

Research Report

# European Infrastructure Update 2014

June 2014

*Passion to Perform*

For Institutional Investors Only



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## Executive summary

- Global Infrastructure has continued to attract interest among investors despite the recent challenging economic environment. Investments in infrastructure offer diversification benefits and the potential to own real assets that generate high-yielding, income-oriented returns and stable, attractive, inflation-hedged total returns.
- It is useful to consider the risk/return profile of unlisted infrastructure in terms of its position on the risk spectrum. Unlisted infrastructure would sit somewhere between fixed income and private equity, however each sector within the infrastructure asset class has certain characteristics that will govern the type of investment return and the nature of risks that an investor might experience, and hence its ultimate position on the risk return spectrum.
- In Europe, the region offers a diverse range of opportunities for the investor, from the developed, larger economies of Western Europe with established and transparent governance to the fast-growing economies of emerging Eastern Europe. These macro factors will also contribute to the actual risk return profile of an individual investment.
- DeAWM Alternatives Research has identified several macro trends in Europe driving the changing socio economic environment, ranging from opportunities emerging from the diverse economic recovery, through to longer term demand changes resulting from changing demographic drivers of performance.
- In addition to the changing socioeconomic macro environment in Europe, this paper further discusses the key trends and themes that will impact specific markets in the future, including opportunities that arise as a result from:
  - The changing nature of Europe's utility sector, driven by utility company asset disposal and changing regulation.
  - The pro-infrastructure nature of policies being adopted across Europe, and the acknowledgement of infrastructure as a major contributor of economic growth has driven commitment at the national level to models that encourage stimulative private sector involvement.
  - A continuation of the privatisation of state owned assets to encourage private sector investment in order to address the major issues of maintenance and upgrading at a time of severe fiscal constraint at national and local levels.
  - The impact of climate change and its consequences on European infrastructure policies for development, maintenance, and retrofits will be key in shaping future direction and performance.
- The long-term trend being observed is one of increasing interest and investment in infrastructure as an asset class. The appeal of infrastructure to institutional investors continues to be its core characteristic: a stable, inflation-hedged yield in a changing European landscape.

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## Introduction

Infrastructure has emerged as an increasingly attractive investment option within the alternative asset class. The fundamental drivers of European infrastructure investment remain positive despite a challenging financial market that distracts national and local governments already struggling with significant fiscal deficits. This environment constrains the ability of the public sector to refinance or even maintain existing infrastructure, let alone finance the development of new infrastructure, despite infrastructure investment being an established driver of economic growth.

The willingness to privatise public assets, whether existing or planned, tends to gain momentum in challenging economic times. This effect can be further reinforced when stimulative infrastructure spending becomes a core component of economic policy, particularly in jurisdictions with weaker economies. At the same time, private companies are restructuring their balance sheets and divesting capital-intensive investments. These tend to create new opportunities for investors in infrastructure assets and businesses.

DeAWM Alternatives Research anticipates that key investment markets will be the large, core European markets of the United Kingdom, Germany, and France, as well as Southern Europe (especially Italy, Spain, and Portugal). The Central and Eastern European ('CEE') markets are expected to provide additional investment opportunities<sup>1</sup>. The broad pipeline of pending European transactions is discussed in the context of macro drivers in a later section of this report.

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<sup>1</sup> There is no guarantee regarding availability of assets in future invested portfolio.

# Infrastructure defined

## Classification

Infrastructure can be broadly defined as the physical assets, systems, and facilities needed to support the social and economic activities of a community or society. As an asset class, however, infrastructure lacks a precise definition that is widely recognized<sup>2</sup>. It is therefore helpful to peel away the ill-defined outer layers to get to the core components which offer the most diverse opportunities for private sector investment.

From an investment perspective, 'social' infrastructure tends to offer fewer avenues for private sector participation because it captures institutional functions such as health, education, and justice where revenue streams may be limited. With social infrastructure, the underlying service that is provided includes a broad public benefit that is not easily monetised. Social infrastructure typically cannot survive purely on user charges and therefore, has traditionally been developed, owned, and operated by governments or municipalities with performance consequently highly correlated with politics and national policy. Nevertheless, a significant PPP (Public Private Partnership) sector has emerged in developed countries such as Australia and the UK and this has subsequently spread globally as a means of raising private sector capital to fund public service projects. However, the capital deployment potential for equity investors remains limited in size and very much determined on a project by project basis.

'Economic' infrastructure, in contrast, presents more direct opportunities for steady revenue flows through user fees, tolling, or ticketing, and thus a wider range of opportunities for private sector participation. DeAWM Infrastructure focuses on economic infrastructure investments because they represent services for which the user (both private and commercial) is generally prepared to pay, such as transport, utilities, and communications.

The following exhibit contrasts examples of economic infrastructure with social infrastructure.

Classification of infrastructure assets		
Economic		Institutional / Social
Transport	Utilities (storage / distribution)	Education
seaports	electricity	schools / campuses
airports	fuels	libraries
railways	water	research facilities
roads	wastewater	Health & Social Services
bridges	solid waste	hospitals / clinics
tunnels	Utilities (power generation)	long-term care facilities
parking	traditional / non-renewable	playgrounds / senior centres
Communication	renewable	medical laboratories
fixed line	Sport & Entertainment	Justice & Defense
wireless	stadiums	prisons / correctional facilities
towers	arenas	courthouses
satellites	conference & convention halls	military bases

Source: Inderst, Georg, "Infrastructure as an Asset Class," EIB PAPERS, Volume15 (1), 2010; and Deutsche Asset & Wealth Management, March 2014

<sup>2</sup> Inderst, Georg, "Infrastructure as an Asset Class," EIB Papers, Volume15 (1), 2010; and Northern Trust, Gaining Exposure to Infrastructure, 2012.

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## Characteristics

Investments in infrastructure offer diversification benefits and the potential to own real assets that generate high-yielding, income-oriented returns and stable, attractive, inflation-hedged total returns which are typically sought after by institutional investors. In particular, the long duration and steady cash flow of mature and some developing infrastructure investments hold considerable appeal for investors such as pension funds and life assurance companies seeking to offset or hedge their long-term liabilities.

While infrastructure can in theory be accessed through traditional equity and debt markets, its unique combination of characteristics help to distinguish it as a unique asset class. Like real estate, infrastructure's income yields comprise a significant and stable component of total returns, and capital appreciation often accrues from well-selected, strategic locations, and may also offer relatively low-risk and long-term cash flows similar to fixed income; however, like private equity, managerial strategies can also influence long-term asset performance. Despite similarities, infrastructure also differs from these asset classes, as it offers less cyclical exposure than equities, and because barriers to entry can be daunting and significant, a smaller field of serious players tend to compete in the marketplace than often found with the real estate asset class<sup>3</sup>. Some of the reasons for investing in unlisted infrastructure are now explored in more detail.

**High barriers to entry:** Many infrastructure assets are 'public goods' and are therefore by nature monopoly assets due to their high up-front and early stage capital costs. These act as a significant impediment to potential competitors and add to consistency and predictability in risk and return characteristics. When these types of assets are privately owned they are generally subject to economic and political regulation.

**Comparatively low volatility:** Some long-term essential services may exhibit a low correlation to the economic cycle and have relatively low technology risk. User demand patterns for infrastructure assets tend to be relatively inelastic given the essential nature of the services involved. Depending on the asset and tariff structure, price inflation can often be passed on to the end user.

**Stable, predictable long-term cash flows:** The counterparties to infrastructure assets are often categorised in terms of two groups. The first includes governments and local authorities, most of which tend to be creditworthy, despite the global financial crisis calling this into question. The second constitutes a widely diversified group of end users which help to stabilise cash flows. The cash flows of infrastructure assets with inherently long lives and strong intrinsic value can be easily matched to the long-term liabilities of certain investors. During economic and market volatility, this income stability and defensive characteristic has been an attractive feature of the asset class.

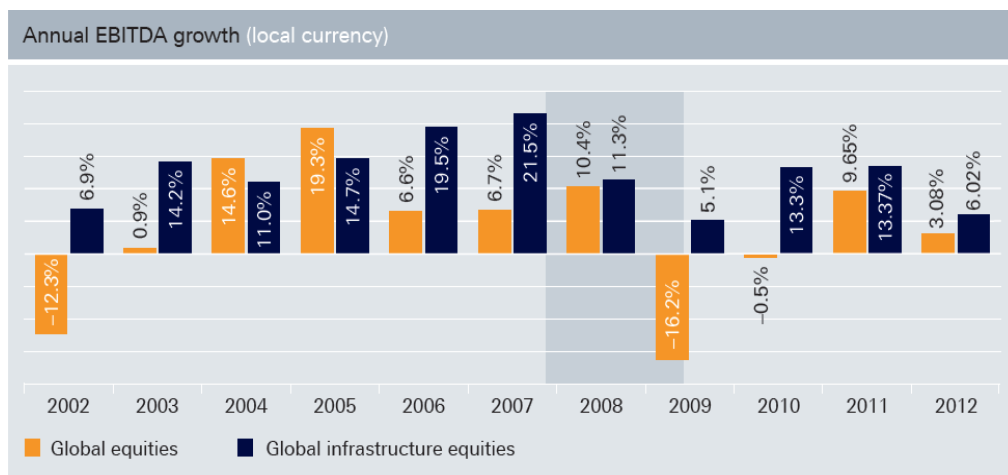
At an individual asset level, user-generated income for certain infrastructure sectors can be relatively inelastic, thus the risk of large fluctuations in income over the duration of the asset life is reduced<sup>4</sup>. The relative defensive nature of the asset class can be demonstrated in the following chart<sup>5</sup> which shows that during periods of global economic growth and decline (as indicated by the performance of global equities), the listed infrastructure market is relatively less volatile. DeAWM Alternatives Research believes that this observation from the listed market further reinforces the stable nature of cashflows generated from the unlisted infrastructure market.

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<sup>3</sup> UBS Global Asset Management, "An introduction to infrastructure as an asset class," October 2009

<sup>4</sup> Australian Super, Fact Sheet: Comparing Listed and Unlisted Assets, February 2013.

<sup>5</sup> DWS RREEF Global Infrastructure Fund: The case for global infrastructure Q2 2013



Source: MSCI, Reuters, Bloomberg, Dow Jones and JP Morgan Quantitative Strategy as of 12/31/12 (the latest data available). Global equities are represented by the MSCI World Index. Global infrastructure equities are represented by the Dow Jones-Brookfield Global Infrastructure Index. Shaded bar indicates a recession, which took place from December 2007 to June 2009. Index returns assume reinvestment of all distributions and do not reflect fees or expenses. It is not possible to invest directly in an index. See back page for index definitions.

**Asset lifecycle:** While it is possible to point to the occasional Roman aqueduct that is still operational, this lifespan is not typical of all infrastructure assets. Still, the depreciable operating life of well-maintained infrastructure assets does indeed tend to be relatively long, usually lasting decades or more. Concessions and leases can sometimes range from 25 to 99 years<sup>6</sup>. Long-term ownership structures allow unlisted owners and managers to enhance asset values in ways that are less feasible through listed ownership<sup>7</sup>.

**Diversification:** Returns for listed infrastructure correlate with equities in Europe as well as globally<sup>8</sup>. Because of the lack of data, we know much less about correlations for unlisted infrastructure in European and global markets. In Australia<sup>9</sup>, where such data exist, the evidence shows that unlisted infrastructure exhibits very low correlations with both equities and bonds, thus suggesting positive diversification benefits<sup>10</sup>.

**Inflation hedge:** Price inflation can sometimes be passed on to the eventual consumer depending on the type of infrastructure asset, hence the extent to which infrastructure can be considered a true inflation hedge is highly dependent on many factors. Inflation-indexed toll increases are common features of concessions for some types of surface transport such as roads, bridges, and tunnels. Inflation can also be a factor influencing rate increases for regulated utilities<sup>11</sup>. There is some evidence, however, that infrastructure is not always an inflation hedge. The specific sector of the infrastructure market, the regulatory environment, and the timeframe of the investment may all play into the extent, if any, that such investments can hedge against inflation<sup>12</sup>.

**Active management:** Infrastructure provides managers of unlisted assets with an opportunity to add value directly to an investment. This type of value enhancement is less feasible with listed ownership<sup>13</sup>. Moreover, the diversity of infrastructure as an asset class

<sup>6</sup> Inderst, Georg, "Infrastructure as an Asset Class," EIB Papers, Volume 15 (1), 2010

<sup>7</sup> Australian Super, Fact Sheet: Comparing Listed and Unlisted Assets, February 2013.

<sup>8</sup> RREEF Research, European Infrastructure Update, June 2012.

<sup>9</sup> Investors should be cautious of extrapolating too much from the Australian experience because individual infrastructure investments are subject to local political and economic conditions.

<sup>10</sup> Inderst, Georg, "Infrastructure as an Asset Class," EIB Papers, Volume 15 (1), 2010; Szado, Edward, "Investing in Infrastructure," Alternative Investment Analyst Review, Vol. 2 (2), 2013; and Australian Super, Fact Sheet: Comparing Listed and Unlisted Assets, February 2013.

<sup>11</sup> Northern Trust, Gaining Exposure to Infrastructure, 2012.

<sup>12</sup> Rödel, Maximilian and Christoph Rothballer, "Infrastructure as Hedge against Inflation—Fact or Fantasy?" The Journal of Alternative Investments, Vol. 15 (1), Summer 2012; and Szado, Edward, "Investing in Infrastructure," Alternative Investment Analyst Review, Vol. 2 (2), 2013.

<sup>13</sup> DeAWM Alternatives Research: Global Listed Infrastructure Securities and Macro Environments, September 2013.

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may be less obvious in indexed performance of listed assets, where market-cap weighting may hide the pure-play opportunities of certain unlisted sectors<sup>14</sup>. Applied effectively, active asset management can help to boost user volumes and revenues enough to enhance returns over and above the cost of active management. The ability to create value successfully will be dependent in part upon the specialist skills of the asset management team, and their ability to position an asset in order to maximise its potential.

**Tangible ‘real’ asset:** Most infrastructure sectors represent tangible assets — i.e., a combination of land and structures that constitutes real property — but it is not necessarily a commodity in the same sense as real estate. Real property will almost always have a residual value, which is particularly attractive during periods of distress and as a store of wealth. The flipside, of course, is that when compared to more tradable asset classes, investment in infrastructure is relatively illiquid.

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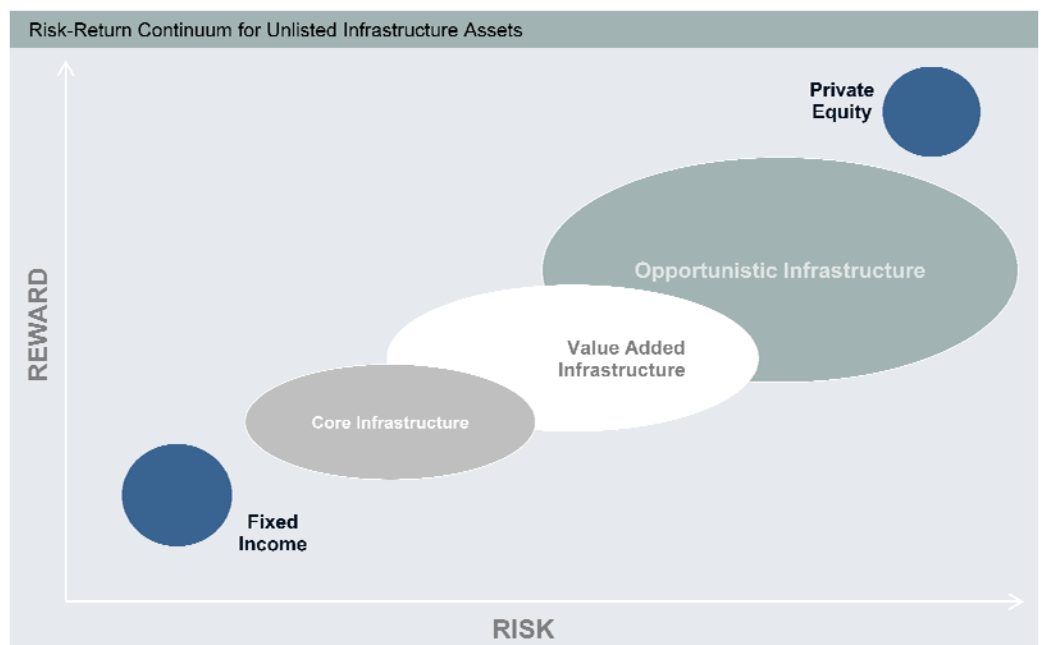
<sup>14</sup> Northern Trust, Gaining Exposure to Infrastructure, 2012.



## Risk/Return profile

Given the little information available for measuring the performance of unlisted infrastructure in Europe, it is useful to consider the risk/return profile of unlisted infrastructure in terms of its position on the risk spectrum below<sup>15</sup>. In general terms, performance from unlisted infrastructure would sit somewhere between fixed income and private equity on the risk spectrum<sup>16</sup>. The specifics of an individual asset would dictate where on the chart an individual investment would sit, depending on the uncertainty surrounding the delivery of individual asset performance at a macro and micro level.

An asset positioned in the core infrastructure space would include mostly mature assets that benefit from regulated or contracted revenue streams that mitigate income volatility, typically targeting 6-10% return and categorized by relatively low gearing and general market risk. As investments progress through the risk spectrum, value added transaction, would involve the investor taking on board a higher level of market or operational risk and a higher level of gearing, with the ability to enhance both yield and value through growth initiatives and hence targeting a return in the 10-16% range. Opportunistic investment strategies, therefore, would target returns in excess of 16% and might involve a variety of risks including development, market and gearing.



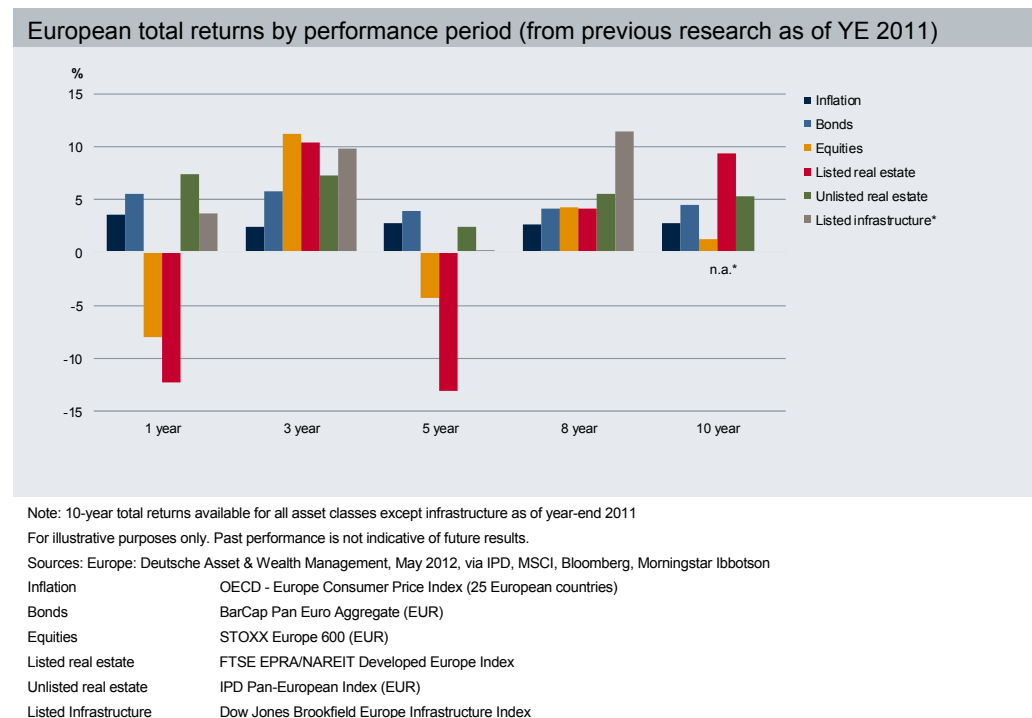
The availability of information to inform decisions is paramount in understanding risk and return. For a small number of Australian funds, there is available information on total returns for unlisted infrastructure holdings. Some work has already been done in studying the performance of these unlisted funds as an asset class. Peng and Newell (2007) studied asset class performance in Australia for the period from Q3 1995 through Q2 2006<sup>17</sup>. They found that unlisted infrastructure during the analysis period produced lower returns than listed infrastructure, but at a much reduced volatility. The result was a higher Sharpe Ratio than listed infrastructure, meaning that unlisted infrastructure delivered a more attractive risk-adjusted return over the analysis period.

<sup>15</sup> Singh Bachher, Orr, Settel, "Investment Performance Measurement: Benchmarks for Unlisted Infrastructure". CFA Institute 2012

<sup>17</sup> Peng, Hsu Wen, and Graeme Newell, "The Significance of Infrastructure in Investment Portfolios," Pacific Rim Real Estate Society Conference, Fremantle, Australia, 21-24 January 2007.

In 2011, DeAWM Alternatives Research tested and published data for Australian unlisted infrastructure funds against the Dow Jones Brookfield Global Infrastructure Total Return Index in Australian dollars. This was an attempt to use the limited data available to compare the performance of unlisted and listed infrastructure at a broader geographic level. The analysis covered a maximum period of five years and found similar returns between the two indices but again with lower volatility for unlisted infrastructure with a correspondingly higher Sharpe Ratio<sup>18</sup>.

In 2012, DeAWM Alternatives Research compared the performance of asset classes in Europe (see exhibit); including listed and unlisted real estate as well as available listed infrastructure indices. Listed infrastructure compared relatively well at 8 years out, the longest period for which data were available at that time<sup>19</sup>.



Because of the limited availability of unlisted infrastructure benchmarks in Europe, comparisons to listed performance are helpful but challenging to analyse. In the chart earlier in this paper<sup>20</sup>, published information from the listed markets was used to enhance the understanding of income security in the unlisted markets. In this context, such a comparison is very useful in informing our understanding of future performance of unlisted assets.

In Australia, where such comparisons are more possible, there do appear to be upside benefits of risk-adjusted returns and diversification under weak market conditions<sup>21</sup>. According to published IPD data<sup>22</sup>, unlisted infrastructure in Australia has delivered a total return of 12.2% over the last 8 years which was 7.2% higher than the domestic 10-year government bond.

Whether similar relationships exist in Europe is only speculation due to the data limitations however, this would intuitively appear to be the case. Investors should be cautious of

<sup>18</sup> RREEF Research, *A Compelling Investment Opportunity: The Case for Global Listed Infrastructure Revisited*, July 2011.

<sup>19</sup> RREEF Research, *European Infrastructure Update 2012*, June 2012.

<sup>20</sup> DeAWM Alternatives Research: *Global Listed Infrastructure Securities and Macro Environments*, September 2013.

<sup>21</sup> Inderst, Georg, "Infrastructure as an Asset Class," EIB Papers, Volume 15 (1), 2010; Szado, Edward, "Investing in Infrastructure," *Alternative Investment Analyst Review*, Vol. 2 (2), 2013; and Australian Super, *Fact Sheet: Comparing Listed and Unlisted Assets*, February 2013.

<sup>22</sup> IPD/MSCI Australian Unlisted Infrastructure Digest 2012

extrapolating too much from the Australian experience because individual infrastructure investments are subject to local political and economic conditions. Therefore, the complex combination of drivers of future performance results in very different risk return profiles within a given sector or region. These relationships were further explored in 2012<sup>23</sup> when DeAWM Alternatives Research sought to understand the risk/return relationships across asset classes. The result further reinforced the view that unlisted infrastructure was capable of delivering attractive risk return benefits when compared to other asset classes.

Sectors do, however, share some structural risks, such as the general availability and quality of financing as well as the temporal nature of the political and regulatory environment. Access to capital often depends on the health of the local banking sector as well as the total indebtedness of the public sector at country and local levels. Other factors such as currency risk and political shocks are, therefore, relevant considerations.

The exhibit below classifies some of the general risks of infrastructure investment, as well as more specific risks encountered by funds and direct investors. The changing weights associated with these risks — especially the availability, quality, and cost of financing as well as evolving regulatory and public policy priorities — will be important drivers of investor interest in the asset class going forward.

Classification of infrastructure risks		
General	Fund Investment	Direct Investment
<ul style="list-style-type: none"> <li>construction</li> <li>operational / management</li> <li>business (supply / demand)</li> <li>leverage / interest rates</li> <li>legal / ownership</li> <li>regulatory (fees / concessions)</li> <li>currency</li> <li>political / taxation</li> <li>obsolescence</li> <li>third-party (corruption / lobbying)</li> </ul>	<ul style="list-style-type: none"> <li>concentration</li> <li>illiquidity</li> <li>pricing / valuation</li> <li>governance / management</li> </ul>	<ul style="list-style-type: none"> <li><i>same as fund risks, plus:</i></li> <li>experience</li> <li>timing</li> <li>advisor / counterparty</li> <li>legal / regulatory / fiduciary</li> <li>reputation</li> <li>diversification</li> </ul>

Source: Inderst, Georg, "Infrastructure as an Asset Class," EIB PAPERS, Volume 15 (1), 2010; Marquette Associates, Infrastructure Position Paper, October 2011; and Deutsche Asset & Wealth Management, March 2014

Each sector within the infrastructure asset class has certain characteristics that will govern the type of investment return and the nature of risks that an investor might experience, and hence its positions on the risk return spectrum. An airport, for example, may be impacted by external factors outside its control such as fuel prices and the popularity of certain travel destinations, whereas some utility businesses that are regulated, such as water and wastewater treatment businesses, will see less variability in earnings regardless of most market conditions.

Infrastructure's performance is often underpinned by long-term demand forecasts. The actual performance of greenfield projects, for example, is more likely to deviate from initial long-term demand forecasts than the performance of more mature assets, according to Fitch Ratings<sup>24</sup>. This underscores how the stage of development can influence the expected performance of infrastructure businesses.

For example, a toll road that has a structured tariff regime (e.g., availability payments, shadow tolls), limited competitive challenges, and a long operational history will typically deliver a consistent and predictable income stream. This is because demand patterns are likely to be well established and/or hedged through the tariff regime and, if the asset is located in a vital transport corridor, these patterns are likely to show relatively little

<sup>23</sup> DeAWM Alternatives Research: European Infrastructure Update 2012

<sup>24</sup> Fitch Ratings, "Infrastructure Ratings Prove Resilient Through the Downturn," 8 March 2011.

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variation regardless of changes in other factors, such as investment markets or fuel price conditions. As a result, well established assets or businesses with minimal competition are often considered relatively 'low-risk' investments. The construction of a new toll road project (an early or development stage asset) will carry much higher investment risk as there are more variables that could influence valuation. For example, the construction phase may experience delays or the forecast road usage may prove inaccurate. In this way, the same type of infrastructure asset (a toll road, for example) can pass through a range of different investment stages during its life.

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## Macro drivers

### Global

Global Infrastructure has continued to attract interest among investors despite the recent challenging economic environment experienced globally. At the macro level, DeAWM Alternatives Research published an interesting piece of research in September 2013 which looked at the key macro drivers of historical performance of the listed market under various economic scenarios, which allows inferences to be made over the future performance of the asset class.<sup>25</sup>

In summary, during the period January 2003-June 2013, all infrastructure sectors outperformed global equities when GDP growth has been above average, global sovereign bond yields and corporate yield spreads have been declining, or inflation has been above average. All sectors except ports and diversified infrastructure outperformed the MSCI World Index when GDP growth was below average. The communications, airports, ports and diversified infrastructure sectors were defensive when global bond yields rose. All sectors but toll roads and diversified infrastructure outperformed when yield spreads increased. When inflation was below average, the ports, toll roads and diversified infrastructure sectors underperformed the MSCI World Index.

The research also seeks to understand performance under a range of interest rate and inflation scenarios and the reader is directed to the paper for a more in-depth discussion. Whilst the analysis has been carried out on the more transparent listed infrastructure markets, there are clear characteristics about the behavior of the asset class in general that can be learnt from such work.

### Europe

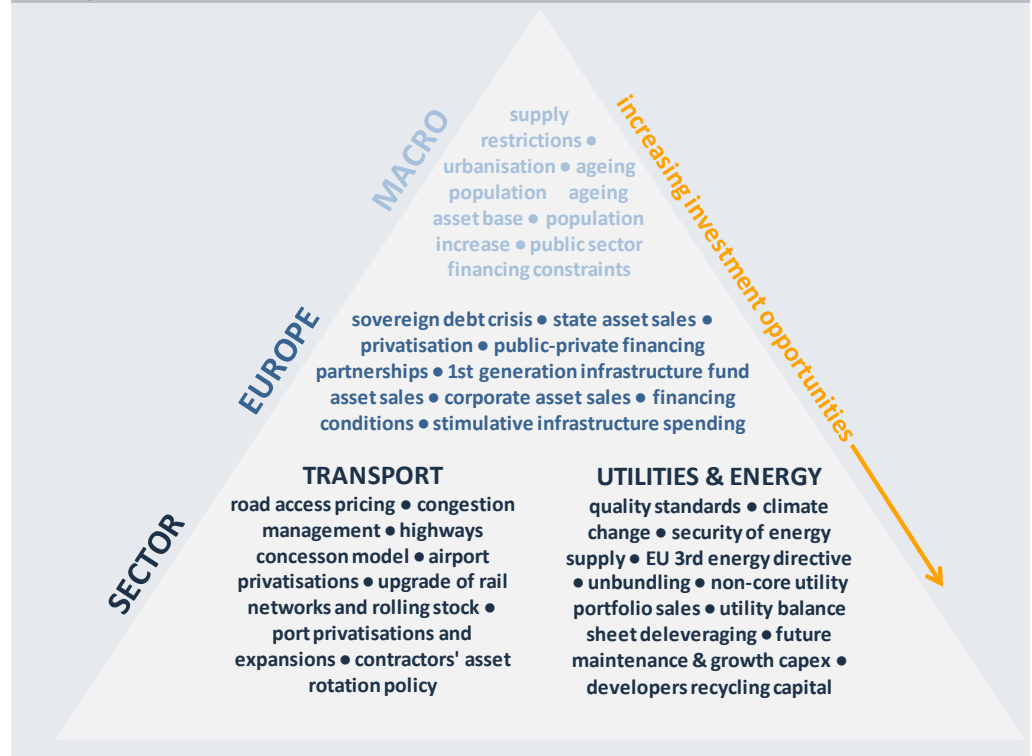
At a European level, the region offers a diverse range of opportunities for the investor, from the developed, larger economies of Western Europe with established and transparent governance to the fast growing economies of emerging Eastern Europe. In general, Western Europe offers ample opportunities to invest in mature and growth stage infrastructure investments, while the emerging economies in Eastern Europe are more likely to present investment opportunities in the construction/development or growth stage. Clearly the risk return profile will vary depending on the growth cycle and the maturity of the asset and market.

DeAWM Alternatives Research has assessed the opportunity for infrastructure investments in Europe on the basis of both macroeconomic factors (e.g. the size of the market, demographic pressure, and fiscal pressure) and country and sector specific trends. The macro drivers are discussed in this section. More specific factors relating to countries and sectors follow in the next section.

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<sup>25</sup> DeAWM Alternatives Research: Global Listed Infrastructure Securities and Macro Environments, September 2013

## Supply side chain of European infrastructure investment opportunities



Source: Deutsche Asset & Wealth Management.2014

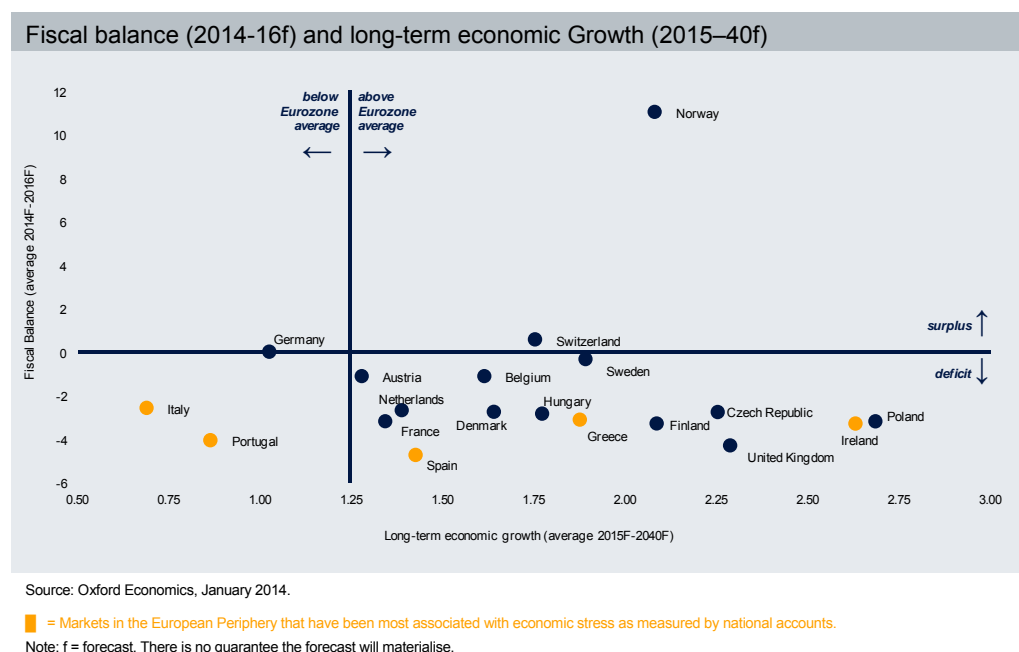
Europe's socio-economic environment will shape the context for infrastructure development, operation, management, and hence performance, in the decades ahead. A recent report by DeAWM Alternatives Research examined some of the socioeconomic drivers from a real estate perspective, but these same drivers have implications for infrastructure as well:

[Europe's] dependency ratio is set to rise sharply over the coming decades. The dependency ratio is the sum of the population aged 0-14 and aged 65+ compared to the population aged 15-64. Currently the dependency ratio in Europe is around 45, which means that for every 100 people of working age (15-64), there are 45 people of non working age. According to the UN's central scenario, this European rate is set to peak at around 78 by the middle of the century. The rise in dependency is expected to be most marked in Germany, with a surge between 2020 and 2035, before peaking mid-century at 85. In the low fertility scenario, dependency in Germany reaches 95, suggesting that for every working age person; there will be nearly one corresponding person of non working age.

The rise in the dependency ratio is of significant concern. Not only will the reduction in the number of working people weigh upon the total productive capacity of an economy, those of working age will face the increased burden of supporting those not in employment. If state pensions are to be maintained, the rise in old age dependency will require either a rise in taxation or a reduction in other services. The majority of governments across Europe are taking steps to partially offset the rise in the dependency ratio by raising the retirement age;

nonetheless these policy changes are unlikely to occur quickly enough to stop a substantial increase over the coming decades.<sup>26</sup>

Three key aspects of this broad macro trend have direct implications for infrastructure. The first and most important relates to participation in the public infrastructure process. The fiscal pressures faced by government at all levels will force an ongoing reconsideration of how infrastructure is financed, built and maintained<sup>27</sup> and the changing demands to be met. The pressure to privatise public assets is underscored in the following exhibit which compares current fiscal balances among European markets to their long-term projected growth rates. Other than Norway, few countries in Europe are looking at the prospect of fiscal surplus, at least in the near term. The ageing of Europe's population implies that current fiscal pressures are unlikely to recede in the years ahead.



A second impact of Europe's changing socioeconomic environment is demand for infrastructure. With real estate, it is straightforward to tie a smaller labour force to a reduced demand for office space and an older population to reduced retail spending. But do these same trends correlate to infrastructure demand in equal measures? Perhaps it depends on the sector. Demand for social infrastructure, especially schools and hospitals, should correspond positively to the age cohorts that form the numerator of the dependency ratio. Demand for economic infrastructure may be more nuanced. Older Europeans, for example, might be less apt to drive or commute daily, so their transport demand could theoretically diminish over time. For other types of economic infrastructure, including water, wastewater, and energy for heating, it may be more difficult to assume direct impacts at the household level from changing demographics. When evaluating the long-term implications of demographic change, investors should differentiate the demand impacts on a sector by sector basis.

The third issue associated with Europe's long-term demographic change is a regional one. DeAWM's Alternatives Research report in 2012 on demographics<sup>21</sup> highlighted notable differences in patterns of population change across European regions. (A case in point is

<sup>26</sup> Deutsche Asset & Wealth Management, The Demographic Drivers of European Real Estate Demand, November 2012

<sup>27</sup> Preqin and Ferguson Partners, Special Report: Infrastructure Industry Themes, February 2014

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Germany where population growth over a recent 10-year period ranged between -30% to +21% across the country's 429 sub-regional measurement areas.) The report suggested these patterns were driven by, among other things, urban regeneration schemes, changing levels of accessibility, employment growth sites, and specific location decisions by age cohorts.<sup>28</sup> Over the long term, affluence and wealth accumulation will play into these regional patterns as well. The European economic recovery will not necessarily be evenly spread across the continent. Forecasts show that economic growth will accrue at a faster pace in Eastern European markets like Poland and the Czech Republic where catch-up growth continues to influence infrastructure investment<sup>29</sup>. The relative positions of regions can also change over time. Even as economic cycles play out, longer economic waves usher in structural realignment. The takeaway is that a detailed demographic and economic analysis should accompany individual asset purchases, particularly illiquid assets with long lifecycles such as infrastructure.

Meanwhile, Europe's policy environment will continue to evolve over the coming years and decades. Some of this will be shaped by demographic trends. For example, urbanisation and uneven population growth will influence the priority of infrastructure investment decisions. Fine-tuning of the public-private partnership ('PPP') process is also expected, with performance contracting — payments tied to results — increasingly becoming the standard, especially as it relates to greenfield development. Furthermore, climate change, a compounding pressure on public sector finances, will continue to shape infrastructure policies for development, maintenance, and retrofits<sup>30</sup>.

Within this macro environment, DeAWM Alternatives Research continues to see a substantial pipeline of infrastructure transactions. The macroeconomic factors outlined above and the market trends outlined in the next section are anticipated to deliver a continued strong deal flow.

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<sup>28</sup> Deutsche Asset & Wealth Management, The Demographic Drivers of European Real Estate Demand, November 2012

<sup>29</sup> Oxford Economics, March 2014

<sup>30</sup> Urban Land Institute, Infrastructure 2013: Global Priorities, Global Insights, May 2013.



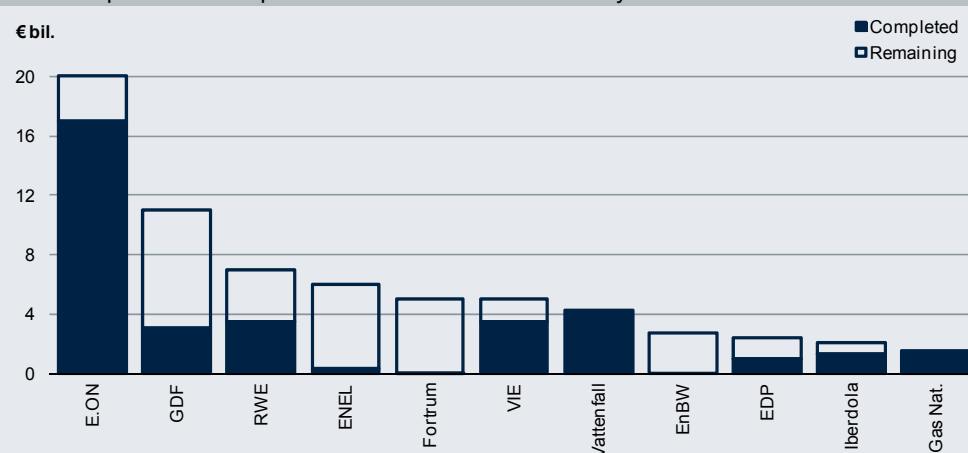
## Relevant trends in the European market

This section outlines the major trends and themes driving the European infrastructure market as identified by DeAWM Alternatives Research. Whilst the focus remains on infrastructure investment opportunities arising from distressed governments or industries, we are also mindful that other investment opportunities arise too and corporate asset sales are expected to continue. This becomes particularly relevant in a post-financial crisis era where corporations are more focused on creating opportunities for investors in capital intensive sectors such as infrastructure.

### 1. Europe's utility sector is in the throes of change

The disposal of assets by utility firms is likely to continue alongside the increasing regulation of the landscape, including the operation unbundling required by the EU Third Energy Package. European utilities have historically focused on conventional power generation and had to compete with subsidised renewables. Declining prices for wholesale electricity in Germany have led to large losses for these traditional utilities, which own just 7% of the country's renewables capacity. The displacement of gas by coal as well as the German government's decision to end nuclear power generation has left the country's major utility firms in an uncompetitive situation. In just five years, the market capitalisation of European utilities fell by more than €500 billion, an even steeper decline than that of European banks over the same period. Credit ratings of some of Germany's major utilities, including E.ON and RWE, have been downgraded while others have been put on a negative outlook. This situation has left traditional utilities with limited capacity to fund necessary capital expenditures. Instead, many have announced large asset disposal programmes. The realignment of European utility firms, especially in Germany, is a major ongoing trend in the infrastructure sector<sup>31</sup>.

Asset disposals of European utilities announced as of July 2013



Source: Utilities Big Book Q4 2013, Credit Suisse, November 2013

### 2. Europe is committed to pro-infrastructure policies

Two Europe-wide initiatives over the past year signal a positive long-term commitment to infrastructure spending. First, the multiannual financial framework ('MFF') approved by the European Parliament in November 2013 and adopted by the European Council in December brought an end to more than two years of political negotiation. The MFF covers a six-year period from 2014 through 2020. The budget includes a €21.9 billion

<sup>31</sup> DeAWM Infrastructure research; Utilities Big Book Q4 2013, Credit Suisse, November 2013; "European utilities: How to lose half a trillion euros," Economist, 12 October 2013; and "Energy: Tilting at windmills," Economist, 15 June 2013.

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commitment to an infrastructure-oriented programme called the Connecting Europe Facility ('CEF'). The bulk of spending in the CEF programme will be directed towards cross-border transport (€14.9 billion) and energy corridors (€5.9 billion) over the next six years<sup>32</sup>.

The other recent milestone in European infrastructure policy is the European Investment Bank's ('EIB's') project bond initiative. It was launched in July 2013 with a €200 million liquidity line for an initial pilot project in Spain. The test phase for the initiative, which intends to boost bond ratings for approved projects to investment grade, continued through 2013, and full ramp-up occurs from 2014 through 2020<sup>33</sup>. The initiative is intended to stimulate private financing for large-scale infrastructure projects in transport and energy<sup>34</sup>, and it coincides with a recent realignment of European Commission priorities on a handful of large multi-country projects<sup>35</sup>. The bond initiative will take time to develop critical mass, but according to Fitch Ratings, Europe's project bond market has potential to develop depth and liquidity over time<sup>36</sup>. The roll-out of the initiative in 2013 sparked further interest among private sector investors in the infrastructure debt market<sup>37</sup>.

Furthermore, the EU's climate and energy package is a set of binding legislation which aims to ensure the European Union meets its ambitious climate and energy targets for 2020. These targets, known as the "20-20-20" targets are a significant driver of capital demand in the renewable sector and associated grid spend to support this strategy.

**United Kingdom:** At the national level, policies to stimulate infrastructure spending vary. The UK's aggressive National Infrastructure Plan consists of 550 projects valued at about £310 billion, but strategies to entice the private sector to partner in the funding has so far proved challenging<sup>38</sup>. In mid-2013, the UK government clarified its programme for loan guarantees on infrastructure projects, which includes assigning the country's sovereign credit rating to approved debt, thus transferring risk from the private sector to the government<sup>39</sup>.

During the last Labour government, the UK had a very strong PPP programme to stimulate investment in social infrastructure; this has now largely run its course. In the early 1980's the UK developed the regulated economic business model as it privatised its state owned utilities. The long track record of the regulated business model in the UK has attracted significant capital from infrastructure investors into the sector.

Changing UK renewable policy should also be closely monitored. Recently this has included the introduction of the Contracts for Difference programme, which forms part of Government's Electricity Market Reform programme and includes significant offshore wind farms projects.

**Germany:** Within Core Europe, the PPP concept has recently been the tool of choice for infrastructure expansion. In Germany, a few controversial projects such as Stuttgart 21 and Berlin-Brandenburg Airport have drawn significant media attention. But beyond these high-profile projects, a German priority for infrastructure investment has been the incremental upgrading of the country's ageing Autobahn system<sup>40</sup>. In Germany, as in

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<sup>32</sup> Council of the European Union, "Council adopts the multiannual financial framework 2014-2020," (press release and budget), 2 December 2013.

<sup>33</sup> "New EU-backed infrastructure era ahead," Reuters, 12 July 2013.

<sup>34</sup> "The Europe 2020 Project Bond Initiative - Innovative infrastructure financing," European Investment Bank, 28 January 2014.

<sup>35</sup> "Future EU transport infrastructure policy to focus on TEN-T corridors," Railway Gazette, 22 October 2013.

<sup>36</sup> "European Project Bonds Making Slow Start," Fitch Ratings, 6 February 2013.

<sup>37</sup> "IJ Global PF Infrastructure Review H1 2013: Regions," Infrastructure Journal, 9 August 2013.

<sup>38</sup> Urban Land Institute, Infrastructure 2013: Global Priorities, Global Insights, May 2013.

<sup>39</sup> "UK Guarantee Scheme For Infrastructure Projects," Fitch Ratings, 16 July 2013.

<sup>40</sup> Urban Land Institute, Infrastructure 2013: Global Priorities, Global Insights, May 2013.

many of the core countries of Northwest Europe, PPPs are being used for surface transport projects. For example, a PPP initiative to widen, maintain, and operate Germany's A7 motorway from Bordesholm to Hamburg/Schleswig-Holstein moved forward in late 2013 as the bid list was narrowed to two consortia. This 30-year concession, valued at €338.5 million, involves a 65 kilometre 4-lane roadway with 70 bridges and a 550-metre tunnel that would be expanded to a width of 6-8 lanes<sup>41</sup>.

The implications of the European unbundling legislation have resulted in the incumbent integrated utilities group selling off their regulated activities businesses attracting significant infrastructure investment interest. Germany's decision to close its nuclear plants will require significant investment in both renewable energy and the energy grid to support this strategy, creating further significant demand for capital.

**France:** The willingness to use the PPP as a tool for infrastructure expansion has drawn particular attention in France. Despite the current French government's nominal preference against PPPs, a number of them continue to move forward especially in the education and transport sectors. Nevertheless, it remains that France still has one of the longest histories in Europe of concession financing; however, recent activity reflects to some degree the urgency of France's current fiscal reality over political ideology. Given France's plans for substantial transport infrastructure investment in the years ahead, the longer term likelihood for PPPs in the transport sector appears encouraging<sup>42</sup>. Furthermore, Energy assets have typically been state owned, but the need for recapitalisation is driving opportunities for private infrastructure investors in renewables and grid assets.

**Other Europe:** Elsewhere in Europe, PPPs have recently been a preferred tool for advancing surface transport projects. This commitment has been especially strong in Denmark, where a report commissioned by the country's largest public pensions recommended in 2013 that major public works projects be implemented with a PPP structure. Transport projects, including tunnels and ports, were singled out as appropriate projects for Danish PPPs<sup>43</sup>. In the Netherlands, a number of PPP initiatives in the road sector have recently spurred investor interest. A €1 billion Dutch PPP that involved a multinational consortium for an A1/A6 roadway project closed in early 2013<sup>44</sup>. Later in the year, a shortlist of bidders emerged for another €1 billion PPP for a similar project, the A9 between the Dutch towns Holendrecht and Diemen<sup>45</sup>. In Belgium, a PPP initiative to build a new tram line in Liège received bids during the latter half of 2013 from three of four prequalified teams. The design-build-finance-maintain ('DBFM') project includes an 18-kilometre line and is expected to be operational by 2017<sup>46</sup>.

### 3. Privatisation of state-owned assets will continue

Opportunities are expected to arise as European governments further encourage private sector investment in infrastructure to address the major issues of maintenance and upgrading at a time of severe fiscal constraint at the national and local levels. A selection of Europe's recent privatisation initiatives are outlined in this section.

<sup>41</sup> "A7 shortlist down to two" Infrastructure Journal, 3 December 2013.

<sup>42</sup> "Financial close for France's L2 PPP," Infrastructure Journal, 8 October 2013; "IJ Special Report: French PPPs," Infrastructure Journal, 6 September 2013; "Lenders step up for French dams PPP project," Infrastructure Journal, 4 September 2013; "French university signs €54m PPP contract," Infrastructure Journal, 6 August 2013; and Urban Land Institute, Infrastructure 2013: Global Priorities, Global Insights, May 2013.

<sup>43</sup> "Organization and financing of public infrastructure projects: A path to economic growth and development of the Danish welfare model," Offentligt-Privat Partnerskab, 15 May 2013; and "Danish pension funds back PPP route," Infrastructure Journal, 16 May 2013.

<sup>44</sup> "Financial close on the Netherlands' €1bn highway PPP," Infrastructure Journal, 27 February 2013.

<sup>45</sup> "Shortlist in place for €1bn-plus Dutch highway PPP," Infrastructure Journal, 22 July 2013.

<sup>46</sup> "Three submit bids for Belgium tram project," Infrastructure Journal, 5 September 2013.

**UK & Ireland:** The central government's ongoing efforts to privatise existing state-owned infrastructure assets continue. The postal service was divested in 2013 through a public offering<sup>47</sup>. At the local government level, authorities have also pursued privatisation options for various reasons. Birmingham is one recent example. The city council is considering its options for settling legal claims over equal pay. With its borrowing authority capped, the council will review its £5.3 billion property portfolio and then weigh potential disposals. Most likely to go is the National Exhibition Centre valued at £300 million<sup>48</sup>.

Large-scale privatisations have also been initiated in Ireland. The sell-off of Ireland's state-owned electricity and gas provider Bord Gáis Energy ('BGE') appeared to collapse in November 2013, but before the year-end a new buyer had been identified and the privatisation process for the utility completed in Q1 2014<sup>49</sup>.

**Southern Europe:** Across the Mediterranean region, the recent crisis has forced many national governments to shed precious state-owned assets, often reluctantly. In few countries has the separation anxiety been greater than in Greece, where delays have been commonplace. The Greek government missed its 2013 target of €1.3 billion from liquidation of state-owned assets after 28 pending deals were held up on technical grounds<sup>50</sup>. Frustrated by the pace of Greek asset sales, Eurozone officials even toyed at one point during the year with a politically sensitive plan to move the assets in question into a holding company in Luxembourg that would then manage the privatisation process instead of Taiped, the Greek agency now in charge<sup>51</sup>.

In Spain, the sale of Madrid-Barajas and Barcelona-El Prat airports has moved back into consideration once again, though the means to accomplish this sale has shifted since the last election which ushered in a change in political leadership. In 2013, a government panel recommended the sale of a 60% stake in AENA, Spain's state-owned holding company that operates the two airports (as well as airports throughout Spain, plus London's Luton)<sup>52</sup>. An IPO is currently planned for AENA and advisors are currently engaged with fund raising.

Privatisation of TAP, the Portuguese national airline, was shelved in December 2012 after receiving scant interest from investors<sup>53</sup>. In early 2013, however, the government announced that it would once again attempt to privatise TAP, along with other state-owned assets, including the national postal service ('CTT'), and the bus and metro operator for greater Lisbon<sup>54</sup>. The government has since moved forward with plans for CTT's privatisation<sup>55</sup>. And as of 2014, options for the privatisation of public transport services in metropolitan Lisbon were also under active consideration<sup>56</sup>. Furthermore, recent activity has also included the privatisation of airports operator ANA to Vinci<sup>57</sup>, and China's state grid company have acquired a significant stake in REN<sup>58</sup>, the national power grid operator.

<sup>47</sup> "State-owned assets: Setting out the store," *The Economist*, 11 January 2014.

<sup>48</sup> "Birmingham council considers NEC sell-off," *Financial Times*, 15 January 2014.

<sup>49</sup> "Centrica named preferred bidder for Bord Gáis," *Financial Times*, 12 December 2013.

<sup>50</sup> "Greece misses 2013 selloff target after auditor blocks asset sale," *Reuters*, 8 January 2014.

<sup>51</sup> "Eurozone eyes holding company to manage Greek €20bn real estate sell-off," *Financial Times*, 28 August 2013.

<sup>52</sup> "Spain sets stage for Aena privatisation," *Financial Times*, 28 October 2013.

<sup>53</sup> "EU airline consolidation slow to take off," *Financial Times*, 21 April 2013.

<sup>54</sup> "Portugal to launch next wave of privatisation tenders," *Infrastructure Journal*, 16 May 2013.

<sup>55</sup> "Portugal aprueba venta de empresa nacional de correos," *Wall Street Journal* (Latin America edition), 25 July 2013; and "Portugal to launch next wave of privatisation tenders," *Infrastructure Journal*, 16 May 2013.

<sup>56</sup> "Government consults on privatisation options," *Railway Gazette*, 24 February 2014.

<sup>57</sup> "Vinci sees off rivals to buy ANA," *Financial Times*, 27 December 2012.

<sup>58</sup> "China's State Grid to take 25% stake in REN," *Financial Times*, 2 February 2012.

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The Italian government announced plans in early 2014 to raise €12 billion by selling stakes in state-owned assets such as postal services, air traffic control systems, shipbuilding, utility transmissions, and export credit operations. Italy has faced criticism for its restraint, as its privatisation policies tend to limit disposals to minority stakes in state-owned holdings<sup>59</sup>.

**Central & Eastern Europe:** The CEE region's legacy of state ownership continues to recede with privatisation programmes rolling ahead. In late 2013, the Polish government initiated a partial privatisation of the country's state-owned cargo rail operator. It was the region's first privatisation attempt in the rail sector through an initial public offering ('IPO'). The European Bank for Reconstruction and Development ('EBRD') signalled the sale as a constructive example that might encourage other governments in the region to privatise their freight rail operations<sup>60</sup>. Meanwhile, the Slovenian government plans to raise €750 million through a privatisation programme initiated in 2013<sup>61</sup>. The assets slated for disposal include the Ljubljana Airport, Telekom Slovenije (telecommunications), Nova KBM (banking), and more than a dozen other state-owned entities<sup>62</sup>. Furthermore, Croatia is privatising its entire highways network, whilst there remains limited PPP activity due to tight debt markets and limited bank liquidity, further exacerbated by poorly resourced and managed state processes.

**Nordics:** Across Scandinavia, governments are actively pursuing creative ways to involve the private sector in infrastructure. Norway hardly faces the same tight fiscal situation as other countries in Europe, yet the privatisation of the high-speed rail line connecting Oslo's central station to the city's primary airport is expected to occur in 2014. This Norwegian initiative is largely a political decision, part of an overall effort to make the country's transport sector more competitive<sup>63</sup>.

#### 4. Climate change is reshaping energy policy

Climate change will continue to shape European infrastructure policies for development, maintenance, and retrofits<sup>64</sup>. The operational environment for renewable energy projects in Europe—especially Germany, Italy, and Spain—has recently evolved from one that encourages only new capacity to one that also supports cost efficiency and integration with the power grid. Some incentives have been curtailed and tariff structures have been amended, and in Spain some of these policies have been applied retroactively. The near-term outlook for other aspects of energy infrastructure remains relatively stable, most notably for oil and gas projects throughout Europe and transmission networks supporting offshore wind in the UK<sup>65</sup>.

Looking further ahead, Germany's commitment to phase out its reliance nuclear energy, as well as to reduce fossils fuel generation, point to a significant reshaping of the sector in the coming years. To meet these goals, renewable energy production will inevitably need to ramp up significantly from the current 25% it now represents. Germany's governing coalition has agreed to set into law renewable production targets of 40-45% by 2025 and to 55-60% by 2035<sup>66</sup>. Germany's 'energiewende' — the massive effort to reconfigure

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<sup>59</sup> "Italy speeds up privatisation with sale of postal operator," Financial Times, 23 January 2014; "Italy launches big privatisation push," Financial Times, 26 January 2014.

<sup>60</sup> "PKP Cargo privatisation details announced," Railway Gazette, 9 October 2013.

<sup>61</sup> "Slovenian sell-off slated for September," Infrastructure Journal, 21 May 2013.

<sup>62</sup> "Slovenian government to privatise national teleco and airport," Infrastructure Journal, 13 May 2013; and "Slovenian sell-off slated for September," Infrastructure Journal, 21 May 2013.

<sup>63</sup> "Norway airport railway privatisation expected for H1 2014," Infrastructure Journal, 5 December 2013.

<sup>64</sup> Urban Land Institute, Infrastructure 2013: Global Priorities, Global Insights, May 2013.

<sup>65</sup> "2014 Outlook: Energy Infrastructure EMEA," Fitch Ratings, 11 December 2013; "European Corporate Credit Outlook 2014," Standard & Poor's Ratings Services, 11 December 2013.

<sup>66</sup> "Factbox: Highlights of German coalition agreement," Reuters, 15 December 2013.

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power supplies — is already impacting Europe's largest industrial economy. The transition so far has been bumpy, with unstable wholesale prices, mismatched supply and demand, and persistent worries that the transmission system is inadequate to absorb the change<sup>67</sup>. For Germany to meet its long-term goals and to make the transition smoother, the investment needed will be steep. By some estimates, the required investments by 2030 could be cumulatively as much as €216 billion for renewables generation capacity plus another €115 billion for grid enhancements<sup>68</sup>.

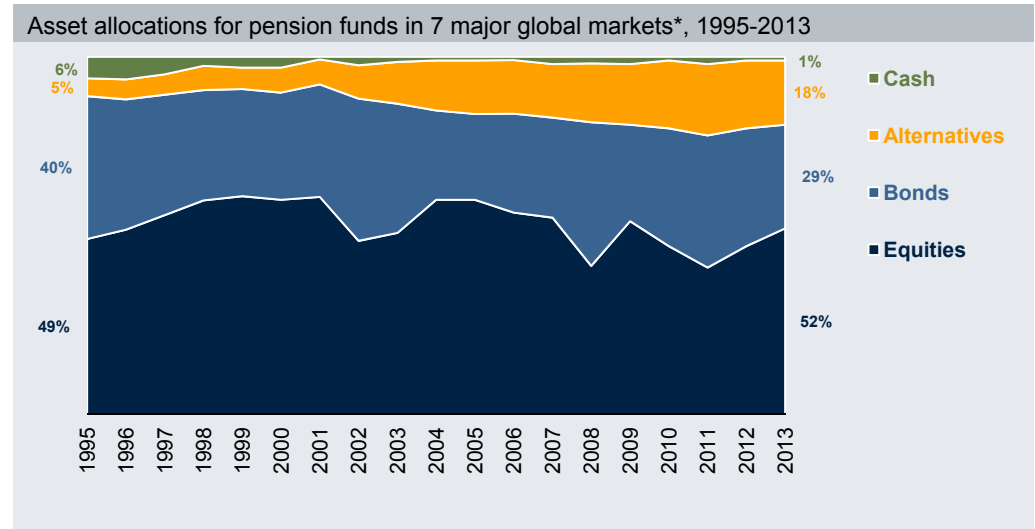
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<sup>67</sup> "Energy: Tilting at windmills," Economist, 15 June 2013.

<sup>68</sup> "Toward a New Balance of Power: Is Germany Pioneering a Global Transformation of the Energy Sector?" Boston Consulting Group, March 2013, Exhibit 6, p.17.

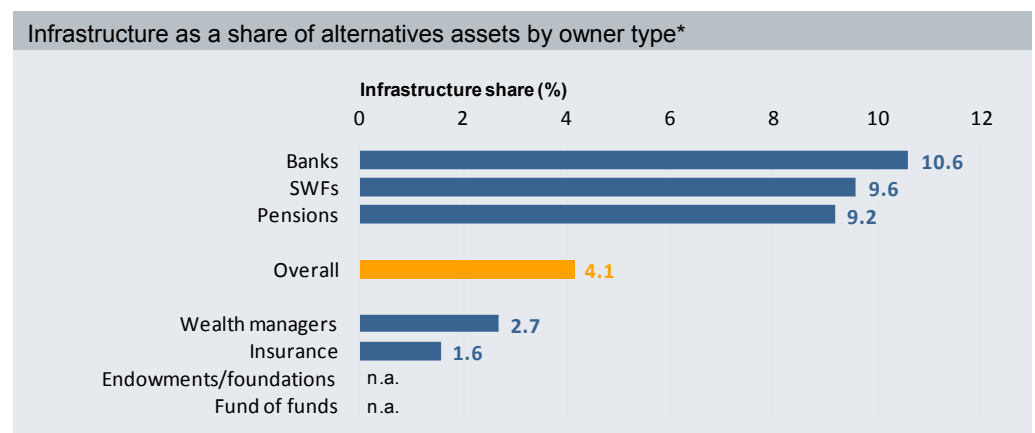
## Allocations to infrastructure

Investors continue to be drawn to the alternative investment asset class, and this is part of a long-term trend being observed. As shown in the chart below, Towers Watson has been tracking pension fund allocations for years. Over nearly two decades, pension funds in seven major global markets, including three in Europe — the UK, the Netherlands, and Switzerland — have seen their collective allocations to alternatives rise from 5% in 1995 to 18% in 2013.



The move towards alternatives is a global trend, but to what extent are investors interested in infrastructure in Europe? Preqin reports that more than half (56%) of the European investors it recently surveyed plan to increase their allocations to infrastructure over the long term<sup>69</sup>. Among global-minded investors, Europe was the most favoured region in Preqin's survey<sup>70</sup>.

A survey of institutional owners of alternative assets by Towers Watson in 2013 found that infrastructure accounts for about 4% of the balance of alternatives assets globally among the top 100 owners. Ownership is more heavily concentrated among banks, sovereign wealth funds ('SWFs'), and pensions<sup>71</sup>.



<sup>69</sup> "Preqin Investor Outlook: Alternative Assets H1 2014," Preqin, February 2014.

<sup>70</sup> "Preqin Investor Outlook: Alternative Assets H1 2014," Preqin, February 2014.

<sup>71</sup> "Global Alternatives Survey 2013," Towers Watson, July 2013.

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According to Towers Watson, the appeal of infrastructure to institutional investors continues to be its core characteristic: a stable, inflation-hedged yield. This is likely to be the main factor pushing up the volume of infrastructure assets under management going forward<sup>72</sup>.

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<sup>72</sup> "Global Alternatives Survey 2013," Towers Watson, July 2013.



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## Conclusion

The European infrastructure investment landscape is categorised by its ability to deliver attractive risk adjusted returns over the long term and historical performance can be described as less volatile and more stable than many other investible asset classes. In order to fully consider an infrastructure investments position on the risk return spectrum, it is critical to consider a wide range of factors from the socio-economic trends through to the market and investment-specific drivers of future performance.

In a multi-asset portfolio, investments in infrastructure offer diversification benefits and the potential to own real assets that generate high-yielding, income-oriented returns and stable, attractive, inflation-hedged total returns. In particular, the long duration and steady cash flow of mature, and some developing infrastructure investments, hold considerable appeal for investors such as pension funds and life assurance companies seeking to offset or hedge their long-term liabilities.

We have identified and discussed in some detail the key issues for consideration in a changing European environment. DeAWM Alternatives Research concludes that Europe will continue to offer a diverse range of investment opportunities across the risk spectrum as the market continues to adapt to changing demand and further supports investor allocations to the asset class.

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