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Marketing Material*

EUROPEAN INFRASTRUCTURE STRATEGIC OUTLOOK 2020

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The opinions and forecasts expressed are those of European Infrastructure Strategic Outlook and not necessarily those of DWS. All opinions and claims are based upon data at the time of publication of this article (January 2020) and may not come to pass. This information is subject to change at any time, based upon economic, market and other conditions and should not be construed as a recommendation.

1 / Executive Summary[1]

- In 2019, the European economy decelerated from the peak growth achieved in 2018, and we expect the slowdown to continue into 2020. The ECB recently announced a broad stimulus to support growth and inflation, and we believe it would take a material shock to derail Europe from its prospects of gradual, medium-term economic growth. Interest rates are now expected to remain lower for even longer. Risks remain on the horizon, including a further cyclical slowdown in global growth, or trade barrier escalations.[2]

- Allocations to private infrastructure will probably continue to grow. Although 2019 marked a slowdown in fundraising, we expect fundraising to continue growing in the medium term, alongside a healthy pipeline of investment opportunities. Investor appetite seems to be shifting from core infrastructure, to core plus strategies where the opportunity set is wider, and entry valuations and business models may offer stronger risk-adjusted return potential.[3]

- Europe continues to represent a key infrastructure market, providing investors with a unique set of opportunities to diversify portfolios by country and sector.[4] We believe that the European markets with the most relevant fundamentals for long-term infrastructure investment are the United Kingdom, Germany, the Netherlands, Belgium, the Nordics and France, as well as Italy, Spain, and Portugal, which combine slightly higher risk/return potential with conducive market fundamentals.[5]

- The recent compression in long-term bond yields[6] has reduced our long-term return outlook for infrastructure returns. However, we continue to observe a sound yield premium over government bonds, particularly in the middle market[7], and outside of the large-cap regulated space, where competition for assets relative to availability is higher and alpha may be limited. For 2020, we forecast levered entry returns for core assets[8] in mature European markets to be in the range of 6.4% to 9.0% (IRR[9]). In the core plus space, levered entry return assumptions are in the range of 9.0% to 12.6% (IRR).[10]

- The performance outlook of European transportation remains stable in our opinion, but traffic growth may moderate further in 2020, particularly for toll roads. Allowed returns for European regulated networks should continue to compress, but the outlook appears to be largely stabilising compared with previous years. The outlook in the power sector seems now more promising. Demand may remain sluggish, but energy transition policies and rising CO_2 prices may lead to mothballing of coal generation and support power prices, benefiting gas and renewable power. Acquiring and managing assets following rigorous sustainability criteria will be a crucial driver of long-term value generation going forward. The outlook for utilities has now largely stabilised compared with previous years, and utilities seem to continue to look for partnerships to fund investment and capitalise on transport electrification and energy networks digitalisation.

- Digitalisation will likely continue to support demand fundamentals for digital infrastructure, particularly for data centres and fibre. We see a good pipeline of opportunities, but believe that focusing on yield and taking conservative views on business plans' growth assumptions may help optimising long-term risk-adjusted returns in the space.

[1] Any forecasts provided herein are based on DWS's opinion at time of publication and are subject to change.
[2] Oxford Economics, as at 20 November 2019.
[3] Preqin, "Preqin Quarterly Update: Infrastructure. Q3 2019", 10 October 2019.
[4] Preqin, "Preqin Quarterly Update: Infrastructure. Q3 2019", 10 October 2019.
[5] Based on DWS proprietary methodology for ranking unlisted infrastructure markets as at 25 November 2019.
[6] Oxford Economics, 20 November 2019.
[7] The middle market includes assets requiring equity checks in the range of EUR 250 million to EUR 500 million, offering a value proposition that is less competitive than the market for large-scale core assets. Opportunities in the middle market often enable acquirers to compete on factors other than price, such as business plan strength and asset management/ industry expertise.
[8] Core infrastructure includes brownfield assets in geographically mature markets, with returns predominantly based on income return. Income return is predictable in the long term, based on regulation or contractual structure, while capital appreciation potential is more limited. Core assets provide essential services in economically and demographically mature areas, are often fully regulated, and technological obsolescence risk is minimal, contributing to low return volatility.
[9] IRR = Internal Rate of Return.
[10] Based on DWS proprietary methodology for ranking unlisted infrastructure sectors as at 25 November 2019. Valuations for 2020 are based on a ten year dividend discount model and a terminal value at exit. Dividend yields, leverage, growth, exit assumptions and discount rate vary by country and sector. There is no guarantee the forecast shown will materialise.

Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns. No assurance can be given that any forecast or target will be achieved.

2 / Strategic Themes[11]

Strategic Themes for Unlisted Infrastructure Investment and Portfolio Management

Category	No.	Theme
Strategic Themes[12]	1	Mature Markets: Focus on European markets with a comparatively more predictable investment environment and a transparent legal and regulatory framework, including Germany, the United Kingdom, the Netherlands, Belgium, the Nordics, France, Italy, Spain and Portugal.[13]
	2	Yield and Platforms: Target brownfield assets offering a platform for growth. Brownfield assets with solid infrastructure characteristics may support yield through regulated or contracted profiles, while platforms may help support growth and capital appreciation to optimise valuations at exit. We believe that an adequate exposure to regulated infrastructure may be key to balance systemic risk in a portfolio.[14]
	3	Long-term Industry Trends: Target sectors that may be favourably positioned to capitalise on long-term industry trends. Electrification, digitalisation, urbanisation and demographic trends should support resilient value creation in the long term independently from the short-term volatility of the macroeconomic cycle.
Risk Awareness	1	Large-Cap: The middle market offers opportunities to acquire assets in a less competitive space compared with the large-cap market, where dry powder is high.[15] Opportunities requiring structuring may enable value creation through operational, strategic and financial expertise.
	2	Style Drifts: In an increasingly mature investment cycle, it may be prudent to focus on assets with solid infrastructure business fundamentals, located in mature markets and with conservative leverage profiles.
	3	Growth Assumptions: There may be benefits in taking a realistic approach on growth assumptions adopted by sell side business plans. In a maturing macroeconomic cycle business assumptions may not materialise as quickly as expected, while in emerging infrastructure sectors, such as digital infrastructure, unpredicted changes in market conditions may limit growth potential substantially.
Portfolio Optimisation	1	Greenfield: Greenfield opportunities may remain a valuable strategy in mature markets. Such opportunities may offer potential to generate alpha and complement a portfolio with higher returns, while increased risk may be largely mitigated.[16]
	2	North America: North American infrastructure may offer the opportunity to diversify a portfolio of European investments, particularly across the long-term contracted renewables space.[17]
	3	Sustainability: Acquiring and managing assets that comply with rigorous ESG[18] criteria and responsible investment guidelines offers potential to protect long-term value, particularly at exit.[19]

[11] Any forecasts provided herein are based on DWS's opinion at time of publication and are subject to change.
[12] No assurance can be given that investment objectives will be achieved.
[13] DWS proprietary methodology for ranking unlisted infrastructure markets as at 25 November 2019.
[14] DWS proprietary methodology for ranking unlisted infrastructure sectors as at 25 November 2019.
[15] Based on InfraNews database transactions, as at June 2019.
[16] DWS proprietary model for ranking unlisted infrastructure markets and sectors as at 25 November 2019.
[17] Based on InfraNews data, as at 6 November 2019.
[18] ESG = Environmental, Social, and Governance (ESG) refers to the three key factors in measuring the sustainability and societal impact of an investment.
[19] DWS, University of Hamburg, "ESG and Corporate Financial Performance", December 2015.

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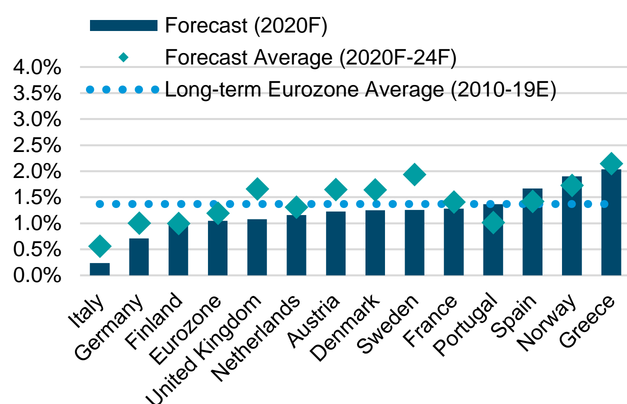
3 / Macroeconomic Outlook[20]

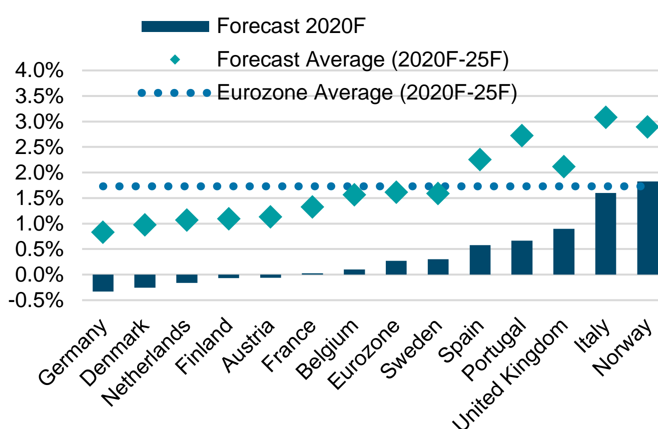
Global Growth: The slowdown in economic growth observed in 2019 may not yet be over. Forecasts for 2020 indicate that global GDP growth should come in at 2.5% - a long way from recession but still subdued by the standards of the past decade. In addition, long-term inflation expectations have been declining further. Ongoing geopolitical uncertainty and the effects of a dissipating U.S. fiscal stimulus may lead to a further slowdown in 2020 compared with what is currently expected.[21]

The growth outlook appears more subdued in mature economies, while emerging markets are likely to gain some momentum. In the U.S., economic growth expectations are at 1.6% for 2020, down from an expected 2.3% in 2019. The U.S. economy remains in a good place, but momentum is undeniably slowing and the Fed acknowledged that further easing would occur in case of a material reassessment of the growth outlook. China may grow at 5.7% in 2020, down from 6.1% in 2019, but the improved sentiment around trade talks with the U.S. seems to have reduced downside risk.

REAL GDP GROWTH (% P.A., 2010-24F)



SOVEREIGN BOND YIELDS (10 YEARS, %, 2020F-25F)



Source: Oxford Economics, as at 6 November 2019. Notes: F = forecast, E = expected. Past performance is not a guide for future results. There is no guarantee the forecast shown will materialise. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

European Growth: The European economy may continue to grow slowly, and forward-looking indicators suggest that growth may remain subdued also in 2020, with domestic demand remaining supportive, but industrial production and exports stalling. This is most evident in Germany, but the dynamic is now spreading to other countries as well. Looking at other major Eurozone economies, growth may remain supportive in France and Spain, while in Italy GDP growth could be little above zero. For 2020, we expect GDP growth in the Eurozone to slow to 1% from 1.2% in 2019. The ECB announced a broad stimulus package to support the deteriorating growth and inflation outlook. We expect the ECB to maintain an accommodative stance for an extended period and Eurozone bond yields to remain lower for longer. In the United Kingdom, a pick-up in wage growth and a cooling in inflation has supported household spending, with GDP growth at estimated 1.3% in 2019. The GDP forecast for 2020 is at 1%, as exports may continue to slow down. While still looming, the risk of a no-deal Brexit appears to have now receded, proving potentially supportive of investment for 2020.

Risks: Beyond Brexit, rising trade barriers and a weaker outlook for global growth may weigh on the European economy. Although unlikely, if Eurozone inflation pressures started to rise, the European central bank may surprise markets to the upside, pushing bond yields and the euro higher, which in turn could slow growth.

[20] Based on Oxford Economics, as at 6 November 2019. There is no guarantee the forecast shown will materialise.
[21] Based on Oxford Economics, as at 6 November 2019. There is no guarantee the forecast shown will materialise.

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4 / Infrastructure Market Outlook[22]

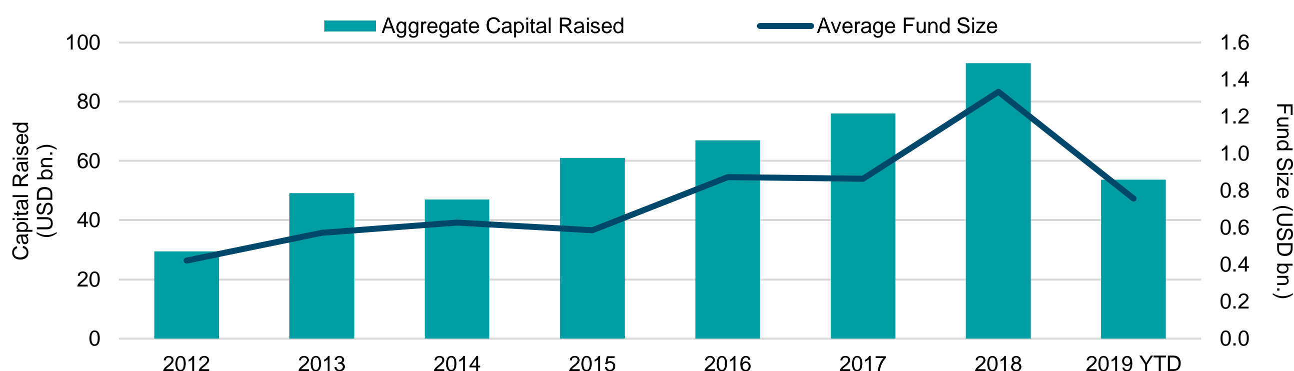
4.1 Fundraising Update[23]

The market environment remains driven by comparatively low returns from traditional asset classes and a weaker economic growth environment.[24] In 2019, long-term investors have continued to increase allocations to private infrastructure.[25] They see private infrastructure as an asset class that has historically offered diversification benefits, long-term cash flow visibility matching long duration needs, and a yield premium over government bonds.[26]

Unlisted infrastructure fundraising achieved a new record in 2018 with funds securing over USD 90 billion, largely driven by a few mega funds reaching final close. In 2019, fundraising continued to prove resilient, but in the absence of mega funds currently in the market, we may observe a slowdown in fundraising compared with 2018. In 2019 year to date, seventy-one unlisted infrastructure funds had secured USD 54 billion[27], but the year-end total is likely to be closer to USD 70 billion, as an acceleration in fundraising is expected by the end of 2019. We believe that 2019 may be another strong year for unlisted infrastructure fundraising.[28]

The fundraising time in the market seems to have shortened: about 83% of funds closing in 2019 were in the market for less than two years compared to 70% in 2014. Looking at strategies by geography, European and North American strategies may continue to dominate private infrastructure fundraising, while we observe that the preference of long-term investors seems to be increasingly shifting from core strategies into the core plus and value add market segment.[29]

UNLISTED INFRASTRUCTURE FUNDRAISING
(Global, USD billion, 2012 – 2019 YTD)



Source: DWS, Preqin, 10 October 2019. For illustrative purpose only. Past performance is not a guide for future results.

[22] Any forecasts provided herein are based on DWS's opinion at the time of publication and are subject to change.
[23] Any forecasts provided herein are based on DWS's opinion at the time of publication and are subject to change.
[24] Based on Bloomberg, as at 17 November 2019.
[25] Based on Preqin, as at 10 October 2019.
[26] MSCI Global Quarterly Infrastructure Asset Index, "Summary - Period ending June 2019", November 2019.
[27] Figure includes Core, Core Plus, Value Added, Opportunistic, Fund of Funds, Secondaries and Debt funds.
[28] Preqin, "Preqin Quarterly Update: Infrastructure. Q3 2019", 10 October 2019.
[29] Preqin, "Preqin Quarterly Update: Infrastructure. Q3 2019", 10 October 2019.

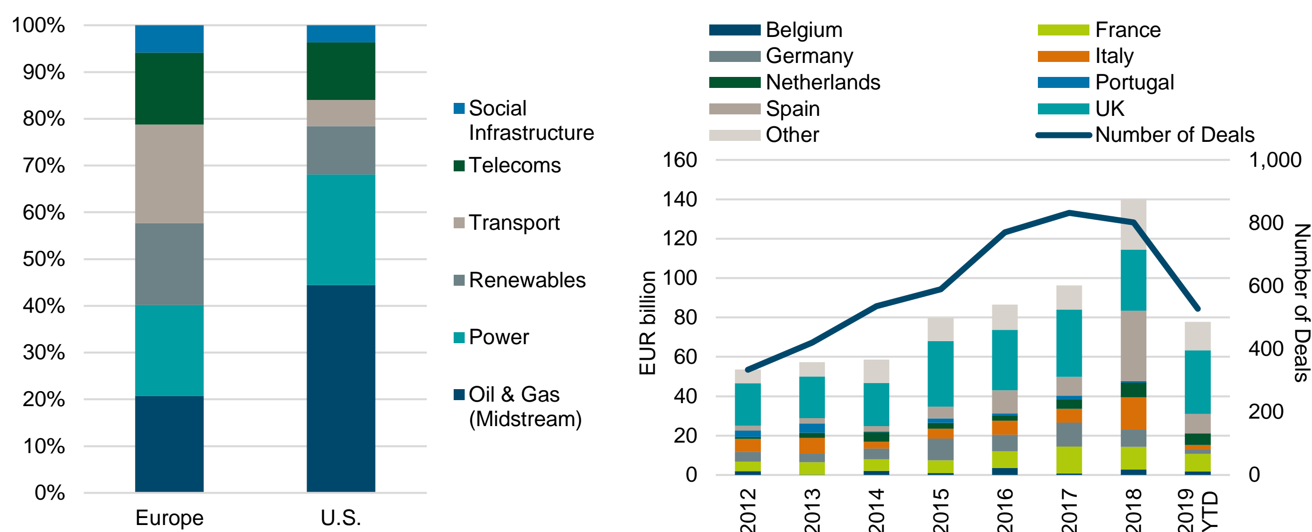
Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

4.2 Historical Transactions Overview[30]

Europe represents the key investment region for core and core plus investment strategies and the pipeline of European transactions appears strong. European infrastructure regulation is relatively transparent when compared with other markets around the globe. Mature European countries can offer an established investment environment, a transparent legal and regulatory framework, and a history of private infrastructure ownership.[31] Compared with North America, Europe provides access to abundant investment opportunities in transportation, governed by mature and tested concession frameworks, which have historically provided long-term income return visibility as well as potential for long-term business expansion.

Historically, North America has represented a region that can offer diversification opportunities to portfolios focusing on European infrastructure, particularly in the long-term contracted energy sector. However, in North America private infrastructure investment has been historically more skewed towards the energy sector and core plus/value add strategies, and has therefore proven more volatile.[32]

PRIVATE INFRASTRUCTURE EQUITY DEALS
(By Region in % and Country in Europe in EUR billion, 2012 – 2019 YTD)



Source: DWS, InfraNews, Infrastructure Journal, as at 6 November 2019. For illustrative purpose only. Past performance is not a guide for future results.

As at the beginning of November 2019, the total of closed private infrastructure equity transactions in the European infrastructure market for 2019 stood at EUR 78 billion, broadly in line with the volume of transactions closing in 2018 over the same period. In 2019, we might observe a deceleration in the volume of transactions reaching financial close compared with 2018. In fact, 2018 represented an exceptional year in terms of transaction volumes, as a number of unique, very large corporate transactions reached financial close. From a country perspective, looking at key markets, the United Kingdom continued to lead the market accounting for about 41% of the total transaction volume, Southern Europe accounted for about 16%, while France and the Netherlands accounted for about 12% and 7% respectively.[33]

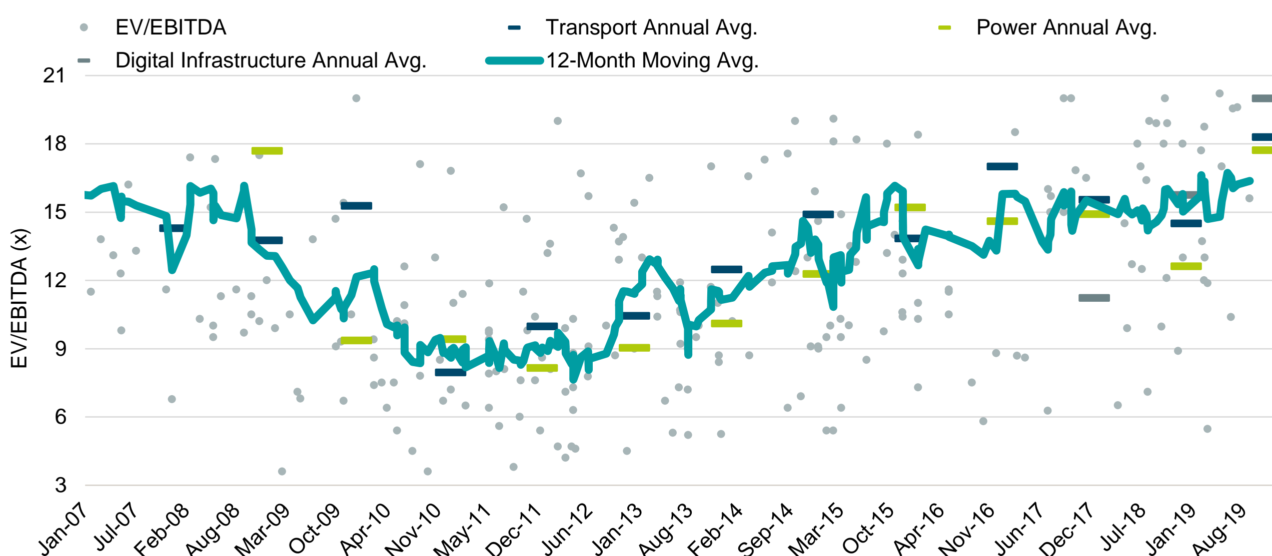
[30] Any forecasts provided herein are based on DWS's opinion at the time of publication and are subject to change.
[31] Based on DWS proprietary methodology for ranking unlisted infrastructure markets as at 25 November 2019.
[32] Preqin, "Preqin Quarterly Update: Infrastructure. Q3 2019", 10 October 2019.
[33] Based on InfraNews database, as at 6 November 2019. Figures include all greenfield and brownfield European projects in the database that have been listed with the status "Financial Close".

Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

4.3 Valuation Trends[34]

Average transaction multiples appear to have increased in 2019, broadly in line with what was observed across other asset classes in developed markets. We believe that a combination of factors drove this increase. In 2019, the composition of the transaction universe included a larger number of transactions in the digital infrastructure sector and in growth assets, supporting transaction multiples. Moreover, we believe that expectations around looser monetary policy adopted by the Fed and the ECB resulted in a further reduction in discount rates, contributing to the increase, particularly for large-cap core infrastructure.[35]

EV/EBITDA, UNLISTED INFRASTRUCTURE TRANSACTIONS IN EUROPE
(2007 - 2019 YTD)



Source: DWS proprietary database of European unlisted infrastructure transactions, based on publicly available transaction information from various sources, including Infrastructure Journal, InfraNews, Reuters, 6 November 2019. For illustrative purpose only. Past performance is not a guide for future results.

In the core infrastructure space, competition continued to increase, particularly at the direct end of the market.[36] We continue to consider the core plus space as the most attractive segment of the market, particularly with regard to the mid-market, where we believe that the pipeline of investment opportunities is deeper and may offer investors access to a comparatively less competitive landscape.[37] In a maturing investment cycle, it is important to have a fundamental view on valuations throughout the cycle across the entire private infrastructure market spectrum, taking a realistic mid-cycle approach to facilitate a stable view of asset values over the long term.[38]

[34] Any forecasts provided herein are based on DWS's opinion at the time of publication and are subject to change.
[35] DWS proprietary database of European unlisted infrastructure transactions, based on publicly available transaction information from various sources, including Infrastructure Journal, InfraNews, Reuters, 6 November 2019.
[36] Based on InfraNews database as at 6 November 2019. Figures include all European projects in the database that have been listed with the status "Financial Close". This figure reflects both infrastructure project financing and non-project financing deals.
[37] DWS proprietary database of European unlisted infrastructure transactions, based on publicly available transaction information from various sources, including Infrastructure Journal, InfraNews, Reuters, 6 November 2019.
[38] DWS proprietary database of European unlisted infrastructure transactions, based on publicly available transaction information from various sources, including Infrastructure Journal, InfraNews, Reuters, 6 November 2019.

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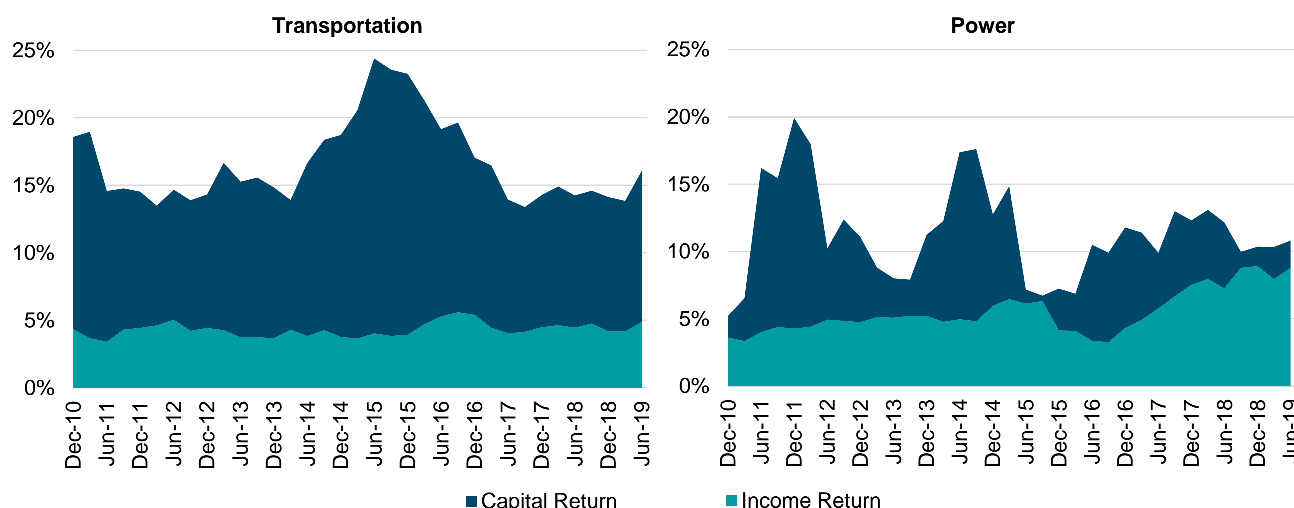
4.4 Historical Performance Overview[39]

Historical Index Performance: According to the MSCI Global Infrastructure Asset Index (MSCI index), historically global unlisted infrastructure has since inception recorded double-digit total returns, supported by a steady and predictable income return profile and some capital growth.[40] Looking at sector specific performance, income and capital returns continued to remain comparatively more stable in the transportation sector, where assets continued to benefit from favourable business fundamentals. The MSCI index signals that capital returns in the power sector continued to prove volatile, particularly for merchant power, while we observed an increase in income return, driven by more supportive business fundamentals compared with the recent past. Income return in the European regulated power sector continued to remain under pressure.[41]

MSCI GLOBAL INFRASTRUCTURE ASSET INDEX RETURN BY SECTOR
(%, Rolling Annual, December 2010 – June 2019)



Source: MSCI Global Quarterly Infrastructure Asset Index, "Summary - Period ending June 2019", local currency, November 2019. Past performance is not a reliable indicator of future returns.

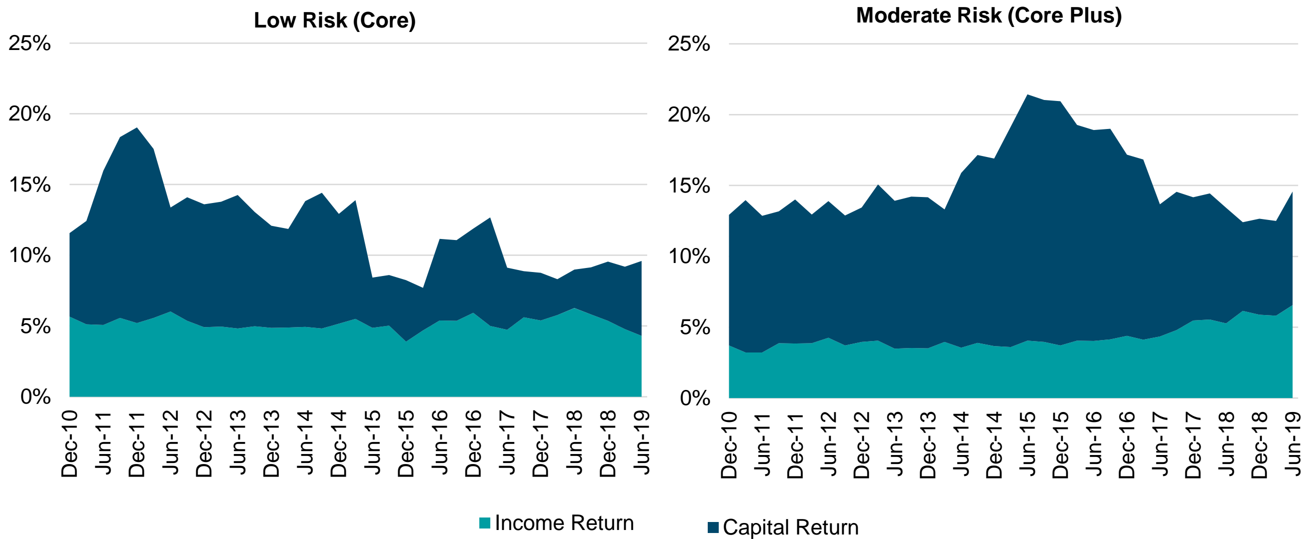
Looking at historical performance by strategy, the MSCI Index indicates that while income return across core and core plus strategies has been largely comparable, core plus infrastructure has historically demonstrated stronger potential for capital appreciation. Core plus infrastructure can offer a flexible business model supported by a regulatory or contractual framework that combines income return visibility with capital appreciation potential through active asset management.[42]

Going forward, we believe that European core plus infrastructure strategies should continue to post solid performance throughout the macroeconomic cycle, particularly for strategies focusing on assets with solid long-term industry growth dynamics. We continued to witness a compression of capital appreciation for core infrastructure,[43] largely driven by the increase in entry valuations and generally by the limited ability to grow assets through active asset management.

[39] Any forecasts provided herein are based on DWS's opinion at the time of publication and are subject to change.
[40] MSCI Global Quarterly Infrastructure Asset Index, "Summary - Period ending June 2019", November 2019. It should be noted that the relative strength of unlisted infrastructure in this analysis is in part due to the fact that the MSCI Index is a valuation-based index, while indices used for the listed asset classes are calculated on a transactional base and are therefore inherently more volatile.
[41] Based on DWS proprietary methodology for ranking unlisted infrastructure sectors as at 25 November 2019. Valuations for 2020 are based on a ten year dividend discount model and a terminal value at exit. Dividend yields, leverage, growth, exit assumptions and discount rate vary by country and sector. There is no guarantee the forecast shown will materialise.
[42] MSCI Global Quarterly Infrastructure Asset Index, "Summary - Period ending June 2019", November 2019.
[43] MSCI Global Quarterly Infrastructure Asset Index, "Summary - Period ending June 2019", November 2019.

Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

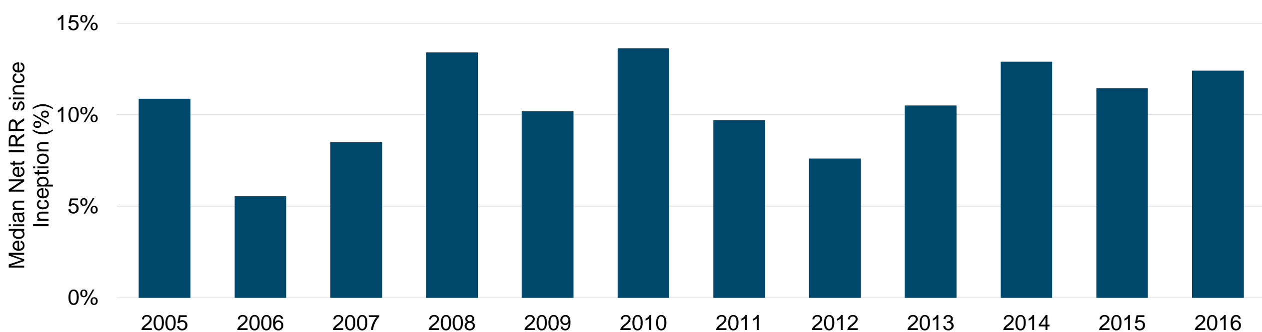
MSCI GLOBAL INFRASTRUCTURE ASSET INDEX RETURN BY STRATEGY
(%, Rolling Annual, December 2010 – June 2019) [44]



Source: MSCI Global Quarterly Infrastructure Asset Index, "Summary - Period ending June 2019", local currency, November 2019. Past performance is not a reliable indicator of future returns.

Historical Funds Performance:[45] Looking at historical fund performance by vintage for infrastructure strategies in the European core and core plus space, we estimate that over the period 2005 to 2016 net IRR performance was at 10.6%. The minimum median net IRR at 5.6% was achieved by funds in 2006, while the maximum was achieved by funds in 2010, at 13.6%. Historically, over the period 2005 to 2016, performance volatility in the core and core plus infrastructure was at 2.45%.[46]

PRIVATE INFRASTRUCTURE FUNDS – NET IRRS (Europe, Estimate By Vintage Year, 2005-2016)



Source: DWS, Preqin, November 2019. Includes funds investing in core and core plus strategies. For illustrative purposes only. Past performance is not indicative of future results. Opinions and forecasts may never materialise.

[44] MSCI Global Quarterly Infrastructure Asset Index, "Summary - Period ending June 2019". Total Returns based on MSCI Global Quarterly Infrastructure Asset Index, as at November 2019, Local. Core Infra = 'Low Risk' in MSCI Infrastructure Investment Style Matrix, includes brownfield assets in geographically mature markets, with significant component of income yield, predictable and regulated revenues, long-term investment horizon, and an investment grade rating profile. Core/Core plus = 'Moderate Risk', includes brownfield assets with some development risk, in mature markets, with relatively predictable revenues and income and capital, generally contributing equally to total return. 'Opportunistic' = High Risk includes high risk brownfield or greenfield assets, located in mature and maturing markets, with a sub-investment grade profile, with potentially volatile income streams and with the capital return component representing the primary driver of total return. Past performance is not guide for future results.

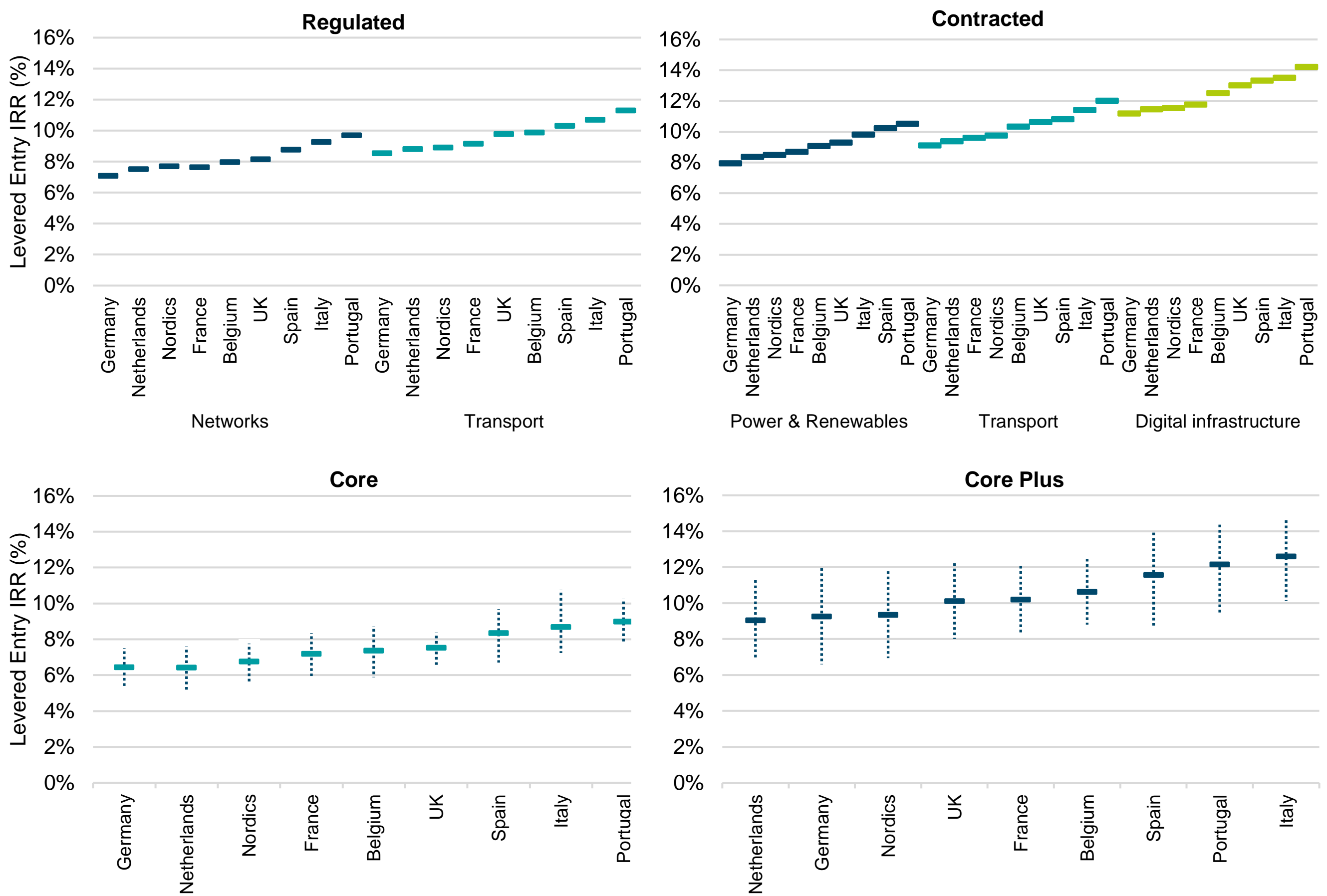
[45] Any forecasts provided herein are based on DWS's opinion at the time of publication and are subject to change.

[46] DWS, Preqin, as at November 2019. Includes funds investing in core and core plus strategies.

4.5 Performance Outlook[47]

Evaluating the performance outlook for infrastructure requires considering the complex, long-term interaction between a number of factors, including entry valuations, operational fundamentals varying by sector, leverage, expectations around dividend yields growth, interest rates fluctuations driving cost of debt and discount rates, evolution in the competitive environment, and assumptions around exit valuations.[48]

UNLISTED INFRASTRUCTURE ENTRY IRR ASSUMPTIONS
(%, 2020, ESTIMATE BY CONTRACT PROFILE AND STRATEGY, LEVERED, AVERAGE)



Source: DWS proprietary database, based on DWS proprietary methodology for ranking unlisted infrastructure sectors as at 25 November 2019. Valuations for 2020 are based on a ten-year dividend discount model and a terminal value at exit. Dividend yields, leverage, growth, exit assumptions and discount rate vary by country and sector as at 25 November 2019. 'Regulated' assets include natural monopolies operating under a volume neutral RAB based model or a price-cap regulatory framework with volume risk. 'Contracted' assets have price and volume neutral contract profiles exposed to medium/long-term, staggered renewal risk. There is no guarantee the forecast shown will materialise. Past performance is not a guide for future returns.

[47] Any forecasts provided herein are based on DWS's opinion at the time of publication and are subject to change.
[48] Any forecasts provided herein are based on DWS's opinion at the time of publication and are subject to change.

We estimate that for 2020 on average, levered private infrastructure equity entry return assumptions in mature European markets should be in the range of 6.4% to 9.0% (IRR) for core strategies.[49] In comparison to 2019, for 2020 we expect a further compression in core entry return assumptions by about 0.4%, driven mainly by a reduction in risk-free returns. We continue to see a healthy premium over government bond yields, but in the core space we expect spreads over long-term government bond yields to remain compressed, particularly for regulated networks. High dry powder levels, particularly in the large cap segment, should continue to limit upside potential.[50]

For core plus strategies, we estimate that for 2020 on average, levered private infrastructure equity entry return assumptions in mature European markets should be in the range of 9.0% to 12.6% (IRR).[51] For 2020, in comparison to 2019 we expect some compression in entry return assumptions also for core plus, but these are expected to be marginal in countries at the lower end of the risk spectrum, including Germany, the Netherlands and the Nordics. The reduction in entry return assumptions is expected to be more pronounced in markets at the higher end of the risk spectrum, including Spain, Portugal and Italy, due to a reduction in government bond yields compared with 2019 and a slightly weaker medium-term macroeconomic outlook.

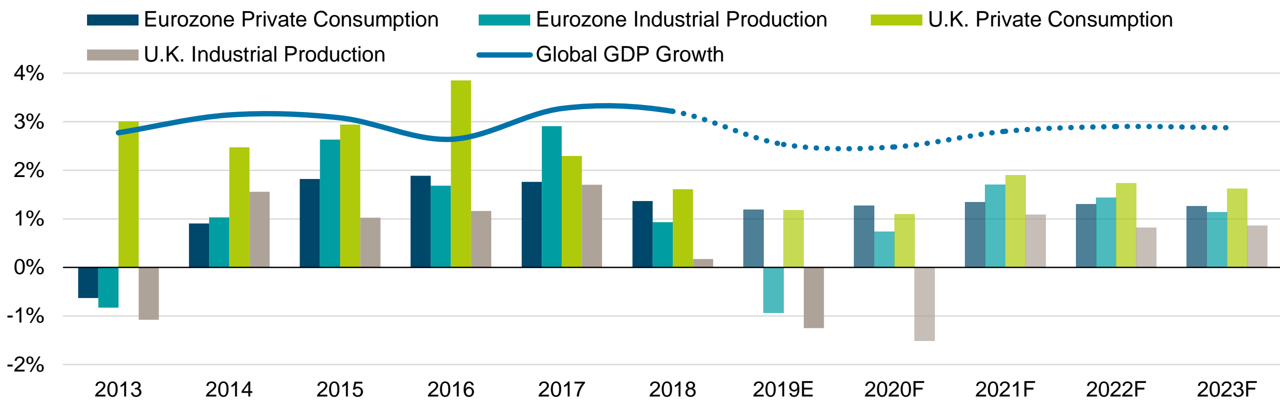
[49] For indicative purposes only, returns vary by country, sector and asset.
[50] Based on DWS proprietary methodology for ranking unlisted infrastructure sectors as at 25 November 2019. Valuations for 2020 are based on a ten year dividend discount model and a terminal value at exit. Dividend yields, leverage, growth, exit assumptions and discount rate vary by country and sector. There is no guarantee the forecast shown will materialise.
[51] Based on DWS proprietary methodology for ranking unlisted infrastructure sectors as at 25 November 2019. Valuations for 2020 are based on a ten year dividend discount model and a terminal value at exit. Dividend yields, leverage, growth, exit assumptions and discount rate vary by country and sector. There is no guarantee the forecast shown will materialise.

5 / Infrastructure Outlook by Sector [52]

5.1 Transportation[53]

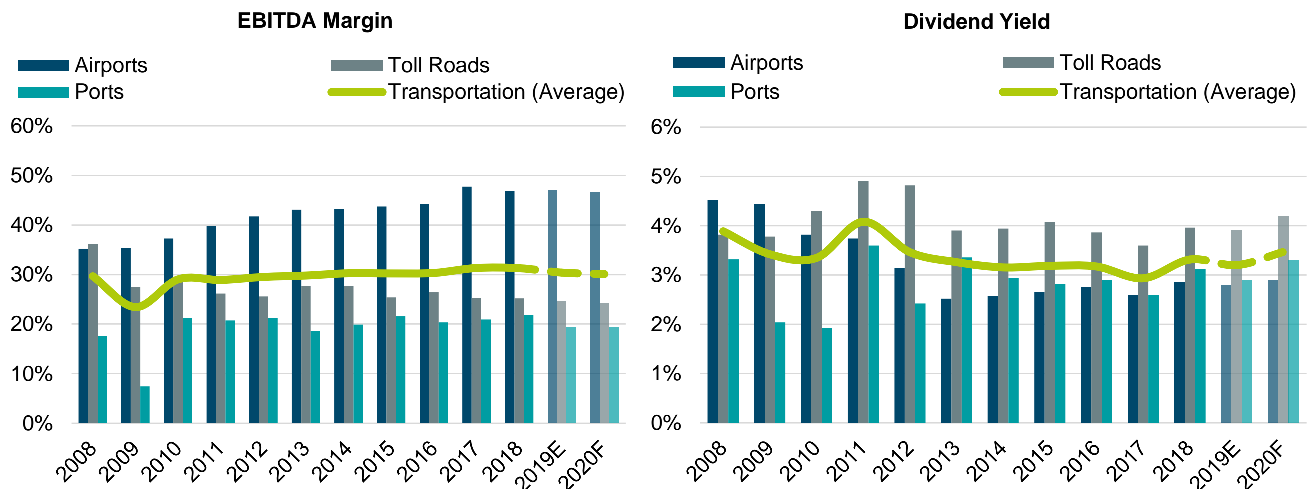
In 2019, European transportation performed well, but we witnessed a deceleration in passenger growth, driven by a slowdown in macroeconomic fundamentals, and we expect this trend to continue in 2020. Transportation is a complex industry and includes, among others, air, marine, road and rail services for both passengers and freight. Although there are differences across industry sub-sectors and regions, traffic volumes have a strong correlation with GDP growth and in particular with private consumption for passenger growth and industrial production for freight volumes.[54]

KEY MACROECONOMIC TRANSPORTATION VOLUME DRIVERS (% p.a., 2013-23F)



Source: Oxford Economics, as at 6 November 2019. Notes: F = forecast, E = expected. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

AVERAGE TRANSPORTATION EBITDA MARGIN AND DIVIDEND YIELD (%, 2008-20F)



Source: DWS, Bloomberg, 6 November 2019. Notes: E = expected, F = forecast. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise.

[52] Any forecasts provided herein are based on DWS's opinion at the time of publication and are subject to change.
[53] Any forecasts provided herein are based on DWS's opinion at the time of publication and are subject to change.
[54] Based on Eurostat data, as at November 2019.

Airports[55]

Airports[55]	
Operating Performance Outlook 2020	Stable
Demand Growth, 2020 Forecast	1-4%
Long-Term Industry Trend	Stable/Positive

For 2020, on average, we expect European airports to continue benefitting from positive passenger growth. However, we forecast growth to moderate further from 2019 levels, in line with the weaker global macroeconomic outlook.[56] We are forecasting growth to be in the 1-4% range, down from the 2-6% range in 2019, and with U.K. airports expected to grow below 2%. Nevertheless, long-term industry fundamentals remain supportive, and we expect the trend of solid single digit passenger growth in European airports to continue.

In 2020, domestic demand in Europe should support passenger growth, while European airport hubs exposed to Asian markets should continue to experience solid long-haul passenger and commercial revenues growth. Asia's air-passenger count could more than double by 2035 compared to 2018 levels, driven by middle-class proliferation, a trend that is unlikely to be materially undermined by economic slowdown or trade tensions.[57]

On average, in Europe we have observed a marginal decline in aeronautical charges over the last years, with some airports trying to remain competitive and capture more airline traffic by reducing charges. In 2019, we also observed cases of airline failure, and continued consolidation in the airline sector contributing to weaker traffic volumes growth; a trend that we expect to continue in 2020. Nevertheless, we continue to witness solid growth in non-aeronautical revenues.[58]

Commercial revenues remain a key growth area, with airports trying to boost commercial yields on food and beverage activities, retail space and parking. As a result, we expect airport revenue growth to remain broadly stable for 2020.[59] Overall, solid passenger growth and operating margins should continue to drive investment and capacity expansions across a number of airports in Europe in the medium term.[60]

Risks: We expect oil prices to average around USD 65 per barrel in 2020,[61] materially below historical levels. However, unexpected sharp, increases in oil prices may put pressure on airlines. At the time of writing, the U.K. airport sector remains exposed to Brexit-related downside risks. In case of a disruptive, hard Brexit scenario, flights to and from Europe might plunge in the short term, and some airlines may move capacity to other European countries. As part of the new Withdrawal Agreement signed in October 2019 between the United Kingdom and the European Union, temporary measures were agreed to ensure basic air traffic connectivity,[62] but these do not fully replicate conditions of the single aviation market. Therefore, we decided to keep our outlook for U.K. airports in 2020 at stable/negative.[63]

In the medium term, we expect that climate change policies may increasingly impact air travel. Airlines may be increasingly exposed to incremental costs to offset the rising price of carbon, potentially passing on the additional burden to passengers through higher tariffs. This risk may curb current passenger growth expectations.[64]

[55] Based on DWS proprietary methodology for ranking unlisted infrastructure sectors as at 25 November 2019.
[56] Based on a number of sources, including Bloomberg, Eurostat and Moody's Investors Service data, as at November 2019.
[57] Bloomberg, Asia Air Travel Boom, December 2018.
[58] Based on a number of sources, including Bloomberg, Eurostat and Moody's Investors Service data, as at November 2019.
[59] DWS forecast based on number of sources, including Oxford Economics, Bloomberg, Eurostat and Moody's Investors Service data, as at November 2019.
[60] Based on DWS proprietary methodology for ranking unlisted infrastructure markets as at 25 November 2019.
[61] Oxford Economics, West Texas Intermediate (WTI), 25 November 2019.
[62] HM Government, New Withdrawal Agreement and Political Declaration, 19 October 2019.
[63] Based on DWS proprietary methodology for ranking unlisted infrastructure sectors as at 25 November 2019.
[64] Based on Reuters, as at October 2019.

Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

Toll Roads[65]	
Operating Performance Outlook 2020	Stable
Demand Growth, 2020 Forecast	1-2%
Long-Term Industry Trend	Stable

In 2020, we expect traffic growth on European toll roads to moderate further and to be only marginally positive, due to sluggish economic growth. We also expect toll increases to moderate in 2020 due to weaker inflation. French toll roads experienced a decline in traffic in 2018 and 2019 due to social unrest, but as these events faded over the course of 2019, we expect traffic levels to recover in 2020. In Italy, traffic volumes were supported by the resilience shown by heavy vehicles despite weak industrial production in 2019, but we expect traffic volumes to remain largely stable for 2020, due to weak economic growth.

Political pressure in Italy may prevent some operators from raising tariffs in line with inflation as expected under their concession agreements. In 2019, traffic broadly reached pre-crisis levels in Portugal and Spain and we expect some growth in 2020, with heavy vehicle traffic continuing to outpace light vehicle traffic.[66]

In our view, technology investment in the toll road sector increasingly represents an opportunity for revenue generation, cost control and decarbonisation of vehicle traffic. Automated tolling technologies allowing distance-based tolls and demand management pricing should support revenues and increase operating efficiency in the medium term. The expected gradual increase in electric vehicles (EV) should drive investment needs across EV recharging stations, supporting business fundamentals for service stations. Automated driver-assistance systems may support toll road capacity increases in the long term, but car sharing could partially offset this dynamic.[67]

Risks: Toll road traffic has historically demonstrated a strong correlation to GDP.[69] Although unlikely, a further slowdown in economic growth, or an increase in oil prices might cap traffic growth in 2020. In the long term, the outlook for toll roads remains stable, albeit subject to a number of long-term trends. An ageing European population and the potential advent of autonomous vehicles, likely to utilise car-sharing business models, could negatively affect traffic volumes for toll roads and parking assets.[70]

Ports[68]	
Operating Performance Outlook 2020	Stable
Demand Growth, 2020 Forecast	1-2%
Long-Term Industry Trend	Stable

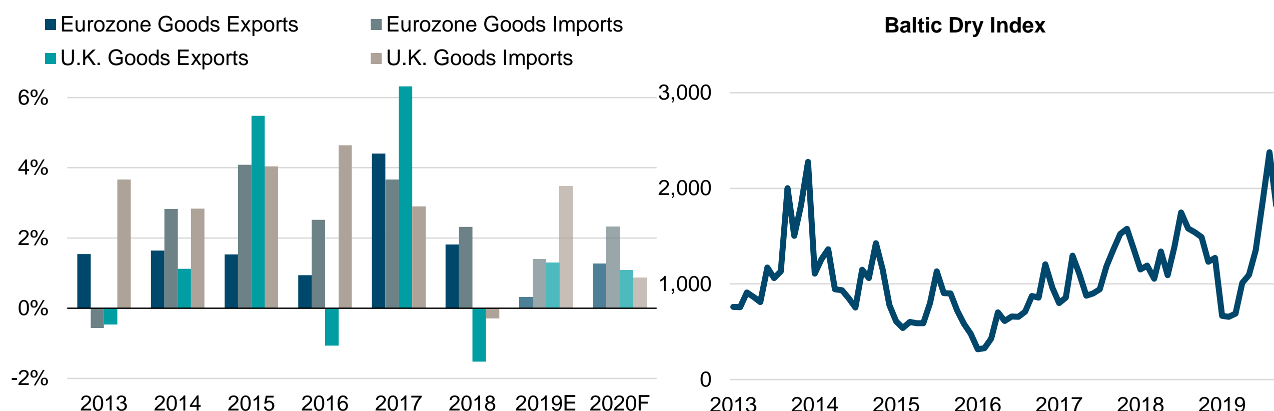
[65] Based on DWS proprietary methodology for ranking unlisted infrastructure sectors as at 25 November 2019.
[66] Based on a number of sources, including Bloomberg, Eurostat and Moody's Investors Service data, as at November 2019.
[67] Roland Berger, July 2018.
[68] Based on DWS proprietary methodology for ranking unlisted infrastructure sectors as at 25 November 2019.
[69] Eurostat, as at November 2019.
[70] Based on a number of sources, including Bloomberg, Eurostat and Moody's Investors Service data, as at November 2019.

Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

In 2019, European ports proved remarkably resilient, notwithstanding the fact that we observed increased volatility in the global macroeconomic and trade environment. We maintain a stable outlook on the sector, as we expect a similar dynamic for 2020.[71] In the shipping sector, after a weak start in 2019, the dry bulk segment continued its recovery, as reflected by the recent strong performance of the Baltic Dry Index (BDI).[72]

In the container liner industry, performance has been solid, supported by improved freight rates, driven by a positive supply demand balance. In the tanker segment, charter rates improved recently. Starting in January 2020, the new IMO 2020 regulation will require vessels to be retrofitted with exhaust-gas scrubbers or burn more costly low sulphur fuel. The new regulation should put pressure on costs for ship owners of less efficient vessels, but may also contribute to the temporary reduction of vessels supply, and increase freight rates. While dry bulk and tanker vessels are less likely to be affected by the increase in costs, container liners may need to ensure timely pass-through of additional costs in their contracts to avoid negative effects on operational performance. We believe that the shift from bulk to containerisation, which has supported growth in the past, is a maturing trend in developed markets but still has potential to support growth in emerging markets. Therefore, in the medium term we foresee European ports to grow in line with global long-term GDP growth, rather than outperforming GDP growth as in the past.[73]

MACRO TRADE INDICATORS (% p.a., real, 2013-20F) **BALTIC DRY INDEX (2013-2019 YTD)**



Source: DWS, Oxford Economics, Bloomberg, 6 November 2019. Notes: E = expected, F = forecast. The Baltic Dry Index (BDI) is issued daily by the London-based Baltic Exchange. The BDI is a composite of the Capesize, Panamax and Supramax Timecharter averages. It is reported around the world as a proxy for dry bulk shipping stocks as well as a general shipping market indicator. Past performance is not indicative of future returns.

Risks: Ports traffic volumes have historically demonstrated correlation to global GDP growth. We see privately owned ports in strategic locations proving more resilient and flexible to risks, including a potential slowdown in global trade driven by a further unexpected deceleration of Chinese GDP growth, or growing trade barriers.[74] In case of additional trade tariffs, performance of ports exposed to the container cargo segment may be more volatile than ports exposed to bulk cargo, as container products are generally more subject to tariffs. In the long term, technological innovation, such as 3D printing, may cap volume growth prospects.[75]

[71] Based on Bloomberg, Oxford Economics and Moody's Investors Service data, as at November 2019.
[72] Bloomberg, November 2019. The BDI represents a traditional barometer of the health of the dry-bulk shipping industry and of global trade.
[73] Based on a number of sources, including Oxford Economics, Bloomberg, Eurostat and Moody's Investors Service data, as at November 2019.
[74] Based on Bloomberg, Oxford Economics and Moody's Investors Service data, as at November 2019.
[75] Based on Moody's Investors Service, "Privately Managed Ports Chartbook", 5 August 2019.

Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

Rail[76]	
Operating Performance Outlook 2020	Stable
Demand Growth, 2020 Forecast	1-2%
Long-Term Industry Trend	Stable/Positive

The 2020 outlook for European rail is stable, in our view. While the passenger segment should continue to prove resilient, in the freight segment downside risks outweigh upside potential, due to the expected slowdown in GDP growth and the uncertain prospects for industrial production. This is particularly relevant for rolling stock, where the passenger segment demand is generally more stable and contracts tend to be medium-term. In the freight segment, contracts can be diversified but are generally more exposed to short-term volatility. In the long term, we believe that the rail industry is expected to continue growing, as capacity expands gradually, also driven by the decarbonisation of transport. We continue to see a shift of freight traffic from roads to rail, driven by tighter regulation around diesel trucking capacity and a growing importance of intermodal freight transportation.[77]

The European rail industry is gradually moving to a deeper liberalisation. European Union policymakers have been looking for ways to make the European rail networks more efficient and integrated, opening up rail services to competition. In June 2019, the E.U. Agency for Railways (ERA) was mandated to authorise vehicles that operate across borders in Europe, to issue single safety certificates that are valid in multiple European states, and to ensure an interoperable European Rail Traffic Management System (ERTMS). This is a substantial change for the European rail system as it introduces a simplified process for European rail operators and helps increasing harmonisation across markets.[78] The European Union 4th railway package envisions the opening of domestic rail passenger markets from 2020, and we expect competitive auctions to accelerate from 2023. Future European tenders are foreseen to be increasingly “multi-mode” in order to satisfy customer needs of “seamless multimodal integration”, and exploit the possibility to design and operate more efficient networks and services.[79]

Looking at rolling stock, today investment opportunities exist across Europe, and mainly in the United Kingdom, where we expect the market to continue to provide opportunities, as a number of rail franchises are up for renewal over coming years.[80] However, supported by the liberalisation process, we expect inter-city, regional, and local rolling-stock markets across Europe to provide significantly more investment opportunities in the medium term, particularly as average fleet ages have already approached the end of their useful life and need replacement. This is one of the reasons why our long-term industry trend is stable/positive.[81]

Risks: Risks in the sector remain low for 2020. Passenger rail traffic has proved to be resilient to GDP and is correlated to demographic growth in the long term. However, freight rail remains materially exposed to the risk of a further economic slowdown in the Eurozone, and particularly to the risk of a slump in industrial production.[82]

[76] Based on DWS proprietary methodology for ranking unlisted infrastructure sectors as at 25 November 2019.
[77] Based on a number of sources, including Oxford Economics, Bloomberg, Eurostat and Moody’s Investors Service data, as at November 2019.
[78] European Union Agency for Railways, “ERA becomes European authority for cross-border rail traffic in Europe”, 16 June 2019.
[79] European Commission, “Fourth Railway Package”, April 2016.
[80] Based on Infrastructure Journal database as at 25 November 2019.
[81] Based on DWS proprietary methodology for ranking unlisted infrastructure sectors as at 25 November 2019.
[82] Based on a number of sources, including Oxford Economics, Bloomberg, Eurostat and Moody’s Investors Service data, as at November 2019.

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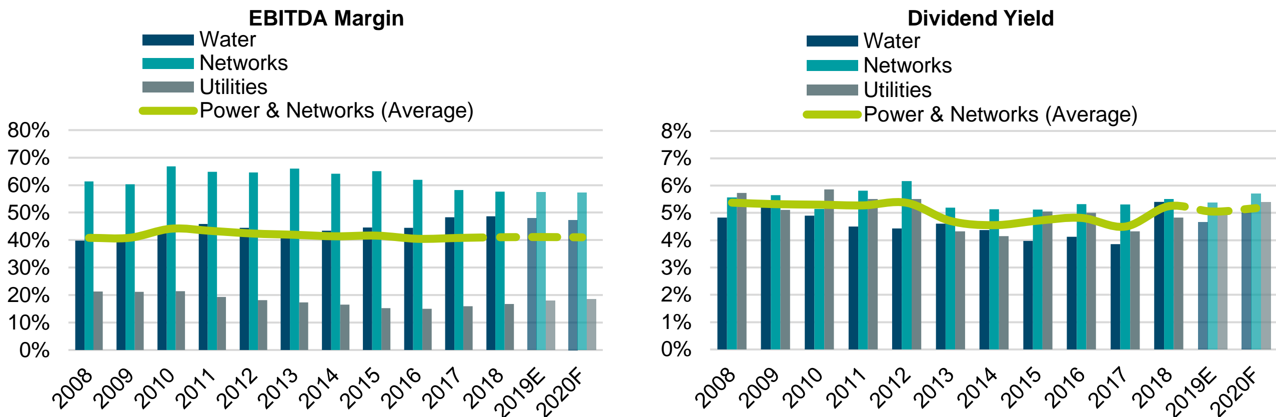
5.2 Power, Utilities and Networks[83]

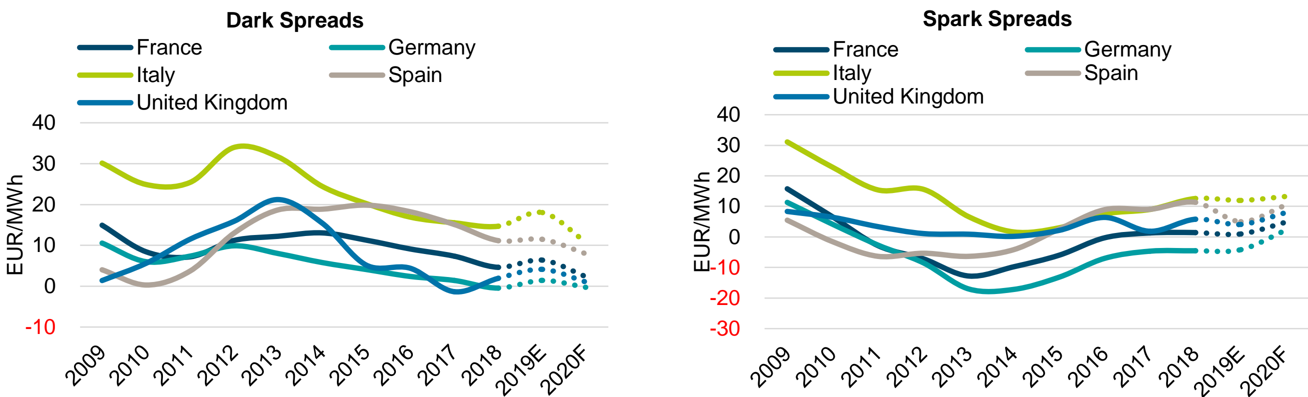
The outlook for the power sector seems now more supportive compared with recent years, particularly for gas power generation, renewables and integrated utilities. Power demand is expected to remain broadly stable, while power prices seem to have turned a corner, and are expected to increase in the medium term, supported by rising CO_2 prices weighing on supply and reserve margins. We expect average sector earnings to grow for power generators and utilities, while regulated networks may continue to experience a reduction of allowed returns and this may weigh on earnings in 2020.[84] In our view, the power sector continues to experience a structural change driven by the energy transition, supporting investment needs, particularly for renewables, energy storage, energy-from-waste (EfW) and smart grids.

AVERAGE POWER, UTILITIES & NETWORKS EBITDA MARGIN AND DIVIDEND YIELD (%, 2008-20F)



Source: Bloomberg, 20 November 2019. Notes: E = expected, F = forecast. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise.

AVERAGE BASELOAD DARK AND SPARK SPREADS[85] BY COUNTRY (EUR/MWh, 2009-20F)



Source: Bloomberg, 20 November 2019. Notes: E = expected, F = forecast. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise.

[83] Any forecasts provided herein are based on DWS's opinion at the time of publication and are subject to change.
[84] Moody's Investors Service, "EMEA Regulated Electric and Gas Networks Outlook 2020", 6 December 2019.
[85] The dark spread is the theoretical gross margin of a coal-fired power plant from selling a unit of electricity, having bought the fuel required to produce this unit of electricity. The spark spread is the theoretical gross margin of a gas-fired power plant from selling a unit of electricity, having bought the fuel required to produce this unit of electricity.

Power Generation[86]

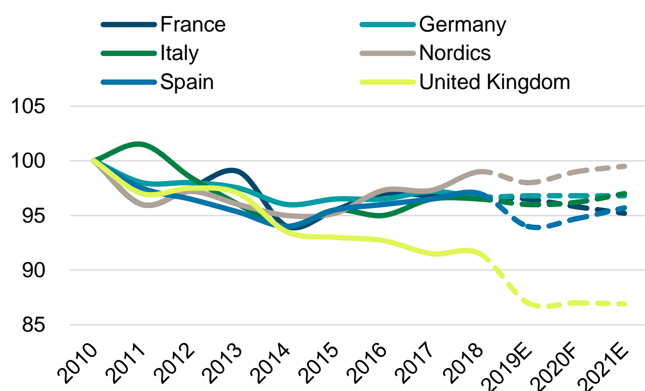
Operating Performance Outlook 2020	Coal: Negative - Gas: Stable/Positive - Nuclear: Stable
Long-Term Industry Trend	Coal: Negative - Gas: Stable/Negative - Nuclear: Stable/Negative

Demand: In 2019, power demand in Europe has continued to remain sluggish, and we believe that it is likely to remain flat in 2020 and 2021, on the back of rising energy efficiency supported by climate change policies and weak industrial production. In the long term, several drivers may boost power demand, including the electrification of transportation and heating.[87]

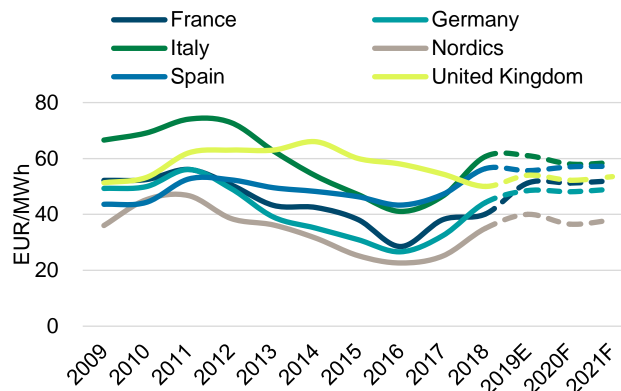
Supply: Energy transition and decarbonisation may continue to drive the closure of thermal generation capacity, and particularly coal power plants, as dark spreads may narrow on the back of rising CO_2 prices. Germany, the Netherlands, Italy, France and the United Kingdom all have plans to accelerate the phase out of coal and lignite. As supply reduces, reserve margins are on average expected to decline across Europe, supporting power prices, although more interconnectors should partly offset this trend. As a result, we expect power prices to remain broadly stable in 2020. However, we see upward potential, particularly in the medium term. Because of capacity closures, Germany should swing from being a net power exporter to becoming a net power importer. We expect nuclear power capacity to continue to reduce across Europe, but policies are diverging in different countries in terms of timing. Germany plans to stop nuclear generation by 2023, while France, Spain and Sweden are positioned for a more gradual phase out.[88]

Merchant baseload generation capacity should benefit from the upside potential in power prices in the short term, and we see improving fundamentals for efficient Combined Cycle Gas Turbines (CCGTs), supported by a recovery in spark spreads and improving capacity markets. Capacity markets are being implemented at a national level across Europe to incentivise thermal generation and ensure power supply safety. Although gas generation is expected to benefit in the short term, the position of gas remains fragile in the long term, as climate change policies aim at displacing it from the merit order via rising CO_2 prices and stricter regulation.

POWER DEMAND
(2010=100, 2010-21F)



BASELOAD POWER PRICE
(EUR/MWh, 2009-20F)

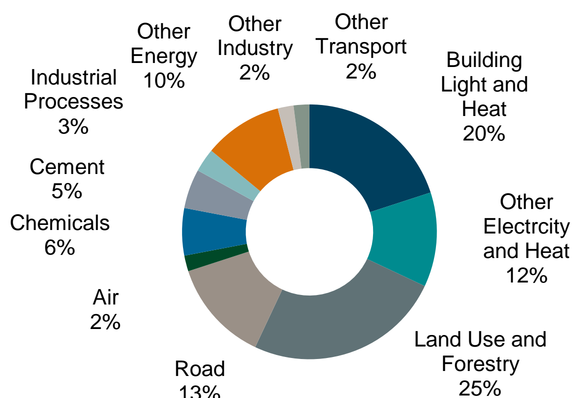


Source: Bloomberg, Eurostat, Moody's Investor Service, 20 November 2019. Notes: E = expected, F = forecast. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise.

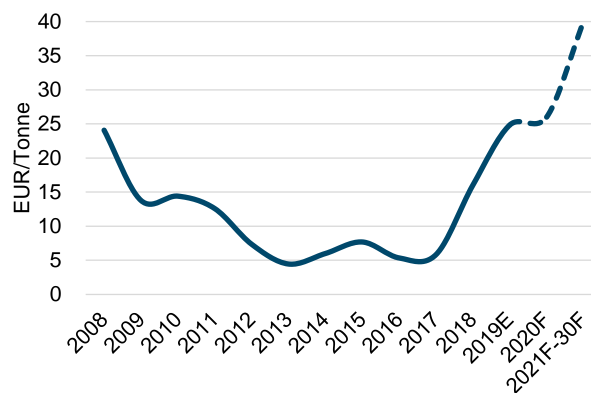
[86] Based on DWS proprietary methodology for ranking unlisted infrastructure sectors as at 25 November 2019.
[87] Based on Bloomberg, as at 25 November 2019.
[88] Based on Bloomberg, as at 20 November 2019.

Risks: Coal generation will likely increasingly be pushed out of the merit order due to growing renewables and rising CO2 prices.[89] As the share of renewables is set to rise materially, power markets should become more volatile. While flexible power generation capacity, including hydro or gas plants, could benefit from increased price volatility, renewables with inflexible generation, including wind and solar, not supported by energy storage capacity, may experience a reduction in capture prices, and require a power purchase agreement (PPA) for cash flow stabilisation.

CO_2 EMISSIONS BY INDUSTRY (%, 2019)



CO_2 PRICE (EUR/Tonne CO_2)



Source: DWS, Bloomberg, European Commission, 20 November 2019. Notes: E = expected, F = forecast. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise.

Renewables[90]

Operating Performance Outlook 2020	Stable/Positive
Long-Term Industry Trend	Positive

In 2019, renewable capacity continued to grow, driven mainly by off-shore wind in Northern Europe and photovoltaic (PV) projects.[91] Renewables continued to dominate the volume of greenfield investment in European infrastructure. In 2020, we expect the installation of renewables capacity to continue at a fast pace, a trend that is unlikely to slow down in the medium term, although we expect the sector to become increasingly commoditised. European regulatory frameworks for renewable power generation continue to move from feed-in-tariff mechanisms to more competitive auction or contract for difference frameworks, providing a floor to power prices, but somewhat capping profitability and reducing long-term cash flow visibility.

Technology costs continue to decrease, and in 2019 we have continued to observe subsidy-free greenfield PV projects in Southern Europe being developed under the assumption of grid-parity, a trend that should accelerate in coming years, particularly if higher carbon prices lift electricity prices.[92] At the same time, we are witnessing substantial demand growth for renewable power from consumers and corporates via power purchase agreements (PPA), a trend that we expect to accelerate in Europe over the medium term.

Risks: Fading subsidies expose new projects to weaker profitability or power price volatility in the long term in the absence of a PPA, while existing brownfield projects are generally exposed to tail risk due to expiring subsidies. As technology evolves, projects may be exposed to untested operational assumptions. A growing share of renewables will require substantial

[89] Based on Bloomberg and DNV GL data, as at November 2019.
[90] Based on DWS proprietary methodology for ranking unlisted infrastructure sectors as at 25 November 2019.
[91] Infrastructure Journal database, 20 November 2019.
[92] PV Magazine, 8 March 2019.

Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

investment in grids. As retail power prices are already high in some countries, including for example Germany, financing the energy transition may be more complex than what is currently envisaged.

Utilities & Networks[93]	
Operating Performance Outlook 2020	Regulated Networks: Stable/Negative - Integrated Utilities: Stable
Long-Term Industry Trend	Regulated Networks: Stable - Integrated Utilities: Stable

Networks: In our view, regulatory frameworks for European networks are generally mature and predictable in Europe, supporting long-term revenue visibility. At the same time, in 2019 we have continued to observe a gradual reduction in regulated returns for electricity, gas and water networks, due to a steady decrease in allowed cost of debt.[94] We expect this trend to continue in 2020, with regulatory reviews expected to reduce allowed returns across a number of geographies. At the same time, the negative impact of lower allowed returns should be partially mitigated by the possibility to refinance maturing debt at historically low rates. In 2020, we expect a number of regulatory determinations in Italy, Spain and the United Kingdom. Fundamentally, we are not anticipating substantial changes to regulatory frameworks, but we recognise that shareholder remuneration remains part of the regulator's considerations in certain markets, such as in Spain, where the regulator may focus on reducing leverage levels. We also envisage that in the medium term regulators will continue to put increasing emphasis on sustainability across Europe, introducing a number of incentives to support asset climate resilience, customer satisfaction and affordability.

In the long term, we see electricity networks, particularly distribution grids, benefitting from supportive regulation and increased investment needs to accommodate the increase in distributed renewable energy capacity to support the energy transition.

Risks: As regulated returns continue to reduce to reflect the decline in government bond yields, in the medium term, if bond yields rise, networks might be exposed to a mismatch between the rise in cost of debt and regulatory allowances. We see the growth of gas networks remaining below GDP growth due to a progressively maturing industry and the prospects of electrification substituting gas in most markets.

Integrated Utilities: In 2019, the outlook for integrated utilities has continued to stabilise. After a decade in which integrated utilities have had to muddle through disruptive changes in the energy markets, the integrated utilities sector is today substantially different. European utilities have now largely completed their multi-year asset disposal programmes and companies have reduced their exposure to thermal generation, focusing on renewables, networks and additional services to end customers. In 2020, we expect integrated utilities to continue refocusing their long-term strategies, concentrating on how to respond to the growing trends of digitalisation and transport electrification. We expect utilities, particularly at municipal level, to continue to target industrial and financial partnerships to redefine their business models, and see a wave on M&A activity ahead, unlocking potential investment opportunities in the medium term.

Risks: In 2019 we have observed a big wave of decarbonisation plans in the integrated utilities space. Focusing on partnerships with integrated utilities supported by solid decarbonisation plans may support investment value in the long term. We expect emission policies, CO_2 prices and regulation to increasingly penalise thermal generation fleets.

[93] Based on DWS proprietary methodology for ranking unlisted infrastructure sectors as at 25 November 2019.
[94] Moody's Investors Service, "EMEA Regulated Electric and Gas Networks Outlook 2020", 6 December 2019.

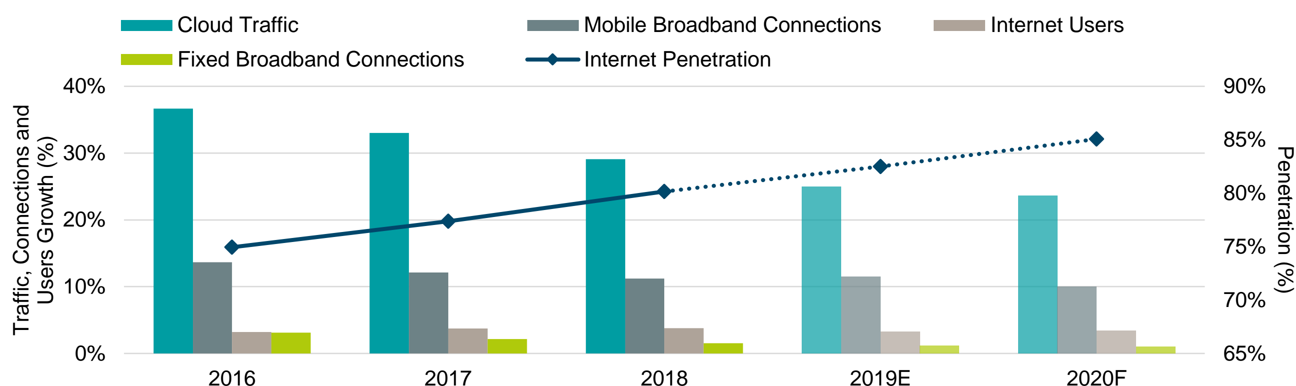
Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

5.3 Digital Infrastructure[95]

Digital Infrastructure[96]	
Operating Performance Outlook 2020	Stable/Positive
Long-Term Industry Trend	Positive

The outlook for European digital infrastructure is positive in our view, as the industry continues to record strong growth, supported by digitalisation, a trend that we expect to continue in 2020 and in the long term. Investment volumes in digital infrastructure should remain high, driven by deployment of new fibre networks and construction of new data centre capacity. Moreover, M&A activity should continue, particularly for towers and fibre networks, as traditional telecom operators seek to dispose of non-strategic assets to fund investment requirements for fifth-generation (5G) mobile technology, currently being deployed across a number of European markets in 2020.

DIGITAL INFRASTRUCTURE INDUSTRY DEMAND METRICS (% p.a., Europe, 2016-20F)



Sources: DWS, Eurostat, Bloomberg, Cisco, 7 November 2019. Notes: E = expected, F = forecast. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise.

Telecom Towers: Long-term and strategic investors continue to invest in the telecom tower sector, as assets can provide solid long-term cash flow visibility. Historically, the market for telecom tower investment has proven to be very competitive and we have seen valuations in the space rising materially. As a result, we believe that today assets may only provide limited potential for alpha generation, and we have observed consolidation in the sector, as a strategy to support returns. The sector is therefore gradually moving towards a more oligopolistic structure. Consolidation has been observed in France and Italy, and we may see more M&A activity in Germany and the United Kingdom. We expect traditional telecom operators to continue disposing of towers to tower operators, as they try to secure capital to invest in their core business, particularly 5G.[97] In 2020, we expect robust growth in mobile data consumption, supporting business fundamentals.[98] In the medium term, the sector may capitalise

[95] Any forecasts provided herein are based on DWS's opinion at the time of publication and are subject to change.
[96] Based on DWS proprietary methodology for ranking unlisted infrastructure sectors as at 25 November 2019.
[97] Based on Oxford Economics, Bloomberg and Moody's Investors Service data, as at November 2019.
[98] Based on Bloomberg, as at November 2019.

Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

on growth opportunities provided by the shift away from legacy tower ownership models to lighter asset base models, as the industry comes closer to the deployment of 5G mobile technology.[99]

Fibre Networks: Historically, institutional investors have mainly focused on telecom towers when looking at the digital infrastructure space.[100] However, recently we have observed more opportunities emerging in the fibre networks space. Investment is driven by the need to deploy new fibre capacity for long-haul and metro ring networks, upgrade fibre density in last mile networks and replace copper infrastructure to provide faster broadband to customers. We expect this trend to accelerate across Europe in 2020. In urban areas, we expect fibre businesses to be increasingly exposed to potential competition from 5G technology when it comes to the provision of services to end-customers. While this may jeopardise growth expectations in the Fibre-to-the-Home (FTTH) segment, at the same time, fibre should remain essential, as 5G will also require improved capacity across other segments of the fibre network, supporting business fundamentals of fibre operators up to Fibre to the Cabinet (FTTC). In rural areas, we continue to observe opportunities supported by substantial growth potential as new fibre networks are rolled out in remote areas. However, we recognise that in rural areas some opportunities may have overly optimistic assumptions around customer base growth expectations in the short term. While regulation continues to support investment in high-capacity networks, it also acts as a limit for industry consolidation and network sharing efforts.[101]

Data Centres: We expect the data centre sector to benefit from robust growth in internet traffic, and we expect global cloud traffic growth of over 20% in 2020, which is likely to boost colocation data centres' revenues by 5-10% depending on geographical location and occupancy levels. In the medium term, we believe that the increase in data creation is expected to be strong, with 5G enabling data traffic growth for new technologies such as the Internet-of-Things (IoT) and virtualisation. As a result, we expect material data centre capacity increases, with new facilities being built across Europe in both core locations as well as in more peripheral areas, where edge data centres are expected to be increasingly necessary to provide low latency services.[102]

Risks: We recognise that supportive market fundamentals do not always translate into attractive investment opportunities. Although we continue to observe robust growth in data usage, care should be taken in selecting opportunities with predictable cash-flow profiles and realistic growth and profitability assumptions that are not excessively exposed to the risk of competition or long-term technological risks.[103]

5.4 Private Healthcare[104]

Private Healthcare[105]	
Outlook 2020	Stable
Long-Term Industry Trend	Positive

[99] Based on Moody's Investors Service data, as at November 2019.
[100] Based on Infrastructure Journal database, as at November 2019.
[101] Based on Oxford Economics, Bloomberg and Moody's Investors Service data, as at November 2019.
[102] Based on a number of sources, including Oxford Economics, Bloomberg, IHS Markit, Cisco, Moody's Investors Service data, as at November 2019.
[103] Based on a number of sources, including Oxford Economics, Bloomberg, Fitch Ratings, Moody's Investors Service data, as at November 2019.
[104] Any forecasts provided herein are based on DWS's opinion at the time of publication and are subject to change.
[105] Based on DWS proprietary methodology for ranking unlisted infrastructure sectors as at 25 November 2019.

Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

The European population is ageing. By 2038, the share of population over 65 years should reach 27% from 20% in 2019, driven by sluggish birth growth rates and medical advances improving longevity.[106] Our view is that an ageing population will have substantial consequences for spending on healthcare infrastructure, driving material investment needs in hospitals, in-home health services, elderly care and nursing homes over the coming years. Healthcare expenditure increasingly represents a challenge for governments, putting pressure on public budgets, and requiring a substantial involvement of private investors. Moreover, opportunities for investment in healthcare facilities funded via traditional, social infrastructure Public-Private Partnership (PPP) models remain limited in size and continue to reduce, increasing the need for further involvement of private investors, particularly for non-acute care, a segment generally enjoying solid long-term cash flow visibility, supported by a combination of government and private cash flow streams. As a result, we observe growing interest from private investors for this sector, and we anticipate the European market to grow substantially in the medium term.[107]

Risks: A fragmented market and regulation across the European private healthcare sector requires a detailed understanding when considering an investment and represents a material barrier for strategies aimed at industry consolidation.

[106] Oxford Economics, European Union, Population 65+ divided by Population, total, as at 27 November 2019.
[107] Based on InfraNews, as at 6 November 2019.

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6 / Appendix

Calendar Annual Performance

Index	2014	2015	2016	2017	2018	YTD Jun-2019
MSCI Global Infrastructure Direct Asset Index - Power, Total Return	13.08%	7.34%	12.02%	12.60%	10.48%	5.48%
MSCI Global Infrastructure Direct Asset Index - Power, Capital Return	6.80%	3.10%	7.47%	4.80%	1.45%	2.62%
MSCI Global Infrastructure Direct Asset Index - Power, Income Return	5.96%	4.14%	4.32%	7.52%	8.91%	2.82%
MSCI Global Infrastructure Direct Asset Index - Transportation, Total Return	19.14%	23.81%	17.50%	14.59%	14.43%	9.46%
MSCI Global Infrastructure Direct Asset Index - Transportation, Capital Return	14.95%	19.32%	11.66%	9.78%	9.95%	6.79%
MSCI Global Infrastructure Direct Asset Index - Transportation, Income Return	3.77%	3.94%	5.39%	4.49%	4.17%	2.60%
MSCI Global Infrastructure Direct Asset Index - Low Risk, Total Return	13.23%	8.38%	12.16%	8.86%	9.73%	4.55%
MSCI Global Infrastructure Direct Asset Index - Low Risk, Capital Return	7.76%	4.35%	5.96%	3.34%	4.18%	2.29%
MSCI Global Infrastructure Direct Asset Index - Low Risk, Income Return	5.17%	3.90%	5.93%	5.39%	5.38%	2.24%
MSCI Global Infrastructure Direct Asset Index - Moderate Risk, Total Return	17.27%	21.41%	17.59%	14.53%	12.96%	8.32%
MSCI Global Infrastructure Direct Asset Index - Moderate Risk, Capital Return	13.24%	17.24%	12.79%	8.69%	6.76%	5.67%
MSCI Global Infrastructure Direct Asset Index - Moderate Risk, Income Return	3.67%	3.72%	4.39%	5.48%	5.88%	2.60%
MSCI Global Infrastructure Direct Asset Index - High Risk, Total Return	3.23%	24.46%	0.42%	46.73%	8.44%	9.94%
MSCI Global Infrastructure Direct Asset Index - High Risk, Capital Return	1.81%	22.93%	-0.77%	43.32%	7.02%	9.89%
MSCI Global Infrastructure Direct Asset Index - High Risk, Income Return	1.40%	1.30%	1.19%	2.55%	1.37%	0.04%

Source: DWS, MSCI Global Quarterly Infrastructure Asset Index, "Summary - Period ending June 2019", November 2019. Past performance is not a guide for future results.

Rolling Annual Performance						
Index	Jun-2014	Jun-2015	Jun-2016	Jun-2017	Jun-2018	Jun-2019
MSCI Global Infrastructure Direct Asset Index - Power, Total Return	17.76%	7.28%	10.67%	10.08%	12.45%	10.96%
MSCI Global Infrastructure Direct Asset Index - Power, Capital Return	12.42%	1.04%	7.14%	4.14%	4.89%	2.00%
MSCI Global Infrastructure Direct Asset Index - Power, Income Return	4.96%	6.12%	3.36%	5.77%	7.28%	8.80%
MSCI Global Infrastructure Direct Asset Index - Transportation, Total Return	16.99%	24.99%	19.68%	14.23%	14.56%	16.47%
MSCI Global Infrastructure Direct Asset Index - Transportation, Capital Return	12.81%	20.36%	13.87%	9.92%	9.79%	11.20%
MSCI Global Infrastructure Direct Asset Index - Transportation, Income Return	3.84%	4.03%	5.29%	4.03%	4.45%	4.89%
MSCI Global Infrastructure Direct Asset Index - Low Risk, Total Return	14.12%	8.56%	11.40%	9.29%	9.12%	9.76%
MSCI Global Infrastructure Direct Asset Index - Low Risk, Capital Return	8.88%	3.55%	5.78%	4.39%	2.72%	5.30%
MSCI Global Infrastructure Direct Asset Index - Low Risk, Income Return	4.95%	4.87%	5.39%	4.74%	6.27%	4.30%
MSCI Global Infrastructure Direct Asset Index - Moderate Risk, Total Return	16.19%	21.94%	19.36%	13.96%	13.75%	14.96%
MSCI Global Infrastructure Direct Asset Index - Moderate Risk, Capital Return	12.33%	17.38%	14.88%	9.33%	8.16%	8.01%
MSCI Global Infrastructure Direct Asset Index - Moderate Risk, Income Return	3.55%	4.05%	4.04%	4.34%	5.26%	6.56%
MSCI Global Infrastructure Direct Asset Index - High Risk, Total Return	-3.37%	30.10%	3.07%	19.39%	32.73%	7.50%
MSCI Global Infrastructure Direct Asset Index - High Risk, Capital Return	-4.78%	28.59%	1.77%	17.48%	29.19%	7.45%
MSCI Global Infrastructure Direct Asset Index - High Risk, Income Return	1.47%	1.25%	1.28%	1.70%	2.89%	0.04%

Source: DWS, MSCI Global Quarterly Infrastructure Asset Index, “Summary - Period ending June 2019”, November 2019. Past performance is not a guide for future results.

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Research & Strategy—Alternatives

OFFICE LOCATIONS:

Chicago
222 South Riverside Plaza
34th Floor
Chicago
IL 60606-1901
United States
Tel: +1 312 537 7000

Frankfurt
Taunusanlage 12
60325 Frankfurt am Main
Germany
Tel: +49 69 71909 0

London
Winchester House
1 Great Winchester Street
London EC2N 2DB
United Kingdom
Tel: +44 20 754 58000

New York
875 Third Avenue
26th Floor
New York
NY 10022-6225
United States
Tel: +1 212 454 3414

San Francisco
101 California Street
24th Floor
San Francisco
CA 94111
United States
Tel: +1 415 781 3300

Singapore
One Raffles Quay
South Tower
20th Floor
Singapore 048583
Tel: +65 6538 7011

Tokyo
Sanno Park Tower
2-11-1 Nagata-cho
Chiyoda-Ku
18th Floor
Tokyo
Japan
Tel: +81 3 5156 6000

TEAM:

Global

Kevin White, CFA
Co-Head of Research & Strategy
kevin.white@dws.com

Simon Wallace
Co-Head of Research & Strategy
simon.wallace@dws.com

Gianluca Minella
Head of Infrastructure Research
gianluca.minella@dws.com

Yasmine Kamaruddin
Global Strategy
yasmine.kamaruddin@dws.com

Americas

Brooks Wells
Head of Research, Americas
brooks.wells@dws.com

Liliana Diaconu, CFA
Office Research
liliana.diaconu@dws.com

Ross Adams
Industrial Research
ross.adams@dws.com

Ryan DeFeo
Property Market Research
ryan-c.defeo@dws.com

Ana Leon
Retail Research
ana.leon@dws.com

Joseph Pecora, CFA
Apartment Research
joseph.pecora@dws.com

Europe

Tom Francis
Property Market Research
tom.francis@dws.com

Martin Lippmann
Property Market Research
martin.lippmann@dws.com

Farhaz Miah
Property Market Research
farhaz.miah@dws.com

Aizhan Meldebek
Infrastructure Research
aizhan.meldebek@dws.com

Siena Golan
Property Market Research
siena.golan@dws.com

Asia Pacific

Koichiro Obu
Head of Research & Strategy, Asia Pacific
koichiro-a.obu@dws.com

Natasha Lee
Property Market Research
natasha-j.lee@dws.com

Seng-Hong Teng
Property Market Research
seng-hong.teng@dws.com

Hyunwoo Kim
Property Market Research
hyunwoo.kim@dws.com