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International

Global research and insights from Frontier Advisors

Observations from the Real Assets Team

European Infrastructure Trip

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Frontier regularly conducts international research trips to observe and understand more about international trends and to meet and evaluate, first hand, a range of fund managers and products.

In conjunction with insights we share with our Global Investment Research Alliance partners, these observations feed into our extensive international research library.

This report provides a high-level assessment on the key areas and observations unearthed during this recent Real Assets' trip. We would be pleased to meet with you in person to provide further detail on these observations.

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Introduction

The European infrastructure landscape is changing rapidly. This is presenting opportunities as well as challenges for infrastructure investors.

On the one hand, there is strong demand for new and improved essential services, reflecting population growth, technology changes and increased interconnectivity and urbanisation; while on the other hand, there are government and regulatory pressures to reduce the cost of essential services and improve accountability to customers.

Frontier Advisors investigated the European telecommunications and UK water sectors as being representative of these thematic trends and innovation.

European telecommunications infrastructure is expected to provide attractive investment opportunities as unprecedented data growth and technological change is necessitating significant capital expenditure to expand supporting communications infrastructure such as mobile towers, small cells, fibre networks (to upgrade legacy copper networks) and datacentres.

While the above example is indicative of Europe's evolving opportunity set, growing social and economic inequality and populist politics are compounding the requirement to deliver better services at a lower cost. In the extreme, the role of private capital is being questioned and a return to public ownership of critical infrastructure is gaining traction. Nowhere is this debate more evident than in the UK water sector.

UK water assets face a challenging regulatory environment. This is expected to lower returns for investors, but drive better outcomes for customers. The UK water regulator, Ofwat, is proposing to reduce the return on equity to investors and limit financial engineering upside. It is also seeking to increase the benchmark service standards for the regulated water utilities.

While infrastructure is a long-term asset class, change is inevitable, whether investing in an established and highly-regulated sector such as UK water or a technology and market driven sector such as telecommunications. Hence, it is incumbent on investors to exercise caution in all aspects of their investment process; strong origination capabilities are required to identify opportunities beyond those subject to pure cost of capital competition; due diligence needs to be thorough to identify risks as well as opportunities to enhance value; asset management needs to take an active approach and utilise operational expertise; and finally, discipline is essential to identify the right time to sell.

We see strong opportunities for investors seeking to allocate capital to European infrastructure and have identified a focused group of specialised managers with the requisite skills and track record to deliver attractive risk-adjusted returns. We encourage clients to contact Frontier Advisors for more information.

Data is a utility

In today's world, internet access is an essential service and data is increasingly becoming regarded as a utility.

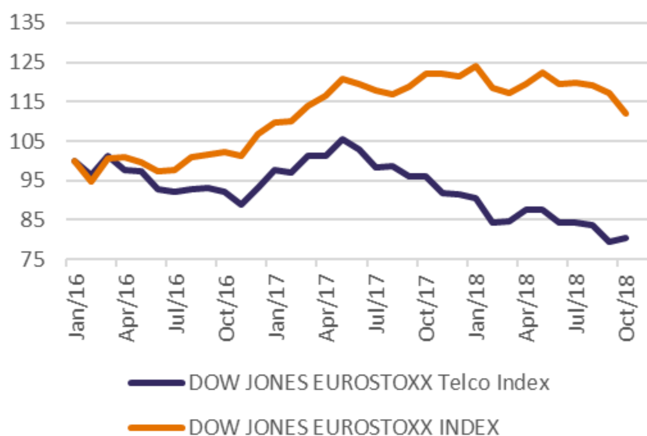
Communications infrastructure (wireless and fixed line) is the backbone of all communication and content delivery services. Data growth driven by a proliferation of users, mobile devices, faster network speeds and a move to more content rich applications (e.g. Netflix, Amazon, live sports streaming) is necessitating significant capital expenditure in communications infrastructure as existing bandwidth capacity fails to keep up. Unsurprisingly, this is driving a wave of large investments into upgrading existing or building new communication infrastructure across the spectrum in Europe.

Against the backdrop of significant capital expenditure requirement in the sector is the plight of European telecommunications operators, facing the dual challenge of balance sheets that are stretched under excess debt and share prices under pressure.

This has presented an opportunity for alternate operators and infrastructure investors to step in and become active participants in the telecommunications sector due to the attractive market fundamentals.

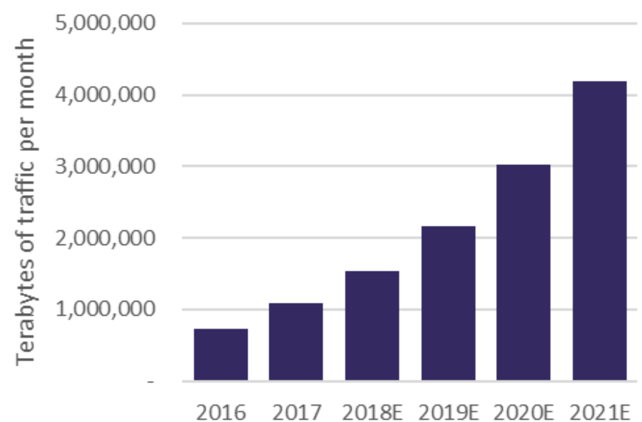
Telecommunications infrastructure, such as mobile towers and fibre networks, are real assets backed by predictable cashflows that are generally uncorrelated to GDP. There are strong barriers to entry and, most importantly, the investment thesis is driven by strong data and user penetration growth in Europe (amongst the highest in the world, 42% CAGR over 2016-2021).

Chart 1: European telco share price performance v the market (rebased)



Source: Bloomberg

Chart 2: Mobile data traffic forecast in Western Europe



Source: CISCO

Delivering content to the end user

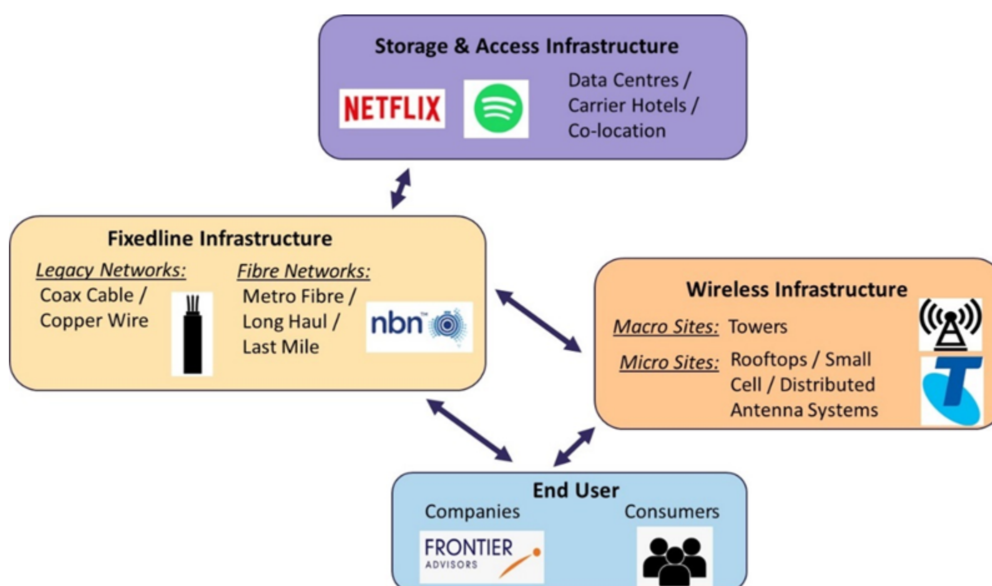
Infrastructure investors are investing across the telecommunications sector eco-system including mobile towers, fibre networks, distributed antenna systems (DAS) and niche and potentially riskier segments such as small cell networks. Datacentres are also an emerging investment opportunity. We explore the investment characteristics of these segments below.

Wireless infrastructure

Mobile towers are a key component of wireless communication and have historically been the preferred method for carriers to build out their networks. Increasing subscribers and data usage requires denser networks and more mobile antenna sites. In particular, the impending fifth generation (5G) mobile technology rollout will enable higher bandwidth and internet-enabled device communication (e.g. internet of things), and the number of sites required is expected to increase dramatically. As a result, mobile network operators (MNOs) are looking to supplement macro mobile coverage (via large towers) with infill sites using small cells and DAS. DAS focus on expanding coverage within buildings and providing capacity relief in high traffic areas (e.g sports arenas, university campuses, train tunnels).

Telecommunication companies have been monetising their tower assets by establishing TowerCos and undertaking sale and leasebacks (e.g. KPN in Netherlands and Germany), sales (e.g. Telefonica to KKR), or listing these businesses (e.g. Telecom Italia listed Inwit). The cash flow profile of the TowerCo business model is attractive to infrastructure investors. TowerCos receive stable revenues under long-term leases (10+ years) from MNO tenants. There are barriers to entry given low risk of overbuild due to local zoning restriction and high switching costs for MNOs given complex networks. As a result, recent towers transactions have been aggressively priced by infrastructure investors[1].

Figure 1: Communications infrastructure landscape

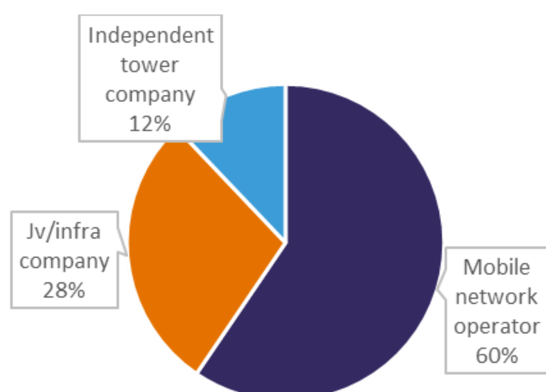


[1]Valuing tower companies is a function of their profitability, driven by number of tenants, revenue per tenant and ground rent. In Europe, a typical TowerCo generates €13-24k of EBITDA per tower per year, heavily influenced by prime tenant rent .

Recent TowerCo sales to infrastructure investors

Most incumbent MNOs still own a large proportion of the towers they use and there is likely to be more transaction activity in the pipeline. For example, Vodafone has recently announced the likely sale of its portfolio of approximately 55,000 towers (mainly across Spain, Italy, Germany and the UK), while Deutsche Telecom has created separate vehicles for its Dutch tower assets in preparation for a potential sale. Several infrastructure investors we met are all closely monitoring these developments, particularly those managers who already own tower assets and are looking at potential synergies to justify the high multiples these assets will likely trade.

Chart 3: Tower and rooftop structure ownership in Europe (Q4 2017)



Source: TowerXchange

"One should consider the wireless network as a toll road: 5G will have significantly larger lanes for wireless traffic and dramatically higher speed limits than the current 4G technology."

Small cells and DAS

While towers have proven to be sound investments to date, small cell investments have also recently attracted infrastructure investors. Small cells support mobile towers and rooftop antennas and are usually attached to lamp posts and other street furniture to provide in-fill coverage or capacity relief. For example, IFM-owned Arqiva started its small cell rollout (attached to lamp posts, c.300,000 sites) in the UK, and 3i owned WIG and AMP Infrastructure's Axion have created a joint venture (JV) in Iberia to do the same.

However, it is worth noting the small cell investment thesis is relatively complex; the roll-out requires much more technical expertise and is often undertaken internally by MNOs or equipment vendors; or if it is out-sourced, it requires close integration with MNOs' existing networks (i.e. equipment/ architecture compatibility). It is labour and time-intensive and needs to be actively managed for network modifications and technology upgrades. For an infrastructure investor, this creates complexity (roll-out of many of small sites), technology risk and potentially entering into competition with MNOs and equipment vendors, if not undertaken in partnership with an experienced small cell firm/operator.

Table 1: TowerCo sales

Asset	Seller	Buyer	Country	Date	EV/EBITDA[2]
SFR Towers	Altice	KKR	France	2018	18.0x
Towers of Portugal	Altice	Morgan Stanley	Portugal	2018	20.3x
Telxius	Telefonica	KKR	Spain	2017	19.4x
WIG	Barings	3i	UK	2017	19.2x
FPS	Antin	AMT	France	2016	19.4x

Source: Inframation, RBC Capital Markets

[2]Pro-forma, current

Fibre networks

Fixed line networks provide the backbone of all communication services, and are the conduit for the delivery and storage of all traditional voice and IP traffic. Legacy networks (copper and coaxial cable) currently provide internet coverage for the majority of Europe, but a number of operators are upgrading their old legacy networks to fibre, while at the same time, new entrants are entering the sector. New fibre networks are being deployed with various models adopted for the last mile delivery, commonly referred to as "FTTx", which includes Fibre To The Home or business/ building/cabinet/node, also referred to as FTTH/FTTB/FTTC/ FTTN[3].

The extent of fibre rollout in a given area is a function of the population density, demand, building planning codes, as well as heritage policies. For example, in remote areas or in old historic European towns where stone pavements need to be torn up and replaced, it may make less sense. It is also dependent on the capacity of the legacy copper networks. Interestingly, Eastern European countries lead the FTTH rollout, as their legacy networks are no longer able to cope with the burgeoning volumes of data, whereas in the UK, the incumbent fixed line operator, BT, has decided to roll out FTTN technology with existing copper connections covering the last mile and FTTH penetration continues to lag.

This provides opportunities for private players to enter the market and fill the gap where incumbent Telcos have lagged. As a testament to this new approach, Vodafone has recently signed fibre agreements with CityFibre (owned by Antin and Goldman Sachs Infrastructure Fund) in the UK, and with Deutsche Glasfaser (owned by KKR Infrastructure) in Germany. Additionally, while some major cities in Europe are well served with fibre networks, outside of the major metropolitan areas, the fibre penetration is very limited. Once again, private capital has looked to fill the gap, for example, Eurofiber in Netherlands and Belgium (owned by Antin), E-fiber in Netherlands and Swiss4net in Switzerland (owned by Arcus) which focus on rolling out fibre to homes and businesses in rural areas.

We view the rollout of fibre networks in Europe today as akin to the rollout of gas or electricity networks 100 years ago and once it is rolled out, it is there for the long-term and those early investors will own valuable core infrastructure assets. Almost all of the investors we met during our trip had fibre network investments in their portfolio or had aspirations to acquire them in order to participate in the 'great European fibre rollout'. However, the risk profile of fibre investments varies considerably and networks can be acquired under various business models[4]:

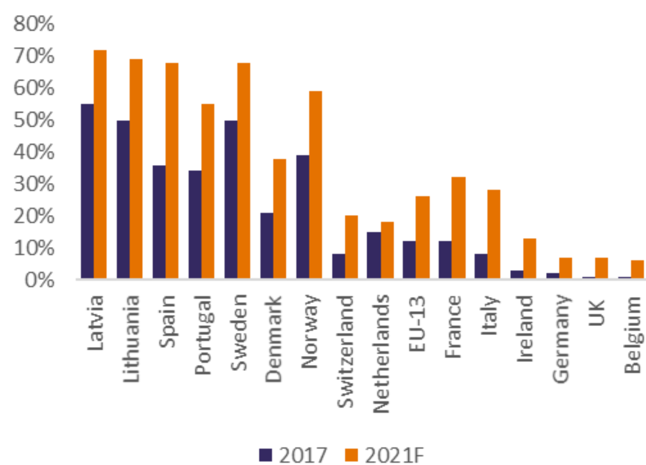
A. **Concession based models:** A fibre network company (FibreCo) is granted a monopoly concession area by the local government to rollout the network. It will be required to provide open access to retailers and may receive a subsidy from the procuring entity;

B. **Demand aggregation model:** where the FibreCo undertakes the rollout based on a pre-subscription level (i.e. minimum number of residential and business customers sign up to the fibre network);

C. **Build it and they will come approach**: where the FibreCo undertakes rollout with full volume risk.

Models B and C bear greater risk of overbuild (limited barriers to entry), competition and customer churn (from legacy networks and other competing technologies).

Chart 4: FTTH coverage (households taking FTTH)



Source: Credit Suisse estimates

[3]For example, FTTN is the last mile delivery model adopted in the NBN rollout strategy in Australia.

[4]The Australian model followed a different model of 'Government led' investment where a new entity, NBN, was created to rollout fibre

Datacentres

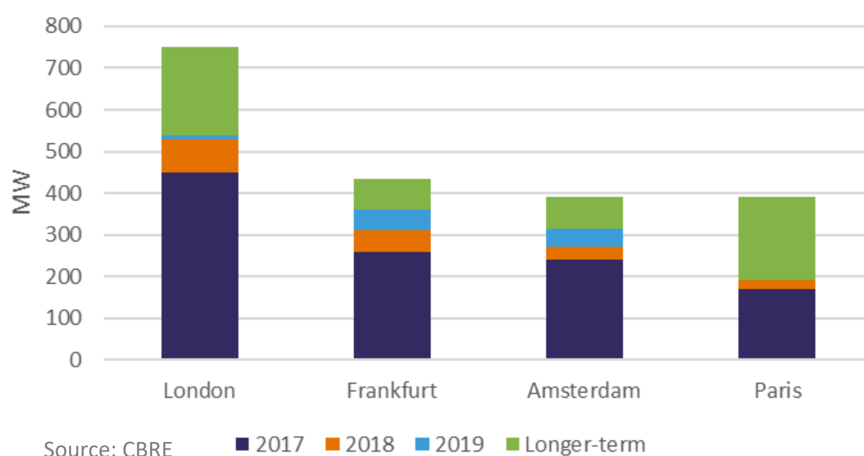
Datacentres, from large centralised cloud nodes to smaller, distributed computing sites at the edge, are attracting infrastructure investors. The transactions have been relatively limited to date, however, the sector is expected to gain momentum as investors look for telecommunications assets beyond mobile towers and fibre networks.

There is a wide spectrum of investment proposals from lower risk datacentres, which have long-term fixed priced institutional contracts (with government, hospitals, financial service hubs etc), to shorter-term retail customers in peripheral cities. Further, there is technology risk; what was considered state-of-the-art storage capacity five years ago could be considered inefficient today – and data loads vary depending on the location in the country.

A few investors noted they were unlikely to look at datacentres as they considered these 'too high risk' for core infrastructure portfolios. Contrastingly, other investors considered datacentres to be 'property investments' and did not want to compete with datacentre REITs on cost of capital (e.g. Digital Realty, Equinix and Keppel).

Notwithstanding this, much like the US experience, we expect strong deal activity across Europe in datacentres, with the UK, Germany, Ireland, France and the Netherlands providing interesting prospects. As examples: London is the largest co-location datacentre market in Europe with the presence of internet giants such as Google, Facebook and Amazon; the French market is very fragmented with the largest five players accounting for only 30% of known data centres, providing market consolidation opportunities; and Ireland, owing to its corporate tax incentives, attracts large corporates with significant data needs.

Chart 5: Projected growth in data centres



Source: CBRE

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The final word on telecommunications

In summary, the European telecommunications infrastructure sector is expected to provide a range of significant investment opportunities as capital constrained Telcos are forced to sell assets and private players enter the market to fill the gap left by the incumbents (wireless and fixed line).

The landscape differs significantly in each country and the market is highly fragmented, which presents consolidation and growth opportunities for traditional towers and fibre network assets.

However, risks do exist including technology obsolescence, regulatory change and customer volume risk. Further, telecommunication assets are heavily competed for and recent transaction valuations have reflected this.

We expect successful managers who have been active in the European telecommunications space (such as KKR, Antin, AMP) to utilise their expertise and synergy benefits and expand their footprint in this sector.

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UK water

The UK water sector has historically been an attractive and stable infrastructure segment for investors, including many Australian asset owners. (through direct investments and funds such as IFM, Morrison & co. and Colonial First State). More broadly, almost all of these investors have exposure to regulated utilities.

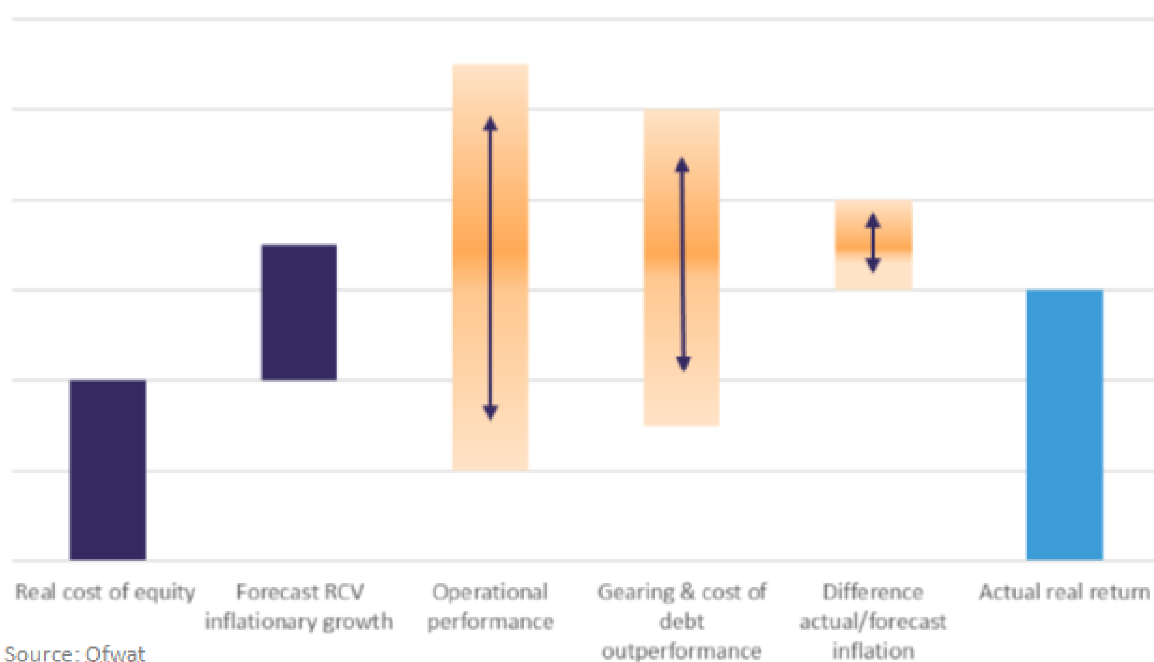
However, there have been a number of recent developments in the UK that are likely to significantly impact returns going forward and call into question the stability of regulated assets. In our research we have reviewed the changes proposed by the UK water regulator, Ofwat, and the Labour Party's nationalisation proposal.

Ofwat's upcoming formal review of the sector for the next five years, Price Review 19 (PR19, covering 2020-2025), is expected to be particularly tough for water companies and their investors. Ofwat is seeking to address a large spectrum of challenges across climate change, population growth, environmental quality, resilience of the system and a broader question of private company trust and legitimacy. Among other initiatives, the changes are expected to limit the rewards available to investors from "financial engineering" and re-focus the companies more squarely on customer outcomes. The final determination is due in December 2019.

In July 2018, Ofwat Chief Executive, Rachel Fletcher said: "The decisions some water companies have made on dividends, financial structures and top executive pay have damaged customer trust. We have looked in detail at the incentives we give water companies. Through the measures we've announced today, we are strengthening the incentive on companies to improve their performance for customers and cutting the rewards that come from financial engineering. This is an important step in making sure water companies put customers' interests and those of future generations, at the heart of all the decisions they take."[5]

Chart 6 illustrates the components of equity returns through the operation of UK regulated water businesses.

Chart 6: Composition of equity returns



Source: Ofwat

[5]https://www.ofwat.gov.uk/pn-28-18-ofwat-announces-changes-pr19-

Notably, there are several opportunities to outperform the benchmarks set by Ofwat. PR19 is proposing changes to the regulatory framework that will make it more challenging to outperform and impose tougher penalties for those companies that underperform. In other words, Ofwat is introducing a negative asymmetry to the distribution of outcomes. Below we highlight three of the most significant changes to financial incentives.

Reduction in the real cost of equity

The building block approach allows equity investors in regulated water assets to earn a defined return on investment. Compared to PR14 (the current regulatory period covering 2014-2019), PR19 is proposing to significantly lower this allowance based on the acknowledgement that market expectations for returns have decreased. In particular, Ofwat has had regard to the extended period of low interest rates and the transactional and equity market evidence pointing to a lower equity return premium. This change will have the largest impact on investor returns.

Component	PR14	PR19 proposed
Gearing	62.5%	60%
Cost of equity (post tax)	5.65%	4.01% (1.64% lower)
Cost of debt	2.59%	1.33% (1.26% lower)
WACC	3.74%	2.40% (1.34% lower)

Source: Ofwat.

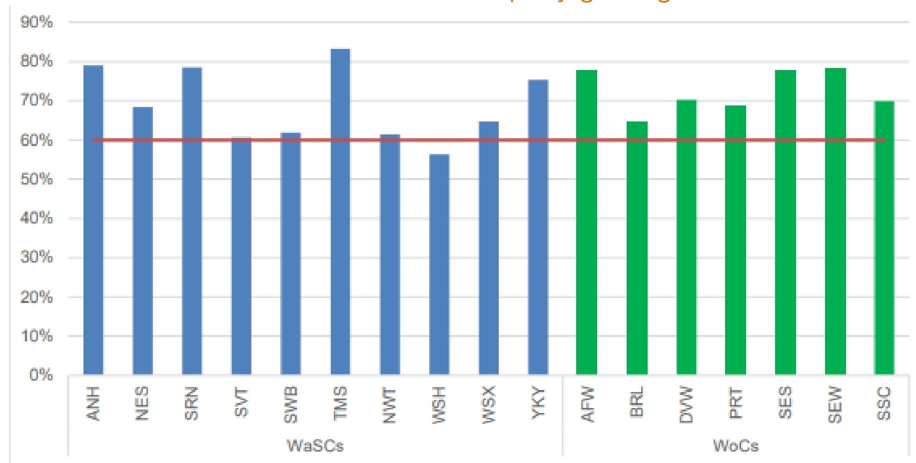
A stricter outcome delivery incentive (ODI) scheme

Ofwat sets industry-wide and company specific benchmarks such as commitments to leakage reduction, reliable supply and environmental performance. Under PR19, companies will be required to adopt an increased number of ODI categories as well as higher performance targets. In practice, this will widen the distribution of outcomes experienced by companies with a skew to the downside. Operational risk could also be increased as companies aim for ambitious targets

Sharing outperformance from gearing

Under PR14, Ofwat permitted water companies to adopt a notional gearing of 62.5%, and returns generated through higher leverage were retained by investors. However, in practice, most companies are geared above this level. Under PR19, Ofwat is seeking to introduce a mechanism whereby 50% of outperformance from higher gearing (above 70%) would need to be shared with customers through lower water charges. In response, many water companies are considering reducing debt levels or transferring debt to the holding company level in order to minimise the impact of Ofwat's proposed sharing mechanism. Consequently, lower dividends to equity holders are expected over the near to medium term.

Chart 7: UK water company gearing levels



Source: Ofwat. Water & Sewerage Companies (WaSCs) and Water-only Companies (WoCs).

Overall, the new regulatory framework will be challenging across the board and will significantly raises the bar in terms of what constitutes an efficient and responsible business, engagement with customers and reasonable return expectations for investors.

Manager responses

We queried several managers on their views of the UK water sector and the implications for the assets in their portfolios.

Most believe the outlook is diminished but is still reasonable. Particularly for top quartile performers, the sector still offers opportunities to earn reasonable returns and there continues to be strong demand for UK water assets. However, for poor performers, the stricter regulation will increase operational risk as companies are asked to do more with less. Managing them amidst a stricter regulatory environment will be challenging and will require competent asset management.

Finally, Ofwat's regulatory review is likely to be carefully scrutinised by other regulatory bodies in other regulated sectors, both in the UK (e.g. the UK regulator for electricity and natural gas, Ofgem) and elsewhere (e.g. the Australian regulator for wholesale electricity and gas, AER).

Chart 8: Recent UK water transactions

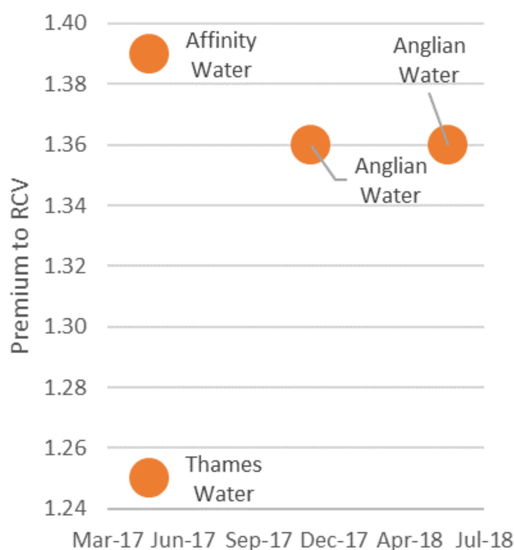
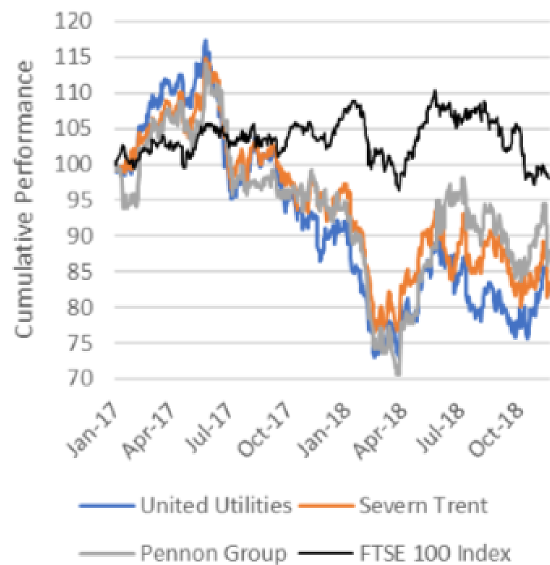


Chart 9: Listed water company share prices



Source: Frontier RADIAS and Bloomberg. Pennon Group is parent of South West Water. RCV = regulated capital value.

Nationalisation

As proposed by the UK Labour Party, a more radical option to bring down prices and improve customer services is to nationalise public infrastructure. Labour Party leaders have stated that, if they win the next general election (scheduled for May 2022), they will nationalise the railways, water and energy companies, Royal Mail and private finance initiative (PFI) companies.

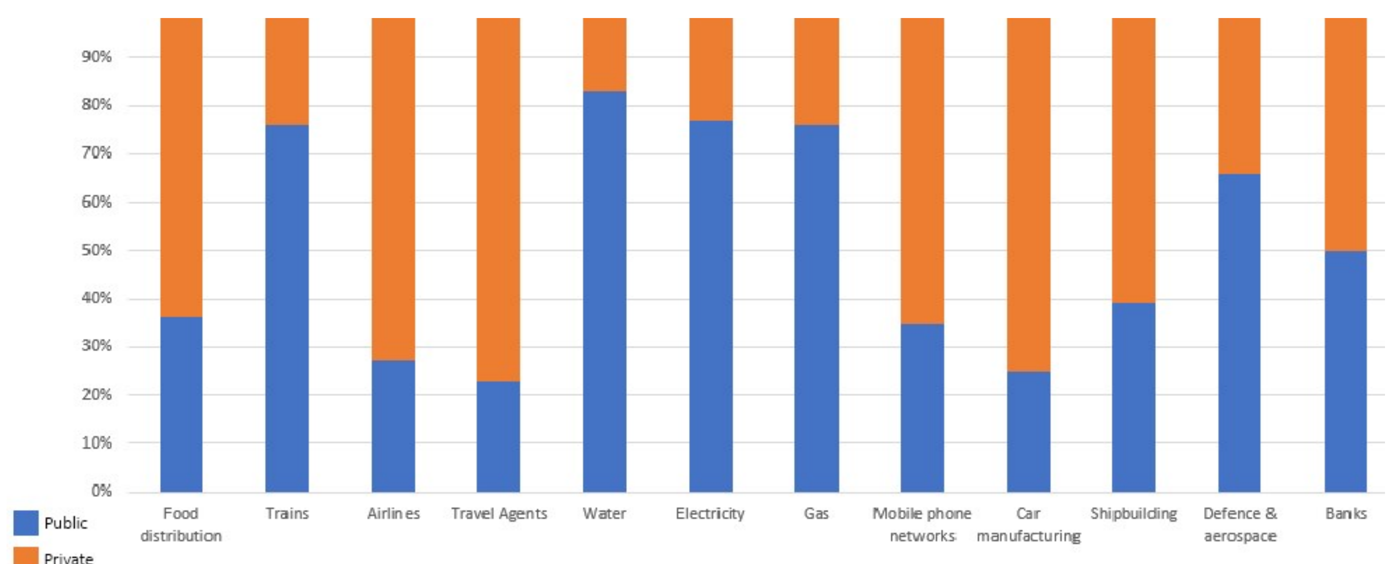
Such rhetoric responds to the view that prices paid by the consumer are significantly more expensive than they would otherwise be under public ownership and without a commensurate improvement in quality. However, critics point to the previous under-investment and poor performance of these assets in public hands.

In practice, the scale and cost of nationalisation would be significant. While it is clear the equity in these companies (estimated at £176 billion[6]) would be a target for acquisition by the government, it is likely that much of the debt would also need to be restructured or refinanced. A related issue is what would constitute fair compensation. For listed companies (e.g. Severn Trent, a listed water utility), a key determinant of company value and compensation would be what share price to use on what date and with what adjustments. This can become a complex issue, especially if negotiations protract over many years. Unlisted assets are even more challenging as the appropriate valuation mechanism would be subject to much debate.

Further, there are several constraints on the UK Government's ability to seize private property and aggrieved shareholders would have various mechanisms for recourse - Bilateral Investment Treaties (protection for companies investing offshore), Free Trade Agreements (investor-state dispute settlement), the European Convention on Human Rights (fair compensation if governments intervene), and international relations (foreign investors lobbying governments to act).[7]

The likelihood of nationalisation seems remote but populism around the world has provided a groundswell of support for similar initiatives (e.g. Trump, Brexit) and, at least in the UK, there is some support for nationalising certain sectors according to the opinion polls.[7]

Chart 10: Poll Results—Which assets are better owned by the public or private sector?



Source: Clifford Chance.

[6]https://www.cps.org.uk/publications/the-cost-of-nationalisation#
[7]https://www.cliffordchance.com/briefings/2018/03/uk_nationalisationthelawandthecost.html

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The final word on UK water

In summary, UK water will become an increasingly tough sector for investors; its status as a highly stable and predictable sector has been called into question. The share prices of listed water companies have already been impacted and unlisted companies face the prospect of valuation write downs as long-term assumptions are revisited.

PR19 aims to curtail the benefits of financial engineering and re-focus water companies on customer outcomes.

While strong operators, such as Anglian Water (owned by IFM and Colonial First State), will continue to deliver reasonable returns to investors, poor performers will need to review their operations or see performance deteriorate further.

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