Real Assets House View 2021

The intelligence that guides our investment decisions

For today's investor

AVIVA INVESTORS

Contents

Foreword

by Mark Versey

Welcome to the latest Aviva Investors Real Assets House View, which brings together the views and analysis of our investment teams in real estate, infrastructure and private debt.

The House View serves two main purposes. First, it provides a comprehensive, future-focused framework for discussion among our real assets investment teams; secondly, it allows us to share and explain our thinking on trends and asset allocation to clients and other interested parties.

Overseen by the Real Assets Research team, we canvass opinions from across the division on the key themes, opportunities and risks likely to impact real assets investment markets at both an individual and cross-asset class level. These views were discussed and debated at the Real Assets House View Forum in November 2020, and during several follow-up sessions.

After the dramatic events of the past year, the release of this report could not be timelier. Despite the turmoil caused by the global pandemic, which has had profound impacts on all parts of the real assets universe, the sector remains in high demand among institutional investors to deliver their varying investment outcomes, as the results of our recent Real Assets Study highlighted.

For 2021 and beyond, we see **three key themes** that will shape real asset markets:

1. **UK joins Europe in zero rate environment.** This should favour stronger performance of UK real assets over the medium term as returns adjust to this new norm – despite the headwinds of the coronavirus and Brexit.
2. **The objective of net zero carbon emissions is being enshrined in law across Europe.** This is likely to generate a large pipeline of opportunities to invest in low-carbon infrastructure and cleaner buildings, while aligning to net zero will increasingly drive asset values.
3. **New ways of living post-COVID will change the real asset investment landscape.** We expect to see greater differentiation of performance between and within asset classes, driven by their alignment to these societal shifts.

The house view hopes to help investors navigate this dynamic and challenging landscape. Not everyone will agree with the assumptions made or the conclusions reached. No-one ever said predicting the future was easy, but this report represents our best collective judgement on the current and future investment themes we believe will shape the real assets market.

Mark Versey
Chief Executive Officer*
Aviva Investors

Despite the turmoil caused by the global pandemic, which has had profound impacts on all parts of the real assets universe, the sector remains in high demand among institutional investors.

*Subject to regulatory approval

Our methodology and central scenario for 2021

by Laurence Monnier

Measuring risk and return: Relative value assessment in real assets

With real assets being an increasing focus for investors and regulators, new data and benchmarks have emerged over the past five years….. However, the availability of quantitative, forward-looking, and comparable data across real assets remains inadequate.

As investors' appetite for real assets grows, so does the level of sophistication they require in portfolio construction. Yet the tools at their disposal for allocating to different parts of the real asset universe remain less developed than those available in public markets.

In particular, the risk assessment of different investment strategies remains all too often qualitative, using broad terms such as "core", "core plus" or "value add". Many sectors, particularly private infrastructure, do not have the long, transparent and tradable pricing history needed to measure risk and return at a statistical level.

With real assets being an increasing focus for investors and regulators, new data and benchmarks have emerged over the past five years – we expect the drive for greater transparency to continue. However, the availability of quantitative and comparable data across the real asset universe remains inadequate.

To remedy this, we have developed a methodology to compare risk and return across real assets on a consistent basis. Our evaluation starts with a fundamental analysis of each sector, which allows us to forecast future cashflows, based on the relevant factors for this specific sector. Depending on sector, the factors considered include: interest rates, credit defaults and recovery rates, rental growth, inflation, property yields, power prices, broadband demand and regulation.

For each asset class we have run 5,000 simulations, varying each of the relevant parameters in a stochastic way around a central scenario. Our central scenario assumptions for each parameter represents our best judgment, which has been derived from objective sources, including historical data, consultants and expert reports where available. The outcome is a range of 5,000 possible returns, with the mean of this distribution being the "expected return" of the asset class.

We also provide a risk measure that is the standard deviation of all calculated returns. In this approach, we define riskier assets as those where there is the widest range of outcomes at the end of the holding period, rather than the assets exhibiting more volatile returns from year to year. We believe this is a better measure of risk as longer-term assessments tend to be of greater value to most of our clients.

This methodology allows a comparison of risk and return for different sectors at an overall market level. The nature of specific investment strategies and manager skill will all contribute to generate returns that could be significantly higher (or lower) than those presented at the asset class level.

Last year, we modelled sectors on an unlevered basis. This year, we looked at levered and unlevered strategies and incorporated a larger number of sectors into our analysis.

Our central scenario for 2021

When we published our first Real Assets House View in February 2020, the economic outlook was vastly different to today. The coronavirus pandemic and severe economic contraction experienced in 2020 will influence real assets performance for years to come.

Critically, an unprecedented level of monetary and fiscal support has been deployed, leaving both companies and governments with extremely high debt levels. Our central scenario has been updated to reflect the new economic environment, with the main changes summarised below and illustrated in Appendix 2.

a) Interest rates in both the UK and continental Europe to remain low for the medium term. UK rates are projected to remain positive, with a c.0.5 per cent pick up over the euro reference rate. We do, however, expect UK and European rates to slowly revert towards their long-term average over a ten-year period.

b) Our central inflation assumptions have not changed. However, the UK consultation on Retail Price Index reform has been reflected in an expected drop in RPI inflation after 2030.

c) Corporate credit default rates are projected to rise in 2021. Our previous view was based on "through-the-cycle" credit defaults. Our central scenario now reflects an increase in default rates above their long-term trend. This is greatest for non-investment grade corporates (for which we also model lower recovery rates post default), and lowest for infrastructure debt.

d) Vacancies in real estate are expected to be elevated over the next three years and higher capital expenditures will therefore be required.

Our relative value analysis provides a quantitative and forward-looking assessment of each sector's risk and return. It is extremely useful when building real asset portfolios.

Relative value analysis supports efficient portfolio construction

The outcome of the relative value analysis provides a quantitative assessment of the attractiveness of each sector on a risk-adjusted basis. This approach remedies the absence of a transparent price history by providing a forward-looking view and makes it possible to optimise portfolio allocations. Our work also identifies the primary sources of risk for each sector – providing an indication of their diversification benefits.

We believe this analysis is extremely useful when building real asset portfolios, helping to bridge the gap between the demands of an increasingly sophisticated investor base and the relative opacity of the market.

Insights for growth-focused investors

by James Tarry

While real assets have the potential to deliver long-term stable cashflows, investors also allocate to them for growth. Our 2020 Real Assets Study indicated that 95 per cent of insurers and 88 per cent of pension funds cited capital growth as an "integral" or "important" part of their allocation strategy to real assets. For such investors, we look at prospective returns over a five-year horizon.

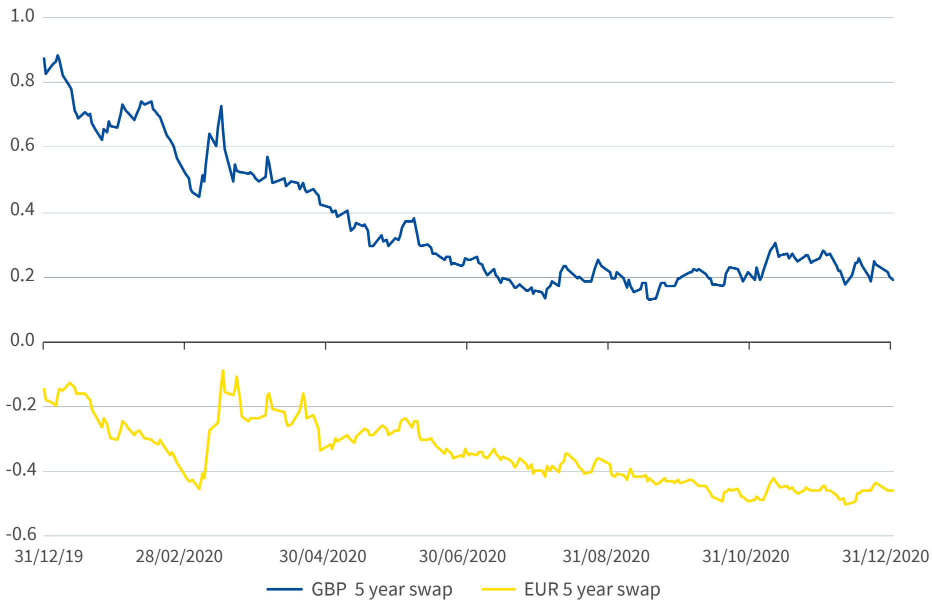
We believe UK assets are likely to outperform continental Europe over the next five years on a total-return basis.

We expect the UK to outperform continental Europe over the next five years

The UK's service-oriented economy has been more impacted by the pandemic than many of its European counterparts, and Brexit will further slow its recovery.

Despite these headwinds, which will affect rents and occupancy levels, we believe UK assets are likely to outperform continental Europe over the next five years on a total-return basis. Our view is driven by the Bank of England's monetary policy and the rapid fall in UK government bond yields – which has yet to be fully reflected in real asset yields.

Figure 1. **UK versus euro rates**

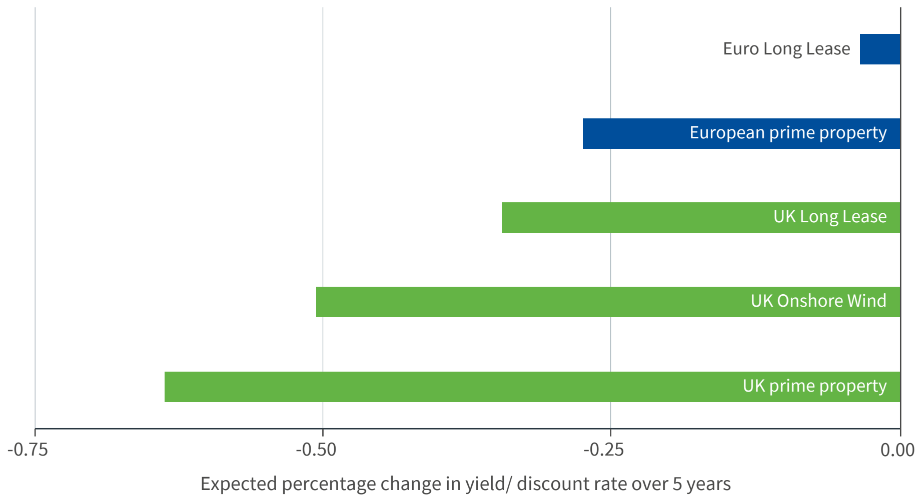


Source: Aviva Investors, as at January 2021. See Appendix for further information on the methodology used.

Real assets are typically slower to reprice than public markets. We therefore expect greater yield compression for sterling than euro assets over the next five years.

However, competition remains intense for the most defensive assets; the UK risk premium over government bonds will compress faster in these sectors. Furthermore, we believe investors combining both European and UK assets in their portfolios should see enhanced diversification benefits in a post-Brexit world.

Figure 2. **Five-year change in yield assumptions**



Source: Aviva Investors, as at January 2021. See Appendix for further information on the methodology used.

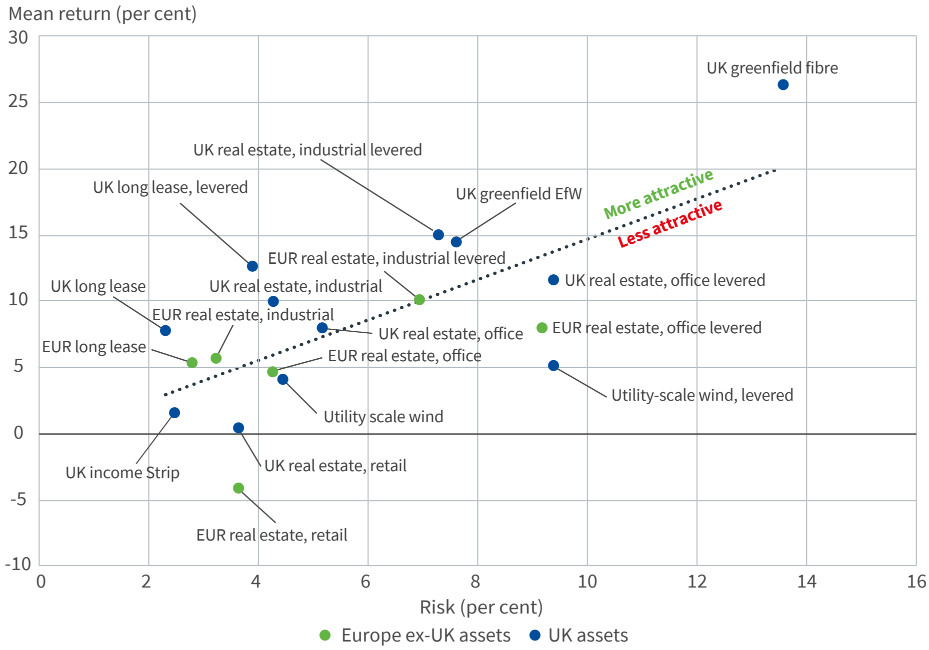
Levered long lease and greenfield fibre to deliver superior risk-adjusted returns

Greenfield infrastructure is attractive for investors seeking higher returns. Developers can capture the high delta between greenfield and brownfield infrastructure yields. In this regard, rural fibre development appears particularly attractive: this strategy delivers the highest total return of the asset classes modelled over five years – but also the widest distribution of outcomes, or greatest risk.

Despite this, the strategy is expected to produce a superior risk-adjusted outcome, as shown below. UK levered long lease is another market that can add a lot of value to growth-focused portfolios. The stability of cashflows, coupled with the availability of long-dated competitively priced debt, mean high-quality long-income assets can be levered without unduly increasing risk. This strategy is well set to capture the benefit of lower rates over the next five years.

UK levered long lease is another market that can add a lot of value to growth-focused portfolios.

Figure 3. **Five year return (IRR) versus risk**



Source: Aviva Investors, as at January 2021. Chart data is projected based on current assumptions.
See Appendix for further information on the methodology used.

Our analysis shows that in most sectors the increase in risk resulting from adding leverage at the typical market level outweighs the return benefits.

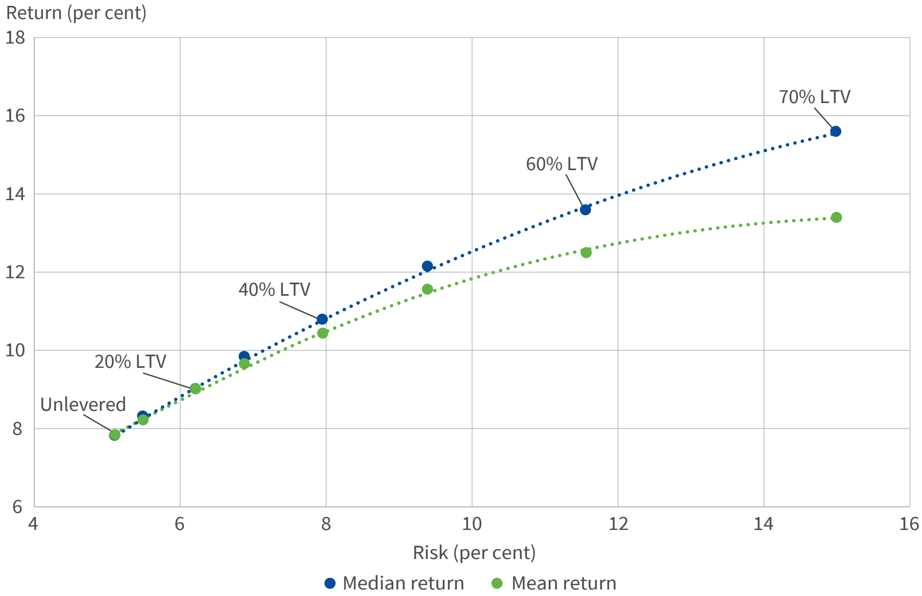
The temptations of high leverage should be resisted

The temptation to maximise leverage is high in today's low interest rate/ yield environment: while debt terms have tightened since March, infrastructure and commercial mortgage debt remain widely available on favourable terms for core sectors. Yet our analysis shows that in most sectors the increase in risk resulting from adding leverage at the typical market level outweighs the return benefits. This is because the scale of negative returns in the few negative scenarios exceeds the return enhancements in the positive ones, so that the average return is negatively impacted.

This is illustrated in the graph below for UK offices, which shows optimal leverage is below 60 per cent.

Other asset classes show similar results, with optimal leverage below those typically seen in the market. This risk is amplified for sectors using shorter-duration debt, such as real estate: as yields are expected to remain low, these sectors are vulnerable if interest rates increase before refinancing dates, which is our central scenario.

Figure 4. **UK offices 5yr IRR, risk versus return with increasing leverage**



Source: Aviva Investors, as at January 2021. Chart data is projected based on current assumptions. See Appendix for further information on the methodology used.

Combining real estate and infrastructure can provide strong diversification benefits

Real estate and infrastructure have different risk and return drivers and we believe combining them in a portfolio should provide strong diversification benefits. While this makes intuitive sense, concrete evidence to prove it has been sketchy.

Using our methodology, factors with the greatest contribution to the risk of each sectors can be identified, as presented in Figure 5 below. Over five years, combining long-income and traditional real estate offers some diversification benefits as the former is less exposed to rental growth risk than the latter.

However, infrastructure drivers are fundamentally different again, both from real estate and between sub-sectors. For example, the biggest risk driver for onshore wind would be power prices, while risk for greenfield fibre is linked to the speed of deployment, as well as potential competition or regulatory interventions.

The correlation between these factors is very low; many of these risks are idiosyncratic by nature. Combining all these sectors in the portfolio with an equal weighting would diversify portfolio risk between non-correlated factors, reducing total risk to below that of a portfolio allocated to a single asset class.

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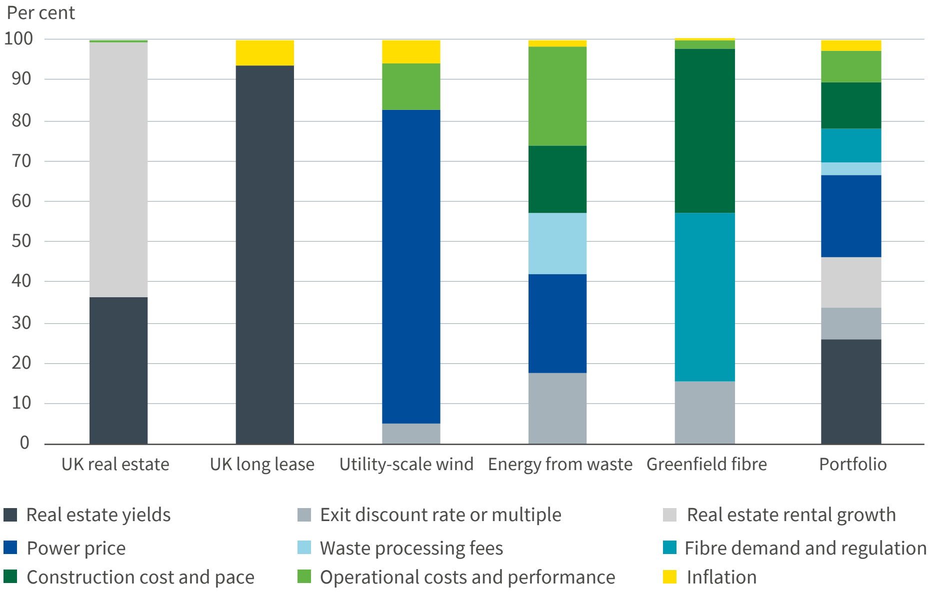
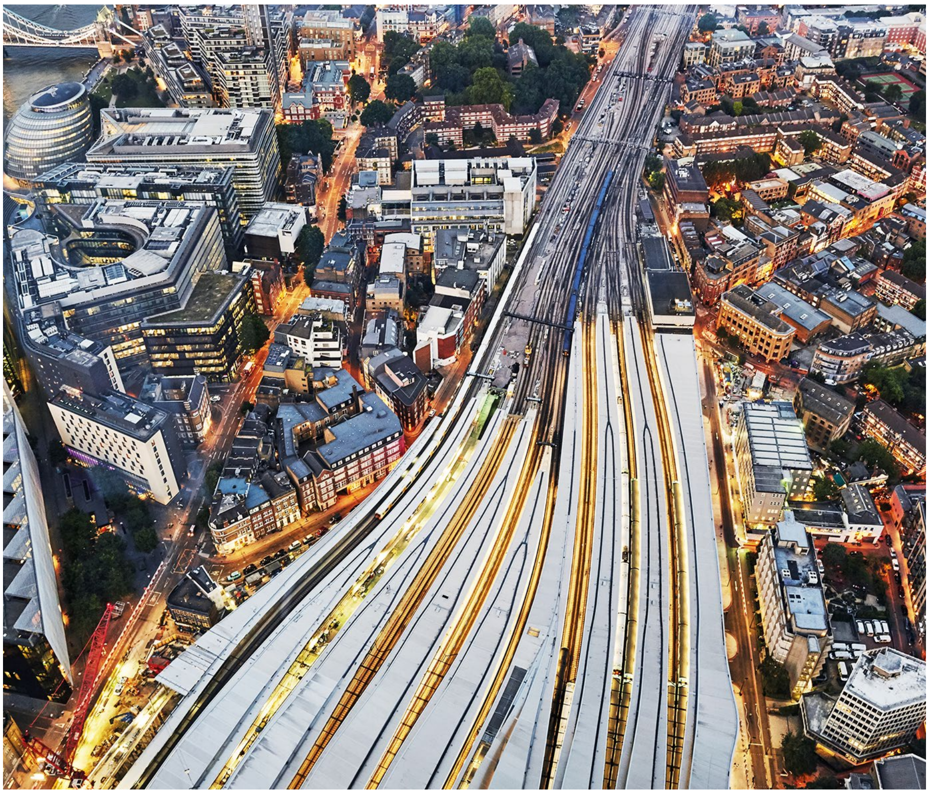
Figure 5. **Five-year IRR return driver breakdown**



Source: Aviva Investors, as at January 2021. Chart data is projected based on current assumptions. See Appendix for further information on the methodology used.

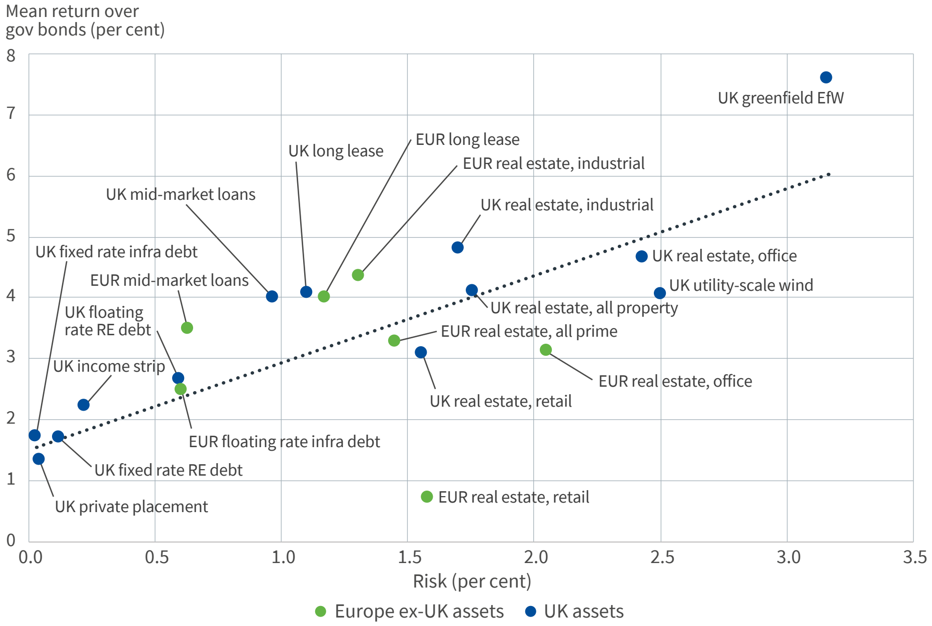


Insights for buy-and-hold investors

by Luke Layfield

The common attributes of steady income streams, lower liquidity than public markets and relatively high transaction costs in many real asset sectors make a buy-and-hold strategy a logical approach for long-term investors.

Figure 6. **Full life return versus risk**



Source: Aviva Investors, as at January 2021. Chart data is projected based on current assumptions. See Appendix for further information on the methodology used.

Initially we consider investors looking to match long-term liabilities, with a low risk tolerance, (e.g. mature defined benefit pension scheme or insurance company).

Income strips can provide inflation-linked and ultra-long-term income, often up to 50 years, matching the long-duration liabilities of many pension schemes and insurance companies.

In the UK, fixed-rate private debt can offer investors access to long-duration and low-risk sources of income that are not widely available from liquid bond markets, besides low-yielding gilts. We assess that the asset class offers a 30-50 basis points illiquidity premium over liquid bonds of similar creditworthiness, as well as more control and higher recovery rates. In our view, this makes it attractive for investors looking to match long-term liabilities.

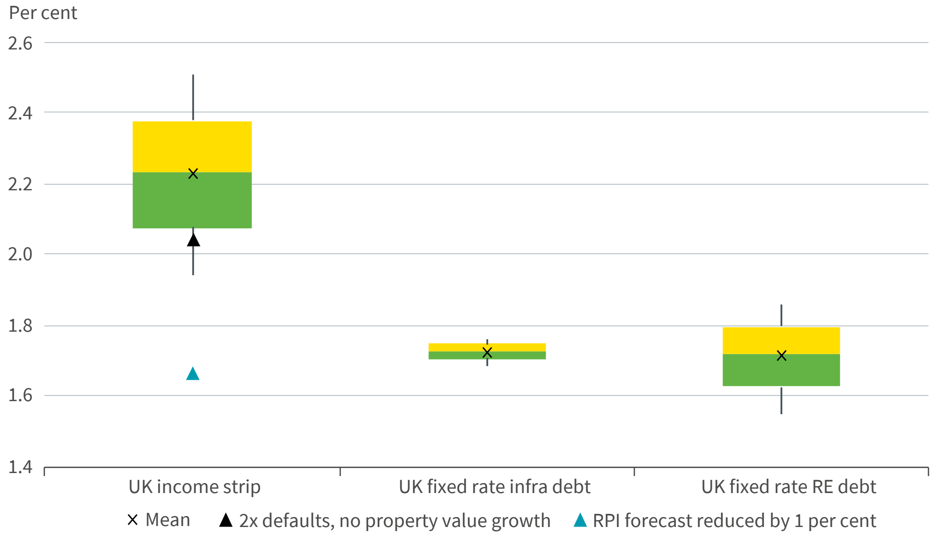
However, for those investors able to allocate to the sector, we believe income strips appear more attractive than fixed-rate debt. Income strips, otherwise known as amortising leases, are an equity investment, but the property reverts to the tenant at the end of the lease provided they have paid all their rent. For investors, this means all the value is in the income and the sector offers similar risk characteristics to debt.

Income strips can provide inflation-linked and ultra-long-term income, often up to 50 years, matching the long-duration liabilities of many pension schemes and insurance companies. The security of income is derived from tenants' creditworthiness, with tenants usually being local authorities, the NHS, universities or strong investment-grade companies.

The amortising nature of the investment offers additional comfort, as the lease obligation of the tenant is paid down but the underlying real estate (providing security on the lease) should increase in value over time. For all these reasons, the asset class carries relatively low risk; the chart below shows that even in a scenario with double the expected amount of tenant defaults and no property value growth, income strips would be expected to outperform fixed-rate debt.

In nominal terms, the biggest risk for income strips is inflation, yet this is a positive exposure for many investors to take on to maintain the real value of their investment or match inflation-linked liabilities.

Figure 7. **Full life IRR over matched duration gov bonds with income strip downside scenarios**



Source: Aviva Investors, as at January 2021. Chart data is projected based on current assumptions.
See Appendix for further information on the methodology used.

Next, we consider long-term investors that are less constrained by regulation or impending fixed liabilities so have a higher risk tolerance (e.g. young defined contribution investor or sovereign wealth fund).

Traditional long-lease real estate looks attractive in the UK and continental Europe. The asset class can provide investors with predictable inflation-linked income streams, making it more defensive and of lower risk than traditional real estate, while offering the prospect of similar returns. This is particularly true in the UK, where leases tend to be longer than on the continent and fully repairing and insuring in nature; essentially, this means all costs are passed on to tenants.

Whilst forward-looking returns have reduced, the idiosyncratic nature of renewable power generation and power prices make renewables a strong diversifier to traditional asset classes.

Long-duration government bond yields fell across Europe in 2020, whilst pricing of long-lease real estate remained relatively flat, improving its expected return premium. However, investors are already beginning to take note and increase allocations to the asset class, so this opportunity may be short-lived.

Although traditional real estate appears fairly priced in aggregate over a long time horizon, we expect wide dispersion between and within sectors, as further explained below, so investors need to be selective. The pandemic has accelerated structural trends; while this creates risks in certain areas, notably retail and offices, there are strong opportunities for other assets to benefit from these shifts, particularly within the industrial sector.

In infrastructure, investor interest in solar and wind across Europe has led to increasing competition and put downward pressure on discount rates over recent years. With almost half of the investors surveyed in our Real Assets Study stating renewables are “particularly important to include in their portfolio”, this trend looks set to continue.

Whilst forward-looking returns have reduced, we believe the idiosyncratic nature of renewable power generation and power prices make renewables a strong diversifier to traditional asset classes. Greenfield development of less-commoditised sectors, such as energy-from-waste and fibre broadband, can allow investors to invest at a discount to buying operational assets. The yield premium this can generate is often attractive compensation for construction risk (For more detail, see Section 5).

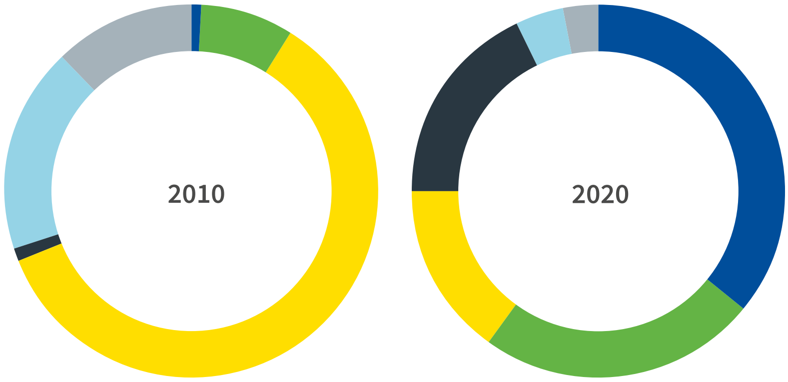
Insights for infrastructure investors

by Sean McLachlan

The infrastructure industry is changing fast, with the focus shifting to digital and low-carbon assets.

The infrastructure industry is changing fast, with the focus shifting to digital and low-carbon assets. These sectors have been resilient through the pandemic and opportunities are expanding across established and emerging sectors.

Figure 8. **European infrastructure transactions**

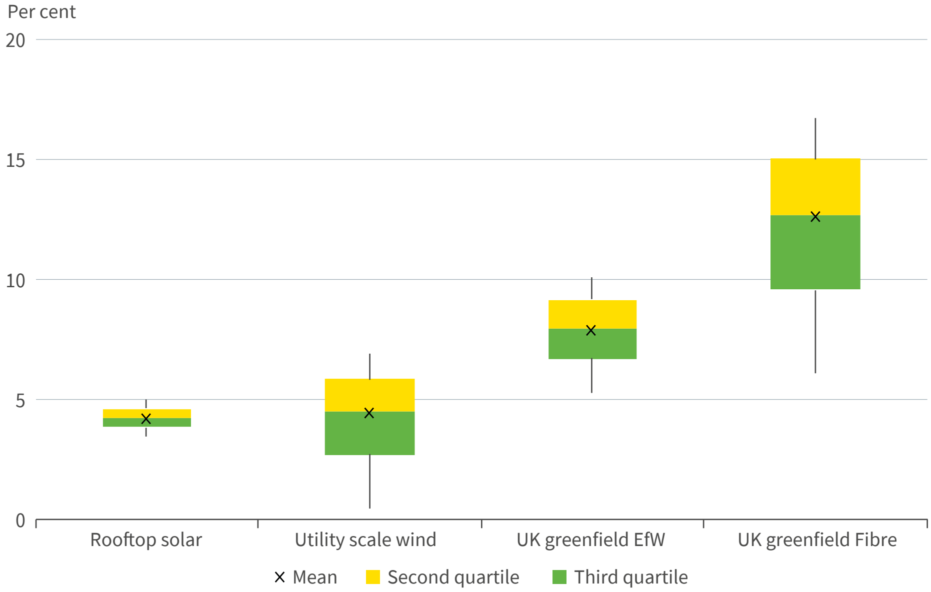


	2010	2020
Renewables	1%	36%
Telecom and data	8%	24%
Transport	60%	15%
Power and energy	1%	18%
Other	18%	4%
Social infrastructure	12%	3%

Source: Aviva Investors, as at January 2021. See Appendix for further information on the methodology used.

Nevertheless, this transition entails new risks. New business models are emerging, and market-based revenues are becoming more prevalent, leading to more volatile outcomes. Figure 9 illustrates the growing differences in risk profiles between a photovoltaic project benefitting from feed-in tariffs, an onshore wind farm earning ROCs[1], a greenfield energy-from-waste project and a greenfield fibre network. It shows a higher return dispersion for the emerging sectors.

Figure 9. **Full life IRR return dispersion for different asset classes**



Source: Aviva Investors, as at January 2021. See Appendix for further information on the methodology used.

A huge amount of private capital is required to support the green and digital transition, including investments in renewables, hydrogen, as well as cleaner transport and buildings. McKinsey estimates that €28 trillion is needed across the EU[2] to support the green transition.

A combination of new subsidies and contracted revenue models will no doubt emerge where needed to attract private investment. In the UK, for example, contracts for difference ("CfD"), a form of revenue stabilisation, have been extended to onshore wind and solar power, and the government has also committed to invest £1 billion to develop carbon capture clusters.[3] The Corporate Power Purchase Agreement ("CPPA") market, which can provide revenue stability for onshore wind and solar, is also developing.

In this fast-evolving environment, better value can be found in more complex or niche sectors, such as anaerobic digestion. Investors can, therefore, gain an advantage by developing expertise in emerging sectors and technologies. Renewable investors with less risk appetite and lower return targets can also hedge power prices through the CfD market where it exists, CPPAs, or by selling power forwards.

In this fast-evolving environment, better value can be found in more complex or niche sectors, such as anaerobic digestion. Investors can gain an advantage by developing expertise in emerging sectors and technologies.

1. The strategy modelled is brownfield UK onshore wind benefitting from the Renewable Obligation Certificate regime.
2. How the European Union could achieve net-zero emissions at net-zero cost, McKinsey, December 2020.
3. UK National Infrastructure Strategy, November 2020.

Building new digital infrastructure can have a beneficial social impact by supporting economic activities in rural locations.

Greenfield rural fibre is attractive

Greenfield infrastructure benefits from an attractive risk premium, as illustrated in Figure 10. Digital infrastructure and rural broadband are particularly well positioned to capture this premium given the growing demand for data and opportunities in the sector.

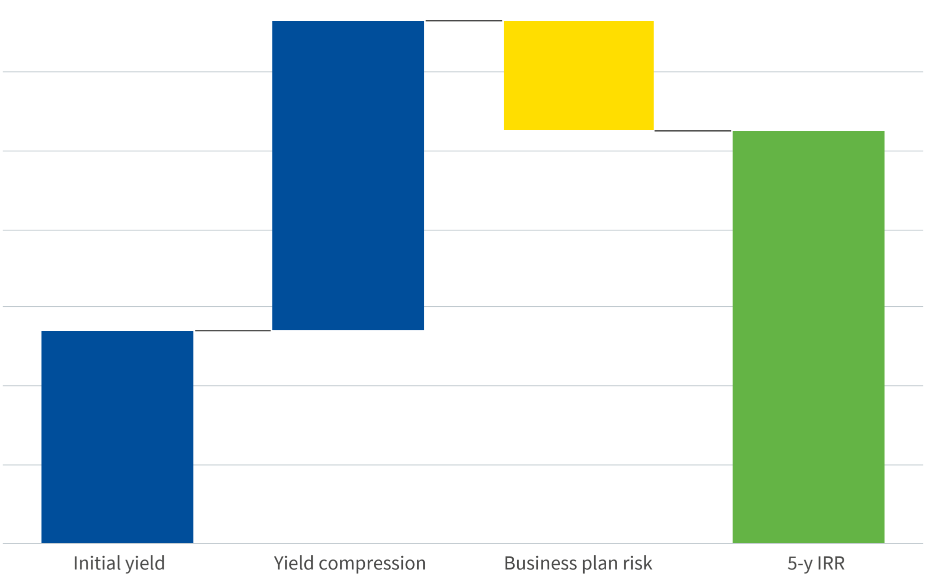
Over the medium term, we believe this “development premium” outweighs the downside risks to business plans, including speed of capital deployment, potential competition or regulatory intervention.

Building new digital infrastructure can have a beneficial social impact by supporting economic activities in rural locations. Greenfield energy, such as energy-from-waste, also offers a good pipeline of opportunities that may complement investments in other renewables.

It is not without risk, however. The construction of an energy-from-waste plant is complex. To generate attractive returns, selecting the right technology and operating partners is fundamental – as is the location of the plant. Strong project and asset management skills are required to deliver consistent, sustainable returns.

As a general observation, managing environmental, social and governance (ESG) risks is critical for greenfield investors: construction is the phase with the highest carbon footprint, and it can be disruptive for local communities.

Figure 10. **Greenfield fibre: Path from discount rate to 5-year IRR**



Source: Aviva Investors, as at January 2021. See Appendix for further information on the methodology used.

Transport electrification

In contrast with data or renewables, high market beta strategies (in other words, those that depend on the level of broader economic activity) such as transport have been severely impacted by the pandemic. For example, the EDHEC infra300 index, which tracks a global sample of unlisted infrastructure investments worth approximately US$ 190 billion, was down -7.8 per cent year-on-year in Q3 2020, primarily due to the negative return for transport (-16.7 per cent) and in particular airports (-19 per cent).

While these sectors should be well positioned to bounce back once a vaccine becomes widely available, recovery could take longer for airports (as business travel will take longer to recover) and public transport, due to a higher proportion of people working from home.

Lockdowns have further accelerated awareness of car pollution, which supports the growing demand for electric vehicles (EVs) – particularly as governments are legislating to force earlier EV adoption. Greener public transport and EV-charging infrastructure should be major beneficiaries of this trend. EV charging is a fast-growing market with developing and diverse business models that can provide material opportunity, but do carry a wide range of return outcomes.

Electric vehicle charging is a fast-growing market with developing and diverse business models that can provide material opportunity, but do carry a wide range of return outcomes.

Insights for real estate investors

by George Fraser-Harding

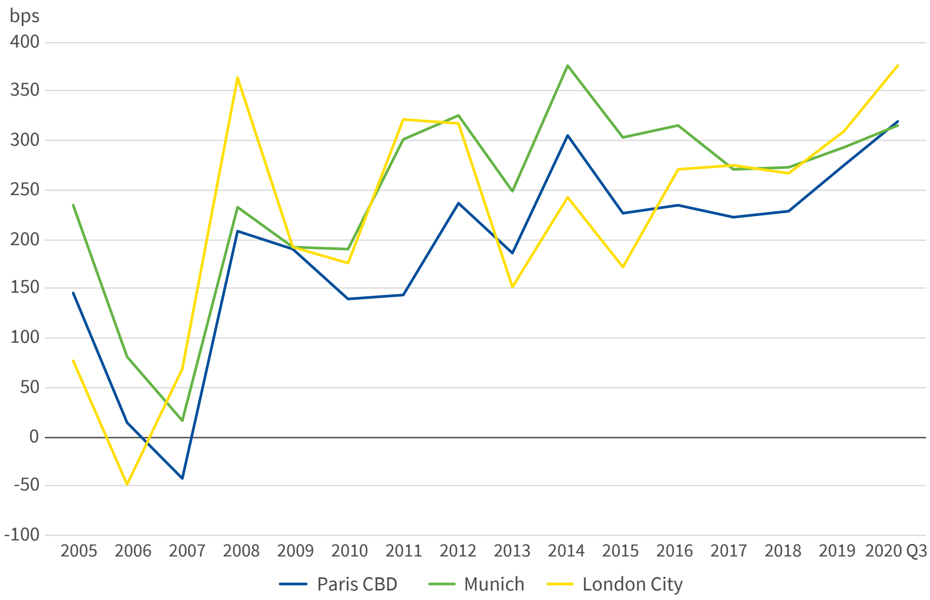
Notwithstanding Brexit risks, City of London office equivalent yields are around four per cent, a record high compared to ten-year gilts.

UK real estate more attractive than Europe

The past year has been one of diverging fortunes across real estate, with sectors like retail and hospitality hit hard, while the crisis provided a tailwind for logistics. Those sectors hit hardest have seen income eroded as retail tenants, for example, struggled to maintain rental payments. But even though the short-term occupier outlook is negative, the medium-term view is more encouraging, supported by a wide spread between ten-year government bond yields and initial property yields in continental Europe and UK real estate.

From a relative-value perspective, we believe the UK looks more attractive than Europe at this point in the cycle. This is driven by the Bank of England's monetary policy; gilt yields fell more than other European government bonds during 2020 and real estate yields have yet to catch up. Notwithstanding Brexit risks, City of London office equivalent yields are around four per cent, a record high compared to ten-year gilts, and show a significant margin to offices in Paris and core German cities, where yields are below three per cent.

Figure 11. **Prime office yield premium over government bond yields**



Source: Property Market Analysis (PMA), Quarterly Data: 2020 Q3.

The pandemic will accelerate structural changes

From home working to online shopping, it seems likely the pandemic will hasten significant structural changes. We expect to see greater differentiation of performance in each sector, driven by their exposure to these changes.

For example, the crisis will hasten the move towards e-commerce. People have shifted their spending online out of necessity or to avoid social contact and retailers are having to increase their e-commerce capacity to meet demand. Online shopping tends to be a sticky habit and the pandemic has accelerated the structural change already in play.

For the office sector across Europe, the pandemic has led to more flexible working practices, with homeworking becoming the default option. There have also been widespread reports of many tenants looking to offload their offices. Such developments are viewed as evidence of mounting structural challenges for the sector. But it is worth keeping in mind cyclical forces are also at play: in every economic downturn, occupiers seek to reduce real estate costs.

Despite the obvious challenges, when it comes to creating spaces for talent to come together and innovate, we believe offices in dense urban locations will remain the preferred option in comparison to other physical or virtual locations. Notably, patents per capita have been 20 per cent higher in metropolitan areas with twice the employment density than elsewhere.[4] Such clustering benefits are evident in most of Europe's leading office locations.

Post-COVID, cities with clusters of excellence will attract talent; in turn, this will stimulate growth and scale where we expect flexible buildings that attract staff to outperform.

Logistics outperformance to continue

Of traditional real estate sectors, logistics looks the most attractive on a risk-adjusted basis. This is driven by both cyclical and structural factors. As well as boosting e-commerce, the pandemic has focused minds on the need for resilient supply chains and the value of holding inventory.

While increasing automation, another trend accelerated by COVID-19, could lower the importance of being close to labour supplies, being within a short distance of consumers will continue to be essential. Indeed, with increased uncertainty about the location of production globally, focusing on logistics facilities that serve consumers is a more attractive option. Urban locations will continue to be relatively attractive, particularly given the boost the sector is enjoying from increased e-commerce.

With increased uncertainty about the location of production globally, focusing on logistics facilities that serve consumers is a more attractive option.

Increasingly, real estate investors are seeking to gain exposure to consumption trends through the logistics sector, as illustrated by strong compression in prime logistics. We believe the current capital re-allocation to the logistics sector is set to last and will be supportive of the sector in the medium and longer term.

Long-income real estate looks attractive

We expect rental growth of traditional real estate to be muted over the next five years, as vacancies have risen in 2020. Therefore, the inflation-linked rent characteristics that are typical of long-lease assets look relatively attractive. Moreover, traditional real estate investors are likely to face heightened capex risks to repurpose assets for changed occupiers needs, further increasing the benefit of long leases.

Our analysis also shows long-income real estate is well suited to leverage, as it benefits from both relatively secure income and returns, as well as the availability of cheap, long-term debt. For these reasons, long-lease assets can play an important role in traditional real estate portfolios.

Sustainability to drive dispersion of performance

With countries across Europe having committed to net zero emissions by 2050, decarbonisation of buildings has become essential. This is a monumental challenge; in the UK, buildings accounted for 17 per cent of emissions in 2019 and the Climate Change Committee recently estimated investment of £2.8 billion per year is needed to decarbonise commercial buildings.[5] Tenants are also becoming increasingly discerning of sustainability metrics; more sustainable buildings have the potential to not only reduce occupational costs but also attract tenants, which should lead to stronger rental growth and higher tenant retention rates.

However, real estate markets are not sufficiently pricing in differentials in buildings' sustainability metrics. We expect this to be a growing driver of dispersion in value and rental growth in the coming years.

4. Matching and Learning in Cities: Urban Density and the Rate of Invention (Carlino, Chatterjee & Hunt, 2005).
5. Climate Change Committee, "The sixth Carbon Budget, The UK's path to Net Zero", 2020.

Insights for long-income real estate investors

by Renos Booth

Pandemic highlights resilience of long income

The COVID-19 pandemic has created severe difficulties for real estate, with social distancing measures preventing assets from being used to their full potential and many tenants unable to pay rent. However, long-lease assets let to highly creditworthy counterparties have proven their resilience. Rent collection has been strong within long income and investors continue to benefit from rental growth due to the inflation-linked nature of rent reviews.

This defensiveness was evidenced by the performance of the CBRE Long-Income Index, which experienced a capital value decline of just -1.6 per cent in the first half of 2020, compared to -5.2 per cent for the MSCI UK Quarterly Property Index.[6]

Moreover, the capital value decline of long income was largely attributed to a small proportion of assets in highly impacted sectors with less creditworthy tenants; around five per cent of long-lease assets experienced capital value declines in Q2 of more than 30 per cent. This reiterates the importance of in-depth credit analysis on tenants and diversification for long-income investors.

Although social distancing measures are likely to ease during 2021 and the economic recovery to strengthen, corporate defaults are expected to remain elevated as government support is removed and because of higher leverage. As such, tenant credit quality will remain a significant driver of dispersion in the performance of long-income assets. Demand for liquidity from companies is likely to create continued opportunities for sale-and-leaseback transactions, but investors must remain selective.

With increasing competition, embrace complexity

Corporate defaults are expected to remain elevated as government support is removed and because of higher leverage. As such, tenant credit quality will remain a significant driver of dispersion in the performance of long-income assets.

We have seen an increasing number of investors recognise the attractiveness of the long-income sector in recent years. This is creating more competition for smaller assets, from both new funds and direct pension fund investors. As a result, larger assets can offer better value in many sectors.

However, increased demand from investors is still matched by new long-income assets from existing or future occupiers in search of funding. Companies are looking to strengthen balance sheets dented by COVID-19 through sale-and-leasebacks of offices or logistics facilities. Demographic trends over the coming years support a growing requirement for student accommodation and care homes. The pandemic has highlighted the lack of suitability of existing stock in both sectors and the benefits of modern, purpose-built facilities. There is also strong demand for ground rent funding in the hotel sector; although currently experiencing severe disruption, there are opportunities for long-term investors to source well-collateralised assets in resilient locations at attractive pricing.

Embracing complexity by either providing development funding of pre-let assets or off-balance sheet solutions can provide a return premium and the potential to source assets off market. This also gives an opportunity to structure deals to ensure the sustainability of rent for tenants and to better match investors' duration and inflation preferences. Development funding also allow assets to be well-tailored to the tenant and give investors greater influence over buildings' sustainability criteria, ensuring their relevance for the long-term and increasing the probability of tenants re-gearing at the end of their leases.

6. CBRE, "CBRE Long Income Index Results to Q2 2020", September 2020.

Inflation reform and risk

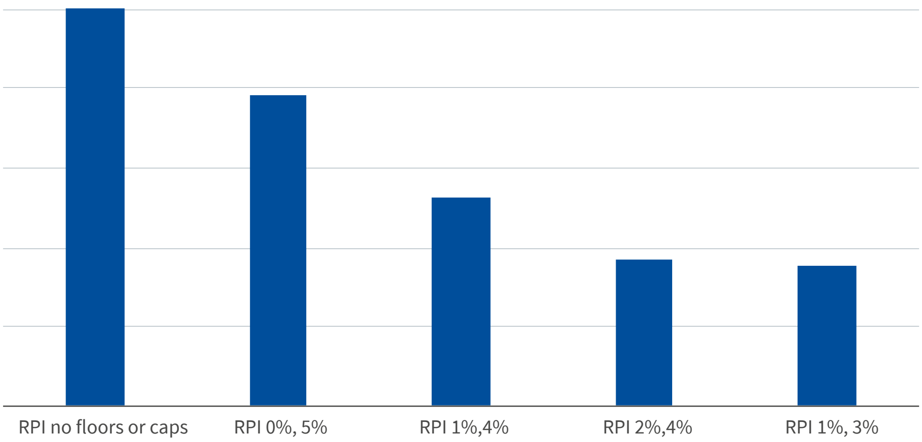
In November, the outcome of the UK RPI consultation was published, setting out the intention to bring RPI in line with CPIH from 2030. With CPIH being roughly one per cent lower than RPI, this has the potential to negatively impact the future rental streams of RPI-linked long-income assets. Whilst detrimental to holders of RPI-linked assets over the past 18 months, there is at least clarity on how to price inflation, removing a source of uncertainty. A growing proportion of new opportunities are linked to CPI or CPIH from the outset.

Although inflation looks set to remain suppressed in the short term, recent events have increased the risk of higher inflation over the long term. Governments have embraced fiscal policy as a means of boosting the economic recovery and the Federal Reserve has moved to a more flexible average two per cent target, rather than a fixed annual target, giving it more room to allow higher inflation for brief periods. Other central banks globally are likely to follow.

Therefore, the importance of investments that provide inflation protection has strengthened; long income is one asset class that can offer this. There are a variety of prevalent rent review mechanisms in the market offering differing levels of inflation linkage (see Figure 12). With heightened uncertainty, investors targeting the asset class for its inflation-protection characteristics should place greater value on assets with broad caps and floors on rent reviews.

Although inflation looks set to remain suppressed in the short term, recent events have increased the risk of higher inflation over the long term.

Figure 12. **Sensitivity of IRR to average inflation for income strips with different rent review mechanisms**



Note. We ran 5000 simulations for income strips with each rent review mechanism and assessed the beta of the full life IRR to average RPI for each.

Source: Aviva Investors, as at January 2021. For illustrative purposes only.
See Appendix for further information on the methodology used.

Value through asset management

As the long-income sector matures, asset management is becoming increasingly important. Leases are reaching their final years on some of the earliest assets acquired by long-income funds. These situations require engagement with tenants to re-gear leases. Investors with a diverse range of tenants may also be able to use these negotiations to unlock further opportunities off market.

Decarbonisation of buildings is an essential component of any net-zero pathway. One challenge for the real estate industry is that the benefit of capital investments, such as improving energy efficiency or installing solar panels, are recognised over time periods longer than typical lease lengths. This makes it unclear whether landlords will be compensated for these investments. However, long-income investors are well aligned to tackle this. Due to tenants' long-term occupation of buildings, they often have more interest in assets' sustainability criteria, which reduce energy costs. Landlords can provide these investments in exchange for lease extensions or higher rent, to the mutual benefit of investor and tenant.

Insights for private debt investors

by Zoe Austin

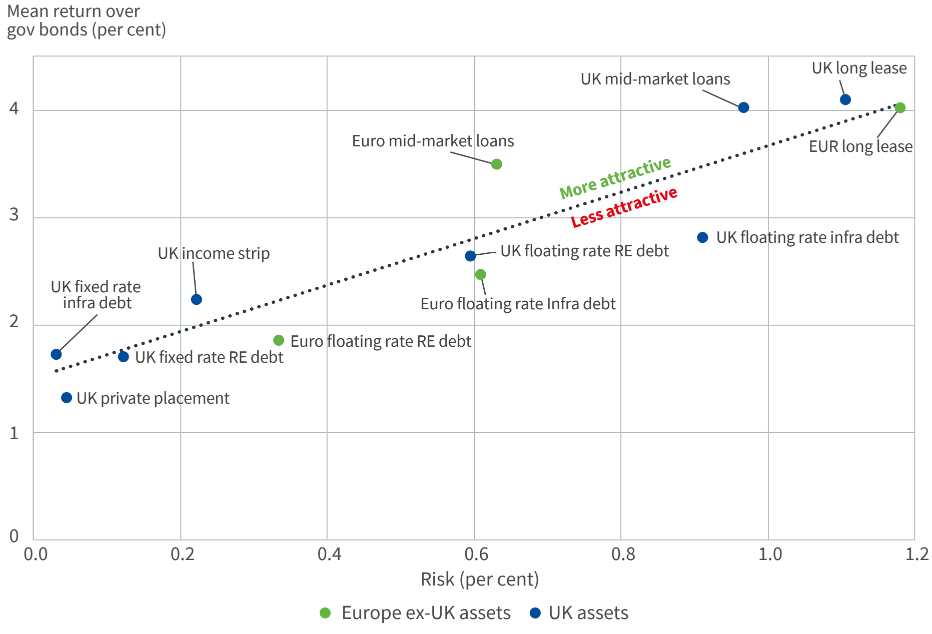
Against the backdrop of a benign credit environment, private debt has delivered strong relative performance over the last decade. The impact of the pandemic will vary by asset class and sector: despite a projected increase in defaults, mid-market loans should continue to outperform on a risk-adjusted basis, while infrastructure debt should exhibit low volatility. These features make private debt a useful diversifier in portfolios, whether targeting increased returns or greater resilience.

Mid-market loans remain attractive

At an overall level, the asset class remains attractive on a risk-adjusted basis, with higher mean returns for similar levels of risk.

Defaults are more likely in the sectors most affected by social distancing measures, with the greatest impact in sub-investment-grade debt. Mid-market loans, generally rated BB to B, are expected to see the highest credit losses of the strategies presented in this document. However, at an overall level, the asset class remains attractive on a risk-adjusted basis, with higher mean returns for similar levels of risk, as the graph below shows.

Figure 13. **Full life return versus risk**



Source: Aviva Investors, as at January 2021. For illustrative purposes only. See Appendix for further information on the methodology used.

This is largely driven by the higher margins required by investors in private corporate debt to compensate for the increased risk of default. Meanwhile, these loans are less exposed than infrastructure loans to interest-rate volatility due to their shorter duration.

Competing forces make it challenging to model expected levels of default: on the one hand, multiple lockdowns are likely to place further stress on company balance sheets; on the other, massive monetary and fiscal support continues to cushion the impact of this recession.

While our central scenario is for an increase in defaults similar to that experienced during the global financial crisis, corporate debt returns could reduce further if government and fiscal support is withdrawn prematurely, we see further lockdowns or if there are delays to the rollout of vaccines. In addition, credit risk cannot be fully diversified in individual portfolios, exposing them to higher loss potential than the sector as a whole. We expect to see greater differentiation in portfolio performance in future, with loans to businesses in the hospitality, retail and transport sectors particularly exposed.

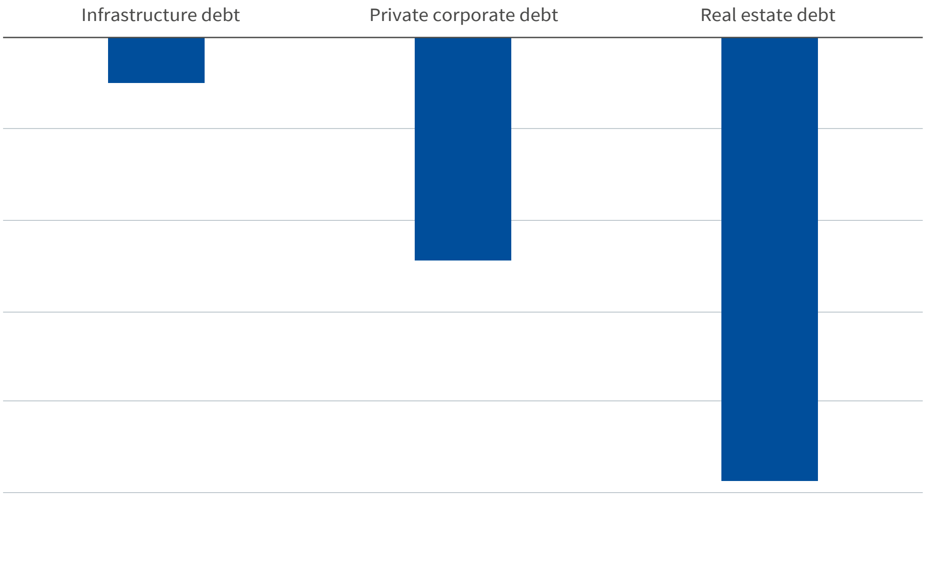
Infrastructure debt well positioned

Infrastructure debt and real estate debt also face challenges through this pandemic, although the extent of this is largely dependent on sector. Despite stresses in the transport sector, infrastructure debt is projected to be more resilient. In the first half of 2020, infrastructure securities experienced fewer COVID-related downgrades than non-financial corporates and, over the longer term, ratings are 61 per cent less volatile for infrastructure than corporate debt.[7]

Despite stresses in the transport sector, infrastructure debt is projected to be more resilient.

The crisis has also led to strong demand for assets such as subsidised renewables, data transmission and storage, as well as utilities as people spend more time at home. Furthermore, defaults and recovery rates in infrastructure debt are less sensitive to volatility in GDP relative to real estate or corporate debt. Based on our assumptions, the credit loss impact of the current crisis is projected to be around five-to-ten times lower for infrastructure debt relative to real estate debt (see graph below).

Figure 14. **Impact of shock on credit loss**



Source: Aviva Investors, as at January 2021. For illustrative purposes only.
See Appendix for further information on the methodology used.

7. Infrastructure default and recovery rates, 1983-2019, Moodys investors services, published Oct 2020.

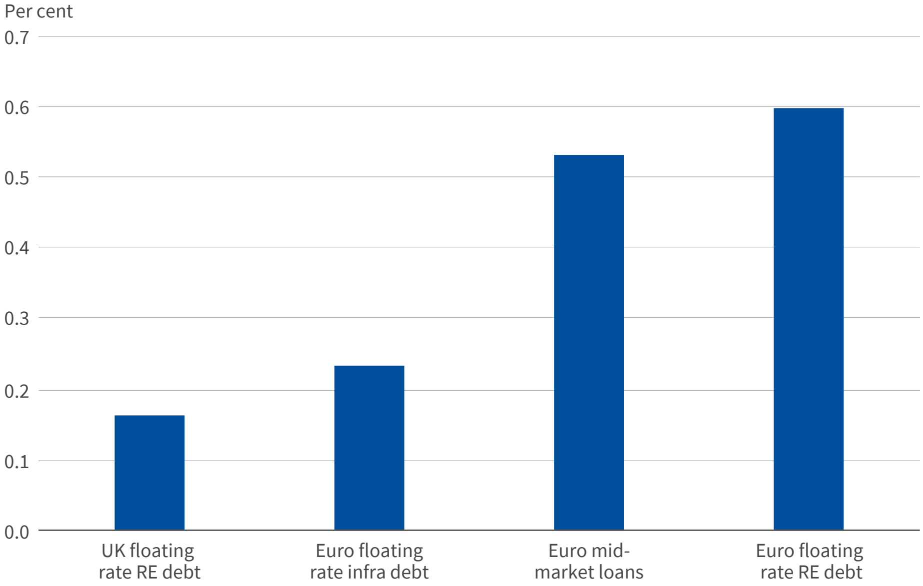
While lower rates have reduced floating-rate debt returns, this is mitigated by the increased use of floating-rate floors in private debt transactions.

Benefits of floating-rate debt eroding

For all debt asset classes, we find floating-rate assets remain attractive relative to fixed rate. Long-duration fixed-rate debt is modelled as investment grade or equivalent, and any increase in credit losses due to COVID-19 is more than compensated for by the increase in margins.

While returns are less attractive than last year due to rates remaining lower for longer, this is mitigated by the increased use of floating-rate floors in private debt transactions, resulting in an uplift to mean returns of 15-60 basis points, as Figure 15 shows. At the same time, while floating-rate debt continues to produce higher average mean returns relative to fixed-rate debt, that differential is lower than last year.

Figure 15. **Impact of floating-rate floor**



Source: Aviva Investors, as at January 2021. For illustrative purposes only.
See Appendix for further information on the methodology used.

Appendix 1: The real asset universe

The real asset universe is vast, and includes real estate, infrastructure and private debt. Other than property, aggregate market data is not available to model the entire real asset sector. We have modelled representative portfolios within each sub-sector, as outlined below.

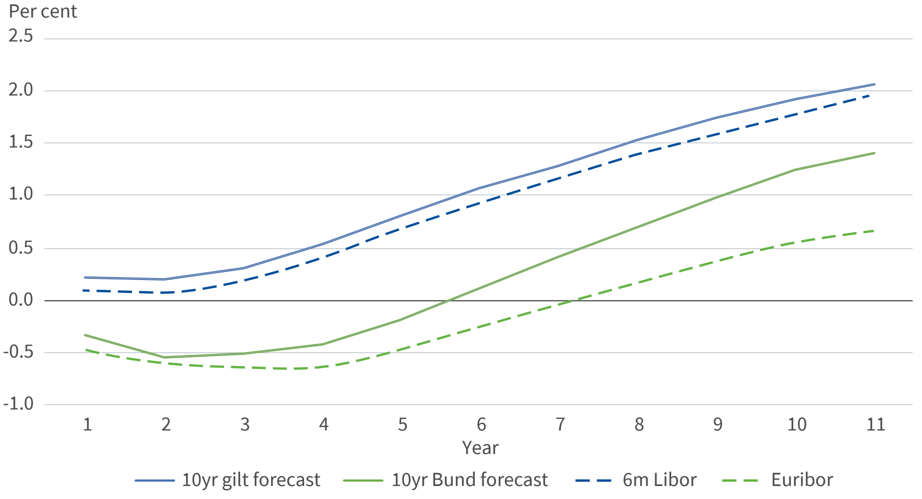
Figure 16. **Asset classes modelled for this report**

	UK	Europe ex-UK	
Real estate	UK institutional real estate. We have separately modelled office, retail and industrial properties.	European prime institutional real estate. Separate model provided for office, retail and industrial properties.	Equity
UK rooftop solar	Brownfield rooftop solar portfolio in the UK supported by Feed in Tariffs.		Equity
UK utility scale wind	Brownfield, onshore utility scale wind portfolio in the UK benefitting from Renewable Obligation Certificates.		Equity
UK medium scale wind	Brownfield, onshore medium scale wind portfolio in the UK benefitting from Feed in Tariffs.		Equity
Greenfield EFW	New build energy-from-waste plant.		Equity
Greenfield fibre	New build rural broadband network.		Equity
Long lease	Real estate let to investment-grade tenants on 20-year inflation-linked fully-repairing and insuring leases.	Real estate let to investment-grade tenants on 15-year inflation-linked leases.	Equity
Income strips	Inflation-linked 30-year income strips with high quality tenants (with no terminal value).		Equity
Senior secured fixed-rate infra debt	Fixed-rate senior-secured debt of investment-grade quality with 25-year maturity backed by infrastructure.		Debt
Senior secured fixed-rate real estate debt	Fixed-rate senior-secured debt of investment-grade quality with 15-year maturity backed by commercial real estate.		Debt
Senior secured floating-rate infra debt	UK senior-secured loans backed by infrastructure (crossover credit quality, 15-year maturity).	Senior-secured loans to western European borrowers backed by infrastructure (crossover credit quality, 15-year maturity).	Debt
Senior secured floating-rate real estate debt	UK senior-secured loans backed by commercial mortgage (BBB credit quality, five-year maturity).	Senior-secured loans to western European borrowers backed by commercial mortgages (BBB credit quality, five-year maturity).	Debt
Private placement	Covenanted fixed-rate debt (single-A credit quality, twenty-year maturity).		Debt
Mid-market loans	Covenanted loans to small and mid-sized corporates (single-B credit quality, seven-year maturity).	Covenanted loans to small and mid-sized corporates (Single-B credit quality, seven-year maturity).	Debt

Appendix 2: Central scenario assumptions

When modelling returns for each asset class, we ran different simulations around a central scenario. Our central macroeconomic assumptions are presented below.

Figure 17. **Interest rates**



Source: Aviva Investors, as at January 2021.

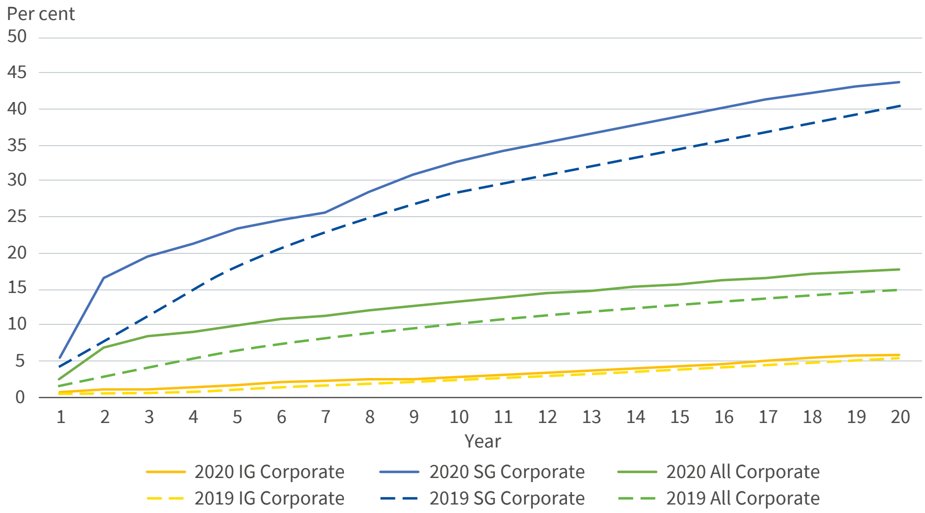
Inflation

UK RPI inflation to rise to three per cent over the next eight years. We have also factored a highly probable reform of RPI to align it to CPI in 2030. UK CPI inflation to gradually increase to two per cent and Euro CPI to 1.9 per cent.

Defaults

Future corporate default rates have been scaled up based on the cumulative default history for loans originated in the global financial crisis, using the 2008 cohort of Moody's corporate default statistics. We applied the same scaling to commercial mortgages. Given the lower sensitivity of infrastructure to recessions, we scaled up infrastructure defaults by only 30 per cent of that applied to corporates.

Figure 18. **Assumed future default probability**



Source: Aviva Investors, as at January 2021.

Further reading

Real Assets Study 2020

Net zero pathway: Our strategy to achieve net zero by 2040

Real assets and net zero: Now for the hard part

Remote working is on the rise, but the office remains indispensable

Fit for the future: Unboxing ESG in real assets

Fibre broadband: The need for speed

How to build back better, greener and faster: A 10-point plan for UK infrastructure

Logistics: 'Last mile' or further to run?

When equity becomes debt: The untapped potential of amortising-lease real estate

The case for private debt

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