AVIVA INVESTORS
THE CASE FOR ALTERNATIVE INCOME: PRIVATE ASSETS AND THE ILLIQUIDITY PREMIUM

AVIVA INVESTORS

Contents

INTRODUCTION

Assets not listed on public markets are attractive in the current low-yield environment, as pension schemes, insurance companies and other long-term investors are challenged to meet their return requirements through traditional investment strategies. Alternatives include infrastructure debt, private corporate debt, real estate finance, structured finance and infrastructure equity.

Standing outside conventional correlation matrices, valuations of alternatives vary in how closely they move in tandem with traditional assets, or the credit cycle. A growing number of investors are looking to these assets to provide higher yields than liquid alternatives.

Selected carefully, the best alternative assets can:

- Generate illiquidity premia, defined as higher returns than those available from investing in a public asset of broadly similar credit quality
- Improve portfolio diversification
- Contribute to downside protection
- Generate predictable cash flows, which can form part of a cash flow-driven investment approach
- Give investors greater control over assets through tailored legal structures and covenants

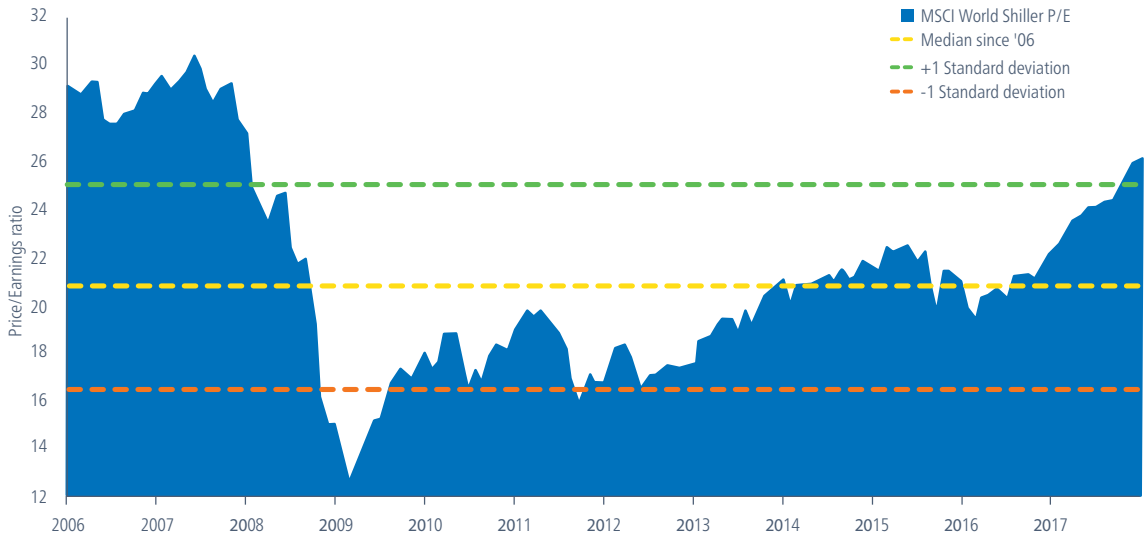
The case for alternative income explains how incorporating alternative income assets can help enhance risk adjusted returns in a diversified portfolio. It looks at how illiquidity premia can be measured and monitored, and how the unique characteristics of alternatives can be exploited as a competitive advantage.

While holding alternatives will introduce additional complexity and illiquidity into a portfolio, long-term investors are well placed to manage these risks and reap the rewards of alternative income.

MEETING INVESTMENT OUTCOMES WHEN MARKET BETA WON'T DO

Since the global financial crisis, the trend in asset returns has been generally positive across a range of fixed income and equity markets. This has primarily been a result of rising valuations, fuelled by loose monetary conditions and mitigation of systemic risks, rather than improving fundamentals. Irrespective of whether current valuations are sustainable or the methodology for measuring them, valuations of a wide range of asset classes are near their highest levels for many years (see Figure 1, below). As the global economy normalises and the period of extraordinary monetary easing finally comes to an end, asset returns can be expected to be lower than they have been in the recent past.

Figure 1: Rising valuations have driven returns in global equities



Source: Thomson Reuters Datastream, as at 29 December 2017.

Meanwhile, in most developed geographies, high quality government bond yields are low and expected to stay that way. German pension funds are suffering from the lowest sovereign yields among all developed economies. In the UK, yields are modestly higher, but around 75 per cent of UK schemes in the Pension Protection Fund's universe are in deficit.[1]

In the US, the situation is not substantively different: corporate pension funding is estimated to be around 85 per cent.[2]

With lower prospective returns from sovereign bonds and equities, many investors are looking to alternative income assets to help meet their return objectives.

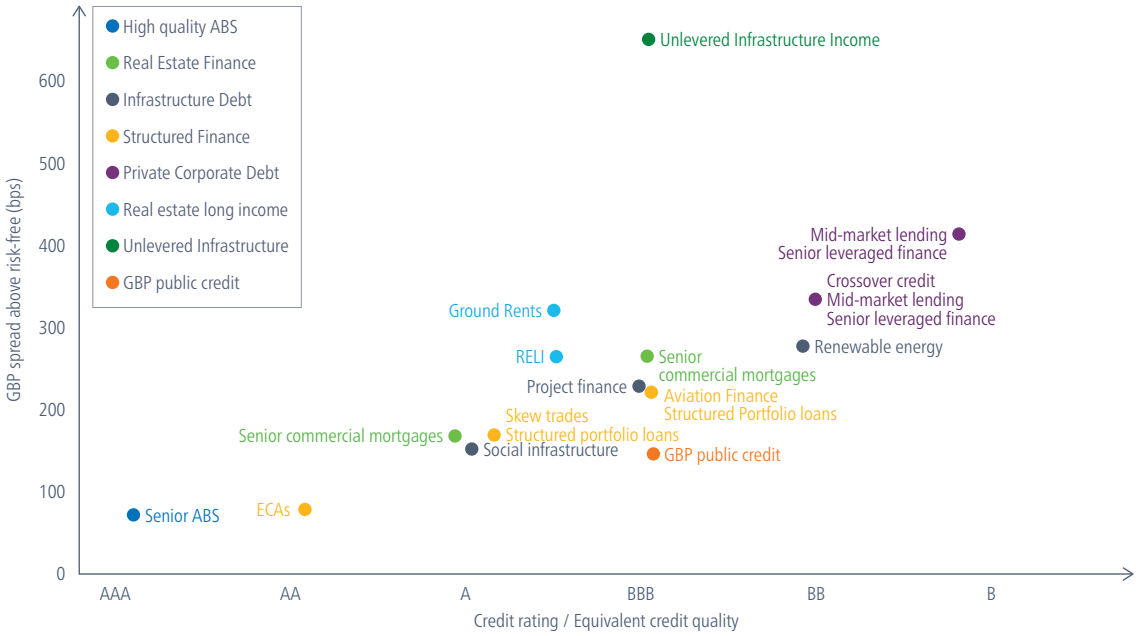
[1] UK Pension Protection Fund, as at 30 April 2017.

[2] Milliman Pension Funding Index, as at 31 March 2017.

NEW WAYS FOR LONG TERM INVESTORS TO GENERATE SECURE INCOME

Alternative income assets are diverse but share some key characteristics. They are income-producing, not listed on a stock exchange or traded on public markets, and may offer premia over comparable listed credit.

Figure 2: Seeking alternative income within the private asset universe



For illustrative purposes only. Source: Aviva Investors, as at 29 December 2017.

> *"With lower prospective returns from sovereign bonds and equities, investors are calling on alternative income to help meet their return objectives."*

CHARACTERISTICS AND POTENTIAL BENEFITS OF SIX ALTERNATIVE ASSET CLASSES

INFRASTRUCTURE DEBT

Loans to finance the construction of long term facilities (e.g. buildings, roads, power supplies) that underpin economic activity.

Can generate long-term stable returns, with a proven track record of low defaults and higher recoveries than listed corporate debt indices.

INFRASTRUCTURE EQUITY

Low carbon and social infrastructure financing across sectors such as wind, solar, energy efficiency and biomass.

Can offer attractive risk profile in line with investment grade debt. High quality counterparts contribute to largely predictable returns.

STRUCTURED FINANCE

Bespoke opportunities in asset financing, corporate financing and public sector financing.

Can offer longer maturity opportunities in funding government organisations, asset leasing and collateralised swaps with strong counterparties.

PRIVATE CORPORATE DEBT

Private placements and bilateral loans from a variety of issuers, from investment grade borrowers to privately owned mid-market corporates.

Can offer diversification benefits away from debt issued in public markets.

REAL ESTATE FINANCE

Loans to assist in the purchase or refinancing of commercial real estate (e.g. offices, retail, industrial, logistics, leisure, healthcare facilities).

Can offer diversification benefits away from typical corporate bond issuers, with the added security of a physical asset as collateral.

REAL ESTATE LONG INCOME

Long-lease commercial real estate let to strong tenants in the public sector or highly rated corporates; ground rents.

Can offer long-term, largely predictable cash flows. Inflation-linked rent reviews or fixed uplifts help maintain the real value of distributions.

USING UNIQUE CHARACTERISTICS AS A SOURCE OF COMPETITIVE ADVANTAGE

ILLIQUIDITY: FRIEND OR FOE?

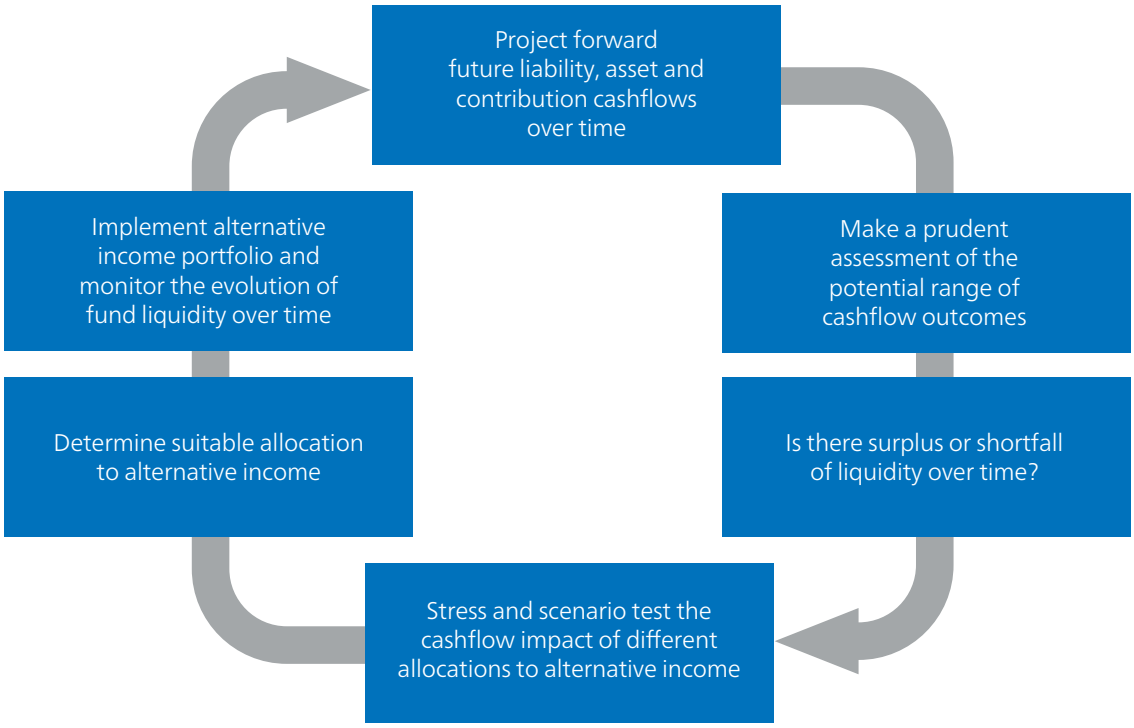
Alternatives can be accessed selectively in the search for income, but they have varying degrees of liquidity. Given their private and idiosyncratic nature, it may be difficult to find willing buyers during the lifetime of an asset without a meaningful reduction in value, particularly over short timescales and in volatile phases. With that in mind, once invested, assets will typically be held to maturity.

Investors in alternative income need to accept a degree of illiquidity. Although there are risks for forced sellers in down markets, a long term investment horizon and a tolerance for illiquidity can be key competitive advantages.

Assessing the cash flow impact of different allocations to alternative income through extensive stress and scenario testing can help ensure that any exposures are set within appropriate tolerances.

"A long term investment horizon and tolerance for some illiquidity can be key competitive advantages."

Figure 3: Assessing and managing appetite for less liquid assets



Source: Aviva Investors. For illustrative purposes only.

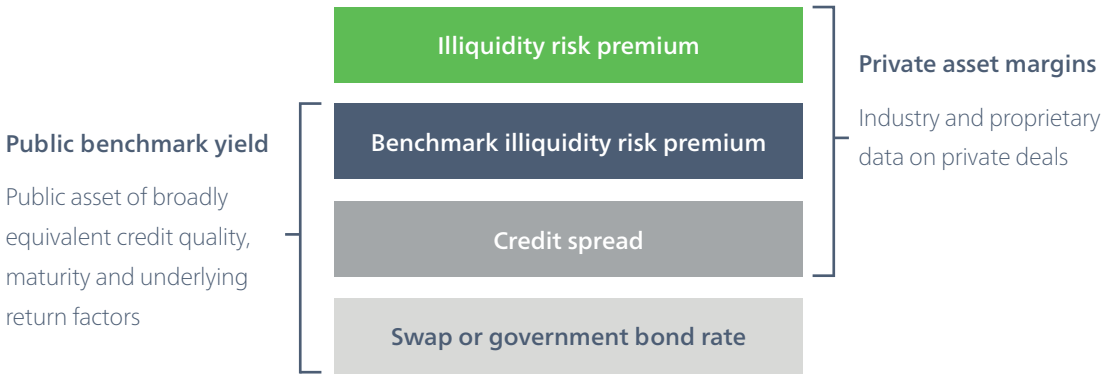
Illiquidity premium: expected higher return from investing in a private asset rather than a public asset of broadly similar credit quality.

DEFINING AND MEASURING THE ILLIQUIDITY PREMIUM

The illiquidity premium is the additional expected annual return that can be achieved from investing in an alternative income asset, relative to a public asset of broadly equivalent credit quality. While most alternative income assets do not have a close parallel in public markets, a pragmatic approach can give a deeper understanding of how an asset is expected to perform, both in absolute terms and relative to other assets.

When comparing private deals to a public benchmark, each deal spread can be adjusted to give a reasonable comparison with the benchmark's characteristics. Adjustments are derived from data sets of spreads on corporate non-financial bonds with different ratings profiles, as described in the example on page 9. Typically, the public asset used as a comparator is not as liquid as a risk-free asset, particularly since liquidity has diminished in many asset classes since the financial crisis.

Figure 4: Determining illiquidity premia



Source: Aviva Investors. For illustrative purposes only.

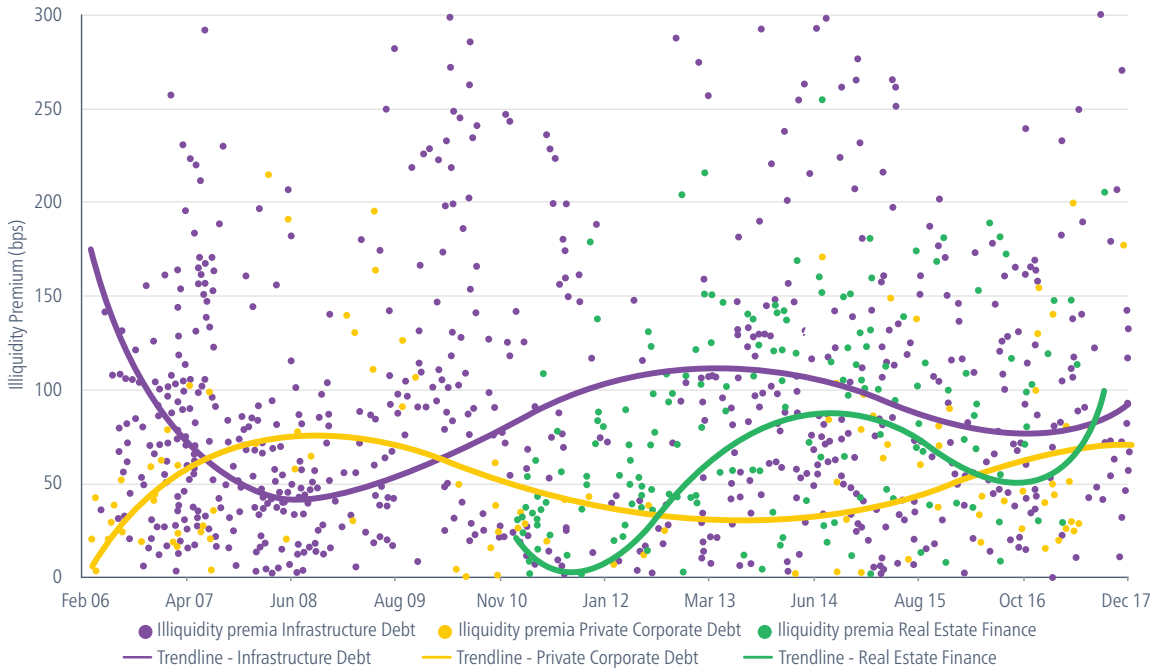
ILLIQUIDITY PREMIA AVAILABLE TODAY

Using the methodology described, the illiquidity premia available across the major sectors of alternative income can be tracked. Although there is a significant dispersion of premia across individual assets, there are broad trends that can be inferred. These suggest opportunities to target illiquidity premia within and between asset classes – but few investors choose to monitor them.

"There may be opportunities to target illiquidity premia – but few investors monitor them."

Figure 5: Time varying illiquidity premia

- Significant dispersion of illiquidity premia across individual transactions
- Few investors explicitly assess and target illiquidity premia
- Broad trends can be inferred from trend lines



Note: Axes have been truncated above 300bps and below 0bps.

Source: Aviva Investors, as at 29 December 2017.

EXAMPLE: CALCULATING ILLIQUIDITY PREMIA IN EUROPEAN INFRASTRUCTURE DEBT

To calculate and monitor the illiquidity premia available from various infrastructure debt transactions, rated and unrated euro and sterling deals from private issuers were assessed. In the example, deals across the European Union between 2005 and 2016 were compared against the Bank of America Merrill Lynch Sterling Utility Index (GBP) and Bank of America Merrill Lynch Euro Utility Index (EUR). As the majority of deals had a BBB credit rating, in line with the liquid benchmarks, there was no need for rating adjustments. However, both benchmarks were adjusted to reflect lower recovery expectations of corporate bonds versus project finance loans, using Moody's project finance and corporate bond recovery rates. The findings are charted in Figure 5 above.

In infrastructure debt, for example, our research shows that average illiquidity premia of between 50 and 200 basis points were available between 2005 and 2016 (illustrated by the purple trend line in Figure 5.) Premia fell in the financial crisis, as credit spreads widened in public markets, before increasing again as private asset pricing adjusted. While the trend over recent years has been for illiquidity premia to reduce, significant opportunities persist.

Strictly speaking, any premium from investing in alternatives may not reflect a reward purely for taking additional illiquidity risk. Other factors may also drive the premium, including complexity, which might reduce investor appetite relative to more familiar assets; the ability to source bilateral deals; regulatory treatment, for example, eligibility for favourable Solvency II treatment for an insurer; reputational risk; as well as other supply and demand dynamics.

SENSITIVITY OF ILLIQUIDITY PREMIA TO DEVELOPMENTS IN PUBLIC MARKETS

The extent to which pricing tracks public benchmarks and the speed at which spreads adjust as market conditions change varies across asset classes. For instance, private corporate debt tends to adjust faster than infrastructure debt to spread widening due to its higher liquidity. So although alternative income assets may offer attractive returns relative to traditional listed assets, they are not immune to the factors that influence yield dynamics in public markets, or supply-demand imbalances.

That suggests a need to take a flexible approach to portfolio construction; identifying assets from a range of sectors that can collectively contribute to meeting investors' long-term requirements. It could mean monitoring and tapping multiple alternatives markets simultaneously, including infrastructure debt, private credit and real estate finance.

Given each alternative income asset type has diverse drivers of return and their corresponding listed markets also move largely independently, liquidity premia opportunities can be volatile. Detailed knowledge that spans a range of alternative income markets is necessary to identify and exploit changing opportunities across diverse markets.

"Private corporate debt tends to adjust rapidly to spread widening, faster than infrastructure debt."

ALTERNATIVE INCOME | TAKING A DYNAMIC APPROACH

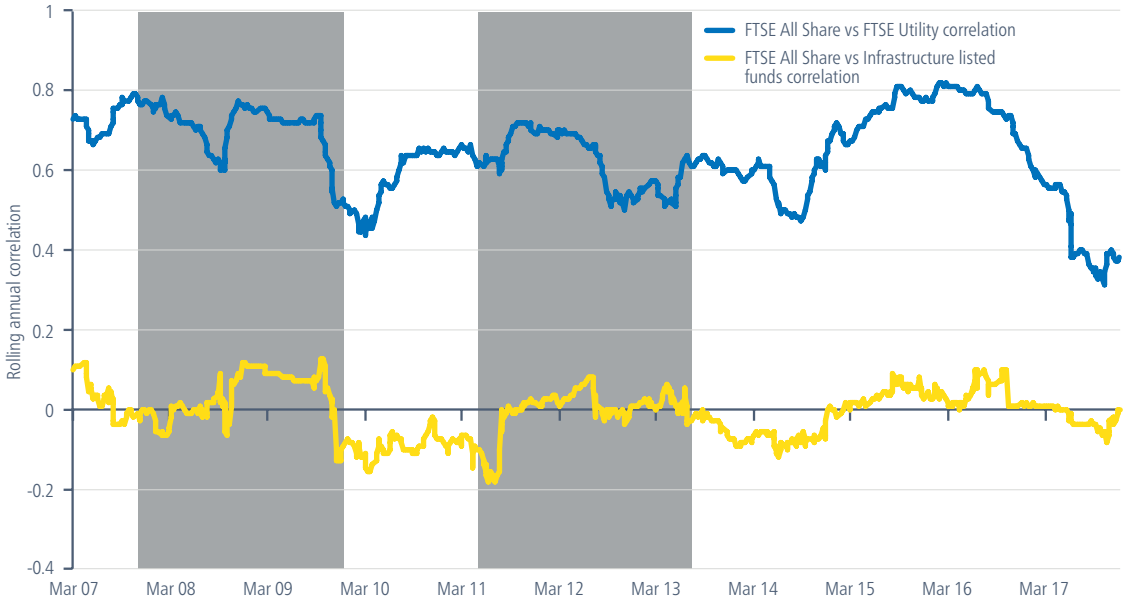
Opportunities in alternatives are dynamic. In early 2017, the fallout from the reduction of subsidies in some parts of the renewable energy market, including wind, solar and biomass, created opportunities for both debt and equity investors; the increasing capital cost of derivatives for banks created opportunities in swap repacks; and opportunities emerged in UK medium-term commercial mortgages. The ability to look across and through alternative asset classes for relative value opportunities can help meet specific investment outcomes.

IMPROVING PORTFOLIO DIVERSIFICATION

Some alternatives have characteristics that can contribute to greater stability of returns across the economic cycle. Including infrastructure equity in a diversified portfolio can be advantageous from a diversification perspective, for example; particularly if the deal structure encompasses an essential service, supplied in a market with limited competition.

Comparing the past performance of an illustrative basket of infrastructure equity funds[3] and the wider UK equity market average (as measured by the FTSE All-Share Index) shows low correlation with UK equities through both positive and negative credit cycles. Correlation remained close to zero during years of low or negative growth (highlighted by the grey bars in the illustration below), while the correlation between the FTSE Utilities Index and FTSE All-Share oscillated between 0.4 and 0.8.

Figure 6: Diversification benefits from holding infrastructure equity



Source: Bloomberg and Aviva Investors, as at 22 December 2017.

[3] Based on a basket of funds including HICL Infrastructure Company Ltd., International Public Partnerships Ltd., GCP Infrastructure Investments Ltd. and John Laing Infrastructure Fund, weighted by fund size, compared with the FTSE All-Share and FTSE Utilities indices from 28 March 2006 to 21 October 2016. Source: Bloomberg, as at 21 October 2016.

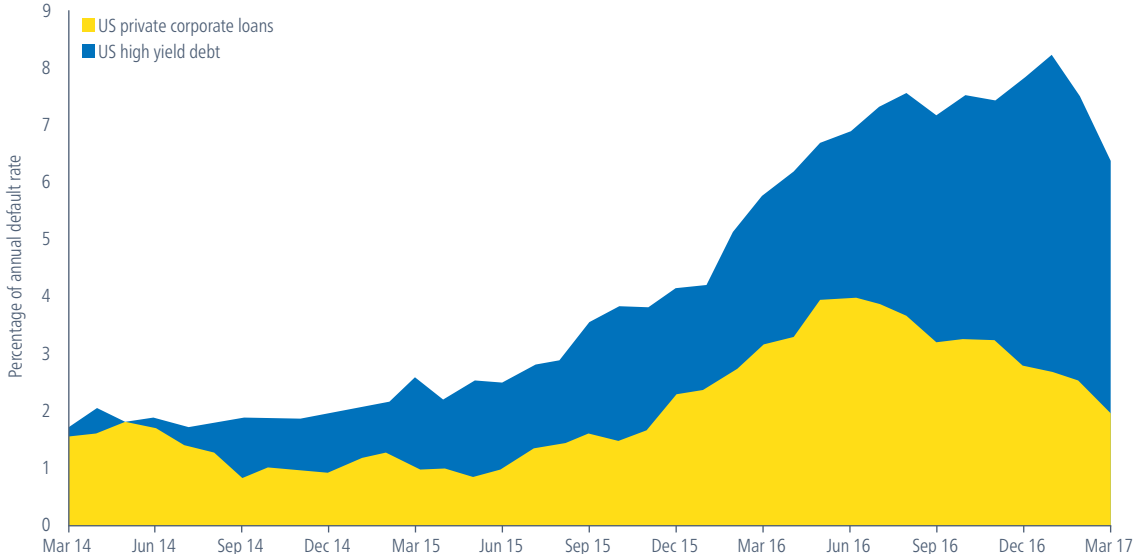
When seeking diversification opportunities, it is important to recognise that access to opportunities can be much more extensive via private rather than public markets in some asset classes. In infrastructure debt, for example, the public market has greater trading volume overall, but new issuance is typically limited to a small number of issuers, mainly in utilities and transport. The European private debt market has had around three times as many issuers as public markets in the past decade;[4] many opportunities have simply not been available elsewhere.

GIVING DOWNSIDE PROTECTION

Private assets may be able to contribute to the resilience of investment portfolios. In the past, US private corporate loans have tended to have notably lower default rates than high yield debt, as shown below. In 2017, the average high yield default rate was over six per cent; more than three times higher than that for private corporate loans (see Figure 7).[5] Although the differential is partly explained by specific conditions in the US high yield energy and commodity sectors, the broader trend has been shown to hold over longer timescales.

Following default, recovery rates for secured corporate loans have tended to compare favourably with unsecured bonds too. These features imply lower overall loss rates for holders of private corporate debt, which can contribute to patterns of smoother returns.

Figure 7: Default rates from US private corporate loans compare favourably with high yield debt



Source: Moody's Monthly Default Report, as at March 2017.

Infrastructure project finance loans also hold up well when compared to the wider bond market (see Figure 8), with better recovery after default, better recovery in downturns and lower correlation with GDP.

[4] Issuers of European infrastructure debt since 2007. Source: Bloomberg, as at November 2016 .

[5] Moody's Monthly Default Report, as at March 2017.

Figure 8: Recovery after default, recovery in downturns and correlation with OECD GDP growth

	Annual recovery rate (Ave. 1992-2014 (%))	Recovery in downturn (2001-2002 & 2008-2009 (%))	Correlation with GDP
Project finance loans	80%	84%	0.1
All bonds	43%	30%	0.28

Source: Moody's Default and Recovery Rates, OECD, as at 31 December 2015.

"Inflation-linked income from long-lease real estate can be helpful for liability matching."

GENERATING PREDICTABLE CASH FLOW

While alternative income assets carry credit risk, they can help deliver predictable cash flows. These characteristics can provide greater certainty in investment outcomes, and may be particularly useful as part of a cash flow driven investing (CDI) approach. Today, there is a strong case for CDI, targeting predictable returns at higher yields, while diversifying portfolios and drawing on a wide range of return premia.

Bond and loan assets, primarily investment grade or equivalent, are suitable in this context. The inflation-linked income streams offered by long-lease real estate can be helpful for investors with liabilities to match in real terms, as can income from infrastructure assets that is not dependent on the volume of usage or market pricing.

Assets which generate income that is not predictable – such as equity dividends, sub-investment grade credit, infrastructure assets with cyclical demand or dependency on energy prices – can play an important role in portfolios, but cannot be relied upon for a CDI approach.

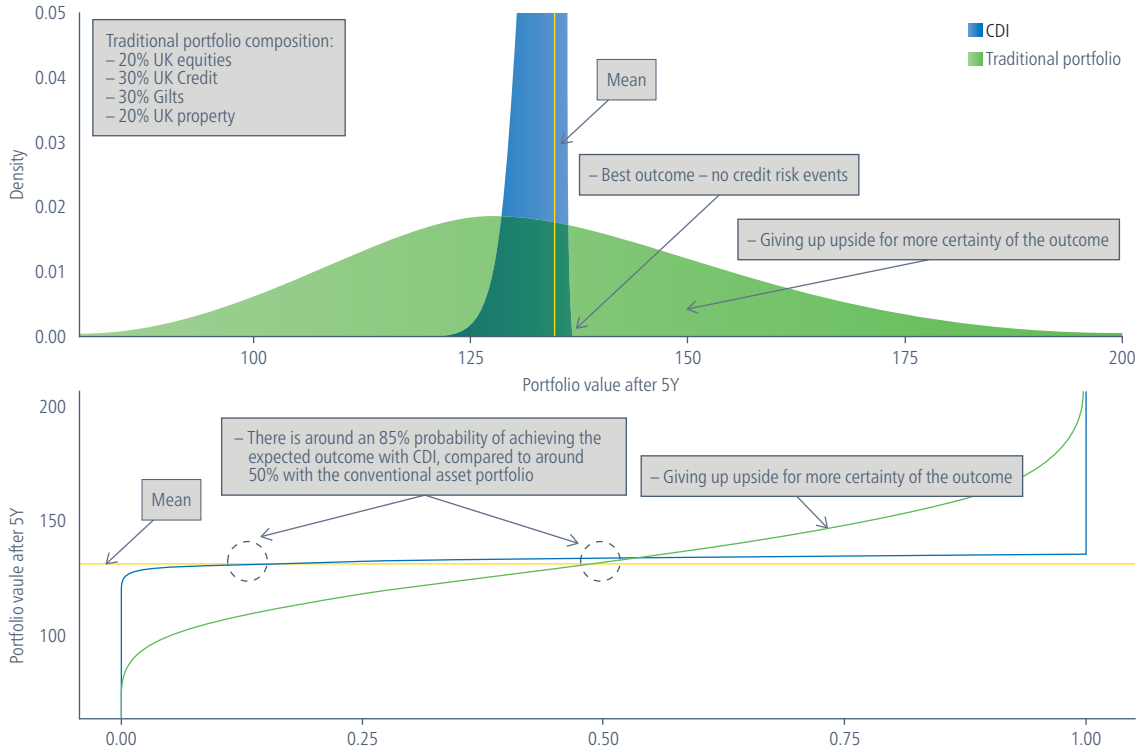
The way in which alternatives can contribute to greater certainty can be illustrated by comparing potential outcomes from a traditional UK portfolio (consisting of 30 per cent gilts, 30 per cent credit, 20 per cent property and 20 per cent equities) with a CDI approach, which targets similar expected return and utilises a range of private assets with largely predictable income streams, is illustrated in Figure 9.

The possible outcomes for an initial investment of 100 after five years are illustrated on page 14. The traditional portfolio has a much wider range of outcomes, with potential underperformance represented in the left tail and an area of outperformance on the right side of the distribution.

After five years, there is a cumulative probability of around 50 per cent that the desired investment outcome will be exceeded. Conversely, a CDI approach narrows the range of outcomes to cluster around the mean. The likelihood that the expected outcome will be achieved is significantly higher (around 85 per cent), where the increase is driven by the different shape of the distribution.

Figure 9: Alternative income can contribute to greater certainty of investment outcomes

Expected value of investment of 100 after 5 years: traditional portfolio vs pure CDI*



For illustrative purposes only.

Source: Aviva Investors, Bloomberg, as at 29 December 2017.

*The traditional portfolio was simulated based on the realised historical distribution over the last decade. The CDI portfolio distribution was calibrated to have the same expected return, with the shape of the distribution reflecting an indicative range of outcomes for typical diversified portfolio of secure income assets. Portfolio value axes have been truncated above 200 and below 70. Probability axis has been truncated above 0.05.

GIVING INVESTORS GREATER CONTROL

By definition, less liquid private assets have limited opportunities to be sold before their maturity without incurred undesirable additional costs. As such, a thorough credit assessment and structuring transactions with appropriate protections at origination are critical in ensuring the best financial outcomes.

Unlike public markets where asset terms tend to be standardised, an alternative income manager has flexibility in how the legal framework, covenants and structure are set out. Expertise, experience and 'market clout' are key determinants in the investment outcome. Since there is limited standardisation in the structure and legal terms of private loans, for instance, experience and a strong negotiation position (as an established provider of finance) allow an investor to introduce investor protections such as covenants to contribute to the security of returns.

"A CDI approach including alternatives can help achieve specific investment outcomes."

CONCLUSION

Investors seeking to fund long term liabilities are increasingly turning to alternative assets to complement traditional investment strategies. The ability to look through and across a number of asset classes simultaneously – from secure real estate long leases to opportunistic structured finance transactions – has distinctive advantages, as return drivers and illiquidity premia change. Investment solutions built from illiquid components can directly enhance the bottom line.

However, managing opportunities in private markets where access to information is a key differentiator takes experience and skill. Suitable resources and experience must be devoted to understanding risk characteristics, then structuring and managing assets throughout their lives. With robust controls in place, private assets can play an important role in delivering higher yields and contributing to attractive risk adjusted returns.

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