# Cash-flow driven investing

*Certainty of return*

*John Atkin | Jon Exley | Chetan Ghosh | John Greaves*
*Julien Halfon | Kate Mijakowska | Giles Payne*

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## Cash-flow driven investing: Certainty of return

A final salary pension scheme pursuing a cash-flow driven investing (CDI) strategy is a sign of maturity, of independence and that it is standing on its own feet.

Its sponsor has most probably stopped helping to boost its liquidity, so trustees are relying on the scheme's investment portfolio to meet their obligations.

This focus on generating regular targeted cash-flow can give trustees a degree of certainty that they will be able to pay their members' benefits on time and in full, which is why pension schemes exist. For many, it is a more attractive proposition than the alternative, which is to sell assets.

Investing to generate cash to pay members benefits is not a new concept, yet there is more to CDI than meeting next month's payments. It also helps relatively well-funded mature schemes to position their portfolio towards its endgame, which could be a buy-out or joining a consolidation fund.

CDI has become more interesting to market watchers thanks to government debt and investment-grade corporate bonds offering depressed yields. Schemes are taking more risk as they search for alternative assets that could provide the regular cash returns that they need.

An additional benefit of this strategy is that it diversifies portfolios through generating returns from various areas of the economy, such as lending directly to companies, investing in private businesses and property as well as roads, GP surgeries and wind farms.

However, trustees will probably need to hold a certain level liquid assets, such as gilts and corporate bonds, as the endgame approaches to attract an insurer to take the scheme off their hands.

It sounds straightforward, but large insurers have added an additional layer of complexity to the strategy. They are pitching for same assets and the competition has seen returns fall in some areas while risks rise as investors fight to secure assets by agreeing less stringent terms. Direct lending is one such example where the term 'cov-lite' can be typically mentioned.

So CDI throws up many issues for the schemes using it to achieve an outcome. To debate these and to find out what trustees need to consider when setting such a strategy we brought asset owners, investment managers and an adviser together to discuss one of the hottest strategies in institutional investing today.

You can read the result of our conversation from page 4.

Mark Dunne

Editor, *portfolio institutional*

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Director of fixed income
M&G Investments

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Chief investment officer
Centrica Pension Schemes

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Head of investment strategy
RPMI Railpen


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Senior solutions manager
Schroders

*Kate Mijakowska*
Senior vice president,
manager research
Redington

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Head of pension solutions
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Professional trustee
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*"The market has not yet found anything liquid that can provide excess return and maturity at the same time."*

*Julien Halfon, BNP Paribas Asset Management*

**portfolio institutional: How important is cash-flow driven investing (CDI) to asset owners?**

**Chetan Ghosh:** We are heavy users of CDI assets. In 2011 we started building an allocation to long-dated assets that had secure, largely inflation-linked, contractual income. That now forms 11% of our portfolio.

We have thought through the cash-flow problem beyond just holding long-dated assets and have a game-plan as to how shorter-dated cash-flow generating assets, like liquid corporate bonds, can form part of the solution.

**John Greaves:** The Railways Pension Scheme was effectively only formed in 1994 so is still quite immature, even the sections of the scheme that are closed to new members.

We are therefore building exposures to assets that lend themselves to CDI, but we are not yet managing them with a specific cash-flow profile in mind. It is very much front of mind though and our thinking there will evolve in the next few years.

**PI: Is this the best way to tackle cash-flow negativity?**

**Jon Exley:** CDI is not fundamentally about negative cash-flow. The relevance to CDI is that being cash-flow negative is a sign of a more mature scheme that is approaching the end game and is generally better funded.

Schemes in that situation can look to lock down the remaining flightpath with a CDI strategy to get more certainty of outcome.

**Julien Halfon:** Illiquid credit is not what would be defined as purely cash-flow driven investing; it can be much shorter term, too. SME loans, for example, can be three or four years. They are not matching assets or cash-flow driven assets, but will generate an excess return of sometimes 6%, 7% or 8% above Libor.

If you have a larger liability driven investment (LDI) portfolio that has a negative real yield, having something that can balance the returns, diversifies risk and has a duration of three, four or five years is a risk worth taking.

**Exley:** It is the increased certainty of return over that horizon. You are locking into an asset that through income and redemption will secure that return over the holding period.

**John Atkin:** Being the asset management arm of an insurer, people come to us and say: "We can't help but notice that a mature, closed pension scheme which is reasonably well funded looks an awful lot like an annuity book; we'll have one of those, please."

You then have to explain that that took decades to build and when it comes to implementation, we haven't found two schemes whose approach to cash-flow driven investing is the same. Everyone has different starting positions in terms of their sponsor, their liabilities and their funding. So most cash-flow strategies are bespoke.

**PI: So what approaches are asset owners taking to build these portfolios?**

**Ghosh:** We have looked at what insurers do and thought about how we can capture those opportunities without having the capital requirement regulations that they face. So, for example, using shorter-dated cash-flows where there is a good risk-return profile and accepting that we take reinvestment risk as we deliver our cash-flow strategy.

**Atkin:** It is also avoiding the areas that the insurers are playing in. When you have large life insurers dominating the bids for long-dated infrastructure, for instance, the value is not there. Locking into some of those cash-flows for 20 or 30 years at poor value is a mistake you will live with for a long time.

**Exley:** Schemes using CDI fall into two distinct categories. Some are basically acting like an insurer in looking to build a self-sufficiency portfolio to hold long-term. Then there are schemes that are relatively mature and well funded but cannot afford to buyout yet. In 10 years' time, pretty much all of their members will be pensioners so they are looking for a strategy to deliver certainty of return over that period to deliver a portfolio value sufficient to achieve buyout.

That is where the shorter-dated higher yielding fixed income assets come in to deliver the required returns in the early years before rolling off as they mature to leave a portfolio of gilts and investment grade fixed income. These schemes are not trying to build a 30-plus year illiquid strategy.

**Giles Payne:** There are schemes out there that require growth but need to protect those long assets to avoid becoming a forced seller. So you need to be able to predict what your front-end is going to produce so cash-flows are met as they arise. Then the long-end is protected because a lot of people are looking to get additional returns out of illiquids, but you don't want to be selling them at the wrong point in time.

**Halfon:** You have long-dated gilts, which may have negative real yields, and you have shorter-dated corporate bonds which give about 150bps on average above gilts. So technically you have either zero or slightly positive real yields.

What is missing is that between the maturities of 10 and 30 years there's nothing in the corporate world. In some ways, the long-dated leases and infrastructure debt meet that deficiency. The market has not yet found anything liquid that can provide excess return and maturity at the same time. So in the search for yield, the long dated excess return box was not filled until people started to realise that they could monetise the illiquidity premium by looking at longer-dated illiquid debt.

**PI: What kind of assets are we talking about?**

Halfon: The two longest dated assets are technically infrastructure debt and commercial real estate debt, which could be pure debt or leases.

On top of that you could transform shorter dated or floating real estate debt into something longer dated by using the balance sheet capabilities of a financial institution, if you are backed by one.

**Kate Mijakowska:** Before you dive into what illiquids you should be investing in, focus on why you are doing CDI. Are you worried about investment risk and forced seller risk? What is the endgame objective? Are you going to buyout or not? All those things will ultimately matter for your illiquidity budget, if you have one.

So we cannot say that CDI always looks the same. It depends on what the objectives are.

**Halfon:** You have touched on an important point. For years most people essentially looked at returns, so the return budget was spread between low returning assets like bonds and high returning assets like equities. Then suddenly the risk budget reared its ugly head because it was scary that some assets could lose 40% in one year. Now, as we are dealing with almost completely mature pension funds, the illiquidity budget is another dimension that people have to take into account.

So if you want to optimise your investment strategy – return, risk and liquidity have to be completely embedded into one approach.

**Atkin:** The purest cash-flow conversations we have are with large schemes that are heading towards self-sufficiency. Their members cannot transfer out once they retire, so those schemes know their cash-flows as much as they possibly can, plus or minus actuarial revaluation. So, how would you match those? Then, of course, the water's become muddied by clients asking: "What assets would you put into cash-flow portfolios for deferred members?" That then becomes a different conversation from the portfolios built for the retired members.

**Ghosh:** Asset managers and asset owners have never said that one-size-fits-all in CDI. If anyone is guilty historically of saying that it's been consultants who have come out with new product launches time and time again. We should never have lost track of the need to deliver cash-flow, but it got put in the bin when LDI came out.

**Exley:** LDI is fundamentally about hedging the interest rate element of reinvestment risk. What got lost was that people thought LDI just hedges an actuarial concept of a valuation basis but, in cash-flow terms, it's all about reinvestment risk.

**Mijakowska:** LDI has to be part of CDI. I couldn't imagine a CDI portfolio without an LDI element. LDI is a big pool of collateral and therefore liquidity, so even if the CDI solution is designed in such a way that you end up short of your cash-flow, LDI is a pool of gilts that you can ultimately redeem and therefore satisfy an extra cash-flow. In some ways it's helping liquidity as opposed to limiting it.

**PI: So CDI has not replaced LDI?**

**Exley:** The two need to be closely integrated because LDI hedges the reinvestment risk of fixed interest assets. The redemption proceeds from these assets are not going to exactly match your liabilities so you are hedging the reinvestment of these proceeds at gilt rates to meet a later liability. LDI also provides a liquidity pool that you can use for day-to-day payments.

**Ghosh:** You need to look at what LDI is doing to your cash-flows. Our liabilities are the benefit outgo that has to be met in the future. LDI can potentially have a significant impact on your ability to meet it, particularly if what you have to pay significantly exceeds gilt returns, and we are significantly leveraging that investment. That could potentially have a significant negative impact on our ability to meet cash-flow. So you cannot disentangle the impact of LDI on trying to meet the final problem. People forgot that it is about meeting cash-flow. They got swept away with the LDI euphoria.

**Atkin:** We had been mandated by some large clients to find long dated, fixed, inflation-linked, high quality cash-flows. When we find them we send through the IEO1 and PVO1 ladders of the portfolios and they turn off the swaps. So they are reducing their LDI exposures synthetically via the physicals market.

**Ghosh:** Our consultants built a model that shows if a large part of your portfolio is dedicated to CDI assets it can negate the case for LDI. Some of their partners are doing exactly the same, using modelling to back it.

**Halfon:** You run a new risk if you move 100% into CDI. When you become cash-flow negative your only objective is to meet the cash-flow, so you can't afford a default.

This is why there is an issue. While LDI meets your liquidity requirements by ensuring there's always something that you can pay your cash-flow from, if you are cash-flow negative and you have a massive amount of CDI on your balance sheet and there is a default…it could be painful. That's why everybody is saying that you need interaction with the LDI and CDI portfolio to optimise the illiquidity budget.

**Payne:** It depends how important within the organisation matching valuations is. I have a number of private company schemes which are not so worried about that, so they have a different set of objectives. They are much more worried about saying: "Right, we have done our calculations with the actuary and we have to produce a 4% return from our assets."

You have a ladder of risk which you can run through your assets, some of which are illiquid, but you do not want to be selling illiquid ones at the wrong time. So there is a different way of looking at this.

**Mijakowska:** CDI is popular at the moment. The not so well-funded schemes have a challenge in that if they want to invest in low-yielding assets and implement a CDI portfolio it will lock them into an outcome, which means they will not satisfy the ultimate objective of a pension scheme.

It is striking a balance between having cash-flow at the front-end, so you are not worried about cash-flow problems, and having enough cash to invest in things that will generate the return to close your funding gap.

**Payne:** One of my schemes was an early adopter of PFI assets, property, things like that, all of which produce a sensible yield. If you produce layers of those types of assets where you can broadly predict the yield, you need to overlay cash generation on top of that to meet your liabilities.

It is not that absolutely everything has to be corporate bonds at the front-end. There are other assets out there generating good cash-flows which are suitable for portfolios. It is just a matter of trying to build a portfolio with a range of these assets which meet your return and cash requirements.

**Greaves:** There is a spectrum. Good investment strategies are exposed to the widest opportunity set that your expertise and governance budget can handle. So we look at assets like ground rents, lifetime mortgages and long-lease commercial property as sensible assets that we want to build critical mass in because one day they might be suitable for CDI. For now, they are an important part of a diversified portfolio. They provide more certainty of return over a 10 to 20-year horizon and that is attractive.

**Atkin:** If you want to build as diversified and as good quality a portfolio as you possibly can, then take as long a time to build it; you will be able to carefully pick your entry point.

If you tell your in-house team or external manager to only buy what's good value, then over time you end up with a diversified portfolio of high quality cash-flows. If you try to solve it all in one go by building a CDI portfolio in 12 months you are probably going to be forced towards poor value, in at least some asset classes.

**Mijakowska:** You can only do that if you are going for self-sufficiency. If you have a five-year plan to buyout, for example, you don't have that time. Critically, if you are going for buyout you probably wouldn't be that creative with your asset allocation because insurers are quite fussy over what they want to take. They would love cash and maybe gilts.

**Halfon:** Time is the crucial variable here. If you can be patient, if you can invest for 10, 15 years, you

Kate Mijakowska


Giles Payne

can harvest the illiquidity premium. If you have five years, that is not always going to work. You are going to need to be in very liquid assets which will be acceptable to a buyout firm, which usually means gilts. That is going to require a lot of contribution from the sponsor.

The [CDI] ramp-up period is quite long because a lot of the time you won't immediately find the right illiquid assets, even if you have a big balance sheet. You will have to do proxies and synthetic CDI assets until you find the right asset, the right infrastructure debt, the right commercial real estate debt.

**Exley:** If you have a 10-year horizon to buyout you don't want to arrive with a lot of these types of assets in your portfolio; you want a portfolio of investment grade credit and gilts. The idea that it's going to be straightforward to transfer illiquid assets to an insurer at an easily agreed fair value needs some further thought.

Assets that deliver returns over 10 years are attractive for a strategy that's aiming for buyout in 10 years' time, but that doesn't give you 10 years to choose these assets because you really want to be out of them after 10 years. So you have got to get into them fairly quickly.

Again, there are two approaches to CDI. There is a long-term strategy, where you are going for self-sufficiency and so can gradually buy long-dated assets and hold them to maturity. Then there are schemes aiming to buyout that are buying assets to deliver returns over 10 years.

**Ghosh:** There are £2trn of liabilities but the liabilities that are getting bought out each year are merely a drop in the ocean, so presumably for the majority we are talking about the longer-term horizon.

For that majority, the advisory community should be well placed to construct portfolios that will help clients to meet their liabilities through these cash-flow generating solutions. It should be doable – rather than paying hefty insurance premiums to insurers. There is also scope to take advantage of the investment opportunities the insurers can't actually do themselves.

**Exley:** It is feasible for large schemes to do that, but there are a lot of mid-sized schemes where it would make sense for them to transfer that to an insurance company because of economies of scale of the insurer. For the multi-billion pound schemes, it will probably be a self-sufficiency solution.

**Mijakowska:** It depends on their preference. Obviously, we are led by what the client's objectives are, so this is what we agree at the outset. If a client is going for self-sufficiency then your point is valid, because a pension scheme is not constrained by the same regulatory framework as an insurer and should be able to deliver a better, cheaper solution through self-sufficiency. Some people are going for buyout and if that is the case we also have to design a strategy, which will ultimately give them that.

**PI: When you are setting strategies are you testing them against different scenarios because transfers can impact strategies?**

**Exley:** When you start allocating cash-flows these 10-year assets are generating your pensions in payments, if your deferreds want transfer values you can take that money out of gilts and some of your more liquid higher yielding credit assets. So transfer values aren't a problem for CDI, they are actually encouraging schemes to adopt CDI strategies as a holding pattern in their flight path while the transfer value story plays out.

**Mijakowska:** How you account for transfers is an important and valid question. It is one of many sources of cash-flow that is not related to your usual pension payments. The sterling market's not big enough so you hold overseas bonds, which you need to hedge. You might also have a collateral call on your LDI.
We would advocate solutions where you have too much cash-flow at the front-end to account for transfers out, FX hedging or collateral calls. If that risk doesn't materialise, then you have too much cash. That's not a bad problem to have.
**Exley:** You can link transfer value basis to your assets. So essentially your transfer values are linked to interest rates and you can even link them to credit spreads. So it shouldn't have any impact on the solution because the transfer values you pay out should be the value of the assets you are holding against that liability.

**PI: What problems do investors face when trying to implement synthetic strategies?**
**Halfon:** It comes back to the point that if you don't have much time you face a lot of competition to acquire illiquid credit assets at ordinary value. If you decide to invest everything now you are going to buy whatever there is, which is not a good idea; spreads will be of bad quality and you are not going to get good assets. If you want to take time to invest into what you need, you have two choices; either you don't invest and you keep your assets in equities, but you don't get the exposure to the asset classes that you would like to have.
Or you could structure your CDI portfolio along the lines of what you would like to have, for example, 30% of infrastructure and 40% of real estate debt, by finding the equivalent in the illiquid or synthetic world. You can use listed-corporate bonds. As you go along and the right CDI assets become available, you transfer from listed or synthetic CDI assets into illiquid assets. You are swapping the right exposure in something which is liquid for something which is illiquid, in doing so you are capturing the illiquidity premium.
It is good to have a lot of cash, but it may not be optimal from pure risk, cash-flow matching or liquidity perspectives. So you will have to restructure your portfolio along the line of your CDI in the future by starting to at least get into the right type of assets.
**Greaves:** If you are buying illiquid assets over time because you can't get enough exposure to things that offer good risk-adjusted returns, buying liquid proxies might also lock you into poor risk-adjusted returns.
You are matching a risk factor you maybe do not care about. The asset allocation choice might not be the motivation for buying those assets.
It is important to have as wide a universe as possible when you are building holding portfolios or liquid proxies because essentially you are trying to get a similar risk-adjusted return profile, not necessarily the same asset class exposure.
**Halfon:** There is an order of priority, a pecking order. If you find the asset you want, invest in it, if not try to find something with a similar risk-return. In the end you will realise that if you can't find infrastructure debt you have probably no chance of finding good real estate debt. There is a shortage of good illiquid credit. That is why if you start to look from the highest priority to the second or third best you end up with something liquid in most cases.


John Greaves

John Atkin

*"Everyone has different starting positions in terms of their sponsor, their liabilities and their funding."*

*John Atkin, M&G Investments*

Either you are in cash and get negative yields or you try to find a proxy.

**Atkin:** That is a fascinating point. If you are seeking good value you should not lock into a similar risk at a poorer price, because you cannot then capture the better value when it arrives. We have found mortgage-backed securities, which being unattractive for Solvency II investors, give an extra premium. The higher quality ones still give you a decent return plus good liquidity, if you are looking to find the sub-10 year assets then they are a nice conduit.

We and a few other managers have had an idea to "park" assets in high quality ABS while looking for higher paying, illiquid ones. What you are effectively then running is a "not-finding-the-right-asset" risk rather than an investment at a poor price risk, which is usually a more acceptable risk.

**Ghosh:** I would like to go back to an earlier point on this approach being the privilege of bigger schemes. To an extent it has been, but it doesn't have to be. There is not going to be enough ability to buyout, so there has got to be a realisation that all schemes can't buyout so they will need this approach.

Waiting for value to appear isn't a natural behaviour by clients who are beholden to investment advisers. It comes back to those bigger schemes that have their own in-house teams.

**Halfon:** The driver to that limitation to small schemes is also due to when you invest in illiquid debt there is usually a cost of capturing the information, which is pretty high, and usually those projects are not scalable on the low side. A minimum amount would be £15m to £25m for every loan. Even if

you put that into a fund structure it is still going to limit access for people who can't put on the table a £50m ticket to get in. It is not only the fact that you need an in-house team, it's that the asset class itself does not lend to meeting the requirements of small schemes.

**Exley:** If a pension scheme arrives in 10 years' time and doesn't buyout it would be invested in gilts and matching investment-grade credit. So it is also a solution that could apply as a self-sufficiency strategy, but these schemes wouldn't necessarily lock themselves into illiquid assets such that if they wanted to buyout in 10 years' time they would have difficulty transferring those across.

The relatively low governance costs of smaller schemes sitting in investment-grade credit and gilts in 10 years' time would also make this a reasonable solution.

**Payne:** Looking at an end portfolio of long-dated gilts and credit is aspirational for a lot of schemes. A good number of clients that I work with would not be looking to fund schemes to that degree of certainty. Their definition of self-sufficiency will be quite different to gilts-flat. We have to be realistic about the types of portfolios which a lot of the small schemes are going to be looking to run. They will need to carry running a degree of risk and relying on the sponsor to an extent as well.

**Exley:** That's why CDI is not about negative cash-flow. There are lots of schemes that are in negative cash-flow that aren't running CDI strategies.

You have lots of under-funded schemes in negative cash-flow that are going to have to adopt the sort of strategy that you are talking about.

CDI, to me, is for relatively well-funded mature schemes that are looking to a strategy of attaining self-sufficiency funding on a relatively conservative basis or buyout in something like 10 years' time. If we are not careful, we are just going to stray into a general discussion about investment strategy for pension schemes just because all pension schemes are cash-flow negative.

**Payne:** That doesn't mean that those schemes aren't cash-flow aware in the way that they invest and they aren't aware that they need to have cash in the right place at the right time. Our job is to pay benefits on time to the right people, so cash generation is absolutely important.

We know that when there's a market shock there is no liquidity, so you don't want to be relying on selling assets at those times. We need to have assets which are producing cash-flow to pay the benefits at those times. That is just as valid a way of looking to cash-flow driven investing as it is to say: "Right, we have to lock everything down, sit here and let it pay its way out. So as the cost of buyout comes down with the maturity of a scheme we can then buyout."

**Exley:** I agree with you, except when I started in investment 30 years ago the objective of a pension scheme was to meet its cash-flows as they fall due. There is nothing new about the idea of investing to meet cash-flows. What we are talking about is something slightly different for schemes that are in a position now to lock things down by investing in fixed income assets with more certainty of outcome.

**Payne:** Historically people sold assets to produce cash, but there has been a realisation since 2008/09 that we can't rely on that going forward. There are all sorts of issues, such as sequencing risk, that need to be built into portfolio construction as well. That is cash-flow aware investing.

**Mijakowska:** It comes back to the original point: what is it that you are trying to do. I don't like people throwing the CDI term around without defining what the underlying problem is that they are trying to solve. This discussion has shown that people have different priorities. Obviously, the worry that you are trying to address is that to pay cash-flow you may have to sell your equities, which have gone down, say, 40%.

Just defining what the worry is and then trying to solve it as opposed to asking what an ideal CDI solution looks like or talking about it in general terms. There maybe four reasons why people want to do it, and depending on the reason the solution might be a bit different.

**Atkin:** I prefer the term 'cash-flow aware investing' to 'CDI'. This is a journey, each pension scheme has to make its own journey in its own way and according to its own requirements, "cash-flow" is just slightly shifting the philosophy. There's no obvious product here which everyone can go into and say: "That's the solution." It's just changing the way people think slightly.

**Ghosh:** The whole conversation around CDI has created a better mindset in the industry. It has stopped advisers scaring clients witless by saying: "If you don't LDI you are toast."

It has also created a better recognition by pension schemes that path dependency will matter at a point in time and when it does you want to be thinking ahead about how you will deal with it. It has changed that philosophy and has got people thinking in a more balanced approach to solving their liability problem.

When I refer to liabilities it is the cash-flows; it's not what a lot of the industry default to in terms of the liability value and calling that the liability.

**Atkin:** One of the challenges we face as an industry is that for so many years the products that asset managers have brought to market have been about asset management. Of course, everyone has known for many years that it is actually about liability management, it is about cash-flow management and trying to get asset managers to think as liability managers is going to be critical.

**PI: With more and more schemes moving into alternative assets is the illiquidity premium disappearing?**

**Halfon:** If you look at the compression of yields for the past 10 years, yes, on average, as spreads over gilts and swaps have compressed, the illiquidity premium has also slightly compressed.

But the market has found new areas where they can invest their cash, for example, going from mid-market loans to SME loans or micro credit where there is a demand from companies and there are healthy spread levels.

You had to go down the capital structure and take different types of risk which at the beginning was investment-grade corporate bonds which became illiquids and what was high yield, let's say, BB or B became CCC or CC.

So down the capital structure and down the liquidity spectrum most of them led to maintaining some level of illiquidity premium. It is an evolving phenomenon.

**Greaves:** There is a danger in labelling something as having an illiquidity premium just because of its

complexity, lack of transparency, execution risk or regulatory risk; it just happens to be illiquid. If there is no good liquid proxy then it is difficult to observe what premium there is for illiquidity. It is important to be aware of what you are buying and understand when we say 'risk-adjusted return' what the risks are.

**Halfon:** Illiquidity is not having ongoing pricing on an established market, but if you look at the way participants in the SME lending market are playing it's very transparent. It's a bottom up approach where you have introducers, auditors, accounting firms and lawyers who deal with those companies on a daily basis and realise they need some financing and make it transparent for lenders to come in and do this in a completely transparent way but it's not traded, you cannot transact on it every day.

The fact that you don't have a benchmark is a good point. If it is difficult to find one it doesn't mean that it's not transparent, it just means that it arrives to the market in a different way than traditional securities.

**Greaves:** Illiquidity is multi-dimensional. We have talked about some assets that throw off high running yields. A lifetime mortgage book pays 7%, 8%, for example, when you include principal repayment. That is pretty liquid because you are unlikely to need more than that until a scheme is very mature. It is just if you have significant shifts in your strategy or you want to buyout then there could be problems. So it's important to slice and dice what you mean by illiquidity. It's not just the ability to realise the entire value within a week or so.

**Payne:** It's a desirable asset but it might take six months to get out into market. Yes, that's illiquid but it's different from something which won't at some point be marketable. It's a different thing.

**Ghosh:** What we saw as outsize returns when we first started investing are being compressed and have gone to more reasonable value or just below fair value for the risks involved. That said, a lot of pension schemes are referencing the assets that they have purchased versus a gilt discount rate. We frame it as are we happy to take out leverage to buy gilts at negative real yields of 1.7% and stomach this type of long-dated asset where you are not buying it as expensively as you would a gilt.

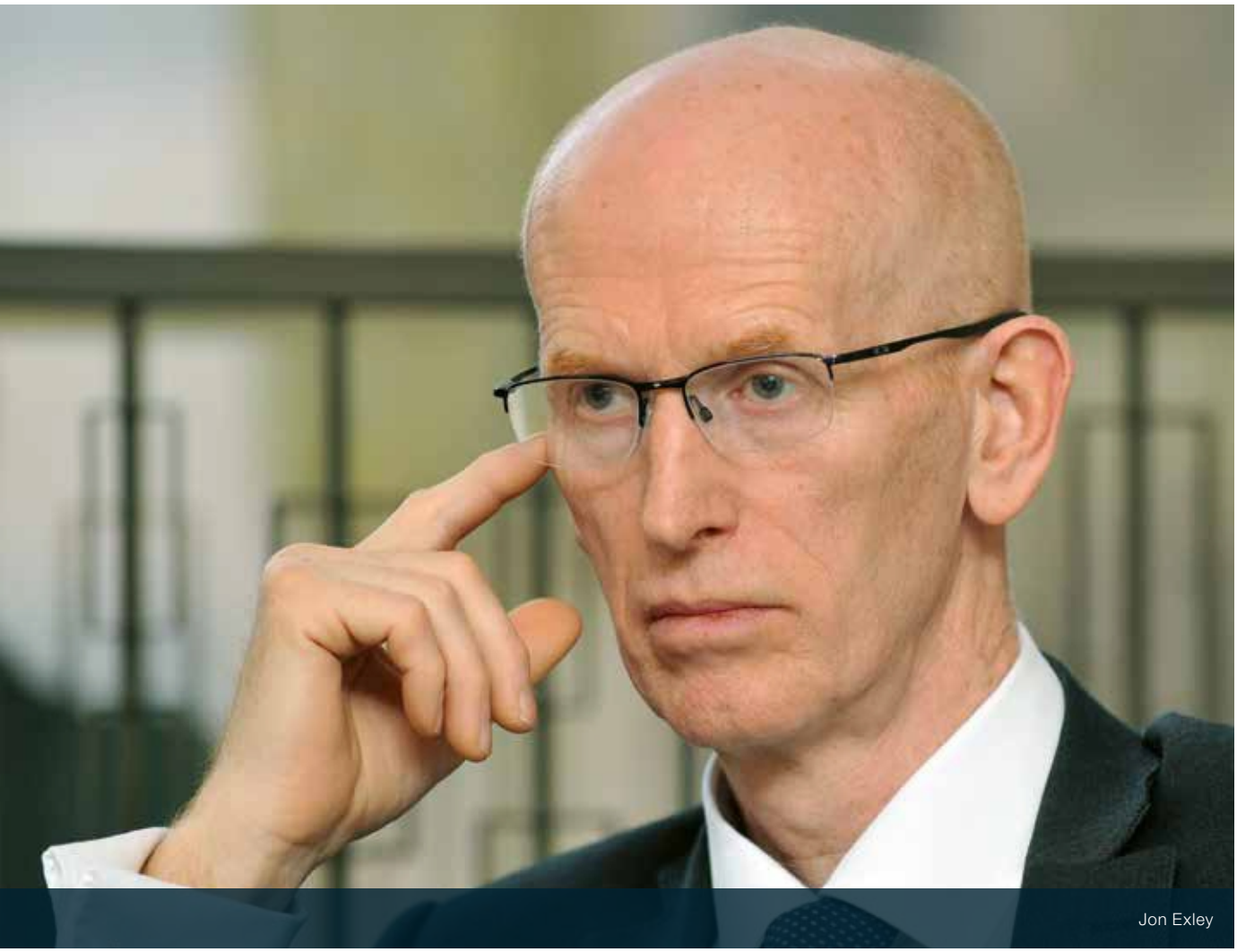
**PI: So origination is important when looking for someone to manage a portfolio of cash-flow generating assets?**

**Halfon:** It is more complicated than the traditional sourcing of assets. The process to access SME loans, for example, requires a large infrastructure, partners, introducers, a network of people working with you. To do this efficiently in Europe you probably need 200 to 300 people. This is only for one asset class. In mid-market US loans, we have had an entire investment banking division working on this for three decades. So this is not as straightforward to source the right assets as a lot of other asset classes.

**Exley:** A lot of value is added in the origination and then after that it is looking after the asset and making sure that it continues to perform. The origination platform needs to be well resourced to actually find the assets and the fees charged need to reflect this.

**Ghosh:** There is a scarcity of these assets, especially at the price we want to pay. We stay close to the asset managers to make sure we are at the top of their list when their queue for long-lease properties goes to zero. We are doing a lot of relationship networking to stay close to them for when a new supply of cash-flow-generating assets comes to market.

Chetan Ghosh



Jon Exley

*"CDI is not fundamentally about negative cash-flow."*

*Jon Exley, Schroders*

**Greaves:** Co-investment relationships can be quite important. In terms of being the first person a bank or asset manager calls, the key is the strength of the relationship and governance processes. Can you make quick decisions on complicated investments? Being a nimble and flexible investor can be a real advantage in this space.

**Atkin:** You have got to be able to do six to nine months work on a deal and then walk away from it if you can't find value. So finding a partner that you trust in the asset management space is very important.

**Mijakowska:** It feels like there are more and more funds cropping up that invest in illiquids. They try to take the governance burden off the smaller schemes by deciding what the most attractive things to be in are. That is getting some traction.

**Payne:** If we go back 10 years we were looking at very narrow, distinct portfolios that investment consultants were pushing people towards. Now it's much healthier. Certainly the way that the schemes I work with are to give portfolio managers a wide brief and an objective, as opposed to saying: "I want you to invest in that asset class. Can you go in that area of the market and achieve this return?" Managers will do a much better job if you don't tie their hands and you could get better returns.

**Greaves:** The challenge is then measuring success, isn't it?

**Payne:** Absolutely.

# Passing the LDI baton to the new generation of CDI

*Julien Halfon, head of pension solutions at BNP Paribas Asset Management*

The widespread adoption of liability-driven investing (LDI) was one of the few success stories to have emerged from the financial crisis. By mapping out what pension funds need to pay and investing more than 30% of their assets in LDI, many of them have closely matched their liabilities and assuage fears of under-funding held by corporate sponsors.

But with this success came a new problem. While on paper, pension fund liabilities are matched, the LDI approach has created a new headache. Some 85% of UK pension schemes claim to be cash-flow negative, right when they need to be generating more cash than ever.

Most pension funds in the UK are closed to new joiners and future accrual of existing members. This means that for many there is no new money coming into the pot. At the same time, the membership is maturing and the level of benefit payments they require is rapidly increasing. Without new money coming in to be recycled and passed through, trustees look to sponsors to increase contributions or to their investments to provide additional cash-flow. Due to the nature of the investments held in an LDI strategy, this cash is not easy to find.

The yields on gilts, the main holdings in physical LDI portfolios, have fallen into negative territory on a real, long-term basis. Other LDI approaches that use a complex web of derivatives and swap contracts may offset this drag from gilts, but with rising interest rates on the horizon, expensive collateral calls may be needed to service the leverage they use. This means just keeping liabilities matched might require significant cash.

Pension funds do have options: cashing in their LDI strategies in favour of more simple and liquid instruments that can be sold to free up the money needed to pay pensions, for example. The problem here is that many of these assets slipped up pension investors a decade ago – and few relish the thought of it happening again. Equities, for instance, are easy to sell when cash is needed, but their volatility – especially when markets might be reaching the end of a record bull-run – make them an unattractive choice for prudent trustees running off their funds.

Some fixed income instruments, aside from expensive gilts, could provide pension funds with options. But credit, which soared after the crisis, has been another tremendous success, meaning the upside investors once gained from holding these relatively risky assets has been squeezed and now offers limited potential for income over what they might expect from gilts.

Real estate and infrastructure equity have become expensive as the market is aware of the high demand for these assets from income-hungry investors. Also, their limited liquidity does not make them ideal targets for pension funds coming to the tail end of their maturity.

The good news is that there is another option.

Over the past few years, a strategy that has been a vital tool to the insurance industry has been transported to the pension sector: cash-flow driven investing (CDI). As some of the largest investors around, with considerable, regular outlays to claimants, insurers need to have cash readily available.

Initially, some of the tools that were offered to pension investors were direct copies of those in the insurance sector and overlooked the nuance of differences between the two. Today, the next generation of CDI strategies have been tailored to focus on the needs of maturing pension funds with benefit payments to make.

These strategies make use of a growing number of illiquid fixed income instruments that can work alongside what is already held in an LDI portfolio. Despite moving towards their endgame, pension funds are still long-term investors compared to other market participants and can benefit from an illiquidity premium that others cannot.

Many of the illiquid assets that make up the new generation of CDI are often well-protected by covenants, with income linked to inflation and a relatively low default rate.

Being valued less frequently than bonds in the corporate credit market, debt from infrastructure, social housing and some asset-backed securities reduce volatility in pension fund portfolios, while providing a regular income that is higher than that paid by gilts. Unlike equity investments in these sectors, debt matures, returning cash to the lender rather than having to find a buyer for the asset.

CDI is not a full-portfolio solution, but it can work alongside other strategies to help achieve pension funds' payment needs without resorting to a costly buy-out.

LDI has helped many pension funds reach the home straight – now it is time to hand the baton to CDI to finish the race.

BNP PARIBAS
ASSET MANAGEMENT

# Build your own annuity book with cash-flow matching solutions

*Jeremy Richards, fund manager, M&G Investments*

For many pension schemes and trustees, the ever-more pressing challenge is not only meeting cash-flow liabilities now, but also into the future. Planning to pay out the right amount of cash at the right time not only creates challenges in terms of generating the level of cash necessary, but also in how to weather changing market dynamics to deliver these required cash-flows over the long term. This is an issue that affects a vast number of schemes. According to Mercer's European Asset Allocation 2018 survey, six out of 10 plans were already cash-flow negative and, of those that were not, 80% expect to be so within the next 10 years.

Some schemes could consider a fully insured buy-out, but this is often unaffordable. Therefore, aiming for self-sufficiency by matching cash-flows over time could be a solution. After all, a healthy, self-sufficient scheme could always consider insured options at a later stage.

### Building a bespoke annuity book

The approach of matching cash-flows to liabilities as they fall due is similar to how an annuity book is run, which is one of the reasons why many pension schemes are asking how our own annuity book, managed for our insurer parent, has delivered over decades. We believe it necessitates being flexible and asset-agnostic, as well as being patient and disciplined when building a portfolio.

Primarily using physical assets to match liabilities can help a scheme reach a different kind of certainty, rather than hedging risk via swaps alongside a growth portfolio. Exposure to physical assets, such as through secured debt, can offer another way to address some of the risks that are met with traditional LDI portfolios, such as interest rate risk. Infrastructure debt, for example, can offer long-dated cash-flows, with debt being repaid over 20 to 30 years, while they are usually inflation-linked and predictable, with contracted payments often derived from well-regulated entities.

Predictability of cash-flows is a feature that lends itself to a cash-flow matching portfolio and flexibility to access public and private financing can allow schemes to, in effect, build their own bespoke, commercially-efficient annuity book.

**Asset in focus: Alder Hey Children's Hospital, Liverpool, UK**

**M&G Investments provided funding for the re-development of Alder Hey Children's Hospital**

- Annuity-like repayment profile provides stable cash-flows from the NHS trust
- Conservative covenant package provides lender protection
- Structure provides credit support and additional security

**Flexible and asset agnostic approach**

Why is a flexible and asset agnostic approach important? The first reason is risk mitigation: just adding more credit risk is not a solution to generating reliable cash-flows. It's important to buy a broad diversity of assets, where the risks to cash-flow interruption are well-rewarded. A portfolio should reflect an individual scheme's trade-off between return, risk and liquidity to meet a scheme's specific cash-flow needs.

The second reason is that value shifts as markets evolve, which is why all cash-flows do not need to be matched at once. To achieve such flexibility, we keep some powder dry to access cash-flows as they become cheap. This is reflected in the fact that our own annuity books look very different from how they did 15 or 20 years ago.

Efficiency is key when building a bespoke annuity book that needs to evolve over time. Putting into practice considerable resource, patience and discipline is the approach we have used to manage our own annuity books and cash-flow-matching portfolios for external clients.

This means not paying up for liquidity that is not needed in the short term. By broadening-out asset origination to capture, for example, illiquid opportunities that could generate higher cash-flows, some powder can be kept dry to capture value should it emerge. Taking such an asset agnostic approach can aid portfolio diversification and help achieve de-risking and the required cash-flow that is the ultimate goal for a pension scheme.

# CDI:
# Certainly Delivering Inflows

*Jon Exley, Solutions manager, Schroders*

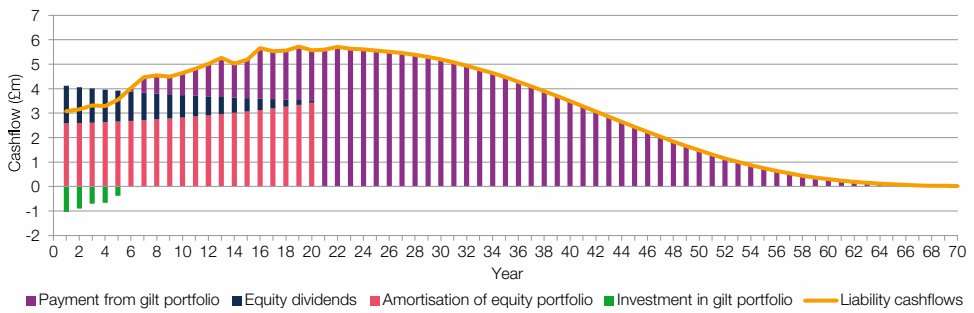
**Although the focus of CDI is often on meeting assumed liability outflows, in reality it is all about securing the *asset inflows*.**

One of the reasons why cashflow driven investment (CDI) gains attention is that it benefits from a simple and intuitive explanation around arranging assets to meet liability outgo. However, this simple explanation alone doesn't really distinguish CDI from many other pension fund investment strategies. After all, the investment objective of nearly every pension fund is to "meet the liabilities as they fall due".

As a result the simple explanation is easily critiqued. Unfortunately, this can deflect focus away from the real benefit of CDI as an investment strategy, which is the greater certainty of *asset inflows*. Liability driven investment (LDI) then complements CDI by matching liability outgo.

### Traditional example of meeting liability cashflows

Let's start with a traditional investment strategy consisting of equities and gilts. Importantly, we will ignore risk initially and just work in terms of an expected outcome. To generate a strategy which is expected to "meet the liabilities as they fall due", we apply an equity allocation strategy which disinvests uniformly over 20 years. Based on assumed equity and gilt returns, all of the liabilities are paid as they fall due out of the projected fund without running out of money for a typical scheme shown below:



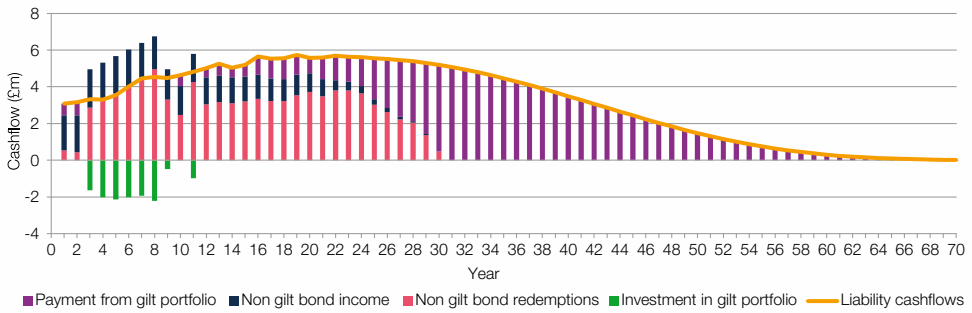

Data and calculations for illustration only

Source: Schroders

Our assumed equity disinvestment plan in this solution actually generates more cash than required to meet benefit outgo in the early years, while in later years the equity disinvestment alone isn't sufficient. This isn't a problem though; in the early years the excess cash is invested in gilts to meet later cashflows and in the later years the pension outgo is met from both equities and gilts or just gilts.

### Moving on to CDI strategies

To get from a traditional equity and gilt strategy to a CDI strategy, we would replace the equity allocation with a different (typically higher) allocation to fixed income assets held on a "buy and maintain" basis. This is illustrated below with the asset cashflows separated between gilts and non-gilts.




Data and calculations for illustration only

Source: Schroders

As with our previous example, the non-gilt portfolio does not need to match the liability cashflows. The gilt portfolio fills gaps and mops up excess *asset inflows* through reinvestment. Instead, as above, the non-gilt portfolio is designed to meet the client preferences in terms of risk profile and deliver the overall quantity of cash required without worrying about precise timing.

### So what is so different about CDI?

Our cashflow diagrams have looked similar for our traditional strategy with planned equity disinvestment and our CDI strategy with various fixed income and redemption inflows. They are both expected to meet the liability cashflows as they fall due based on the assumptions made. The crucial difference between CDI and traditional "growth plus LDI" strategies is actually in the distinction between:

- "assuming" the cashflows from dividends and planned disinvestments from the equity portfolio and
- "securing" cashflows from fixed income assets under a CDI approach.

Although this may sound like semantics, there are two important reasons why we make this distinction:

1) **Parameter uncertainty** – in particular knowing what the central scenario looks like
2) **Market risk** – the risk associated with disinvesting from the equity portfolio at unknown prices rather than relying on coupons and maturity proceeds from fixed income assets.

**Parameter uncertainty – what is the central scenario?**

A key assumption in our projection of the traditional strategy was the assumed excess equity return over gilts or "equity risk premium". In fact, it takes about 100 years of reliable data to estimate the equity risk premium to within +/- 2% p.a. with two-thirds confidence.

Furthermore, the impact of this parameter grows as we increase the projection period and, in any event, it is not necessarily constant over time! To put this in context, a 2% p.a. downwards shift from assumption to reality reduces the expected proceeds from equity disinvestment in the tenth (middle) year of our amortisation plan by around 20%.

By contrast, for fixed income assets held on a "buy and maintain" basis to maturity, the central outcome is far more predictable. This is because it can be based on the known yield secured at inception less an allowance for defaults which are generally stable (and low) in central economic scenarios.

**Market risk - volatility relative to the central scenario**

The other important difference between CDI strategies and traditional approaches is the market risk exposure on top of any uncertainty in the central scenario. The equity strategy relies on selling a proportion of the equity portfolio in the market every year. As discussed above, there is significant uncertainty in the expected (or average) proceeds from these sales, but more importantly, there is also significant market risk.

By contrast the "amortisation process" under CDI involves structuring a series of fixed income assets such that their income and maturity proceeds deliver a planned series of future cashflows. Although these fixed income assets may be subject to significant market risk prior to maturity, investment grade bonds and many alternative credit securities held to maturity have a much narrower risk profile of outcomes compared with selling the equity portfolio in the market.

**The role of LDI**

Thus far we have described strategies as simple combinations of gilts and either equities in the traditional allocation or non-gilt fixed income assets in the CDI example.

However, in addition to the market risk of equities and default risk of non-gilts, both strategies would also be exposed to interest rate and inflation risks and potential liquidity risk, which could be addressed using an LDI strategy. In this context it is important to stress that CDI is not an alternative to LDI, and in particular for both the traditional equity plus gilts strategy and the CDI strategy:

1) The longest-dated liabilities would be met from long-dated gilts with maturities matching the liability profile of the tail where possible
2) The LDI hedging would be used to add inflation exposure to match that of the liabilities
3) The LDI portfolio would provide day-to-day liquidity as discussed above, acting as a reservoir out of which pension outgo is paid and into which income and proceeds from equity sales or bond maturities are deposited.

Potentially though, LDI can be much more closely integrated with the non-gilt assets in a CDI strategy when compared with a traditional strategy to create a fully robust solution. This is because, although LDI hedging can still be expressed in interest rate risk terms, the LDI structuring for a CDI strategy can also be analysed at the granular level of the more certain annual cashflows from the non-gilt assets. Effectively, in cashflow terms, LDI hedges the reinvestment into gilts of the excess cash scheduled to be received from CDI strategies in one year used to pay benefits in later years.

**Summary and conclusions**

We have presented our discussion in this article in binary terms to make our argument whereas in reality of course the difference between asset classes is more nuanced: high yield credit is more like equities than investment grade credit and more highly rated investment grade credit behaves more like gilts than lower-rated credit. However, we believe that our broad conclusions remain even in the more complex real world.

Our key observation is that closely matching the asset inflow from non-gilts to the liabilities is not necessary in a CDI strategy once it is accepted that the gilts can "fill the gaps" in cashflow matching solutions. Instead, if LDI is used to match liability outgo, the important difference between traditional strategies and CDI strategies is actually the greater certainty of *asset inflows* in CDI.

Schroders

# Why CDI?

Is CDI a way to avoid an expensive buyout or is it just another three-letter gimmick? *Elizabeth Pfeuti* takes a look.

With just 14% of UK defined benefit (DB) pension schemes open to new members and future accrual, cash-flow has become a focus for the other 86%.

Some 1.2 million pensioners are in schemes that receive no new money, The Pensions Regulator said in November, with just 11% of UK scheme members actively contributing.

An astounding 41% of all DB pension scheme members are drawing benefit, according to the regulator, with 48% deferred, meaning that they could request regular payments at any time.

This means pension schemes need to generate a regular cash income to pay these members rather than just recycling new contributions.

A couple of years ago, after looking at this increasingly mature UK pensions landscape, some fund managers and consultants turned to the insurance market for inspiration. Annuity providers and other insurance companies need regular cash-flows to make agreed, regular payments, but do not receive regular contributions.

Instead they use a cash-flow driven investing (CDI) approach to ensure they can meet their payments and hold a range of low-risk fixed income securities that fall in line with their regulatory requirements.

With pension funds needing a similar cash-flow profile, it might have been thought that they would happily follow that route too, but it has not turned out that way – at least not yet.

## READY FOR ACTION?

The fly in the ointment is that most UK pension funds are not in a position to lie back and begin their final act.

Just 3% of schemes were in wind up in November, according to TPR, accounting for just 52,547 members.

For the rest of the schemes closed to future accrual, despite being fairly sure of whom they need to pay and for how long, there is an additional, somewhat bigger fly.

At the end of December, some 3,271 UK schemes were in deficit on a buy-out basis, according to the Pension Protection Fund (PPF). This meant just 40% of the schemes eligible for entry into the lifeboat had enough assets to push them through to the end.

For the 60% that find themselves under water, they are at least one step away from setting up a cash-flow matching investment strategy, which relies heavily on fixed income rather than growth assets to close any gap. But even for the 40% that could potentially consider the approach, few have been willing.

Even the PPF, which was 123% funded at its last reporting period that ended in March 2018, does not run a CDI strategy, according to chief investment officer Barry Kenneth. Instead, an in-house liability-driven investment (LDI) strategy manages the economic risk of future cash-flows.

"CDI is a cash-flow matching strategy and thus your assets would have to be fully invested in fixed income," Kenneth says. "In order to implement this across the whole fund efficiently, the return hurdle of the pension scheme would have to be the same or higher than the yield on the portfolio of bonds/cash-flow instruments to have enough money to pay the cash-flows."

From a portfolio construction perspective, there may need to be some compromises made when juggling diversification of sector exposure and matching cash-flows. For example, long term inflation-linked cash-flow issuers can be very sector-concentrated. Utility companies and banks are big issuers of these securities, whereas other sectors prefer rates set by the market.

Unlike LDI funds, which match investments up to specific liabilities to be converted or sold to create a cash-flow at a certain date and can be created using a range of derivatives, including swaps, CDI strategies are usually not created using leverage. This means the whole portfolio must be dedicated to one end goal, using up its entire firepower.

While investment grade and government-issued bonds are often preferred, real estate and infrastructure can give a steady enough return to meet cash-flows.

However, unlike an LDI strategy, which traditionally has a growth and matching portfolio running alongside, should a significant part of this CDI portfolio default, there are no growth assets left to take the strain and sweat a little harder to make up the gap.

There have been suggestions that just a slice of a pension that was linked to a section of scheme members – retired or deferred – could be managed on a CDI basis. But this increases the governance needed to oversee a strategy that sounds a lot like a partial buy-in or annuity that an insurer could do (albeit at a cost).

> **"While your cash-flow needs might be between 2.5% and 5% of your overall portfolio, the collateral calls on an LDI portfolio could be 20%."**
>
> Alex White, Redington

## THE NAME'S BOND

A reliance on bonds causes other barriers for CDI enthusiasts. Alex White, head of ALM research at Redington, says that there are difficulties in the details of cash-flow matching.

"For example, if you want to buy a large, diversified, liquid investment-grade credit portfolio you may struggle to do so purely in sterling," he adds.

"For context, in the UK there is around £400bn in investment-grade bonds. There are close to £2trn in pension liabilities."

Instead, pension fund investors may need to look further afield, to the biggest corpo-

rate bond market in the world: the US, where the markets are worth around £5trn. However, despite the deep liquidity in these markets, there are two problems for UK investors. First, most corporate bonds have a maturity of up to 10 years.

After that, the money is returned, and the lender has to seek out another company that wants to borrow.

This introduces reinvestment risk as there is no guarantee that the market will not have moved and what a pension fund needed may be trickier (or easier) to find. Even if corporate bonds were available at tenors as long-dated as pension liabilities, strong companies are quite likely to become weak companies over long (30 to 50 year) horizons, so schemes would not be able to rely on holding these investments to maturity.

Becoming a long-term creditor for a company is a different matter to lending over decades to a state or nation.

Additional issues with investing in the world's largest bond market come with its currency. While investors riding the crest of a strong dollar for the excess carry trade may appreciate the divergent economic policy, for those looking to match the regular returns against cash-flows, the picture is not as appealing.

"Once you are holding dollars, you have a currency mismatch," White says. "You have to hedge it, and you cannot know what cash requirements will be needed to pay for the hedge if the dollar goes up."

These hedging requirements need constant oversight and collateral calls could be frequent.

They can also be greater than the cash-flow you were expecting from the bond. While this does not render them bad investments, it does make it harder to use bonds directly to match cash-flows. So how has the insurance sector made CDI work?

## SUCCESS STORIES

Pension Insurance Corporation (PIC), which takes on the assets and liabilities of DB schemes to manage to maturity, has an entire fund following CDI principles.

It already has a head start on most DB funds as the schemes it takes on are at least 100% funded.

"If you are a pension provider, why take the risk of not being able to pay them?" asked Mark Gull, PIC's head of fixed income.

The specialist insurer's CDI portfolio is concentrated on high-quality bond issuers, such as utility companies and banks, that have a low probability of default and issue debt linked to inflation.

The investment team also hedges the inflation risk though inflation-linked gilts – of which there were just £28.5bn issued by the UK's Debt Management Office in the 12 months to the end of March 2018 – or through swaps with a counterparty.

Unlike pension funds, which are encouraged to invest for the long-term, insurers such as PIC are bound by different rules. Another reason for the popularity of CDI is that it fits with the mentality of insurance investors.

"Solvency II encourages you to match in annual buckets," Gull says, meaning PIC can pick through primary and secondary markets to find appropriate bonds to buy. Equally, as one of the largest insurers in the sector, which has a dedicated origination team, PIC can craft the instruments it needs.

"Not many pension funds have the skills and specialisms needed to run a CDI strategy," Gull says. "But they also do not have the same pressures on regulatory capital and are able to hold equities for a long time, which PIC cannot."

## YOU CAN GO YOUR OWN WAY

Equities and other growth assets are invaluable when pension funds are hit with an unexpected spike in longevity, for example, as they have the freedom to flex and shift investments.

But freedom can spell trouble in other ways for DB schemes considering a CDI strategy.

"While your cash-flow needs might be between 2.5% and 5% of your overall portfolio, the collateral calls on an LDI portfolio could be 20%," says White at Redington.

"Even without any hedging, we have seen in many schemes that transfers of around 4% can be taken out in a year by members leaving the scheme, which again makes your cash-flows less well-known."

While members have been able to pull small amounts of pension pots for some time, the pension freedoms announced by former Chancellor George Osborne, have led to millions of pounds being withdrawn from schemes.

It is difficult for any CDI model to factor that in accurately, and is a major reason why, for White at least, "cash-flow matching is an intuitive idea, and cash-flow management is crucial; but for many schemes the operational detail can make it a lot harder to get an accurate cash-flow match from bonds".

However, as pension funds continue to mature, Jordan Griffiths, investment consultant at Quantum Advisory, says more of his clients are considering a CDI approach instead of going down the route to buyout or take a bulk annuity.

"It is very client-specific," Griffiths says, "and depends on the covenant and whether the pension is fully-funded."

The certainty of returns and hedging out of liabilities is attractive to some pensions, according to Griffiths, who says some were considering taking short-term CDI strategies as part of their overall risk management. "Pension funds are used to using LDI," Griffiths says. "Many had large deficits, so matched inflation and interest rate risk while using growth assets to make up the difference."

And LDI has a place alongside a CDI approach, he adds, but accepted that it would involve some complex engineering. Therefore, Quantum is creating a CDI structure in the mould of the pooled LDI strategies launched at the start of this decade. "It aims to simplify the process and make it available to the wider market, including smaller schemes," Griffiths says.

But as markets around the world look unsettled and pensions edging closer to solvency see the insurance sector already well-versed in CDI happy to take on their liabilities, it might take a trustee board with a strong constitution to go it alone – at least in the short term.

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**Editor:** Mark Dunne
**Deputy editor:** Mona Dohle

**Publisher:** John Waterson
**Head of sales:** Clarissa Huber
**Head of bespoke events:** Elena del Pino
**Sales and marketing executive:** Tabitha Tebbatt

portfolio Verlag
Office 5.05 – 5th floor
Fleet House
8–12 New Bridge Street
London EC4V 6AL
+44 (0)20 7822 8522

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To find out more contact:

**John Waterson**
+44 (0) 20 7822 8522
j.waterson@portfolio-institutional.co.uk

**Clarissa Huber**
+44 (0) 20 7822 8522
c.huber@portfolio-institutional.co.uk

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