Institute
and Faculty
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Fixity of cash flows

by the Matching Adjustment Working Party

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The working party

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1. Introduction

Insurance firms with Matching Adjustment ("MA") portfolios require attractive long-dated assets to back their long-term liabilities.

Given the heightened focus on initiatives such as the levelling up agenda in the UK, incentivising green investment objectives, and stakeholders placing greater emphasis on Environmental, Social and Governance ("ESG") considerations, insurance firms are well placed to invest in these long-term, productive assets and support the wider economy in a meaningful way.

However, the ability to invest in these assets is constrained (sometimes severely so) by the need to satisfy the strict "fixity of cash flows" requirements under the current MA regime. While (re)structuring solutions may achieve MA eligibility, given the often costly and complex nature of these processes, we assume a preference for alternative solutions.

The interpretation of what may satisfy the regulatory view of "fixity" of asset cash flows is a key area of subjectivity and expert judgement in the assessment of MA eligibility. The Prudential Regulation Authority ("PRA") states in Supervisory Statement SS7/18[1] that its interpretation is:

"*fixed in terms of timing and amount, and cannot be changed by the issuers of the assets or any third parties*", and "*it is not sufficient for a portfolio of assets to provide cash flows that are predictable in aggregate to a very high degree.*"

This contrasts with the eligibility of liabilities in the MA portfolio, which are not "fixed", but instead are highly predictable in aggregate.

The nature of the underlying projects, and the additional structuring available in private debt capital markets, can contribute to asset features that challenge the regulatory view of fixity. The PRA has noted that firms can hold such assets, if not MA-eligible, outside of their MA portfolios[2]. However, the ability to hold these investments in MA portfolios where they can back liabilities is important for many firms to be able to invest in them. The PRA has signalled it is looking at MA eligibility in the context of such assets alongside its 2021 Quantitative Impact Study ("QIS")[3,4].

The contrasting views of the PRA and industry experience have been highlighted in the HM Treasury ("HMT") review of Solvency II ("SII") regulations in the UK. A core HMT objective underpinning the SII review[5] is:

"*to support insurance firms to provide long-term capital to underpin growth, including investment in infrastructure, venture capital and growth equity, and other long-term productive assets, as well as investment consistent with the Government's climate change objectives*"

The consequential impact on annuity policyholders, defined benefit ("DB") pension scheme members, trustees, and firms with UK DB pension schemes is also potentially significant. Facilitation of investment in appropriate assets will allow insurance firms to offer more attractive annuity rates to DB pension schemes and individual policyholders. This means DB pension schemes, their trustees, and sponsors, can insure sooner and provide greater financial security for members within a well-

[1] Supervisory Statement 7/18 'Solvency II: Matching adjustment' (bankofengland.co.uk)
[2] Developments in the PRA's supervision of annuity providers - speech by Charlotte Gerken | Bank of England
[3] Solvency II Review: Unlocking the potential - speech by Gareth Truran | Bank of England
[4] Review of Solvency II: Quantitative Impact Study (QIS) | Bank of England
[5] Solvency II Review: Call for Evidence - GOV.UK (www.gov.uk)

capitalised and risk-managed UK insurance sector. It also means better retirement outcomes for individual policyholders.

In this paper, through illustrative case studies for three commonly used asset classes, we set out areas where we consider that the MA framework could be readily adapted to accommodate a more pragmatic interpretation of "fixity", leading to more beneficial outcomes for policyholders, the insurance industry, and the wider economy. We also note that capital can be held against any residual risks arising, to ensure continued policyholder protection.

Further, rather than asset-by-asset assessments of fixity, a more portfolio-level view of "fixity in aggregate", reflecting the nature of the liabilities, may be more appropriate and more aligned with the principle of pooling (of risk), subject to any concentration and exposure limits.

Note that while we have suggested approaches that could be used to resolve MA eligibility issues, it is for individual firms to consider whether their exposures and arrangements allow for such approaches to be appropriately (and prudently) employed, as well as to determine their appetite for implementing any of the approaches.

As this paper was being finalised, Charlotte Gerken (Executive Director, Insurance, PRA) gave a speech on the PRA's role in improving the processes that support insurers' investment[6]. There are several areas of overlap with the challenges presented in this paper. In particular, construction phases in infrastructure assets, and prepayment and deferral risks are highlighted as potential areas for reform, which we see as positive developments.

[6] The PRA's role in improving the processes that support insurers' investment - speech by Charlotte Gerken | Bank of England

2. Examples

In this section of the paper we present examples of the constraints imposed by the current regulatory view of cash flow "fixity" and the factors that investors in relevant assets must consider.

Our examples highlight the types of ESG-conscious, productive assets that insurers would like to invest more in, in order to back their policyholder liabilities, but currently face barriers to doing so.

We present examples of:

- Infrastructure assets with a construction phase – the eligibility of cash flows at various times through the construction
- Clean energy infrastructure assets – prepayment clauses in the form of cash sweeps, Power Purchase Agreement / off-taker buyout, and asset disposal
- Sale and leaseback assets – eligibility considerations for the rental cash flows and the residual property cash flows throughout the life of an agreement

For these assets, there will be elements that are considered more readily MA-eligible (e.g. rental income streams) and those that are less so (e.g. residual property value at a future time). Similar splits may be achieved by (re)structuring assets to address the strict fixity requirements. As noted in section 1, in this paper we assume a preference for alternative solutions to (re)structuring.

We focus on the income stream elements which are more readily MA-eligible, consider the challenges posed by the current regulatory treatment, and present proposals to address some of the key issues. These proposals include the haircutting of cash flows, the use of make-whole clauses, the use of more "MA-friendly" contractual definitions, and the holding of capital.

2.1. Infrastructure assets with construction phase

In a speech in April 2021[2], Charlotte Gerken stated that "*the MA does not stop firms investing in assets such as construction phase assets structured as debt*". The speech also noted that firms may hold assets outside of the MA portfolio if these are not considered MA-eligible. However, the ability to hold these assets in the MA portfolio is important for many firms to be able to invest in them, a point acknowledged in a speech in September 2021 by Gareth Truran[3] (Director of Cross-Cutting Policy, PRA). It is the view on the MA eligibility of cash flows during the construction phase that we consider in this section.

Charlotte Gerken's November 2021 speech[6], published as this paper was being finalised, noted that the PRA was considering its expectations for firms' liquidity management in construction phases, as well as "*considering whether a softening of the restrictions on cash flow recognition for construction phase assets can be accommodated within the prudential framework*".

Investment in an infrastructure project or "real asset" typically involves the providers of capital – here, the insurance firms – investing prior to the inception of the project, after which there is an initial period of construction. This brings certain risks and uncertainties around the success and timing of the project, and whether the final asset will then deliver the expected cash flows, in timing and amount.

Typically, relevant asset experts within insurance firms work with highly experienced partners, often with long-term relationships, throughout the lifecycle of these projects. All parties are incentivised to deliver, with contractual terms in place to provide clarity on responsibilities for issues arising, and to limit the exposure of the insurer to expense overruns. This reduces the uncertainty of the project and reduces the risk that the lender does not receive the cash flows it expects. However, there is still residual uncertainty that needs to be considered.

In SS7/18, the PRA discusses "*cash flows with uncertain but bounded timing*" and also states that if cash flows have a "*fixed latest point*" ("FLP"; the latest point a cash flow is contractually agreed to be delivered) specified in the contract, the cash flows could be MA-eligible (assuming other eligibility conditions are met) if they are recognised at their latest date.

We are aware that some assets with a construction phase have been demonstrated to be MA-eligible. However, we are also aware of examples of assets with construction risk where firms have not been successful in securing MA eligibility. While we do not comment on any individual firm's experience, we understand that the scale of effort and length of time regulatory engagement may consume, coupled with the uncertainty of the outcome, can act as barriers to firms pursuing investment in such assets. We also note that the PRA has asked about firms' exposures to assets with construction phases in the qualitative questionnaire in the 2021 QIS[4].

2.1.1. Worked Example

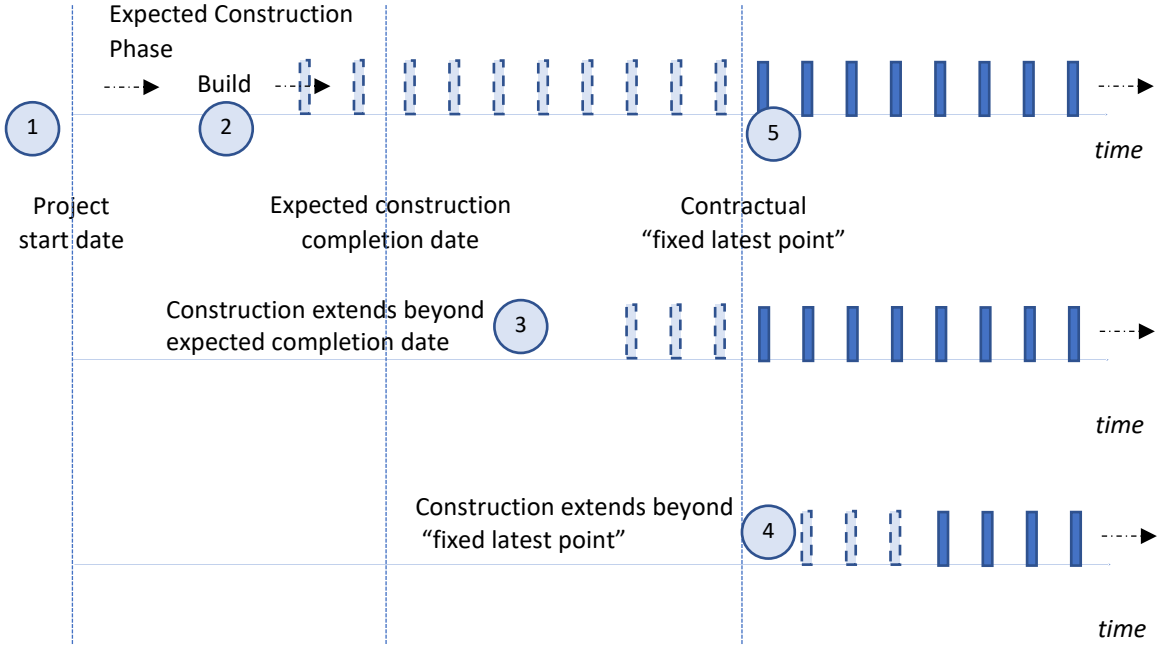
We consider a relatively simple example of a single firm solely providing the funding for an infrastructure asset that will return a stream of regular, quantifiable cash flows. Solid blocks in the chart below indicate a cash flow paid from the asset post-completion; dashed blocks indicate a cash flow paid before completion of the build.

In this example, a contractually agreed FLP has been established, after which the insurer is guaranteed to receive cash flows, although at outset cash flows are anticipated before that point.

We assume that any expected cash flows can be determined (i.e. "known") in timing and amount. We now consider MA eligibility at several different points in the timeline of the project:

1. Before construction begins (assuming all pre-requisites complete, e.g. completion of land purchase, planning approval, finalisation of construction contract, etc.)
2. During construction, before the expected completion date (the "ECD")
3. During construction, but after the ECD and before the FLP (if applicable)
4. During construction, after the FLP (if applicable)
5. Post-construction

We assume that failure to complete the build is a default event. Under SS7/18, firms should have a definition of "default", and they should also have set out how they will treat and recognise these assets under any types of default that may occur, including MA eligibility. Processes around this are not considered here.



In construction, before the expected completion date - MA eligibility at points #1 and #2 in the chart would be expected to be similar to each other. We anticipate having a stream of cash flows, and there is a contractual FLP; future cash flows after the FLP are considered to be MA-eligible (absent any other ineligibility issues).

Cash flows expected to be received before the FLP need to meet the PRA's SS7/18 requirement and "*be invested so that they will be available to meet the liability cash flows as assumed in the matching assessment*", to be MA-eligible. As the asset is not yet built, the degree of certainty attached to these cash flows needs to be considered. This should most obviously be captured within the rating of the asset, but alternative approaches using other techniques could also be used, including:

- Applying haircuts to non-contractual cash flows to reflect the degree of certainty. Haircuts could be calibrated, for example, by applying stresses to the elements that could affect project completion
- Increasing the Fundamental Spread[7] ("FS") considered in the matching assessment, perhaps based on the rating of the construction contractor for construction-period cash flows

[7] Fundamental Spread represents the risk of default and downgrade of an asset, subject to a long-term average spread. It represents the risk to which the insurer is exposed by investing in that asset.

Firms should also review these adjustments as the project evolves, updating as necessary (e.g. if the project falls significantly behind schedule).

Recognition of the cash flows in these or similar ways would increase the attractiveness of funding the construction phase of such assets. Alternatively, a structure or Special Purpose Vehicle ("SPV") could be established that would pay out a fixed schedule of cash flows, although this brings a different set of challenges. As noted in section 1, we assume a preference to avoid (re)structuring routes (actual or notional), if possible.

Construction extends beyond the ECD - At point #3 in the chart, the build is not yet complete despite passing the ECD, and there may not be incoming cash flows, however the cash flows after the FLP are still recognised for MA eligibility purposes, and those before the FLP must meet the above requirement from SS7/18.

This would be an appropriate point to review the project in some detail to determine whether further haircuts (or rating downgrade) should be applied. If necessary, for example due to the expectation of further delays, there may be a case for only recognising cash flows from a later date.

Construction extends beyond FLP - At point #4 in the chart, the contractual FLP has passed, and the firm would most likely consider the project defaulted as the firm has not yet begun to receive expected and contractual cash flows.

As noted earlier, we would expect firms to follow any treatment that they have set out for dealing with actual or technical "default" events, as expected by SS7/18. However, the treatment at this point would depend on a number of factors, such as the likelihood of reinstatement of cash flows (e.g. setting a new completion date and/or restructuring the debt), and the enforceability of any contractual clauses for make-whole[8], or alternative compensation.

Construction complete - At point #5 in the chart the asset is built, and there is no more construction phase. The infrastructure project is delivering a steady stream of cash flows, known in timing and amount. These would be considered MA-eligible and recognised in the MA portfolio.

2.1.2. Further considerations

Contracts should ideally be "MA-friendly", e.g. they should clearly state:

- A fixed latest point
- Who covers (inter alia) any costs for delays
- Who is responsible for rectifying any defects in the construction
- Who covers costs if the asset turns out different to plan
- How to deal with uncertainty over on-going management expenses of the asset

It is not always possible to achieve this idealised situation. Further, insurers are often operating in competitive bidding processes for these types of projects, and establishing strict contractual terms for MA eligibility can hinder their ability to compete with other investors.

In order to support a wider scope for investment in such assets, firms could be allowed to include them in their MA portfolios provided they make allowances for any uncertainty by using prudent

[8] Make-whole is a form of compensation (typically linked to market interest rates) which allows the lender to reinvest the proceeds to match the full term asset cash flows.

assumptions or by holding explicit additional reserves and/or capital to ensure continued policyholder protection. Such circumstances may include:

- If there is likely to be any recourse to the insurer for defects
- If a "fixed latest point" is not possible to achieve contractually
- If the income, once complete, is not certain (but is highly predictable)

"Infrastructure" covers a broad range of assets. The risks posed by one asset may not be the same, or be present to the same degree, as for another asset, and the nature and complexity could vary significantly. This requires a range of specialist expertise in order to understand and advise on the potential risks and "work-out" scenarios, should this be necessary. The PRA has highlighted this through its David Rule "*An annuity is a very serious business*" speeches[9,10], as well as Charlotte Gerken's April 2021 speech, noted earlier.

[9] 'An annuity is a very serious business' (bankofengland.co.uk)
[10] David Rule at the Westminster and City Bulk Annuities Conference, London, on Wednesday 10 April 2019 (bankofengland.co.uk)

2.2. Clean energy infrastructure assets

Recent scientific, industry and regulatory consensus, and the HMT Call for Evidence[5], are clear that investment in "greener" assets is critically important to tackle climate change and the transition away from carbon-based power generation.

One area that has expanded significantly in recent years is clean energy, or energy derived from renewable and/or sources with zero emissions. The International Energy Agency states[11] that investment in clean energy needs to reach USD 4 trillion annually by 2030 if the world is to reach net zero emissions by 2050.

The working party has investigated three types of clean energy assets:

1. Offshore wind farms
2. Onshore wind farms
3. Solar panel installations

All types require upfront financing, in order to build and be able to rely on the income from electricity generated to repay debt holders.

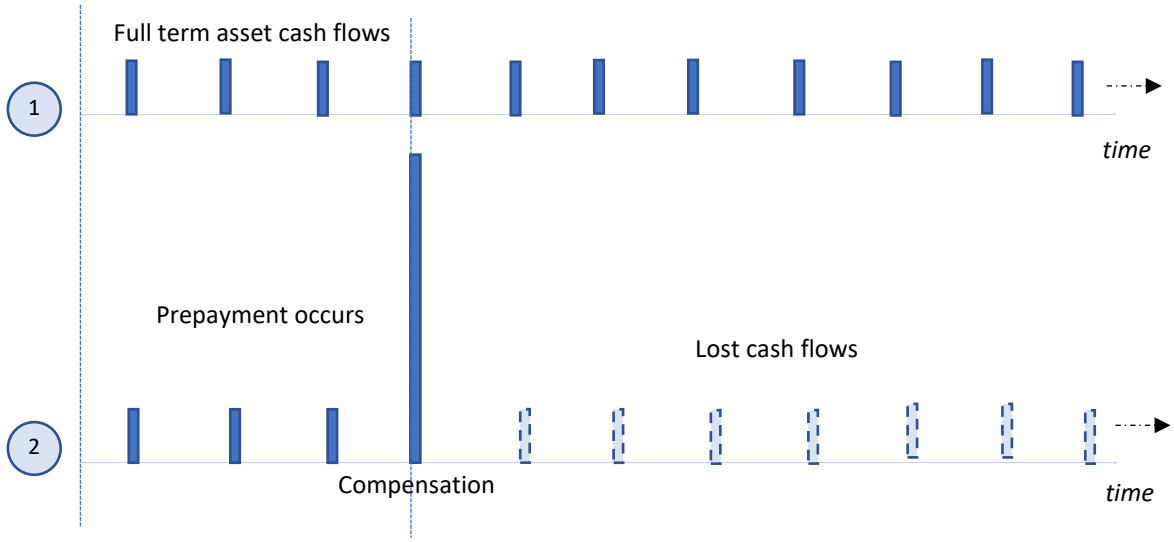
Offshore wind tends to be situated in single large sites. The market here appears to be reasonably MA-friendly and geared towards institutional investment, potentially due to the larger amount of funding required per project. The nature of single-site offshore wind also means that prepayment features are less common.

Onshore wind and solar assets tend to be more problematic from an MA perspective. They are often more fragmented projects (spread across several sites) and the underlying landowners require flexibility to allow them to change the usage of their land, or potentially to allow them to buy themselves out of the long-term contract, i.e., they give rise to prepayment features. Even if these prepayment options are unlikely to ever be used, this presents challenges for investment by MA portfolios, and issues with such assets were noted in the September 2021 speech by Gareth Truran[3].

Prepayments are problematic from an MA perspective because the compensation paid needs to be sufficient to reinvest to replace the lost cash flows, otherwise the MA portfolio may no longer be able to match its liability payments. As noted earlier, Charlotte Gerken's November 2021 speech indicates that the PRA is reviewing its approach to prepayment and deferral risk.

The example in the chart below shows how the expected asset cash flows (#1) may be changed by a prepayment event (#2).

[11] World Energy Outlook 2021 – Analysis - IEA



Below we discuss some of the common forms of prepayment clauses associated with onshore wind and solar assets, and how they could be considered for MA eligibility purposes.

2.2.1. Prepayment clauses

Cash sweep - Under certain circumstances, excess cash flows may be used to pay down the debt early. For example, this could happen where the income being received from the asset begins to fall and a "debt service coverage ratio" trigger is breached. This is generally a mandatory prepayment event and is seen as a credit (risk) protective feature, which may allow a higher credit rating to be achieved.

As these features are for the purpose of protecting the debt holder from adverse credit experience (e.g. a rating downgrade), they would seem to be a sensible measure that should be allowed in an MA portfolio.

It would also seem fair to characterise the trigger as being outside the control of the borrower, given it should not be in their interests for excess cash flows to be used in this way. However, it is worth noting that the cash sweep may improve the credit rating (relative to the same asset without this feature) and hence there is a question over whether a firm should be able to pass through the higher rating when calculating the MA.

Our view is that cash sweeps should not prevent MA eligibility. However, firms should more closely monitor assets with this feature and update the asset cash flow projections if a cash sweep process is (or is likely to be) triggered. Firms should ensure they understand their overall portfolio exposure to such features and the potential impact of a mass event (e.g. lots of clean energy infrastructure assets beginning to prepay at the same time). A further consideration would be whether to disregard the cash sweep feature when setting the credit rating, or adjusting an external rating for the purposes of assigning a credit quality step to achieve the same effect.

Power Purchase Agreement/Off-taker buyout - In this scenario, the user of the electricity being generated (the off-taker; typically the landowner) has the ability to exit their Power Purchase Agreement ("PPA"). This is akin to the landowner buying the sole use of the power generation assets.

Compensation is paid but it is not usually in a make-whole format. There may be an ability for the project sponsor (typically the equity holder) to reinvest the proceeds in other sites, but if they are unable to do this, debt holders are typically pre-paid at par. This feature could be considered similar to prepayment risk on residential mortgages, which are generally only considered MA-eligible if the prepayment risk is structured out.

However, it is unlikely that the prepayments in this circumstance would be "economically driven" and, even if they are (e.g. due to shifts in power prices), this is unlikely to be correlated with other prepayment risks to which an MA portfolio is exposed.

Our view is that firms should be allowed to hold this type of prepayment risk, subject to exposure limits which take into account the uncorrelated nature with other prepayment risks.

Asset disposals - This situation applies to "portfolio" assets, where the project holds multiple power generation sites. The project sponsor may decide to dispose of a certain site (or sites) and, rather than the debt coverage (and hence credit worthiness) reducing, the debt holders are prepaid with the proceeds. Typically, any significant asset disposals (e.g. above 10% of the overall portfolio in a calendar year) would attract a make-whole payment, however smaller amounts would be repaid at par (i.e. early repayment).

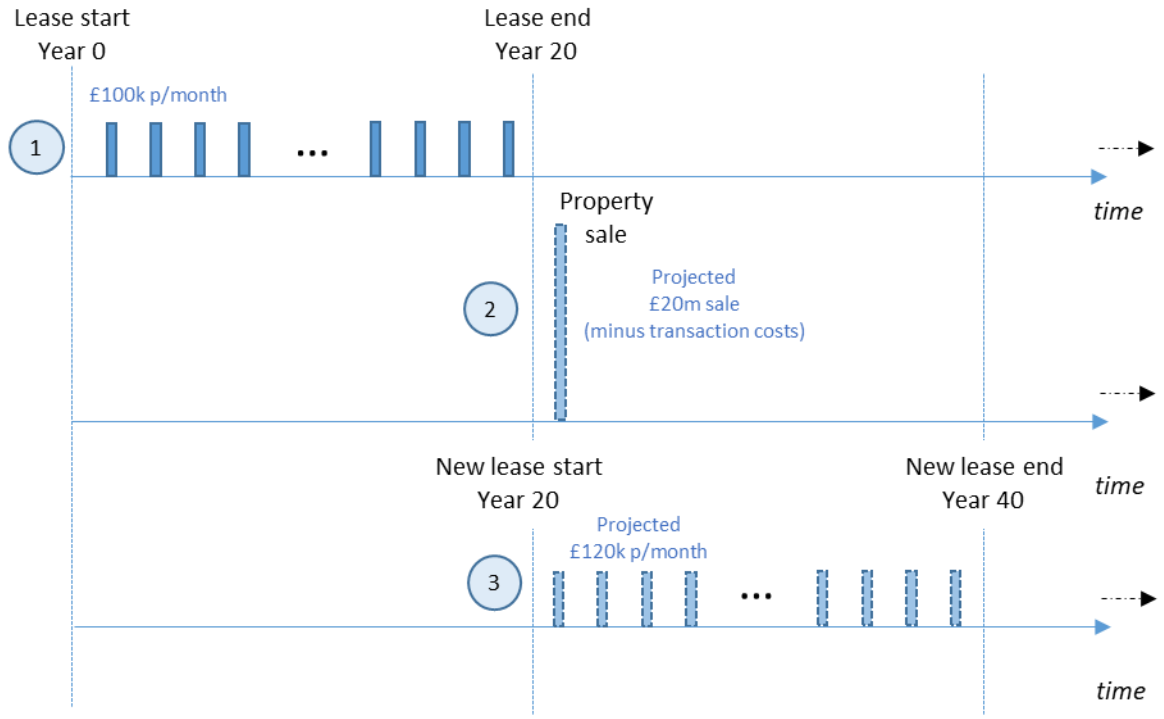
The presence of make-whole on larger disposals means MA portfolios are unlikely to be materially exposed to prepayments of this type. As a result, we think it makes sense to allow this type of prepayment exposure, subject to appropriate limits (or holding additional capital).

2.3. Sale and leaseback

A sale and leaseback ("S&L") transaction can be structured in a number of ways and can be applied to a variety of assets. For the purpose of this paper, an S&L transaction is where the insurer purchases a property for a lump sum paid today and leases the property back to the seller of the property for a fixed period.

The cash flows consist of (#1) rental cash flows paid for the duration of the lease – which are usually fixed – followed by either (#2) a property sale cash flow, or (#3) a new stream of rental cash flows under a new lease. In practice, at the end of the lease term, firms will likely avoid (#2) in favour of (#3) as they aim to achieve long term regular cash flows to match annuity liabilities.

A simple example is shown in the chart below. Solid blocks represent known, contractual cash flows, and dashed blocks represent potential cash flows. Figures are illustrative.



To achieve MA eligibility under current SII rules, firms may choose to separate (#1) from (#2) or (#3) by structuring the asset using an SPV. Notes are issued from the SPV to the firm that are backed by the cash flows from (#1), and these notes are then put into the firm's MA portfolio. The remaining cash flows from (#2) or (#3) are managed through subordinated notes and equity tranches which are held outside of the MA portfolio.

A more flexible treatment of S&L may not require a formal (re)structure to separate the cash flows, and instead could permit all cash flows to be held in the MA portfolio, subject to appropriate adjustments. This would allow firms to follow a more realistic management of the asset in practice, such as assuming that the property will be re-let at the end of the lease term. It would also avoid the costly and onerous legal separation of cash flows achieved via a formal (re)structure.

Below, we set out some barriers to fixity and how they are currently treated under the MA rules. For each one, we consider some potential alternative treatments based on a less strict interpretation of fixity. These alternative treatments are intended to better accommodate the "real-world" features

and practicalities of these assets, to allow for the risks of the cash flows, and also to prevent cash flows from being excluded from the MA portfolio completely.

2.3.1. Rental cash flows

Generally, it should be straightforward to demonstrate the MA eligibility of a stream of rental cash flows. We note below circumstances that might mean this is not so straightforward to do in practice, with suggestions for how to resolve the issues, provided the specific situation allows.

Default of the tenant and termination of the lease

This is a risk which is also present with any corporate bond. It is currently reflected in firms' calculation of the Solvency Capital Requirement ("SCR") and in the deduction to the MA benefit via the FS. For a publicly rated tenant, the credit rating assigned is usually the public credit rating.

Firms include covenants in loans, such as limits for cash sweeps and traps in place on the tenant's debt service coverage ratio[12]. Cash sweeps and traps involve holding amounts in ring-fenced accounts that the tenant cannot access, in order to reserve for future unpaid rental cash flows. This supports the fixity of cash flows and helps to reduce the financial impact of tenant default.

To reflect the credit improvements offered by these contractual terms compared to a public corporate bond, a suitable reduction could be made to the level of FS applied to the lease contract, and an adjustment could be made to the calculation of the SCR to reflect the presence of these covenants.

Costs that may fall on the landlord during the lease term

These include, for example, repairs, addressing changes in building regulations and/or insurance costs. Leases typically state that tenants bear these costs, but if they fall on the firm these costs are typically allocated to the notes that are held outside the MA portfolio.

Where the firm bears the costs, a potential alternative treatment may be to haircut cash flows in the MA portfolio by a best estimate of future costs over the duration of the lease.

Break clauses

Break clauses are problematic from an MA perspective. We note that make-whole clauses can be used to provide sufficient compensation for break clauses and produce MA-eligible assets under the current regime.

It may be possible to use an SPV to structure a number of S&L assets, and the cash flow uncertainty resulting from any break clauses could be allowed for when structuring the MA-eligible notes. However, this is outside the scope of this paper.

2.3.2. Post-maturity rental cash flows

In this section we consider post-maturity issues that can render cash flows to be excluded from firms' MA portfolios under the current SII rules.

We note that the cash flows in this section are at the "less certain" end of the range, and firms would need to strongly consider whether it is appropriate to adopt any of the approaches we have set out. Should a firm be able to satisfy itself that it is appropriate, the assumptions would require considerable validation and any expert judgements should be heavily scrutinised. For example,

[12] Debt service coverage ratio is the tenant's earnings before interest and tax ("EBIT") divided by the total debt obligations. For S&L this would be the tenant's EBIT divided by total rental cash flows.

allowance for dilapidation and/or re-fits should be included as appropriate. We would also expect that any of the approaches would only be utilised for an appropriate time horizon post-maturity.

Unknown value of post-maturity rental cash flows

Firms can estimate future rental cash flows by carrying out a risk-neutral projection of future rental returns using a combination of published indices on market rent levels and stochastic simulation techniques. This will be similar to the property price projection noted in section 2.3.3 below.

A haircut to future rental cash flows reflects the uncertainty in the projection approach. While firms may be able to demonstrate through back-testing that the model is appropriate based on the calibrated parameters, the long duration of S&L assets (e.g. 25 years) means that long-term projections may lack credibility. One approach may be to calibrate haircuts based on differences between observed historic rent yields and those projected by the model in back-testing. Expert judgement may be applied to allow for any idiosyncratic differences between real estate assets where there is insufficient historic data.

Unknown timing of post-maturity rental cash flows

This is similar to the unknown timing of the future sale of a property discussed in section 2.3.3, below. A delay to the start of new rental cash flows can be used to represent the time taken to find a new tenant. The timeframe chosen will depend on the specific transaction, such as the type or use of property and the number of tenants, and may be set individually using expert judgement.

We are unaware of data published by rating agencies on the timeframe between the end of a lease and a new lease being agreed, however firms could use the sale period as a proxy for this combined with expert judgement adjustments.

Unknown new tenant

The main issue here is the credit quality of a new tenant and the impact on the FS, which is difficult to predict. Depending on the use of the property, an average index credit rating for the industry could be used with an adjustment to provide a margin of prudence. Ultimately, this affects the level of haircut applied to cash flows from the FS.

2.3.3. Property sale cash flows

Before considering property cash flows, we acknowledge that there are two consequences of a relaxation in fixity rules: (1) include previously excluded cash flows, albeit with a haircut, to help with cash flow matching; and (2) increase the residual spread earned on assets used in the calculation of the MA benefit. The consequences are linked: (1) means that fewer other assets are required to meet matching requirements; and (2) means that the yield on existing S&L assets increases. Therefore, any haircuts proposed to cash flows to achieve (1) (which, on average, reduces the risk of becoming a forced seller of assets) should be consistent with the treatment in (2).

Unknown sale price of property

Firms can project the sale price of the property to determine the future cash flow at the end of the lease term. The projection approach will need to be consistent with the PRA's treatment of Equity Release Mortgages ("ERMs") in estimating the value of a future property sale, as we expect the PRA to apply similar principles to that set out in Supervisory Statement SS3/17[13] – i.e. valuing properties using risk-neutral valuation techniques. We do not go into the details of valuation methodologies

[13] Supervisory Statement 3/17 'Solvency II: Illiquid unrated assets' (bankofengland.co.uk)

here; however we expect that some form of stochastic process or closed form[14] technique using risk-neutral parameters would be used to estimate the future property value, due to lack of observable market data.

In practice, the sale price of the property may not be a focus as the firm will look to re-let the property at the end of the lease term. There may therefore be a choice for the firm between including post-maturity rental cash flows (as discussed in section 2.3.2 above) or including a future sale value for the property.

Determining haircuts to apply to post-maturity property sales is somewhat artificial and could lead to spurious estimates. If firms do plan to sell the property at the end of the lease, then the haircut may take into account factors such as the type of property, number of rentable units, attractiveness, age, quality etc., as well as by looking at comparable property in the same region. A more scientific approach is difficult to generalise and is likely to be transaction-specific due to the idiosyncratic nature of some real estate assets.

What is more relevant is the value of the property following default of the tenant – where either the firm looks to sell the property (which may be linked to the reason for tenant default) or re-let. The value of the property will take an immediate hit as a property without a tenant is worth less in the market, so a haircut to the market value to reach the "vacant possession value" could be made.

Unknown timing of property sale

If a property is to be sold following the end of a lease, there is often a period between the end of the lease and the sale of the property. The length of this period depends on the cost, size, type, region, quality, age, etc. of the property. It may also depend on practicalities, such as organising legal arrangements.

One possible method to determine the length of the period may be to use data gathered by external credit rating agencies in rating mortgage-backed securities. Agencies observe the time between the default of a mortgage and sale of the underlying collateral, and they have produced estimates of the time based on the country of the underlying asset. For example, Standard & Poor's ("S&P") estimate the period to be 12-18 months[15] for commercial mortgage-backed securities in the UK.

[14] For example, firms value the no-negative-equity-guarantee as the present value of a series of put options on the forward price of the underlying property each valued using Black-Scholes option pricing.

[15] S&P European CMBS Methodology And Assumptions, November 2012

3. Conclusions

HMT's review of SII seeks to:

"*provide long-term capital to underpin growth, including investment in infrastructure, venture capital and growth equity, and other long-term productive assets, as well as investment consistent with the Government's climate change objectives*".

The working party believes that if insurance firms were given greater scope to solve the challenges to MA fixity – such as those presented in this paper – then these firms would be more able to invest in long-dated assets that reflect their ESG and corporate values. As a result, insurance firms could better support HMT's objectives above, providing security for their annuity policyholders, as well as meeting wider economic objectives.

The term "fixity", in its absolute form, presents a challenge to MA firms looking to incorporate private debt assets – notably those with "green" credentials – in increasing volumes and wider forms within their MA portfolios. The nature of the underlying projects, and the additional structuring and risk management features incorporated into loans, often results in features that do not align perfectly to the current regulatory form of "fixity".

There is likely to be no general solution to the appropriate degree of fixity, as each asset class or individual project presents its own idiosyncrasies, based on the underlying risks, prevailing market practice, and financing structure employed.

There are multiple solutions for each of the challenges presented in this paper, and we have set out some ways in which these issues potentially could be addressed without significant changes to the MA framework, through a more pragmatic interpretation of "fixity".

We welcome Charlotte Gerken's November 2021 speech on supporting insurers' investment, which indicates that the PRA is considering potential reforms to tackle several of the issues covered in this paper.

Rather than requiring the satisfaction of strict fixity requirements at individual asset level, portfolio-level approaches, (e.g. different cash flow matching tolerances or tests, at an aggregate level), could demonstrate overall adherence to matching requirements, including under stressed conditions, while adhering to any concentration or exposure limits.

While the assets considered in this paper (certainly once built) are a very good match for annuity liabilities and can satisfy the objectives of HMT's SII review, there would be Prudent Person Principle considerations; for example, the exposure to infrastructure assets that were "in build" at any point in time, or the size of any single asset or sector exposure as a proportion of the MA portfolio.

Whichever way a firm chooses to approach these situations, evidencing that risks are appropriately managed is a core requirement, particularly where material judgement has been exercised.

Overall, fixity as a concept under the current MA rules is a clear challenge when considering investment in emerging technologies, green/clean energy investments and long-term real assets. Annuity policyholders, the UK insurance industry and the wider economy would benefit from greater pragmatism and exploration of practical solutions to the challenges presented in this paper.