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Non-traditional investments: key considerations for insurers

Abstract of the London Discussion

[Institute and Faculty of Actuaries, Sessional Research Event, London, 19 January 2015]

This abstract relates to the following paper: Mee, G. Non-traditional investments: key considerations for insurers. *British Actuarial Journal*, doi:10.1017/S135732171500015X

The Chairman (Mr P. Fulcher, F.I.A.): This meeting is to discuss the benefits and the challenges for insurers considering non-traditional investments.

Legislation is increasingly discouraging banks from acting as long-dated finance providers. However, the need to build infrastructure in the UK and in other countries is increasing, so we have a growing demand for long-term lending. Insurers with long-dated illiquid liabilities are, in theory, ideally placed to fill the gap and are increasingly incentivised to do so, given the low returns on their more traditional investments like corporate bonds.

With new opportunities come new problems. Investment in new asset classes raise regulatory, operational and legal issues that people will need to manage. For these reasons, the Life Practice Executive Committee, of which I am a member, decided in 2013 to commission a working party to look into this. It was set up late in 2013 and it has progressed to producing the paper that is being presented to us tonight.

What we have is only about 20% of the working party's output. Tonight's paper focusses on generic issues with investing in new asset classes. The working party has also done some detailed work on five or six individual asset classes, looking into their risks and specifics. Those papers are not on today's agenda, but will be going on the Institute and Faculty's website following this discussion.

The working party was keen that its work was complemented by a coalface view from a couple of practitioners. Mr Martin Muir, who is Group ALM Director at Aviva, is going to give the introduction. Then, after Mr Mee has introduced the paper, Mr Dan Pender, who is Executive Director Capital and Commercial at Prudential, is going to give his perspective. Mr Muir is an actuary with 25 years' life insurance experience. His role as Group ALM Director for Aviva is looking after capital management, asset allocation and hedging. He has previously worked at Goldman Sachs and at Towers Watson.

Mr M. J. Muir, F.I.A. (providing Aviva's perspective on non-traditional investments): I am focussing on Aviva's perspective on these sorts of assets. I caveat in the usual way by saying that, while I will try and focus on Aviva's perspective, the views I express are my own, and not necessarily the views of my employer.

The title of the paper refers to non-traditional investments. However, many of the investments that are covered in the paper are investments that Aviva has been making for a long time. We have quite a large long-standing portfolio of commercial mortgages, for example, so we might regard it as a more traditional investment for us. Nonetheless, there are new investments that we are looking at as well.

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I will briefly cover some of the background on our current asset portfolio, and then consider some of the non-traditional investments that are covered in this paper. Then I am going to talk about how and where we expect to extend our portfolio, and why, and some of the challenges that we see in doing that. Where possible, I will try to contrast that with some of the views that are expressed in the working party paper.

Aviva is a composite international insurer with a little under £300 billion of assets under management. In general, our objective in selecting what to invest in is to meet or exceed customer expectations, and to provide a good risk-adjusted return to our shareholders while remaining within risk appetite. That means our investment strategies are heavily influenced by our liabilities. Our biggest blocks of business are the UK with-profits book, the UK annuity book, large with-profits portfolios in France and Italy and some large non-life businesses, particularly in the UK but also in Canada and France. Each of those businesses requires a different appropriate investment strategy.

The total asset split, if I exclude the unit-linked assets for Aviva, is about 70% in bonds and debt securities, 15% in loans and 15% in equities, property and mutual funds. The corporate bonds and the debt securities are used in all of our portfolios: the with-profits portfolios, the annuity portfolios and the non-life. The equity, property and mutual funds are primarily, but not exclusively, backing the with-profits liabilities. The majority of the loans back the annuity business where you have the long-dated illiquid liabilities. But there are investments in loan portfolios in the with-profits and non-life books as well.

Our loan portfolio contains many of the non-traditional investments that are mentioned in the paper. We have a large and long-standing portfolio of real estate mortgages. That is both commercial property and social housing. We have a large portfolio of equity release mortgages, private finance initiative loans and private placements. We have investments in infrastructure and renewable energy funds through Aviva Investors and we are also building out a direct portfolio of UK infrastructure debt.

Why is AVIVA interested in what the paper describes as non-traditional assets? The first and probably the main reason is diversification. Infrastructure debt or commercial mortgages, for example, provide an alternative form of credit exposure that can diversify well with traditional corporate bond portfolios. There are interesting investment opportunities, and good risk-adjusted returns on capital, in many of the alternative or non-traditional investments, which means that it is inefficient to restrict yourself to listed corporate bonds, for example, if you are building up an efficient credit portfolio.

The second reason is, particularly in annuity business, we have long-dated illiquid liabilities. That means that we have some appetite for illiquidity risk in the assets that we buy to back those liabilities, and so we are looking to capitalise that illiquidity premium for shareholders. We are also looking for areas where we think we have a competitive advantage in sourcing assets, so we have a large commercial finance business that sources commercial mortgages because of the equity release products. And because we have illiquid liabilities, we have a competitive advantage over lenders whose liabilities are more liquid.

A final point, which is important, is that one of Aviva's values is building legacy. Investing in things like social infrastructure in the UK or supporting the economy and infrastructure in the EU is consistent with our values as well as being a large insurance company supporting the economy more broadly.

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I did not mention low yields or low credit spreads, which is one of the reasons listed in the paper for wanting to invest in non-traditional investments. That has not been a factor for us as we have been investing in non-traditional investments for a long time. Investing in these asset classes requires a real commitment in terms of building the team and the expertise to source the assets, assess the risks properly, carry out due diligence and price them properly. That is not something that you want to switch on and off – to suddenly invest in the assets for 3 or 4 years where rates are low and spreads are tight. For that commitment to pay dividends you want to identify asset classes that you want to be in for the long term and throughout the economic cycle.

I move on now to where we are, and have been, looking to extend our current portfolio. We spent some time at the beginning of 2013 analysing a range of investment opportunities. I was quite interested in looking at the scoring matrix within the paper for different asset classes. We did something quite similar. We felt that it was particularly important to prioritise the new investments in which we wanted to invest, as, to reiterate, it is a lot of work to move into new asset classes effectively. We only want to do that if it is something that is material in the context of our balance sheet. We need to identify the opportunities that will deliver the most value to us, to our shareholders and to our policyholders.

We wanted to prioritise on the opportunities that were the most meaningful for us. The key criteria that we used were the risk-adjusted return, capital treatment and size of the opportunity. We only wanted to invest in things where we felt that we could make a meaningful investment, again in the context of our balance sheet and scale. We were looking ideally for investments that had a larger deal size. If you are looking at deals that are £5 million each, there is an awful lot of due diligence in order to build any meaningful portfolio. If you are looking at deals with £50 million each, you get a much better return on the time that you are investing in due diligence, risk assessment and building internal models.

We were also looking for assets where insurance companies, particularly with illiquid annuity liabilities, had a competitive advantage over banks, especially with the changes in the capital and the liquidity rules in the banking sector. We were looking for areas where we felt we had a sustainable competitive advantage, not just a short-term or transitory advantage.

The final criterion was the ability to access the asset class, and that we have the skill to do so.

That prioritisation reaffirmed many of our existing investments. It highlighted, in particular, certain types of infrastructure, debt investment, that were complementary to our existing investment portfolios. As you may know, Aviva subsequently made public commitments to support the UK infrastructure programme and the EU's €315 billion investment plan.

In considering infrastructure debt, our current preference is for locally denominated infrastructure debt. The paper therefore touches on some of the challenges around currency matching. We are looking for a high degree of cash flow certainty. That is important for matching adjustment eligibility. In general, we prefer infrastructure debt where the cash flows are linked to availability of the project or building, not usage. We are not looking to take material construction risk at this stage. We are happy to look at primary or secondary investments.

Primarily, we are accessing these investments by leveraging and building out the existing capabilities within Aviva and Aviva Investors. Having said that, we have considered, and continue to explore,

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opportunities to work with third-party fund managers, to partner banks and to syndicate with other insurance companies.

Aviva is applying for an internal model under Solvency II. That means that clearly we need to develop internal model calibrations for our material asset classes. So that is another focus and a big piece of work for us. Obviously, we need to be selective. We cannot develop, and indeed the regulator would not have time to review, an internal model for every single investment that we might look to invest in. So we are focussing on the opportunities that are material for us.

Finally, from an industry perspective again rather than specifically for Aviva, we need political and regulatory stability. These are long-term illiquid investments. So, insurance companies and investors generally need to have confidence that there will not be any regulatory or legal changes that, retrospectively, change the returns for investors in existing investment. We have seen it in Spain and Italy on renewables. That is a big disincentive for private investment in some of the non-traditional investments.

Ultimately, we need more encouragement for long-term saving in households. That is where the money comes from that insurers have to invest. We need a supportive regulatory regime for insurance companies, including Solvency II – both matching adjustment eligibility and internal model treatment.

Also, we need a good supply of infrastructure deals and good access to them. That means, for example, having a clear pipeline visibility so that you can see the deals coming through, and you can plan your resources. You are confident in committing and building the resources that you are going to need to invest in some of these new assets. Then an efficient procurement process is necessary. In particular, the public sector procurement is often quite painful. It needs to become more efficient and quicker so that you can have more confidence in making investments.

We need more supply of infrastructure debt as well. At the moment this supply is not keeping up with the demand. Particularly, if you have relatively tight lending criteria and if you are interested in a particular sector of the infrastructure debt market, as we are, you are seeing spreads bid really tight. There are still attractive opportunities, but my perspective would be that there is a supply–demand imbalance. Many insurance and pension funds are keen to invest, but the supply is not keeping up. There is much talk about deals that are coming through but not much action.

There is also much talk about government guarantees on infrastructure and other debt. That is crowding out the private investors who have an appetite for that risk. So when it is government guaranteed, the yield will collapse. That is not necessarily of interest to many private members.

Nonetheless, despite all of those challenges, I am confident that we and other insurers will build out our portfolios in many of these new investment areas.

Someone asked me whether I think this is transitory or here to stay. I do think it is here to stay. There are many structural and long-term reasons why insurers and pension schemes are the natural lenders for many of the projects and the finance that the economy needs.

The Chairman: Mr Gareth Mee will now present the paper as the chairman of the working party. He is also a Director within EY European Actuarial Services. He leads the insurance investment team at EY, providing advisory solutions to insurers' investment functions and to asset managers who invest insurers' money.

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Mr G. S. Mee, F.I.A. (introducing the paper): I am going to focus on the shorter paper starting off by giving you a brief background, the backdrop to the economy at the moment and where insurers are currently focussing. Then I will talk you through some of the opportunities as we see them within the working party and build on what Mr Muir has talked about. Finally, I will talk about the challenges and, as Mr Muir says, the fact that they are perhaps the keys to success, and then leave you with some final thoughts.

Before we launch into a discussion on non-traditional investments, it is important to look at the current economic backdrop. Back at the end of 2013 it looked like yields might be picking up again. Long-term nominal gilt yields had significantly picked up. Perhaps, if you are looking at nominal annuity pricing, for example, then this might be a good sign.

At the end of 2013, credit spreads were quite low compared to recent history, albeit still significantly higher than long-term historical norms. Then towards the end of last year yields collapsed again with long-term gilt rates at about 2.5%, and credit spreads had stayed very low. Notwithstanding Mr Muir's comments, the working party would agree that insurers need to broaden their horizons and look outside of traditional asset classes in order to remain competitive within the annuity pricing market and to make competitive returns for their policyholders and shareholders.

It is worth reflecting on the importance of insurers on the long-term investment society. Insurers are critical to this society, investing £1.8 trillion of assets under management here in the UK and over €8.5 trillion within Europe. They are serious institutional lenders. The survey from BlackRock and The Economist Intelligence Unit sets out the way that insurers are looking at material investment in what they call private asset classes, and what we call non-traditional asset classes. Three years ago, only 6% of insurers – and this is a global survey – were investing material amounts of assets in alternatives, where "material" here is defined as 15% of a portfolio or more. That figure has now risen to 26% and is expected to rise to 46% in the next 3 years. That is a staggering move towards what would previously have been considered non-traditional asset classes for all but perhaps some of the largest insurers.

Why might they be doing this? If I consider a liquid asset and an illiquid asset, both of which have the same spread over risk-free yield, I ought, as a long-term investor, that is an investor that is going to hold an asset to maturity, to prefer the illiquid asset, because in an efficient market I should be paid more for the illiquidity and therefore the credit risk on that investment ought to be lower. That is important because if I then hold that asset to maturity, I ought to be losing less money in the long run. That seems to be something to which insurers are subscribing in the current market.

I thought it would be useful to put some of this into a real context. Mr Muir has talked about what Aviva is doing in the current market in terms of non-traditional investments. I know that Mr Pender is going to talk about what Prudential has been doing over the recent past. The £25 million commitment from UK insurers to the UK infrastructure plan is significant and, of course, we do need the supply of infrastructure projects as this is something that UK insurers want to get into in a big way.

A few examples from the past couple of years of insurers moving into non-traditional assets are L&G, Prudential, Friends Life and Aviva. We can see a diverse mix of assets and insurers. PIC, Lloyd's Banking Group, Rothesay, Phoenix and Standard Life have also made considerable moves into the non-traditional market over the past couple of years.

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Before we go too far, I thought that it would be useful to reflect on Mr Mark Carney's words of last year, which are probably the best illustration in the public domain of the concerns about these non-traditional asset classes within the regulator. Certainly, my clients at insurance companies will see some more scrutiny from the regulators.

I made an important comment earlier that an illiquid versus liquid asset comparison works well in efficient markets. It could be argued that these are not efficient markets. Insurers need to be clear that they understand the risks within these non-traditional assets before diving in too fast.

We should start talking about some of the research that the working party has done. I would like to comment on the diverse set of backgrounds that we have within the working party that can contribute to this sessional paper. We can draw on expertise from the asset management industry, from the banking industry, from insurers and from consultants, all of whom have different views. This has been critical in making this working party a success.

So far, we have researched five sub-groups of alternative assets. We have focussed on the opportunities and potential constraints, and we have started working with organisations such as the Department for Business, Innovation and Skills and the UK Government to try to think realistically about how we can break down some of those barriers.

This working party had a number of particular challenges when trying to put together an academic research paper. There is limited data, if any, in some of these areas. We cannot go on to the internet, download historical data on yields, spreads and default rates. It does not exist. There are confusing terms and inconsistent material. What we have had to try to pull together is mainly proprietary knowledge that we can turn into consumable form and that is of interest to this and the broader audience.

The capital requirements for some of the non-traditional assets are hard enough to consider even within a stable regulatory framework; it is certainly difficult when the rules change every few months.

What might we consider "alternative"? Mr Muir has already said that commercial real estate and social housing might not be considered alternative for Aviva. But for most UK insurers they would still be considered alternative assets. We defined five sub-groups of investments, starting off with infrastructure. That is the asset class that makes the headlines and is aligned to the social good. A number of insurers would invest more in infrastructure if they could. Here we are talking about social infrastructure, which is aligned to government policy, and economic infrastructure, which might be privately run but is still important for the running of the country. The other is energy, including renewables.

The key feature with these is that an insurer is making a loan to a project, a special purpose vehicle (SPV), with generally no official security and the assets are highly illiquid. Once you have these assets, again, as Mr Muir said, you are holding on to them for a long time.

The next asset class is real estate-backed, which is probably the one that is easiest for insurers to grasp. We have some explicit security here. It is backed by property, which insurers generally understand to one extent or another. We have residential and commercial lending, social housing, student accommodation, equity release, mortgages and ground rents. It is a broad asset class. Again, these are formally secured on properties. But generally, in debt form, they are highly illiquid securities.

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Then it is obviously important to cover other asset-backed securities. Within this we have a broad mix of assets that are secured on real assets, including securitisations, about which there is much press at the moment. Aircraft financing is an asset that we have considered in detail. These are often highly structured. Valuation of the underlying investments is important, and understanding the structures is critical for insurers.

Other unsecured assets are those that are closest to corporate bonds, which insurers understand. Private placements are in loan format – basically, a corporate bond. With the Loan Market Association announcing standardised terms here in the UK, and with a push to standardise terms across Europe, we could have a private placements market, which opens up a broader universe of borrowers for insurers to lend to. We also considered briefly small and medium enterprise (SME) lending, and some of the other unsecured assets that are traded, such as high-yield assets and overseas debt.

Then we have this "other" category. We considered it important to consider a range of other assets, which were a little different to fixed income. We chose private equity, hedge funds and insurance-linked securities. We could have chosen other assets. Insurers have invested in commodities, fine wines and art, all of which we could have potentially considered. We have chosen assets that are perhaps more widely represented in terms of interest within UK insurers at the moment.

I have built up a graph of potential returns for these major asset classes. In general, we picked a few of the assets within the sub-groups, starting off with the other asset-backed securities (Figure 1).

There are a number of things we should note as we go through this graph. There is a range of different durations. We started out this working party primarily focussed on the long-term investments because we are focussed on life insurers, and many life insurers are most focussed at the long-term end. In terms of non-traditional, we have to look at assets across a range of durations.

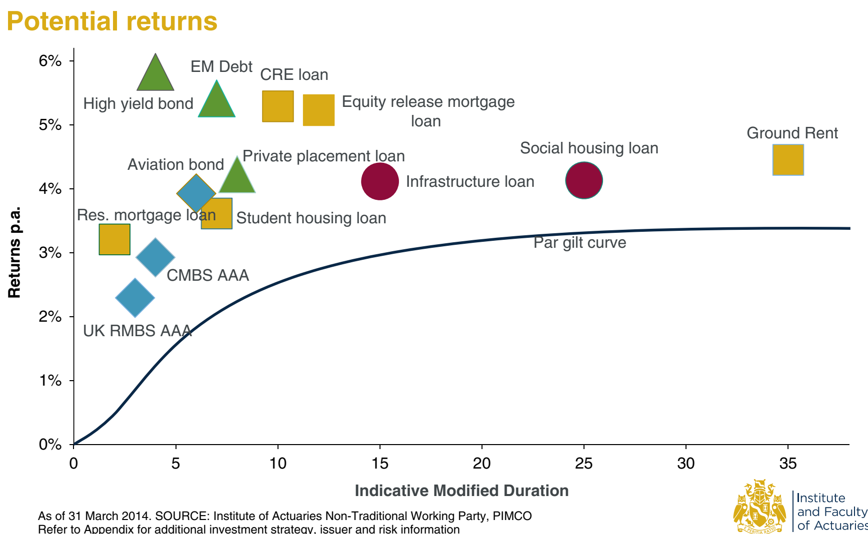

Figure 1. Potential returns. EM, emerging market; CRE, commercial real estate; CMBS, commercial mortgage-backed security; RMBS, residential mortgage-backed security

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There are some attractive-looking returns, so they are probably worth exploring further, given the low-yield environment.

However, we should note that, in general, there is no public data on any of these asset classes. What we have is not an exact science and it is drawn from proprietary information. It is important to note the range of uncertainty around the investment returns. This is a snapshot. The yields may change. Most importantly, even if we wanted to know what the yields are right now, we would need the level of uncertainty to be represented.

Other asset-backed securities are generally shorter-dated than some of the other assets that we are going to consider. But they have some interesting-looking returns. For insurers, particularly some general insurers, and for assets backing shareholder funds, this is potentially a way to uplift corporate bond yields with something a little more structured, a little less liquid and with some complexity premium.

The unsecured assets do not have any form of security behind them. So, we would expect yields to be increased, and indeed they are. We have high-yield bonds, which probably require the highest level of risk appetite within the asset classes that we have considered, at the shorter end. Moving out towards the longer durations, we have emerging market debt and private placement loans, which can carry a wide range of durations, but we have chosen quite a common one here of about 7 years.

Then we have the real estate-backed assets. Property is a long-term investment, so debts backing that property also need to be long term. At the longest end we have ground rents. These are typically secured at 60-year terms, so potentially of interest for companies with periodical payment order liabilities or some very long deferred annuity liabilities. At the medium-to-long end, we have commercial real estate loans, equity release mortgage loans, and at the shorter end, student housing and residential mortgages.

We complete the picture with infrastructure, which again pushes out the duration quite significantly, offering opportunities up to 25 and 30 years in length with some interesting-looking returns but perhaps not quite as high as some of the others, particularly the high-yield bonds and some of the real estate-backed assets.

In summary, what we have in terms of a picture of a range of alternative assets is a diverse range of assets. We have a diverse range of durations. Depending on where you are looking on the balance sheet, there are assets that might be suitable from a duration perspective. We certainly have some yields that look healthier than some of the yields on corporate bonds, which again, to reiterate, in this competitive environment, warrant further consideration.

It is important to go through the other aspects of the paper, which are the challenges. The first challenge is how to get hold of one. You cannot just ring up a bank and get hold of an infrastructure loan. These are big, lumpy investments. You could try to invest alongside other investors by going through pooled funds. That is quite difficult in the current environment. There are not that many pooled funds that exist for insurers to participate in for many of the asset classes that we are considering. There are some segregated mandates whereby insurers can invest with an asset manager on their behalf. Mr Muir mentioned the idea of investing alongside other insurers. Certainly, in some of these markets the idea of insurers clubbing together to take down some of the bigger deals might be a good way for insurers to access this market.

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Securitisations are a useful way of getting hold of some asset classes that would otherwise probably be too small for insurers to invest in. Certainly, the working party felt that, in isolation, SME lending would be difficult for insurers to participate in. In securitisation or collateralised loan obligation format they might be accessible. More commonly, some of the bigger insurers tend to try to lend either directly into the origination market or by purchasing secondary market loans. This is where insurers are replacing banks or asset managers and acquiring these assets directly onto their balance sheets. This is hard because there are no market prices.

If I want to buy an infrastructure loan or a commercial real estate loan, I do not know what I should value it at. I cannot look on Bloomberg and get a price for it. I have to come up with some other method of valuing the assets. I might use a proxy valuation method, by looking at similarly traded instruments, or looking at real estate companies that are traded on the market. I might try and look at their bond returns, try and bridge from a bond to a loan. Or I might try to build a yield up from first principles and think about all the risks that are within that investment.

Then I am going to have to perform a credit assessment. I might have a relationship with the borrower. I need to understand about that borrower, the sector it operates in and its creditworthiness.

With Solvency II around the corner, if I am a standard formula investor or a smaller investor, is this going to cost me lots of capital? Is it worth bothering?

The conclusion that we came to as a working party is that it is not clear-cut. If you look at some of the assets, such as social housing loans, equity release mortgages and commercial real estate, you find that the standard formula is penal because these are unrated assets, whereas it gives you credit for the fact that you have some formal security behind them. You end up with something quite similar to an A-rated corporate bond. If you weigh that up, it is perhaps a little unfair on the default rates and on the level of recovery. We would certainly expect, as a working party, that you would recover more from some of these assets and the default history tends to be a bit better. Then perhaps it is a little too favourable on the spread risk widening. These things are illiquid and in times of market stress there is evidence to suggest that these become even more illiquid and thus spreads blow out.

Other assets, where there is no formal security, such as infrastructure loans, aircraft and private placements, end up requiring almost double the level of capital charged to corporate bonds, and potentially look quite capital consumptive for similar-looking returns. There are a number of assets that, looked at in isolation, appear almost prohibitive in terms of the level of capital. Here we are thinking about Type 2 securitisations, re-securitisations, and certain hedge funds and private equity strategies in the absence of looking through to the underlying investments.

From a standard formula perspective, there are many asset classes that are not necessarily unfairly treated, but there are certain asset classes for which it is difficult for standard formula investors to achieve a good risk-adjusted return on capital. It is worth reflecting on the fact that many of the insurers looking at these asset classes at the moment will be using internal models.

Investing overseas is an obvious way to increase diversification, not just because you are lending money to companies in a different jurisdiction. If you look at different markets then you will find that you end up with different looking bonds, certainly at the long end. If you compare the US market to

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the UK market, for example, you find a much higher level of non-financials in the US market, which is particularly attractive for companies looking to increase their diversification.

The difficulty is then what to do with the currency risk. We could not hedge it, which is an option, albeit that the current Solvency I rules look dimly upon that, as do the Solvency II rules. The currency charge is expensive and you probably have to do something about the currency risk if you have material holdings.

"Rolling forwards" is what most companies would do, perhaps, in the absence of a matching adjustment. This is where you look at your currency hedging on a 3-monthly basis and you look to hedge out the market value volatility. It tends to be relatively inexpensive but it does not fix cash flows in sterling. So, a number of companies are now looking to do full cross-currency hedges, which provide that certainty from a sterling perspective but are not perfect. You end up with market value volatility, which can be quite significant in certain currencies. You also end up with some geared exposure to default risk. It is not simple in terms of whether you place your hedges within a matching adjustment portfolio or outside it. The matching adjustment seems to be pushing companies towards cross-currency hedges, but that is not without its challenges.

Building on this idea about matching cash flows, it is topical to think about what we need to do in order to fix cash flows. One of the key features of the assets that we consider within our paper, and that we considered early on, is that they do not have fixed cash flows. They often have a number of uncertainties. They might be in a foreign currency, as we have just covered. They might be floating rate. They might be index-linked bonds, which might be linked to LIBOR or to other indices not allowable for the matching adjustment. There may be performance uncertainty. Securitisations, for example, often have uncertain amortisation schedules. For many of the loan instruments, there is borrower optionality, so there might be pre-payment risks; there might be either optional or mandatory deferral clauses within those loans. There are a number of challenges to fixing the cash flows.

Within the working party we considered a number of ways that have been considered by insurers to fix those cash flows. One example is relatively simple, whereby the insurance company passes some problematic assets into an SPV, and that SPV issues a debt note back into the insurance company. We are considering the annuity funds, and the equity layer is held somewhere else. In this example it is held by the holding company, but it could equally be held by an external party. The idea here is that you create fixed cash flows out of uncertain cash flows.

The paper then goes on to cover other types of fixing: derivative overlays using more standard instruments, some structured third-party derivatives – a total return swap or perhaps a reinsurance contract – and then a number of intra-group transactions, where perhaps a parental guarantee can take out some of the uncertainty.

The final challenge perhaps is the most difficult for insurers to overcome because, for most of these assets, we have a relationship with the borrower that we do not have when we invest in corporate bonds or government bonds. Terms can be changed either contractually or on a discretionary basis. That might come about because the borrower's circumstances have changed: it has been taken over, or it does not want its borrowing to be linked to 1 month LIBOR because its liabilities are no longer linked to 1 month LIBOR. It wants them linked to 3-month LIBOR instead.

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It might just choose to repay the asset, or there may be variations which are negotiable within the terms of the contract. For infrastructure loans, there is documentation that comes alongside it in which you can negotiate variations depending on a number of things, for example, soft services, portering and cleaning – what happens if your porter business goes insolvent? What happens if some of your assets need repairing? What happens if you have a solar farm and some of your panels start to disintegrate? What happens if you have boilers and freezers that obviously are going to need to be changed?

There is a wide range of reasons why these types of assets are much less certain. These need to be managed. First of all, there is a cost, which needs to be estimated at outset. More importantly, the insurer needs to have the expertise to be able to deal with these changes. A borrower phones up an insurer and says "I should like to change my asset, please. I should like to change it from a fixed rate to a floating rate. Can I do that?". The insurer could say "No". But, actually, it may be in its interest from a credit perspective to say "Yes". It needs to be able to evaluate that opportunity. So, insurers have generally been doing one of three things: hiring expertise in-house, utilising investment management or credit insurance expertise, or outsourcing all management of these assets, which perhaps is quite difficult, given that the insurer is going to have to demonstrate some level of oversight.

Infrastructure is the asset that gets all the headlines, but there are some quite difficult features of infrastructure loans, which need to be overcome for insurers to be able to invest in them in a meaningful way.

The other unsecured assets look good in terms of pricing transparency, cash flow certainty, ability to source and ongoing management but some of them have higher risk profiles. We talked about high-yield bonds where the credit quality might be lower than some other assets that you would otherwise be considering.

I should like to leave you with some final thoughts. It is the working party's view that, despite the challenges, there are many opportunities, and it is important for insurers to evaluate these opportunities. We will continue to focus research in this area. The insurance industry, the UK Government and our profession, all have specific workstreams devoted to investigating further in this area. We welcome any thoughts, suggestions or contributions for further research.

The Chairman: Our next speaker is Mr Dan Pender. He is an Executive Director, Capital and Commercial, at Prudential. Dan Pender was appointed to that role in January 2014. He leads strategy for Prudential UK in Europe and capital optimisation. He joined Prudential from Zurich, where he was most recently UK Life CFO but before that had a variety of positions across the business.

Mr D. J. Pender, F.I.A.: This is a topic of genuine interest to people. For instance, it was the subject of a breakout discussion at the recent Labour Party conference in Manchester. I will shed some light on Prudential's role in the story.

Prudential has been involved in infrastructure for a long time. It sees itself as having a key role in both the British infrastructure and in putting the money of hard-working families to great use. It takes that challenge seriously. If you look around the infrastructure of the UK, there will be many power stations, housing estates and so on that would not exist if it were not for insurance companies stepping up to the plate. Prudential has been proud of the role that it has played.

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To give you some sense of the scale of Prudential, it has £443 billion of assets under management, which is much larger than the six sales people who were selling insurance back in 1848. It has come a long way.

Through M&G it has been investing particularly in infrastructure for over 80 years. One of the first projects it invested in, in 1930, was the Crawford dam in Scotland, which was one of the first hydroelectric dams in the country.

In the UK, Prudential has invested £28 billion in infrastructure, including £6 billion in social housing. It is a strong supporter of giving families homes. Also, M&G has over £8 billion in private placements. So, Prudential has a sizeable long and large track record. It invested £200 million in Alder Hey Children's Hospital in 2013, and £156 million in affordable homes in the Welsh housing associations. One project that I was personally involved in was the £100 million investment in the Swansea tidal lagoon. That is an exciting project of which Prudential is a cornerstone investor. If you did geography A-level, you may recall the idea of building a barrage. That has changed. The logic now is to build a lagoon and the water comes in every day and then is let out through sluices to generate electricity. As long as the moon orbits the earth, we will have electricity being generated from it. It uses technology from France that is 50 or 60 years old.

In more recent times, Prudential has been committing its energy and ideas to greenfield. We have an institution in Prudential called the Portfolio Management Group. It decided to try to broaden the remit of infrastructure beyond brownfield and allow it to start including greenfield. Greenfield projects are projects where you invest at the very start. You take on construction risk and the development of that project. You take planning risk. You take all sorts of new risks. You need particular skills and expertise to do that. By doing it, the Life Fund felt that it was going to be able to access a part of the market that it had not been particularly active in previously.

Prudential has the capabilities and skills within the organisation to look at infrastructure. It has the expertise. You need quite a lot of expertise to be able to consider greenfield. But it is a very exciting area and it allows the organisation to get involved in projects exactly like the Swansea Bay tidal lagoon.

I want now to make some comments around some of the benefits and challenges of infrastructure as an asset class. Mr Mee represented the views of the working party in covering many views. I have drawn out half a dozen benefits and a similar number of challenges.

We see infrastructure giving stable cash flows – often predictable. It is a function of the amount of work you do upfront. If you get it right, infrastructure investments can be stable and predictable. We also think they show a level of economic insensitivity, which is attractive. They are not linked to other asset classes as closely as ones that are more freely traded and therefore they have an appeal in their own right. They also are inflation linked. The formula by which you get a return from the asset is linked to how the economy is growing or to some sort of inflation measure. So it is a good inflation hedge.

Investment in infrastructure is also a great way of diversifying. It has a low correlation to other tradeable assets, which again makes it attractive.

We also think that when you look at infrastructure in particular, there are attractive returns available. There is a functioning market but it is a smaller pool of people investing and they are

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taking quite a lot of risk with many projects. With that risk you would expect to be rewarded with a higher return. We believe that we are compensated for the risk that we are taking.

A final point about infrastructure would be social benefit, which is at the heart of the decisions that Prudential makes. We believe that we are a vital part of the fabric of the UK. We find that being associated with projects where we are building homes for families is a good thing to do, particularly if the money is coming from the very families that have been saving. We see a high level of correlation with social benefit and therefore it is an attractive asset class.

However, there are some challenges. Investing in infrastructure is complicated. You need a lot of expertise. You also need a lot of capital. You need to be able to commit that capital to projects. There are many issues to be flushed out, and you therefore need to have the in-house capability to do that. That means you need to build a team locally to do so.

Infrastructure investments are illiquid. You have to be committed to the market for a long time, and committed to the investments for a long time. You cannot shy away halfway through. You are either in or you are out.

For greenfield there are additional risks. I mentioned them earlier. From our point of view, construction risk is a major risk. Will it even be built? There is also contractor counter-party risk and possible cost overruns. Many investors avoid these risks by going into brownfield. The vast majority of our investments are brownfield, but we have been quickly expanding into greenfield and taking those risks deliberately.

We talked in the paper about data. Data is inconsistent, unreliable and not necessarily helpful. It is contradictory. It lacks what you need to be able to make a good decision. The absence or paucity of data is a real problem.

There is political and regulatory risk. All infrastructure projects operate within the context of both political risk and regulatory risk. The stroke of a politician's pen can create many issues for investments that you have made in good faith.

Another point that I would make is about capital treatment. Prudential has an internal model, which is going through the internal model process. The paper, quite rightly, pointed out that BBB infrastructure investments are not really the same as BBB corporate bonds. They do have a tendency to behave better and therefore it seems somewhat unfair to penalise them with the equivalent capital treatment, which means you arguably get too high a capital charge.

For the matching adjustment, the definition is quite narrow, for example, around excluding assets with pre-payment clauses. That means that infrastructure projects, in order to have appropriate capital treatment, do need, just like in the paper, special treatment and some sort of vehicle around them.

To conclude, I want to talk about policymakers and politicians. There is a broad agreement in Westminster that infrastructure is a very important topic. In the UK, our generation has benefited from investments in the past, and it is our turn now, with the growth in the population, to re-commit resources to growing our infrastructure. If we want our economy to thrive into the future, it is vital that we do that. The EU is also in the same position. Juncker's €315 billion plan is good news.

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Prudential certainly welcomes and supports commitments from all parties to the cause of infrastructure. There are several areas where we would make some comments.

First and foremost, that the Government, needs to make sure that it is focussing its attention on areas in which it is hard for investors like Prudential to become involved. A good example of that would be towards roads or flood defences. It is hard to see the economic case for those and so the Government should be doing more. The Government can play an important role in enabling or making it easier for insurance companies to become involved in private investments: matching funding or providing guarantees, clarifying the pipeline, giving a more supportive planning process and getting cross-party consensus on projects.

Those are all things that governments can do to ensure a smoother transition. If you are investing in something for 20 years, you do not want to be thinking about a May election in your decision-making. It is not helpful.

We welcome the progress that has been made with Hinkley Point and the Thames Tideway Tunnel, which were both ticked against those four criteria. It would be great to see a level of urgency applied to projects in the national infrastructure plan similar to that applied to those two high-profile pieces of work.

The paper also touched on the topic of securitisation. Securitisation is important in the market because it allows banks to be able to re-package their assets and to continue to lend. Not having a functioning securitisation market creates issues.

The point I will finish with is we also need a regulatory framework that does not disincentivise investment. It is not clear that the regulatory framework is set up to encourage investment in projects that are of national interest. A good example was when we reached some agreement around Solvency II, the six largest insurers made a commitment of £25 billion to UK infrastructure over the following 5 years. If we want to see investment in priority areas, we need to make sure we incentivise it with lower risk rates.

I would wrap up by saying that Prudential is proud to be associated with infrastructure. It has committed a lot of its policyholders' money to it over a long period of time. We think infrastructure does society a huge amount of good. It is great to see the insurance industry being active in this area.

The Chairman: It probably falls to me as the chair to ask the first question, which is about annuity reform. Mr Muir talked about long-term savings being key to having demand from insurance companies for long-dated assets. But the Government seems minded to change pension provision to a much more liquid, flexible form. Steve Webb, even more recently, has been talking about being able to surrender annuities.

Mr Mee: Based on the conversations we have with insurers and asset managers developing new products, at about age 45–55, typically in a DC scheme you would start life-styling and de-risking before you handed your money to an insurer, which then goes and re-risks back into traditionally corporate bonds and more recently a range of more interesting non-traditional assets.

A more efficient way to do that would be to have products whereby, instead of retiring, you semi-retire and therefore you have your assets invested for a longer period of time. You get some of these investments in earlier. While obviously some detailed modelling needs to be done around the

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impact of liquidity and being able to withdraw the money, arguably people could be investing for a longer period of time. So I would hope they should still be incentivised to invest in some of these long-term and diversifying assets.

Mr Pender: Prudential is one of the largest writers of annuities in the country. Just like any insurance company when we are selecting the assets, we do that corresponding to the liabilities. Annuities are contracts that last for 30 or 40 years for the individual. Illiquid assets are a great way of matching them in small parts, as a balanced portfolio. We do that rigorously. If we write fewer annuities then the argument would be that we need fewer of these investments.

The Chairman: The banks are pulling out of this market precisely because, speaking as a banker, they offer liquidity to our depositors. It is difficult to fund that with illiquid assets. On long-term savings, it seems the Government wants to have its cake and eat it, that is, long-term saving but with instant flexibility to take money out. This ultimately means customers do not receive the liquidity premium because they cannot provide funding for illiquid lending. Mr Muir talked about needing political and regulatory stability, and policy also needs to be joined up.

Mr Muir: The Budget change for pension schemes is another factor that must reduce the long-term demand for illiquid investment.

Mr Pender: Aviva is a big bulk annuity writer as well. The bulk annuity market has grown so it may be a good use for illiquid assets. Again, if you have more joined-up government policy then you can have a more concerted effort to make sure that the insurance industry or banking industry can work in unison to support large projects.

Another point is that there is a real association of large projects with big business. It is important that the general public understands that infrastructure is an important investment for them. It is often using their money. It is not big business concreting over the landscape; it is providing useful services and homes for people. So it fulfils an important societal function. Often it gets confused with doing big business and making lots of money and that is not the whole picture.

Mr B. S. Mabley, F.I.A.: I am from Citigroup. You were looking at the number of insurers that would have >15% of the infrastructure now and potentially in 3 or 4 years' time, when looking at BlackRock survey. How far do you think insurers will go in their annuity funds? Are they going to be going 50%, 60%, 70%? What is the safe level to have? With increasing use of derivatives in some funds, cross-currency swaps and US dollar bonds, inflation swaps with the bulk deals and so on, is there any risk you will get with an increase in liquidity improvement products, contingent collateral facilities and so on as well?

Mr Mee: The fact that you make those two comments together is important. If a fund has a very large investment in overseas assets, and potentially very large collateral calls, then it is more restricted in the amount of investment it could make in illiquid assets. Certainly, two insurers that I can think of have made public statements of the order of 50% of their annuity funds being pushed into illiquid assets. That feels like the sort of level that, with a well-controlled liquidity policy, might be safe.

It probably also depends whether you are part of a big group or whether you are a monoline. If you are monoline then you probably do need to start looking at some contingent collateral facilities or other forms of liquidity if you want to push much further ahead of, say, 50%.

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Mr Muir: I do not know if there is a particular maximum percentage, but in any fund you are looking at your constraints in terms of your liquidity risk appetite. In addition, one of the reasons for doing this is diversification, so there comes a point when your additional diversification for moving into these assets is diminishing and probably the return on capital prospectively starts to make less sense. It is constrained in practice by the supply of attractive investments as well.

Mr Pender: The board ultimately decides how comfortable it feels about the asset policy and the risks it wants to take. They are the people who know the answer to that question. It varies from company to company. Prudential's preference is to go nowhere near the 50%. Equally, we are making substantial investments in infrastructure just because of the size of our fund.

Mr A. H. Silverman, F.I.A.: The paper, particularly the table in 2.3 and the associated comments, refers to the situation where an investment might be treated in the standard formula in a way that was looking at the spread risk. But an internal model may be completed on the basis that that was inappropriate. It was going to be held to maturity and you would focus on the default risk and that would produce a much more favourable answer.

What will the regulator's view be of an internal model that produces a substantially different answer to that from the standard formula? Is that what is going to happen and will the regulator be happy with that?

Mr Mee: The working party thinks that in an internal model you would often decouple the spread risk, which we would argue ought to be higher for non-traditional assets because they are illiquid and thus you would expect a blow out more in times of stress from default risk, which, for many of the assets that we consider, we would consider to be lower than for the equivalent unsecured corporate bonds.

If that were in an annuity fund, and subject to matching adjustment rules and so on, then in decoupling you would be less constrained than under the standard formula.

Notwithstanding that, of course, the difficulty is that the standard formula remains a benchmark. Whether the regulator chooses to use it as a benchmark or not, only time will tell. It is going to be quite difficult for companies, and most notably for Type 2 securitisations, where you might have 100% capital charge in the standard formula and perhaps significantly less than that in an internal model. That is going to be quite challenging for companies.

Mr Silverman: I would be interested in what the other panellists think or if there is anybody from the regulator in the audience what they might be able to say to us.

The Chairman: Does any brave person from the regulator want to sign off on Prudential's internal model here and now?

Mr Pender: The thing with the internal model is that as an organisation we have to justify the choices we make within it. We have to set it according to the board's preference and appropriate to the risk that we want to take as a company. It is about making our case and then having a dialogue with the Regulator. If the Regulator feels that we have not made that case, then it is justified in being able to suggest a different route for us. We are all interested to see how that plays out.

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Mr Muir: I would add that it is a valid concern about being benchmarked to the standard formula. As others have said, in your internal model submission you put in what you think is right as a company based on your analysis of the risks. We have ICA models, which are not consistent with the standard formula, that we were comfortable with. We are waiting to see how the regulator reacts.

Mr A. Plotnek, F.I.A.: Mr Muir pointed out the issues around supply and demand and compressing yields on perhaps, say, infrastructure assets in the safer infrastructure or social availability-based infrastructure assets. To what extent does the working party feel that insurers will further have to push the barrier and move out of comfort zones to invest into more varied forms of infrastructure assets to meet the investment targets?

Mr Mee: I cannot speak on behalf of all of the working party, but I can give a personal perspective. It was an interesting contrast between the way that Mr Muir positioned this from an Aviva perspective, who favoured the availability-based social infrastructure, and Mr Pender from Prudential perspective, who is starting to focus more on the riskier end of the spectrum. That certainly is consistent with what we see a number of insurers doing.

One has to be careful. Chasing yield is something that Mr Muir is definitely not advocating. Being clear on the level of risk appetite that an insurer is interested in, and doing the right amount of due diligence, is. That is not to say that only investing in social availability-based infrastructure is the right thing to do. Obviously, some of these projects are harder and therefore there is an incremental level of additional due diligence required.

Mr M. Benson: I am from KPMG. The speakers touched on building in-house capability to perform credit assessments and manage these assets. Within just one sub-section of infrastructure assets, the variability and different risks of the projects is vast.

How do you balance the need to have expertise and be able to perform these assessments with the fact that most insurers cannot build teams of 40 or 50 people to assess these alternative assets?

Mr Pender: At Prudential we are fortunate that we do have scale so we can cover most sub-asset classes within that. That has been built over a long time. Infracapital, which is part of M&G, is a core component of that. It has launched several funds. It specialises in greenfield but does not have any expertise in housing, for instance; but elsewhere in M&G there is expertise in housing.

You need to play to your strengths, and focus where you do have the expertise. An insurance company that was starting to explore what these assets might do should develop a network, and understand how it works. It is not like going on Bloomberg, as Mr Mee mentioned earlier.

You need to understand who makes the market in various areas and then look to start a team in a small way and focus in on those areas to build up a deep level of expertise. A broad-brush approach would be foolish.

It is about starting small, focussing on where you wish and then, perhaps, starting at the less risky end. Housing is a particularly good area to look at to start with. It requires particular knowledge. There are many projects that are in the pipeline and therefore there is a good opportunity to start to acquire that knowledge before you go big.

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Mr Mee: You have to take out the lumpiness. You cannot go and buy a £50 million infrastructure project if you have only £200 million under management. One of the things that does need to move in the market is the availability of pooled funds or investors being able to invest alongside other insurers or investment managers to access the broader pool of assets.

Where we see even mid-sized insurers do that, they are generally partnered with another organisation in order to be able to invest alongside them, be that an asset manager or an insurer. Then there is this critical point around having the right level of expertise. A small insurer is not going to be able to hire the right level of investment professionals into the organisation, and so some level of outsourcing is going to be critical. Then you can focus on oversight within the risk function or within the first line of defence within the insurance company. So you can draw on experts to do your credit assessment, do your valuation, do some of your investments for you, make some of your investment decisions, even do the investment governance, and you can do the risk oversight function.

That is what we covered within the operational complexities part of the paper. That is where things can become difficult. It is not "Can I buy this asset and assess it right now?" but "I am going to have this asset on my balance sheet for 25 years. I cannot assemble a project team just for today. I am going to have to have someone to call upon in 10 years' time when the borrower phones me up and wants to change its terms".

Mr E. J. L. Bujok, F.I.A.: I have two questions. The first one was about the pooling that just mentioned. Can you see a market in the future for a crowd-funding infrastructure-type platform for some of those smaller players, similar to the crowd funding that you see for members of the public at the moment?

Mr Mee: On that one I am going to draw a parallel with what happens in France. In France, insurance companies invest in a slightly different way in that there is more herd mentality, with the mainstream insurers following the large players. So you see some of the large French insurers set up funds, most notably in the commercial real estate database but also in private placements and infrastructure to an extent, and other insurers follow.

We have not really seen that happening here where many other insurers will invest alongside Aviva or Prudential. That is the sort of thing that was discussed around the time of the £25 billion investment.

Certainly, to take on some of the big deals, you would need a mediator, a bank or a lead insurer. But then a club of insurers going to market would be quite a powerful prospect and potentially then could also bring in some of the smaller insurers.

Mr Bujok: Thank you. The second question is probably more for Mr Muir and Mr Pender. You touched on the matching adjustment and some of the challenges around it. With such sizeable portfolios now, and the pre-pay type options, LIBOR options and so on, apart from SPVs what might some of the next steps for your firms be, particularly around practical implementation of how to manage matching adjustment-friendly assets from the process point of view?

Mr Pender: We are awaiting our feedback. So we will see for how long we will hold on to our position.

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In our minds, we believe that we have the right assets backing our liabilities. We believe that we will get the matching adjustment that we want. The extent to which some assets fall outside of that involves a cost and we have to weigh that up against the yield that we are going to get. We are not fans of putting complex structures in place.

Sometimes an underlying asset is complicated with a very complicated structure on top of it. That makes for a mess. So our solutions will probably be simpler.

Mr Muir: Similarly, we are also waiting for feedback. We have some solutions for the assets on our balance sheet that are potentially problematic and we will see whether the Regulator is comfortable with the solutions we have put forward.

The Chairman: We have come to the end of the evening. To summarise some of the messages we have heard here, Dan Pender, Martin Muir and the working party have emphasised that these assets are attractive because they can offer favourable, diversified, risk-adjusted returns through the cycle. But insurers need to build sustainable competitive advantage. They certainly have one on the funding side from their liabilities but we have also talked about the need to build capabilities on the sourcing and management side.

Very important also are the social benefits; “building legacy” was the term Martin Muir used.

On the challenges side, we have complexity, complexity, complexity. Management, as Gareth Mee said, is needed not just today but for the next 25 years. The need for data is an actuarial concern, but with the need to build internal models that can be one of the biggest challenges. Then a point which came strongly across from our two industry speakers: the need for stability in the political and regulatory environment, not just in terms of insurance regulation, for example, capital charges, but also in terms of wider government policy.

That leaves me just to thank the working party, first and foremost, some of whom are in the audience, as well as Paul Fulcher as the chair; the speakers, including Gareth Mee, Dan Pender and Martin Muir; and all of you who contributed.

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