



Module: Investing for Pension Funds

Hello everyone. My name is Roel Mehlkopf. I am a strategic risk advisor at Cardano and a postdoctoral researcher at Tilburg University and Netspar. During this module we will discuss two topics related to investing for pension funds. The first topic is the report of the Parameter Committee of 2019. The second topic is the pension agreement of June 2020 aimed at reforming the Dutch pension system.

The Parameter Committee is anchored in Dutch Pension Law. At least once every five years, a Committee is asked for an expert judgement about expected investment returns and expected inflation. The parameters are used in legislation to prevent pension schemes from using overly optimistic assumptions.

The latest Parameter Committee published its report in June 2019. The Committee was chaired by Jeroen Dijsselbloem, the former Eurogroup president, and further consisted of six independent experts. The members of the Committee, the chair included, are appointed by the Minister of Social Affairs and Employment.

So why does the Dutch government use a Parameter Committee? The economic rationale is that there is no objective and unambiguous value for expected returns and expected inflation. For example, the expected return on stocks cannot be objectively derived from quoted prices in financial markets. Instead, subjective assumptions are required. This is why the government asks an independent committee for an expert judgement.

This brings us to the next question: what is the legal mandate of the Committee? The left-hand side of the slide shows the mandate, which has five components. The right-hand side of the screen shows the impact on pension schemes. Components one, two and three on the screen take the form of single parameter values. The committee is asked for its judgement regarding future price and wage inflation and the return on investments.

The impact of these parameters is fourfold. First, the parameters play a role in the recovery plans of pension funds with a funding deficit. More stringent parameters can make additional recovery measures necessary, such as higher contribution rates or, ultimately, cuts in pension benefits. Second, the parameters play a role for pension funds that calculate their contribution rates on the basis of expected future returns. Lower expectations result in higher required contribution levels for these pension funds. Third, the parameters determine the extent to which pension funds can increase pension benefits with inflation. This is called indexation. Fourth, the parameters play a role



in defined contribution pension schemes. In these schemes, participants can choose between fixed or variable annuities, where the initial payout level of a variable annuity may be a higher. The extent to which this is the case is restricted by the parameters.

The fourth component of the mandate is an advice on a uniform economic scenario set, which is used in an annual regulatory test called the feasibility test, or in Dutch: haalbaarheidstoets.

Finally, the fifth component is the so-called Ultimate Forward Rate, or UFR, method. The UFR method determines the discount rate for long-term liabilities. Thereby, this method has an impact on the funding ratio of pension funds. Also, the UFR method has an impact on required contribution rates. The economic rationale for the UFR method is that with long horizons, market information can be less reliable or unavailable. The Committee is asked for its judgement on how to determine discount rates in case of long horizons.

So, which questions are *not* part of the mandate of the Committee? Well, basically all other questions. In particular, the mandate does not include the more general question as to how pension liabilities should be valued. Dutch Pension Law stipulates that liabilities must be discounted using the term structure of interest rates. The Committee is only asked for its judgement on how this term structure can be determined for long horizons. So, now we know what is included in the mandate of the Committee and what is not.

Let us take a look at what the Dijsselbloem Committee of June 2019 recommended. The top part of the table shows the recommendations for expected inflation. Inflation parameters are minimum values in pension legislation. The bottom part of the table shows the recommendations for the expected returns on assets. Return parameters are maximum values in pension legislation. It is not required for this module that these numbers are memorized.

So how does the Committee arrive at these parameters? Are these parameters simply equal to historical averages? The answer is no. The Committee also considers insights with regards to future expectations. In fact, forward-looking insights have played an important role in the advice. This becomes clear when we look at the breakdown of the Committee's expected return on listed equity. The Committee departs from the long-term historical average, which is equal to 5.2% in real terms and has been derived from academic publications. In addition, the Committee has made two downward adjustments: 0.5% for a so called 're-rating effect' and 0.8% for the lower level of interest rates. So what is the economic rationale for these two downward adjustments? The first effect, the re-rating effect, is based on the argument that there has been a general decline in the risk faced by investors because the scope for diversification has increased in past decades. If this has led to a



reduction in the required return on equity, then there has been a positive effect on past returns. If this argument is true, then stock markets have risen in the past for reasons that are unlikely to be repeated in the future. The second effect for a downward adjustment is related to the lower interest rate. The current real interest rate is 1.6% below the historical average. Given the persistently low interest rates, the Committee considers it plausible that expected returns on risky assets are also below their historical average. The Committee recommends that half of the low-interest rate effect is incorporated in the expected return on equity. This results in a downward adjustment of 0.8%, that is half of 1.6%. This 'one half' factor is very subjective: the estimates in academic literature have a wide range. The Committee therefore emphasizes that the 'one half' factor primarily reflects the fundamental uncertainty about how the expected return on equity is determined by interest rates.

So what about the return expectations for fixed income investments? These are not based on fixed parameters. Instead, the Committee recommends that the expected return on AAA-government bonds is derived from the term structure of interest rates. For credits, the Committee recommends the expected return to be based on a linear combination of the expected returns on stocks and AAA-government bonds, where the weights depend on the credit rating. The 2019 Committee left this approach unchanged in comparison to the previous advice.

So what were the recommendations of the Committee with regard to the UFR-method? The Committee advises to adjust the current methodology. The figure on the slide illustrates the impact of the Committee's proposal. The figure is based on the interest rate curve of April 2020. The blue line shows the swap curve as observed in the financial market. The orange line shows the term structure that is produced by the current UFR method for Dutch pension funds. The current UFR method yields a term structure that is equal to market interest rates for horizons up to 20 years. Beyond the 20-year point, the curve converges to an ultimate forward rate given by the 10-year historical average of a long-term market forward rate. Due to the decline in interest rates over the past decade, the UFR method produces a term structure that is above the market curve for long horizons. The Committee of 2019 has reviewed the current method and proposes to change it. The green curve illustrates the term structure that would follow from the Committee's proposal. The committee proposes to exclusively use market data up to a horizon of 30 years instead of 20 years. Beyond the 30-year point, convergence happens more gradually. As you can see in the figure, the proposal of the Committee results in a term structure that is much closer to the market curve. The proposed change follows from one of the starting points of the Committee, namely that the UFR curve should make use of market information where possible. Based on daily transaction volumes in



the European swap market, the Committee concludes that the liquidity of 30-year swaps is sufficient to be able to fully rely on market information up to this horizon.

The government has adopted the advice of the Committee, and implemented the new return parameters on January 1st, 2020. The UFR method is not an advice to the Minister. Instead, it is an advice to the Dutch pensions regulator, DNB, which independently publishes the discount rates for pension funds. DNB has stated that the new UFR method will be introduced in four annual steps, starting January 1st, 2021. The new UFR-method will be fully implemented by January 1st, 2024.

So what is the impact of the advice of the Dijsselbloem Committee on pension schemes and their participants? The new parameters are stricter than the old parameters recommended by the Committee five years ago. For example, the expected real return on public equity is adjusted downward by a full percentage point. This has no impact on the current value of pension fund assets. Nonetheless, there are important consequences. For a number of pension funds, the new parameters will mean that the required contribution rate will exceed the current contribution rate. In addition, the recovery plans of pension funds with a funding deficit have become more critical. The new parameters can result in situations where a funding deficit makes pension cuts unavoidable.

The proposed change in the UFR method results in a higher present value of pension liabilities, and therefore in lower funding ratios for pension funds. Funding ratios can decline by more than 5 percentage points when the new UFR method is implemented. The exact extent of the impact depends on the shape of the swap curve in the market. Also, the age composition of a pension fund plays an important role. The impact is larger for pension funds with relatively more young people, as their pension liabilities have a longer duration.

The recommendations of the Committee do not affect the current value of pension fund assets, but they do have an impact on the rules that determine how pension fund assets are distributed over time, and thus also across generations. More stringent parameters and discount rates imply that less benefits can be paid to current pensioners, and that more pension assets must be set aside in order to be able to pay out pensions to younger participants in the long run. The implementation of the recommendations of the Committee thus has redistributive effects between young and old generations.



The second topic is the Pension Agreement. In June 2020 the Minister of Social Affairs and Employment sent a memo to Dutch parliament in which he set out the main features of a new pension system. The pension agreement is the result of lengthy negotiations between the government, employer organizations and labor unions. The government memo is not a pension bill yet: important details still have to be decided upon. However, the direction for the reform is clear. The reform includes a new fiscal framework for pensions and a new pension contract.

During this module we will not go into the fiscal changes. Instead, we will focus on the reform of pension contracts. Let us start with the question of why a reform of the pension system is deemed necessary. Well, most pension participants in the Netherlands participate in a defined benefit type of pension scheme. These schemes have become subject to public discussions about sustainability and intergenerational fairness. As working careers have become more dynamic, ex-ante solidarity transfers between generations are considered undesirable. Especially the so-called 'doorsneepremie' is considered outdated, as this works out unfavorably for young participants that might leave the pension fund at a later age. Young participants are disadvantaged because each cohort pays the same contribution rate and gets the same accrual rate, and the time-value of money is not accounted for. In addition, the sustainability of defined benefit schemes is under pressure. The current framework for defined benefits, the FTK, is centered around solvency requirements, but since the crisis of 2008 many pension funds have been failing to satisfy those requirements. As a result, pension funds have not been able to increase pensions with inflation. In some cases, pension funds were required to cut pensions. Pension rights for all participants were reduced, directly leading to lower benefit levels for retirees.

These issues about fairness and sustainability were already identified by a government Committee in 2010, and have been publicly debated for more than a decade. The pension agreement of June 2020 proposes a large reform to structurally overcome these problems. The agreement concludes that the defined benefit contracts are not future-proof. The proposed new pension system is focused around two other pension contracts that are deemed future-proof. The first contract is new, and is simply referred to as the 'new pension contract'. The second future-proof contract is the existing defined contribution contract, which will be expanded with optional solidarity elements.

Let us start with the design of the proposed 'new pension contract'. On the screen, you see three main characteristics. The first characteristic is that the new pension contract does not have pension liabilities. Participants do not accumulate an entitlement to a pension benefit. Instead, participants acquire a personal 'share' in a collective pool of assets. This feature has similarities with the existing defined contribution contracts, under which participants build up individual pension wealth.



However, there is a difference: in this new contract, the pension assets are the collective property of the members of a pension fund. Another difference is that a part of the collective assets is not allocated to anyone. This wealth is referred to as the solidarity reserve, and can be used for risk-sharing transfers between generations. The reserve can be filled with a fraction of the contributions and a fraction of the excess returns. The solidarity reserve can be used to compensate participants in times when the return on their personal pension wealth is lower than expected. Legislation will impose limitations on the role of the solidarity reserve. The government memo states that the maximum size of this reserve is limited to 15% of total assets, and that it cannot be negative. Moreover, the fraction of contributions that can go into the solidarity reserve is limited to 10%, and the fraction of excess returns that can go into it is also limited to 10%.

A second characteristic is that the new contract does not include a discount rate. After all, there are no liabilities under the new contract, so the traditional role of the discount rate will disappear. Also, there is no funding ratio, and there are no solvency requirements like in the FTK. The new contract does make use of projected returns to determine benefit levels. The benefit level of a retiree is determined so that this level can be maintained during the expected remaining lifetime. Lifelong pensions are possible because the mortality risk is shared within the collective of participants. A long lifespan for some participants is financed by the risk of a short lifespan for other participants.

The return projection in the new pension contract can be higher or lower than the term structure of interest rates that is currently used as the discount rate in the FTK. Under the new pension contract, this should **not** have redistributive effects between young and old generations. It only affects the speed at which participants decumulate their own personal pension wealth. A higher return projection leads to higher benefit levels in the short run, at the expense of the benefit level in the long run.

A third characteristic of the new pension contract is that there are rules for allocating the collective investment risks to age cohorts. There are two allocation rules: an allocation rule for hedge returns as well as an allocation rule for excess returns. The purpose of the hedge return is to compensate participants for changes in interest rates. The economic rationale is that lower interest rates lead to lower return expectations and make it more expensive to finance a lifelong pension income. The extent to which the interest rate is hedged can be determined by pension funds themselves, and can be differentiated across age groups. The distribution rule for the excess return can be determined in accordance with lifecycle investment theory, which generally suggests that the pension wealth of younger pension scheme members has a higher exposure to risky assets than those of older participants.



In comparison to the current contracts under the FTK, the new contract offers more possibilities for tailoring the investment policy to different needs at different ages. To see this, consider the following simple example. Let's take the situation of a pension fund that wants to fully hedge the interest rate risk for its older participants, and only partially hedge the interest rate risk for its younger participants. This is possible in the new pension contract. In the current pension contracts under FTK this is not the case. Under the FTK, the investment strategy is determined at the total level of the pension fund, and a pension fund must choose to either fully or partially hedge the interest rate risk on behalf of all participants.

So how does this new pension contract compare to the existing defined contribution contracts in the Netherlands? The similarities are shown on the left-hand side of the screen. Both types of contracts will be known as 'premieregeling' in Dutch pension legislation, which means that there is no entitlement to a predefined benefit level. Another similarity is that under both contracts, participants accumulate personal pension wealth. A third similarity is that under both contracts the risk exposure of participants is age-dependent. A final similarity is that under both contracts, benefit levels can be based on projected returns.

There are also a number of differences, as shown on the right-hand side of the screen. The new pension contract does not provide for a conversion on the retirement date. Under DC schemes, the individual pension wealth is converted into an annuity around the retirement date. Under the new pension contract, no such conversion moment exists because the build-up phase and the pay-out phase are integrated into a single collective scheme. A second difference is that DC schemes offer members a choice at the retirement date between a fixed and a variable annuity. They may also provide participants with a choice between risk profiles. Under the new pension contract, it will not be possible to offer such choices to participants. A final difference concerns the borrowing constraint.

The difference with regard to the borrowing constraint is the following. According to lifecycle investing theory it is – under certain assumptions – optimal for young participants to be invested in stocks for more than 100%. In example calculations in the appendix to the government memo, young individuals are invested in stocks for 150%. This means that if stock prices go up by 50%, the pension wealth of these young participants increases by 75%. It also means that if stock prices decrease by 50%, the pension wealth of the young falls by 75%. So why does the government introduce this example with a 150% exposure to stock market risk for the young? The economic rationale here is that young participants have a large amount of so called 'human capital' in the form of future labor income. If future labor income is assumed to be not very risky, then the young already 'own' a large



and relatively safe asset: their human capital. This can imply that it is optimal for the young to invest as much of their pension wealth as possible in stocks, if possible with borrowed money, so that they can take maximum advantage of the risk premium on risky assets in financial markets. In the existing DC schemes, with individual ownership of assets, a position in stocks of more than 100% may be difficult to implement in practice. The proposed new pension contract provides for collective ownership of assets, which may make it easier to implement this.

Another important element of the pension agreement is that the government wants to make the existing defined contribution schemes more attractive, in particular for pension funds that cover an entire industry or profession. Such pension funds will be given the option to use a solidarity reserve under a DC scheme. Another adjustment to the existing DC-schemes concerns the fiscal framework, which will be changed to match that of the new pension contract.

On the screen, you see the roadmap towards the new pension system as outlined in the government memo. The government hopes that a pension bill will become law by January 1st 2022. What follows, is a two-year decision period, until January 1st 2024. In this period, decisions have to be made by social partners at the level of industries and companies. Next is a two-year implementation period. The 'deadline' for the implementation is currently foreseen on January 1st 2026. Thereafter, there will be a ten-year period during which certain compensation measures related to the transition may still be in place.

Let us take a closer look at the decision-making phase. What are the most important choices to be made during this period?. First, social partners will need to decide upon the type of pension contract: they can choose between the new pension contract or a DC pension scheme. I have discussed the similarities and differences between those two contracts earlier. Second, the social partners will have to make choices about the design of a new pension scheme. The most important choices are the ambition level, the contribution level, the design of the retirement phase, the rules for the solidarity reserve, and a new investment policy in which risk exposure depends on age. Moreover, social partners have to make a choice about what to do with existing pension entitlements in their current defined benefit schemes. The government memo states that – by default – existing pension rights will be converted into personal pension wealth under either the new pension contract or a DC contract. At the same time, the government memo also states that social partners can decide not to convert existing rights if they can demonstrate that such a conversion would disproportionately disadvantage certain participants. The government has stated that the FTK legislation will continue to apply for such pension funds. Finally, social partners also need to make decisions about



compensation for participants who are disadvantaged by changes in the pension contract or changes in the fiscal framework.

We have arrived at the end of this module. The pension reform discussed in the second part has an important link with the Parameter Committee discussed in the first part. A parameter committee will also have a role in the new contract, because future expectations are used to determine benefit levels and contribution levels. However, in contrast to the current FTK, a change in the parameters or a change in the UFR method does – in principle - not have redistributive effects between generations. The reason is that in the new contracts, participants have personal pension wealth, so that a higher projected return should – in principle – **not** have redistributive effects between young and old generations.



MiFID II
Stay Compliant Program

Parameters Committee



Legal mandate of the Committee

Five components:

1. the minimum expectations for price- and wage inflation
2. the maximum expectations for returns on investments in fixed income
3. the maximum risk premia on equities, real estate and other risky assets
4. a uniform economic scenario set
5. the methodology for the valuation of long-term pension liabilities

Impact on:

- recovery plans
- required contribution level
- permitted indexation level
- initial payout-level of variable annuities in DC pension schemes
- annual feasibility test
- funding ratio
- required contribution level



Parameters: minimum and maximum expectations

Minimum expectations	
Price inflation	1.9%
Wage growth	2.3%

Maximum expectations			
	Geometric mean before costs	Costs	Geometric mean after costs
Listed equity	5.8%	0.2%	5.6%
Other (private equity, hedge funds)	7.5%	1.9%	5.6%
Non-listed real estate	4.8%	0.7%	4.1%
Commodities	3.5%	0.2%	3.3%

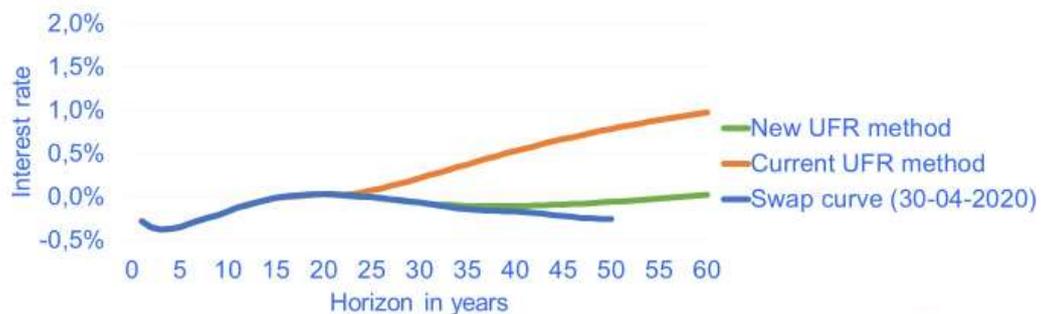


Parameter for listed equity: substantiation

Historic real geometric average return	5.2%
– Re-rating effect	- 0.5%
– Lower interest rate	: - 0.8% (= 1/2 * 1.6%)
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Ex ante expected geometric real return	3.9%
+ expected inflation	1.9%
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Ex ante expected geometric nominal return	5.8%



UFR-method: impact of proposed change



Pension Agreement 2020



Blueprint of new pension contract

1. No liabilities

- Individual share in the collective assets pool
- Solidarity reserve (max 15%)

2. No discount rate

- Payout level based on expected returns
- Lifelong variable pension payments

3. Age cohorts

- Hedge returns: differentiated across age cohorts
- Excess returns: differentiated across age cohorts



Comparison to existing DC pension contracts

Similarities

- 'premieregeling'
- personal pension wealth
- age-dependent risk exposure
- benefit levels can be based on projected returns

Differences

- No conversion moment
- No choice between fixed or variable annuity
- No choice of risk profiles
- Alleviates borrowing constraint



Roadmap



Choices for social partners

1. New contract
 - Choice between the new pension contract versus DC pension scheme
2. Design choices of a new pension contract
 - Choices about ambition level, contribution level, payout phase, solidarity reserve, age-specific risk profiles
3. Existing pension rights
 - Decision to convert existing pension rights into to personal pension wealth in new scheme (default), or decide not to do so
4. Compensation for affected members
 - Decision whether and how to compensate affected members for impact of new contract and fiscal changes

