



Module Dutch Laws & Regulations

Pension Agreement 2020

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Hello everyone. My name is Roel Mehlkopf. I am a pension fund advisor at Cardano and a postdoctoral researcher at Tilburg University. This module is about the Pension Agreement of 2020. Last year's program already introduced this topic. This year's module provides an update on the current status of the legislative process, and we take a 'deep dive' into new pension contract.

Let us start with the update of the legislative process. What is new in comparison to the situation of last year?



December 2020: draft legislation



The government reached an important milestone in December 2020, when it published draft legislation for the pension reform. The draft legislation is a bulky package of more than 200 pages, which was released for public consultation. The consultation resulted in 484 public responses.





The next step for the government is to look into the consultation responses and submit an updated version of the draft legislation to the Dutch parliament.

Let us turn to the main features of the draft legislation.



December 2020: draft legislation

Highlights:

1. New accruals no longer possible in defined benefit scheme, but move to:
 - existing defined contribution scheme (in Dutch: Wet Verbeterde Premieregeling) or
 - the new pension contract
2. Existing defined benefit pension rights are 'by default' converted
3. After transition, role of FTK is limited and applies to
 - defined benefit funds who do not convert existing rights
 - the payout phase of defined contribution schemes if pension fund offers fixed annuity
4. Transition-FTK
 - Current funding ratio at least 90%
 - Expected funding ratio at transition date at least equal to target funding ratio
 - Target funding ratio at least 95%



A first feature of the reform is that, after the transition, it is no longer possible for active members of pension funds to accrue new defined benefit pension rights. This implies that all defined benefit pension funds will have to set up a new pension scheme for the new pension accruals. Pension fund can choose between the already existing defined contribution scheme (in Dutch: Wet Verbeterde Premieregeling), or the new pension contract. In last year's module we already discussed the similarities and differences between those two types of contracts.

The second feature of the reform is that existing pension rights in defined benefit pension schemes are 'by default' converted into a personal pension wealth in the new pension system.

Social partners can decide not to convert existing rights if they can demonstrate that conversion would disproportionately disadvantage certain participants. For example, this can be the case if



defined benefit rights are protected by a sponsor guarantee. Also, the draft legislation clarifies that not all pension funds are able to convert existing pension rights. This can be the case if a pension fund is closed and if there is no active employer involved to set up a new pension scheme.

This brings us to the third feature of the reform: the role of the FTK legislation after the transition. The FTK is the financial assessment framework which currently applies to defined benefit pension schemes. After the reform, there will still be role for the FTK but it will be rather limited. The FTK will continue to apply to defined benefit pension funds where existing pension rights are not converted. These funds will all be 'closed' pension funds, because no new defined benefit pension rights can be accrued after the transition.

In addition, the FTK has a role in existing defined contribution schemes which remains intact after the reform: the FTK applies to the payout phase of defined contribution contracts in cases where a pension fund offers not only variable annuities but also fixed annuities to its members. These fixed annuities provided by pension funds are subject to the FTK.

The fourth feature of the reform is that a transition-FTK has been announced. The general idea behind the transition-FTK is that certain measures, in particular cuts to pensions in payment, are not required in the transition-FTK if these measures are not needed in the new pension system.

The draft legislation contains a set of rules which make this general idea more concrete. The government proposes that pension cuts are required only if the current funding ratio falls below 90%, or if the expected funding ratio at the moment of transition falls below a so called target funding ratio (in Dutch 'richtdekkingsgraad') which is at least 95%. The idea behind the target funding ratio is that this is the financial position that suffices for a balanced transition to the new system without immediate pension cuts at the transition moment.

The transition-FTK is not mandatory: pension funds can decide whether or not they want to make use of it. The decision to make use of the transition-FTK is made by pension funds, not by social partners. A precondition of using the transition-FTK is that there must be an intention to convert existing pension rights to the new system.

In May 2021, the Minister sent an update to parliament about the status of the legislative process. The government now expects that the proposed legislation will become law by January 1st, 2023.

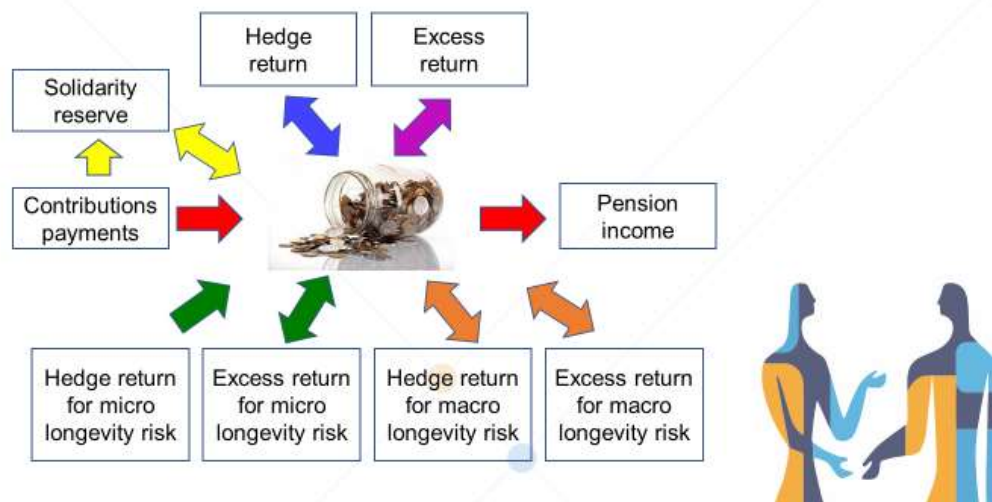


This is a delay of one year compared to earlier announcements. The ultimate deadline for the conversion of existing pension rights to the new pension system is now foreseen to be January 1st, 2027. The expected period for the transition-FTK is from January 1st 2023 until January 1st 2027.

The remainder of this module is a ‘deep dive’ into the new pension contract.

In the new pension contract, participants do not accumulate an entitlement to a defined pension benefit. Instead, participants acquire a personal pension wealth, which is a personal ‘share’ in the collective pool of assets of the pension fund. This personal pension wealth is accumulated in the working phase of life, and is decumulated during retirement.

Personal pension wealth: inflows and outflows



On the slide you see the personal pension wealth in terms of the inflows and outflows. The illustration is focused on the old age pension and abstracts from other aspects of pension arrangements, such as survivor pensions and disability insurance.



Let us start with the two arrows in red. Before retirement, there are inflows in the form of contribution payments. After retirement, there are outflows in the form of a pension income for the participant.

The blue and purple arrows represent the financial return on the personal pension wealth. The financial return is decomposed into the hedgereturn (in Dutch: beschermingsrendement) and the excess return (in Dutch: overrendement). Hedgereturn and the excess return can both be positive or negative, depending on price movements in financial markets. We will elaborate on this later.

The two arrows in green relate to sharing micro-longevity risk within the collective of participants. First, there is hedgereturn for micro-longevity risk (in Dutch: beschermingsrendement voor micro-langlevensrisico). This is often referred to as the biometric return.

This biometric return works as follows. If a participant within the collective passes away, then his or her personal pension wealth accrues to the collective and is distributed across the surviving participants in the form of a biometric return. The biometric return makes it possible to provide lifelong pensions. A long lifespan for some participants is financed by the risk of a short lifespan for other participants. The biometric return is determined ex ante and is directly based on the survival probability of an age-cohort. The biometric return increases with age. Older age-cohorts have lower survival probability, and therefore receive a higher biometric return. The biometric return is always positive for all age-cohorts.

The other arrow in green is the excess return on sharing micro-longevity risk (in Dutch: overrendement op micro-langlevensrisico). This works as follows.

Ex post survival rates can deviate from the ex ante survival probabilities that were used to determine the biometric returns. This mismatch result is called the excess return on micro-longevity risk in the new pension contract. It is distributed among all pension scheme members via an age-dependent attribution rule. The mismatch effect can be positive or negative. Consider for example the situation of last year, during which the covid-19 pandemic caused ex post survival rates to be lower than the ex ante probability. Hence, last year, the result would have been positive.

The two arrows in orange relate to the sharing of macro-longevity risk within the collective of participants. First, there is hedgereturn for macro-longevity risk (in Dutch: beschermingsrendement voor macro-langlevensrisico).



This works as follows: suppose that life expectancy, for the population as a whole, rises faster than expected. For example due to improvements in medical treatments. Then participants need a higher personal pension wealth to maintain the same expected pension level for a longer expected lifespan. This additional wealth is provided by the hedgereturn for macro-longevity risk. The effect can be positive or negative, depending on whether the life expectancy forecast is adjusted upwards or downwards and whether the pension fund has decided to compensate certain cohorts for macro-longevity shocks.

The other arrow in orange is the excess result on sharing macro-longevity risk (in Dutch: overrendement op macro-langlevensrisico). The macro-longevity risk can typically not be hedged in financial markets, so that the distributed hedgereturns for macro-longevity risk are recouped on the collective of participants itself, via an age-dependent rule.

Finally, the yellow arrows represent cashflows related to the solidarity reserve, which was already discussed in last year's module.

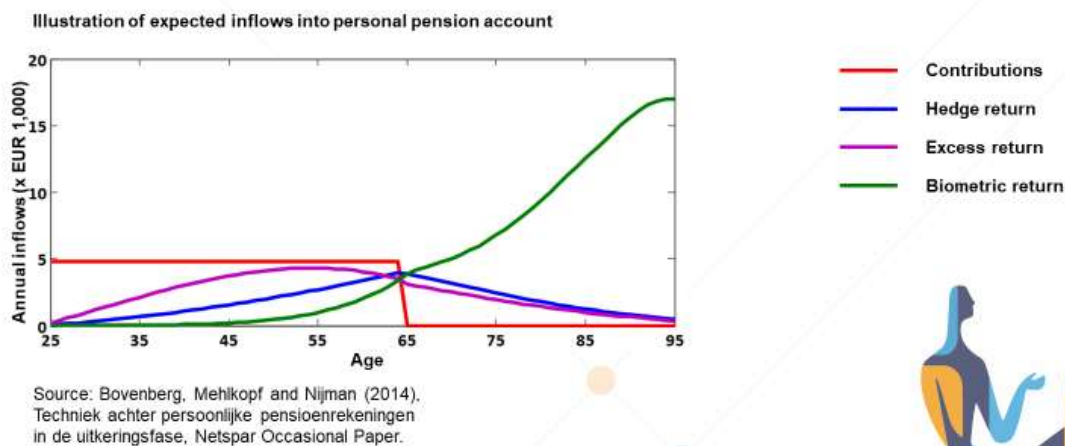
Okay, so now we have become familiar with the various types of inflows and outflows in the personal pension wealth of participants. But what is the relative importance of these types of inflows and outflows? For example, how important is the biometric return? And how does this change with age?

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Capital accumulation components



On the slide, you see a stylized example of four types of capital inflows into the personal pension wealth as a function of age. The red line represents inflows from contributions payments during the working phase. In this example, the contributions are equal to 5,000 euro per year. The blue and purple line represent the expected inflows from financial returns, decomposed into the hedge return and the excess return. Financial returns are highest around retirement, when the personal pension wealth of the participant reaches its peak. The green line represents the inflows from the biometric return. The figure shows that the biometric return plays a dominant role during the retirement phase, during which it is the most important inflow component.

The biometric return ensures that the pension income stays at level, even if a participant reaches the age of 100 and the personal pension wealth is almost depleted. From an actuarial perspective, it works similar as a lifelong annuity.

In the new pension contract, it is possible to smooth shocks that occur during the retirement phase. Smoothing can be applied to shocks from financial risks, but also to shocks that stem from longevity risk. The draft legislation prescribes that the maximum smoothing period is 10-year.

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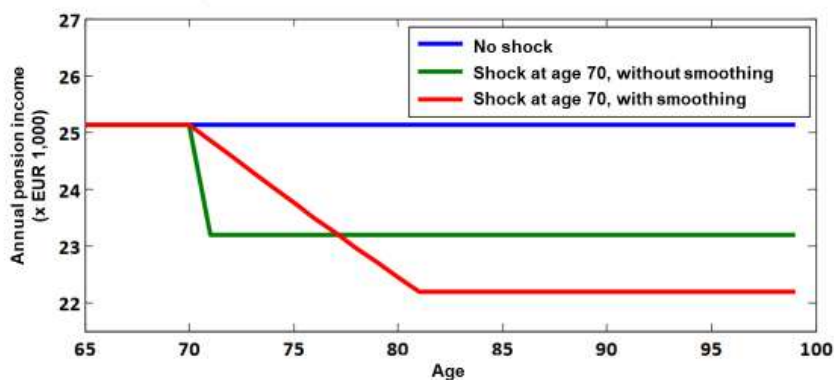
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Smoothing of shocks over 10-year horizon



The illustration on the slide shows the effect of smoothing, based on a simple example with a single negative shock at age 70, and no shocks at any other ages. The green line shows the outcome in a situation where no smoothing is applied, while the red line illustrates results for the situation where smoothing over a 10-year period is applied. The example shows that the impact of the shock on pension income is postponed when smoothing is applied. Smoothing can lead to more stable outcomes if negative shocks are followed by a positive shock, and vice versa. However, if a negative shock is not followed by a positive shock, as in the example on the screen, then smoothing results in a lower pension later in life. Also, it is important to be aware that smoothing becomes less effective at higher ages: at high ages the remaining life expectancy is shorter than the smoothing period.

Now, let us take a closer look financial returns in the new pension contract. As mentioned earlier, there are two components: the hedge return (in Dutch: beschermingsrendement) and the excess return (in Dutch: overrendement). Let us take a look at a concrete example.

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Stylized example with two participants

Fund population	45-year old	67-year old
Personal pension wealth	€100,000	€300,000
Duration	30 year	10 year
Policy hedge returns		
Hedge percentage	40% hedge	80% hedge
Market interest rates		
Short term interest rate	1%	
Parallel shift in term structure of interest rates	-50bps	

Step 1: Hedge returns. Calculated as time-value of money plus compensation for change in interest rates

- 45-year old: $(1\% + 40\% * 30y * 50bps) * 100,000 = €7,000$
- 67-year old: $(1\% + 80\% * 10y * 50bps) * 300,000 = €15,000$

Asset allocation	AuM (€)	Return (%)	Return (€)
30-year bonds	40,000	16%	6,400
10-year bonds	240,000	6%	14,400
Stocks	120,000	11%	13,200
Total	400,000	8,5%	34,000

Policy excess return	45-year old	67-year old
Attribution weight	3	1

Step 2: Excess returns. Calculated as realized return on assets minus distributed hedge returns

- Total: $34,000 - 7,000 - 15,000 = €12,000$
- 45-year old: €6,000
- 67-year old: €6,000

Let us go through this example step by step. The pension fund of this example has two participants: a 45-year old participant and a 67-year old participant. Their personal wealth is equal to 100 thousand and 300 thousand. The duration of future pension payments is equal to 30 years for the 45-year old, and 10 years for the 67-year old.

The new pension contract applies a two-step procedure to attribute financial returns. In Step 1, shown on the left hand side of the screen, the hedge returns are determined. In Step 2, on the right hand side of the screen, the excess returns are determined.

Let us start with step 1 on the left-hand side: the calculation of hedge returns. In the new pension contract, a pension fund specifies a hedge percentage for different age-cohorts, which determines the extent to a participant is protected against interest rate risk. The idea is that a fall in interest rate increases the costs of pensions. The hedge return compensates for this. A pension fund must determine ex ante to what extent such protection is desirable for each age-cohort separately. In this example, the hedge percentage of the 45-year old is set equal to 40%, and for the 67-year old it is 80%.



The hedge return is determined ex ante and is equal to the compensation for the time-value of money plus the compensation for change in interest rates. The time value of money is included in the hedgereturn at all times, and is given by the short term interest rate. This is also referred to as the cash return, and is given by 1% in our example. The compensation for a change in interest rates refers to ex post deviations from the forward curve. The change in interest rates is given by a parallel drop in interest rates by 50 basispoints. In our simple example, we apply a proxy using the duration, and the result is shown on the screen.

The hedge return can be positive or negative. In particular, the compensation for the change in interest rates is negative if interest rates increase. Notice that even if the hedge percentage is set to zero for a certain age-group, there is still a hedge return because it always contains the cash return. The cash return can be negative in practice, if the short term interest rate is below zero.

Let us now go to step 2 on the right-hand side: the calculation of excess returns. In the new pension contract, a pension fund specifies attribution weights for excess returns for different age-groups. These attribution weights are determined ex ante. In our example, the attribution weight of the 45-year old is three times higher than the attribution weight of the 67-year.

The excess return is first calculated on the total level, and is subsequently attributed to age-groups. The excess return at the total level is calculated as the total realized return on assets minus the hedge returns distributed in step 1. In our example, this yields a total excess return of 12 thousand. This total excess return is then attributed to the two participants. In our example, both participants receive an equal share in absolute terms. The reason is that the 45-year old has an attribution weight that is three times higher, while the size of its pension wealth is three times lower.

Our example assumes that the attribution of excess returns in step 2 is based on initial wealth distribution before the distribution of hedge returns in step 1, and not after step 1. However, the draft legislation is not conclusive about this.

In the new pension contract, the exposure to stock market risk of an age-cohort cannot be observed from one single policy parameter, as is the case in lifecycle investing. Instead, it is determined by three factors: 1) the investment mix of the pension fund as a whole 2) the attribution weights that allocate investment risk across age-cohorts 3) the age- and wealth composition of the pension fund population. If any of these three factors changes, then the exposure to stock market risk changes as well for all age-cohorts.



The new pension contract is constructed in such a way that the attribution of financial risks across age-groups does not lead to ex ante redistribution in market value. In particular, the excess return by definition contains not only the risk but also the risk premium. This implies that if we increase the attribution weight for the 45-year old participant, then this participant gets a higher exposure to stock market risk and at the same time also the corresponding higher risk premium.

But how is this all different from lifecycle investing?

To answer this question, let us start with the observation that, in our stylized example, the exact same results can be created with lifecycle investing. In a lifecycle approach, the 45-year old participant holds the 30-year bonds and half the stock portfolio. The 67-year old participant holds the 10-year bonds and the other half of the stock portfolio. You can calculate for yourself that, in our stylized example, the lifecycle approach yields exactly the same outcomes for both participants.

However, this equivalence with lifecycle investing does not hold in general.



Let us consider three differences compared to lifecycle investing

Differences compared to lifecycle investing



Three examples of differences with lifecycle investing

1. The new pension contract makes it possible for young participants to be invested for more than 100% in risky assets (leveraged position)
2. The new pension contract decomposes fixed income returns into an interest component and a credit risk component, with different attribution rules
3. In the new pension contract, the mismatch effects on interest rate hedging of an age-cohort can affect another age-cohorts

-> This can be avoided in the new pension contract if a pension fund chooses for the policy variant with a separated 'hedge portfolio' instead of 'hedge returns'



The first difference is that the new pension contract makes it possible for young participants to be invested for more than 100% in risky assets such as stocks. In other words: the young can have a leveraged position in risky assets. This is the case if they have a high attribution weight to excess returns. A leveraged position in an diversified portfolio of risky assets is more difficult to implement in lifecycle investing. A leveraged position in risky assets can – under certain assumptions – be optimal for young participants according to lifecycle investing theory. The idea is that young participants already 'own' a large and relatively safe asset, their human capital, if their future labor income is not very risky.

The second difference is related to credit risk in fixed income investments. In the new pension contract, the interest component of fixed income investment can be attributed via hedge returns,



but the credit risk component always ends up in the excess return. The new pension contract thus applies two different attribution rules for these two components. In a lifecycle approach, there is no such virtual decomposition of bond returns.

A third difference compared to lifecycle investing relates to mismatches in interest rate risk hedging. In the original idea of the new pension contract, hedge returns are based on a term structure of interest rates published by the regulator DNB, in combination with the age-cohort specific cashflows. The ex post realized returns on a hedge portfolio can deviate from the ex ante hedge target. These mismatches end up in the excess return, and affect other age-cohorts. Hence, the 47-year old participant in our example can be affected by the result on interest rate hedging for the 67-year old, and vice versa. If a pension fund regards this as an undesirable property, then there is the possibility in the new pension contract to determine the hedgereturns on the basis of ex post realized returns on a separated hedgeportfolio. Hence, pension funds who choose the new pension contract must make a choice between 'hedge returns' versus a 'hedge portfolio' (in Dutch: beschermingsrendement versus beschermingsportefeuille).

Finally, let us end this module by addressing a final question: what is the idea behind the attribution of financial returns in the new pension contract? And what could this approach more or less attractive than lifecycle investing? Well, the answer is that the philosophy behind the new pension contract is somewhat different from lifecycle investing. In the new pension contract, the concept of internal risk sharing within the collective of the pension fund is a key cornerstone of the contract. For example, earlier in this module, we saw that there is a mechanism to share macro-longevity risk internally within the pension fund population. The attribution rules for financial risks stem from this same philosophy, and are based on similar mechanisms.

In this module, we have seen that the return attribution of the new pension contract can lead to results that are similar to lifecycle investing. At the same time, we have discussed a number of differences as well. Thank you for watching!