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CASPER VAN EWIIK, LEX MEIJDAM, RUTGER TEULINGS,
PETER ZWANEVELD

OCCASIONAL-03 / 2020

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Colofon

Netspar Occasional Paper 03, December 2020

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This article was commissioned by Pension Magazine and is published (in Dutch) in the December 2020 issue of this magazine.

Low interest rates and the future of pensions

Casper van Ewijk, Lex Meijdam, Rutger Teulings and Peter Zwaneveld

Prof. dr. C. van Ewijk is professor emeritus University of Amsterdam and currently affiliated to Netspar, Prof.dr. L. Meijdam is professor at Tilburg University, ; dr. R.M. Teulings and dr. P.J. Zwaneveld work at CPB Netherlands Bureau for Economic Policy Analysis.¹

Low interest rates challenge the current system of capital funded pensions. Despite the recent accord on new the pension contract in the Netherlands – making the system more robust to future (interest rate) shocks – the evolution of the interest rate will remain essential to the future of pensions. Low rates over a longer time horizon are bad news for pension fund participants. The lower the return, so much lower pension can be achieved for a given contribution leading to difficult choices to be faced with regard to pension ambition and contribution rates. Some argue that it is better to shift from capital funding to pay-as-you-go financing when interest rates remain low. In this context, in particular, the Notional Defined Contribution (NDC) pensions systems may offer an attractive alternative.

Interest rates have been falling for years. The expectations for returns on equity as well as other risk bearing investments have also been adjusted downward. This trend raises new questions, also touching the core of the Dutch pensions system: the capital funding of additional pensions. Is capital funding still attractive as the foundation of the pensions system?

Following a brief discussion of the prospects for the interest rates, we will look into the consequences for pensions and contributions. Subsequently, we will assess the concept of pay-as-you-go (payg) as possible alternative for capital funding, as well as the question how enlargement of the payg part of pensions could be shaped. After all, we will briefly discuss the consequences of low interest rates for the transition of the current pensions contract to the new one in 2026.

Prospects for interest rates and returns

The nominal interest rate on government bonds has been decreasing since the early eighties; currently the return on ten-year bonds is less than 0% (see fig. 1). The causes include population ageing, decreasing productivity growth as well as lower expectations for inflation². The policy of quantitative

¹ This article is based on a joint publication of CPB and Netspar: N. Ciurila et al., 2020, Low interest rates and the future of pensions, CPB Policy Letter/ Netspar Letter.

² L. Rachel en L.H. Summers, 2019, On falling neutral real rates, fiscal policy, and the risk of secular stagnation, <https://www.brookings.edu/wp-content/uploads/2019/03/On-Falling-Neutral-Real-Rates-Fiscal-Policy-and-the-Risk-of-Secular-Stagnation.pdf>

easing has put further downward pressure on interest rates, although the current consensus is that this effect is modest.³

Fig. 1. Nominal interest rates have been falling since the eighties



Source: OECD, Main Economic Indicators of 10-year interest rates on AAA-rated government bonds.

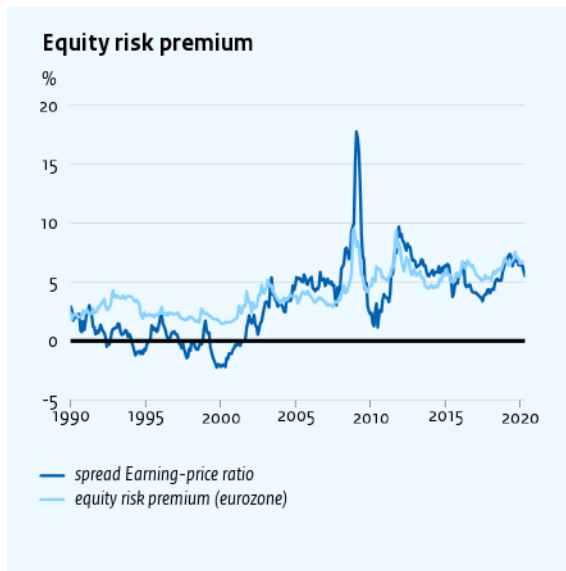
Lower interest rates also affect returns on investments with an increased risk exposure, such as equity and property, although probably not entirely: fig. 2 shows that stock returns seem to have decreased less than the interest rate as a result of a rising risk premium, i.e. the difference between equity returns and the risk-free interest rate.

[Despite the possible cushioning as a result of higher risk premiums, long-term lower returns on investment must be expected due to lower interest rates]

On balance, the rising risk premium can't prevent equity returns from falling. This is to be attributed to the search for yield: as the returns of many government bonds are low, many investors switch to investments with a higher risk profile. As a consequence, equity valuations increase for the short term, but equity returns are expected to fall in the long run. Although low interest rates are beneficial for the current equity value, it worsens the prospects of a further market rise in the future. Pension funds invest in diversified portfolios, in part consisting of equity and other risk-bearing assets. Despite the possible cushioning effect of higher risk premiums, lower returns on investment are a serious scenario for the future.

³ F. Eser, et al., 2019, Tracing the Impact of the ECB's Asset Purchase Programme on the Yield Curve, ECB Working Paper nr. 2293, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3417070.

Fig. 2 The risk premium on equity seems to have increased slightly



Source: The estimate of the risk premium on equity is based on the median of estimates drawn on 9 different models (C. Cara, 2020, ASR Composite ERP Calculation, Absolute Strategy Research, Mimeo, London).

Even during normal times it is difficult to properly forecast future returns, let alone during the corona crisis. Equity risk has further increased and government debt is rising, slowing down the drop of interest rates. On the other side, central banks respond with quantitative easing, which in turn suppresses interest rates. At the moment it is impossible to predict which effect is to prevail.

Low interest rates and pensions: new tension between contribution and pension ambition

Lower returns for pension funds considerably affect pension income. This is illustrated in fig. 3, which shows the average pension result in two scenarios: one with a high real return⁴ of 2,6% and another with a low real return of 0.7%. The difference outcomes are in particular contrasting for the younger cohorts who are still facing a lifelong pensions accrual: in their case, a lower return of 2 percentage points leads to a 50% lower pension⁵.

[The pension of the average pensioner roughly consists of 60% AOW and 40% additional pension]

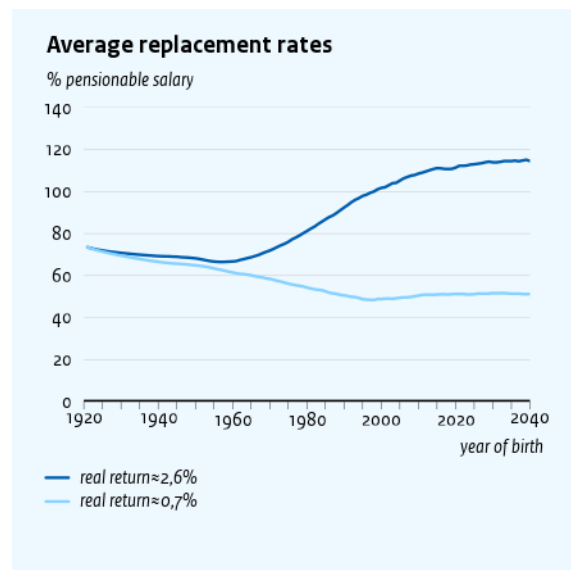
These results apply to additional - second pillar - pensions, so without the state pension (AOW), and reflect the pensions result as a percentage of the pensionable salary. The additional pension is in particular important to higher income groups. The pensions income of lower earners in particular

⁴ This scenario is based on the uniform set of scenarios as advised by the Dijsselbloem Committee; see Advice Parameters Committee (2019), Ministry of Social Affairs (SZW).

⁵ These calculations are drawn on the current pension contract and unchanged contributions.

depends on the AOW. As an indication, an average pensions income roughly consists of 60% of AOW benefits and 40% of additional pensions.⁶

Fig. 3 Replacement ratios of additional pensions with different median returns



Source: L. Metselaar and P. Zwaneveld, 2020, Pension calculations for 3 scenarios, CPB Note. This note involves the median outcomes of scenario sets aimed at a pensions contribution of 20% of the pensionable salary. The applied scenarios are those used by the Parameters Committee 2019 as well as a scenario set focused on low interest rates. In all scenarios an annual real salary growth of 0.4% has been taken into account.>

Lower interest rates require adjustment of pensions target

The scenarios in fig. 3 show that long-term low returns hamper achieving the current pension targets. In order to stick to the old target, contributions ought to be raised significantly. This is difficult, as contributions are already being perceived as high. Moreover, higher premiums could negatively affect the economy.

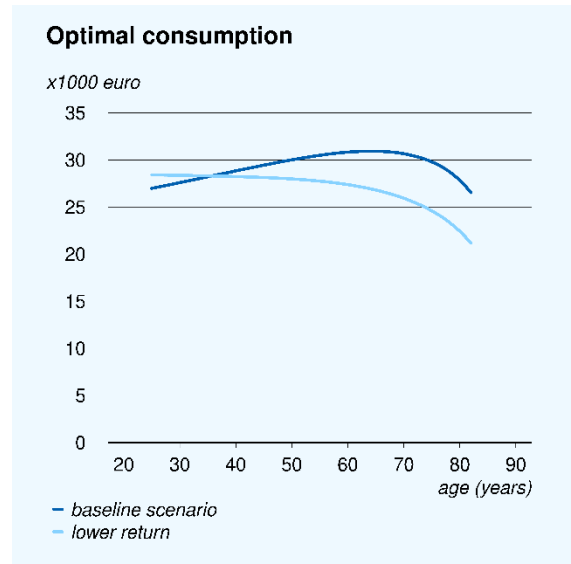
Should we adjust the pension ambition then? The theory for pension benefits is univocal on this: lower returns justify a more modest pension. Maintaining the target would require a too high contribution. We need to be aware that, as a result of low returns, the scope for spending during a lifetime decreases as saving and investing generate lower gains. It is obvious that spending should be reduced after retirement.

[The economic theory is univocal for the pension ambition: lower returns mean a more modest pension]

⁶ <https://www.cbs.nl/nl-nl/maatwerk/2019/27/aow-ers-met-aanvullend-pensioen-2011-2017>

The impact of lower returns on the pension contribution is less univocal. By using model calculations we can provide an insight into this⁷. Fig. 4 shows the optimal distribution of consumptive spending during a lifetime for a basis scenario of real returns of 3% and a scenario of lower real returns of 2%.

Fig. 4 Optimal consumption is lower during retirement if returns decrease



We observe three effects of lower returns. Firstly, in general consumptive spending is usually reduced as proceeds from assets decrease. This is reflected in the fig. by a reduction of spending power during a lifetime: the ‘income effect’ of lower returns.

In addition, we see that the consumption path topples: the consumption at the start of life is less reduced than at the end of life. This is linked to the substitution effect: during low returns, postponing consumption and saving is less attractive. As households receive less returns on their current saving, it becomes relatively more attractive to increase their spending. As a consequence, they shift their consumption from the future to the present. That’s why the consumption profile in the fig. flattens.

Finally, lower returns can cause the value of the current assets to rise. For example, a lower interest rate pushes up prices of residential property and long-duration bonds. Moreover, the human capital – the cash value of future labour income - increases, because this will keep on generating decent gains. This positive assets effect of lower returns reduces the need for saving and is therefore a reason for a smaller reduction of current consumption.

At the start of life the substitution and asset effects dominate the income effect, and is the optimal consumption higher than in the basis scenario. This would mean a contribution reduction. After this, the income effect has the upper hand and saving is the optimal option. Nevertheless, on balance less assets are being accrued.

⁷ N. Ciurila, 2020, The impact of lower returns on wealth on optimal wealth accumulation, CPB Background document, <https://www.cpb.nl/lage-rente-en-de-toekomst-van-pensioenen#docid-160297>.

Invest more in human capital

The extent to which households are being affected by low returns can strongly differ, depending on their specific situation, such as having or not having their own home with a mortgage. Also important is how much pension funds have hedged themselves against a future drop of interest rates and returns through their investment policy.

[The most important protection against lower interest rates is human capital, i.e. the earnings potential from labour]

Human capital – the earnings potential from labour - is the most important hedge against lower interest rates. The fall in pensions income can be cushioned through increased investment in human capital. For example, through improved education or by investing in health and labour market opportunities during a lifetime. This can not only raise the income, but also offers the potential for working longer to fill up a looming pension deficit. A single year of working beyond the official retirement age easily generates a 6% increase of the additional pension. However, in practice, increased investment in human capital won't be feasible for everybody.

Pay-as-you-go as an alternative?

Does PAYG offer a better alternative if capital funding become less attractive because of low interest rates? This question addresses the balance between the pension pillars, in particular between the PAYG-financed first pillar and the capital-funded second one. Theory says that the interest rate merely plays a subservient role in the optimal distribution between the pillars⁸.

The AOW (first pillar) is aimed at providing all citizens a basic income for old age. Thanks to the AOW, poverty among pensioners in the Netherlands is very low. The role of additional pensions (second pillar) is to enable households to continue their living standard after retirement. The third pillar comprises non-mandatory pension savings in order to tune the pension to individual circumstances.

The different ways of financing through the three pillars also contribute to the spread of risks, in particular political, demographic and financial risk. The first pillar offers an inflation-proof pension, but is susceptible to political and demographic risk. For example, although the level of AOW benefits has risen in step with purchasing power during the past decade, the retirement age for the AOW is to increase to 67 in 2024.

[Pay-as-you-go financing doesn't offer a way out of the low interest rate environment. The government is also facing low interest rates]

Because of its capital funding, the second pillar is susceptible to financial risk – as is the third pillar – but is sensitive to political risk as well. This distribution of functions doesn't change as a result of higher or lower returns⁹. The assessment of the financing method - payg versus capital funding – is in particular

⁸ See, for example H. Sinn, 2000, Why a Funded Pension System is Needed and Why It is Not Needed, International Tax and Public Finance, vol 7, pag. 389-410.

⁹ See C. Van Ewijk and L. Meijdam, 2020, Optimal balance between pay-as-you-go system and capital funding for pensions, Netspar Background document.

determined by the pensions' desired risk profile. Payg doesn't offer a way out of the low interest rates environment; the government also has to deal with low interest rates. In addition to risk considerations, other structural motives also play a role, such as pension funds' contribution to providing risk-bearing capital for the private sector, which in turn boosts economic growth.

Generational effects of increased pay-as-you-go financing

The share of payg financing could be increased by, for example, raising AOW benefits, the basic pension provided by the state to all citizens. However, this wouldn't only change the way of pensions financing, but would redistribute income at the same time, both between and within generations. A rise of AOW payments would provide current older generations with a higher pension, but would put the financial burden on next generations who are to pay higher contributions.

In addition, a higher AOW will mean a redistribution from higher to lower income groups within current generations. After all, the AOW provides every citizen – independent of their income – with an equal pension, whereas their contribution is income-linked. As a consequence, higher AOW benefits lead to a levelling of income. As the entitlement to AOW doesn't depend on labour history, this can upset the supply side of the labour market. Because of these effects, raising AOW payments is a less likely way to cause a shift from capital funding to payg.

New kid on the block: Non-financial Defined Contribution (NDC) pension

An interesting alternative way of payg financing in the first pillar is the 'Non-financial Defined Contribution pension (NDC). This was introduced in Sweden in the nineties of last century and has been adopted by several other countries in the meantime. The NDC is a payg system under which pension fund participants – like in the current second pillar – accrue a pension through paying in a contribution. The most important difference is that the premium is not actually invested with an annually growing entitlement as a result of a pension fund's return. Instead, the participants' entitlement is annually increased based on the observed salary rise, offering an index-linked pension¹⁰.

This way, the NDC system contributes to solidarity between the working population and pensioners. The aged share the salary development of younger generations and trade in part of their financial risk for salary risk. So, the payg character of NDC is being reflected in a different risk profile: more index-linked and less dependent on financial markets.

[An NDC system is less disruptive to the labour market. Moreover, it comprises all workers, including the self-employed]

¹⁰ Other kinds of indexation are possible as well, such as based on consumer price developments, or on a mix of returns and prices, or on salaries.

Because of the direct link between paid in contributions and pensions accrual, an NDC - other than the AOW - lacks redistribution between high and low incomes. As a result, an NDC system is less disruptive to the labour market. Moreover, it covers not only employees but all workers, including the self-employed. Otherwise, the NDC pension is comparable to the additional pensions in the Netherlands, with a flexible retirement age above a set minimum age and a higher pension as a consequence of working longer. The system also offers an insurance against longevity risk as well as the risk of premature death, and can be extended with a labour disability scheme.

Gradual introduction and generational effects

An NDC pension can be introduced through the current working population paying part of their contribution for additional pensions into the first pillar rather than into the second one. Premium payment comes - like in the second pillar - ahead of benefits. During the setup of the system, contributions exceed benefit payments by far. After the transition, when the accrued pensions are being paid out, full payg financing takes place: benefits are paid from the ongoing premium proceeds.

[An NDC system can be introduced without generation effects if all current workers pay part of their pension contributions into the first pillar rather than into the second one]

So, at the introduction of an NDC, no distribution between the generations is required. The fund's accrued assets must be deployed generation-neutral. The NDC is only relevant to the current workers. Pensioners remain out of harm's way.

An important consequence of the transition to an NDC pension is a risk transfer between the future generations who participate in the new system: younger generations transfer part of their salary risk to the pensioners of preceding generations. In exchange, they carry the risk on the assets accrued by the government as a result of the surplus premium. This inter-generational risk sharing reinforces everybody's pension. However, building a substantial fund during the transition phase incurs additional political risk. It requires discipline at the government to refrain from using the accrued assets for other purposes than pensions.

It is possible to enable current generations to benefit from the NDC pension in an earlier stage, for example as compensation for the recent drop of purchasing power in pensions as a consequence of the decreased discount rate for liabilities. In this case, there is a redistribution from future to current generations. Future generations would pay a higher contribution than they would get back from the government through their pension and/or lower taxes as a result of lower government debt.

On the other hand the future generations suffer from low interest rates. Moreover, the expectations for future growth have also been adjusted downward in the past years. This will also hit future generations. From this point of view, it is less logical to shift an additional financial burden to the future.

Finally, it is important to be aware that every partly shift of capital funding to payg is much easier to carry out than the way back. In the latter case, workers need to pay 'double': both for themselves as well as for the older generation.

Low interest rates and the transition from the current to the new pensions contract

The discount rate for liabilities no longer plays a key role in the new pension contract like it did under the old DB oriented contract. Nevertheless, persistently low returns will lead to a difficult trade off between pension ambition and contribution in any capital-funded system, also in the new one. In the new pensions system pensions accrual is measured in terms of share in a scheme's assets rather than pension claims. As a result interest rates and returns remain important for the projection of the achievable pension level.

A last valuation and distribution

At the transition to the new pensions contract, the current claims need one last valuation and need to be converted in terms of assets. In addition, surpluses and shortfalls in pension funds must be apportioned. This all must be completed before 2026.

It is inevitable that interest rates play an important role in the valuation of the current pension claims during the transition. In general, the transition will be easier if there are more assets to be divided up, and if current and future returns turn out to be better than expected.

More specifically, the interest level plays a role in two ways. Firstly, it affects the transition going from a DB oriented system with uniform accrual rates and uniform contribution rates to a DC system based on pension contributions. As a consequence of the abolition of 'the uniform accrual system' the implicit subsidy from younger workers to older premium paying colleagues disappears. This means that the current workers of mid age lose out on the subsidy in the second half of their working career. The amount involved decreases with the fall of interest rates. After all, the difference in cost between the pension of an older worker and a younger employee is smaller at a lower interest rate.

At a rate of zero, the problem of the average systematics disappears altogether. From this point of view low interest rates are beneficial for the transition to a new pension contract, as compensating the workers of mid age becomes less expensive.

Secondly, interest rates have an impact on the pension result, which decreases for everybody if low returns must be factored in. What's more, depending on the level of interest hedge of liabilities, the starting position could become less favourable, leaving less options for compensating certain groups using pension funds' assets.

However, there is no need for too much pessimism. The replacement ratios at both high and low average real returns remain reasonable for the youngest cohorts of participants. (see fig. 3) CPB calculations for the pensions accord based on other scenario sets, don't provide an unfavourable picture either for the generations who haven't yet entered the labour market¹¹.

¹¹ L. Metselaar, A. Nibbelink and P. Zwaneveld, 2020, New pension rules: effects and options of the enhanced contract and a transition to a flat premium percentage, CPB Note June 2020, <https://www.cpb.nl/nieuwe-pensioenregels>.

Conclusion

Future returns on financial markets are inherently uncertain. At the moment it isn't clear how much of the returns' drop is permanent and how much is temporary. For example, it is difficult to establish the scale of the impact of the non-conventional monetary policy as well as the corona crisis. Nevertheless, it is sensible to take into account the possibility of long-term low interest rates and returns. This applies to both individual households and pension funds. By anticipating timely, they can cushion a drop of pensions income. At the same time, lower returns demand a new assessment between pension ambition and contributions. The currently available information doesn't offer sufficient footing for fundamental structural reform, such as the introduction of the NDC. By waiting, for example for the elaboration of and experiences with the new pension contract, better informed decisions can be taken.

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Quotes/streamers

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