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Completing Dutch pension reform

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Abstract

The Dutch government and the social partners recently reached agreement on how the system of occupational pensions should be reformed in the coming years. In June 2019 they agreed on the main principles of reform; in June 2020 they elaborated these principles in greater detail. We argue that this reform is one in a series of reforms that transform the final-pay benefit pension contract, which was dominant twenty years ago, step by step into a collective defined contribution contract. This paper provides a historical overview of these reforms and how they connect to developments in the financial position of pension funds and to demographic and economic development trends.

Samenvatting

De Nederlandse overheid en sociale partners hebben recentelijk overeenstemming bereikt over de vraag hoe het stelsel van aanvullende pensioenen hervormd moet worden. In juni 2019 werd een akkoord gesloten op hoofdlijnen en in juni 2020 werd overeenstemming bereikt over de uitwerking van dit akkoord. Het Nieuwe Pensioen Contract kan worden omschreven als een collectief *defined contribution* (DC) contract: participatie en premie- en beleggingsbeleid worden collectief georganiseerd, terwijl pensioengaranties – kenmerkend voor het huidige pensioencontract – komen te vervallen.

Het sluiten van het pensioenakkoord mag, gezien de lange voorgeschiedenis, met recht historisch worden genoemd. Met het sluiten van een akkoord is de hervorming van de aanvullende pensioenen nog niet geheel afgerond. Kwesties als de omzetting van bestaande pensioenrechten in opbouw onder het nieuwe contract en eventuele compensatie van deelnemers die een verlies lijden vanwege de afschaffing van de doorsneesystematiek worden op het moment van schrijven nog nader uitgewerkt. En ook los hiervan is het hervormingsproces niet compleet. Dat zou pas het geval zijn als zich in de toekomst geen grote veranderingen in demografie, arbeidsmarkt en internationale economie meer zouden voordoen.

De Nederlandse pensioenhervorming lijkt uniek in de wereld. De vervanging van de doorsneesystematiek door een systeem van uniforme premie-inleg, de overgang van een collectief systeem van pensioenrechten op een van pensioenverwachtingen en de introductie van buffers die voor elke pensioenregeling weer anders kunnen zijn, zijn typisch Nederlands. Hetzelfde geldt niet voor het voorstel het mogelijk te maken dat een lumpsumbedrag wordt opgenomen bij het bereiken van de pensioengerechtigde leeftijd. Het Nederlandse stelsel van aanvullende pensioenen kenmerkt zich van oudsher door een sterke nadruk op collectiviteit en uniformiteit. Invoering van de mogelijkheid van een opname doet het Nederlandse stelsel meer naar dat in andere landen convergeren.

Dit paper betoogt dat de Nederlandse pensioenhervorming minder uniek is dan die op het eerste gezicht lijkt. We duiden het pensioenakkoord als de tot nu toe laatste stap in een stapsgewijs proces dat zo'n twintig jaar in beslag genomen heeft. Daarbij is een collectief *defined benefit* (DB) contract gebaseerd op niet-conditionele indexatie, conditionele werkgeversbijdrages en eindloonsystematiek vervangen door een collectief DC-contract met (per definitie) conditionele indexatie en zonder conditionele werkgeversbijdrages. Een omzetting van DB-contracten in DC-contracten is niet typisch Nederlands; het is iets dat in veel OESO-landen kan worden geobserveerd.

Het internationale karakter van de transformatie van DB-regelingen naar DC-regelingen suggereert dat er ook internationale factoren aan ten grondslag liggen. We zien drie van dergelijke internationale factoren die hierin mogelijk een rol spelen. Deze betreffen de wereldwijde vergrijzing van de bevolking, de mondiale daling van de rente en de invoering van scherpere boekhoudregels zoals de IFRS.

De vergrijzing van de bevolking heeft als effect dat het premie-instrument botter wordt. De daling van het aantal premiebetalers ten opzichte van het aantal pensioengerechtigden holt de effectiviteit van het premie-instrument uit. Dit heeft ertoe geleid dat pensioenfondsen hun heil zijn gaan zoeken in nieuwe beleidsinstrumenten, zoals conditionele indexatie in combinatie met de middelloonsystematiek. De mondiale daling van de rente is waarschijnlijk de hoofdoorzaak voor de onhoudbaarheid van het huidige contract, dat wij interpreteren als een conditioneel DB-contract. Mede vanwege het intact laten van de pensioenambities heeft deze rentedaling tot een toename van pensioenverplichtingen geleid die niet kon worden bijgehouden door de pensioenvermogens, ook al maakten pensioenfondsen volop gebruik van het instrument van conditionele indexatie en wisten ze internationaal gezien respectabele beleggingsresultaten te behalen.

De introductie van nieuwe pensioenregels in 2005 betekende dat afstand werd gedaan van het jarenlange gebruik van een vaste nominale rente (van 4%) en dat overgegaan werd op een variabele marktrente. Het gevolg hiervan was dat de gemeten dekkingsgraden de structurele ontwikkelingen in de rente beter zijn gaan weergeven. De nieuwe regels hebben er eveneens toe geleid dat werkgevers zich massaal hebben teruggetrokken uit pensioencontracten die de werkgeversbijdrage relateren aan de financiële performance van het fonds. Dit heeft de solidariteit van werkgevers met werknemers verminderd op een moment dat de solidariteit tussen werkenden en pensioengerechtigden al onder druk was komen te staan vanwege de vergrijzing van de bevolking.

Het onderscheid dat we in dit paper aanbrengen tussen vergrijzing, rente en boekhoudregels betekent overigens niet dat we denken dat deze drie factoren los van elkaar staan. Integendeel. Er zijn veel studies die de vergrijzing van de bevolking aanwijzen als oorzaak van de langdurige daling van de rente, los van de bijdrage van het beleid van centrale banken in de periode na de Grote Recessie. Ook de nieuwe boekhoudregels vallen moeilijk los te zien van het vergrijzingsproces. Boekhoudregels die het effect van grootscheepse structurele veranderingen in beeld brengen, zijn immers het meest waardevol als dergelijke veranderingen kunnen worden verwacht.

Afsluitend constateren we dat in twee decennia veel in het pensioenlandschap is veranderd. We zien een verminderd gebruik van het premie-instrument, een

omzetting van het eindlooncontract in een middellooncontract, een geleidelijke groei van de beschikbare-premieregeling, een overstap op fair-value accounting, de introductie van indexatiestaffels en die van opties om het pensioen meer individueel te maken. Het pensioenakkoord voegt daar een afschaffing van de doorsneesystematiek en een overstap op pensioenverwachtingen aan toe, alsmede beter communicatiebeleid en de optie van een lumpsum opname op de pensioengerechtigde leeftijd. Bij elkaar genomen markeren deze veranderingen de overgang van een traditioneel DB-contract op een – ook internationaal vaker toegepast – DC-contract.

Constante in dit proces is het principe van de verplichte deelname aan pensioenregelingen, zij het dat met de groei van flexwerk en het aantal zzp'ers de reikwijdte van de verplichtstelling kleiner is geworden. Met nieuw beleid wordt getracht de deelname aan pensioenregelingen op een hoger niveau te brengen.

1. Introduction

In the Netherlands, the national government and representatives of employers and employees ("the social partners") have recently reached agreement on how the system of occupational pensions should be reformed in the coming years.¹ In June 2019, an agreement was reached (Ministry of SAE, 2019) and in June 2020, this agreement was worked out in greater detail (Ministry of SAE, 2020). The New Pension Contract as it is called can be qualified as a collective defined contribution (CDC) plan: participation and contribution and investment plans are organized collectively, while the pension benefit guarantees that are characteristic of the current pension system will be abandoned.

This reform can be seen as one in a series of reforms. Starting in the late 1990s, the Netherlands moved to stable contribution rate policies, moved away from final-pay to average-pay contracts, introduced fair-value accounting and indexation ladders, and launched options to match pensions more to individual preferences. In retrospect, the Dutch seem to have transformed the final-pay defined benefit (DB) pension contract step by step into a CDC contract. During this same period, the Dutch population has been ageing, worldwide interest rates have declined, and the labor market in the Netherlands has become more flexible. There is good reason to argue that the reforms and these developments in demography and economy are connected.

The Netherlands are not unique in this respect. Worldwide, pension systems have moved from DB towards DC (Holzmann, 2013, Willis Towers Watson, 2016). Bonenkamp *et al.* (2017) show that the move from DB to DC applies both for private sector funded schemes and for pay-as-you-go schemes in the national pension plans. As to funded DB plans, three main reasons can be identified as driving forces behind this switch from DB to DC (Baily and Kirkegaard, 2009; Rauh *et al.*, 2020). First, fair valuation accounting principles require a company, as the ultimate risk bearer of its DB plan, to reflect any surplus or deficit of the pension fund position on its balance sheet. Transitioning to a DC plan freed companies from the exposure to volatile equity markets via their pension fund. Second, since the early 1980s, DB plans witnessed a continuous increase in the economic burden of their pension liabilities due to increasing longevity risk and the steady decline in nominal and real interest rates. A third reason, suggested by Rauh *et al.* (2020), might be that participants in a pension

1 There is a long tradition in the Netherlands of cooperation between the government and social partners. Denmark and Finland also attach an important role to social partners (Jensen *et al.*, 2020).

plan attach increasing value to the flexibility and the control over retirement wealth and spending decisions that a DC plan provides.

This paper primarily presents a historical overview, and it discusses the context that led to the proposal in the New Pension Contract in June 2020 to reform plans funded by the private sector. We aim to inform newcomers to the Dutch pension system, domestically but mainly from other countries. As to the new contract, we focus on four major elements. The first is the change in the form of the pension contract, a change that amounts to replacing pension entitlements with pension expectations. Secondly, the paper discusses uniformity pricing (the combination of a uniform contribution and a uniform accrual rate), which will effectively be abolished in the New Pension Contract. Thirdly, the paper discusses rules that must ensure that funds communicate better with their participants. Fourthly, it discusses the proposal to introduce the option of a partial lump-sum payment at the date of retirement. The paper will not address in detail the reforms of the first-pillar pension scheme in the Netherlands (an increase of the retirement age). The paper instead mainly focuses on the dominant type of pension agreement in the second-pillar, which is an average-pay DB contract, and on pension funds (abstracting from so-called pension premium institutes and insurers). We will, however, briefly address the proposed reform of the developments regarding IDC schemes.

The paper is structured as follows. Section 2 provides some institutional background. Section 3 contains an overview of the policy reforms and the development of the financial wealth of pension funds in the past two decades. Section 4 then relates the proposed reform to earlier reforms and the financial position of the funds. Section 5 contains our conclusions.

2. Dutch pension institutions

As a background, this section sketches the main features of the Dutch three-pillar system and in particular of the second pillar, namely the system of supplementary pensions.

2.1 The Dutch three-pillar system

The Dutch pension system can be characterized as a three-pillar system. The first pillar, the *Algemene Ouderdomswet (AOW)*, is a government-provided basic pension. It is an obligatory insurance that provides all citizens a life-long pension as from the retirement date. Benefits are independent of income and not means-tested; instead, the benefit level depends on the number of years that the recipient has resided in the Netherlands. The second pillar concerns (semi-)obligatory occupational pensions. They cover the employees of firms within an industrial sector (industry-wide pension funds), the employees of a specific firm (company pension funds), or workers with the same type of job (occupational pension funds). Benefits depend upon individual contributions, but the financial position of the fund also plays a role. The third pillar includes supplementary pensions that are unrelated to industry, firm or job type. These pensions are arranged on an individual voluntary basis.

The three pillars differ as to coverage. The coverage of the first-pillar system is complete: every resident participates in this on a compulsory basis. The third pillar is the opposite: participation is voluntary, and traditionally only a relatively small number of people participate in this. The second pillar stands in between. If the social partners have decided to arrange a contract, workers are obliged to participate. But the coverage, while high, is not total. Self-employed workers and part of salaried workers do not participate in a second-pillar contract for reasons we will describe below.

In 2019, first-pillar benefits amounted to € 39.5 billion, while second-pillar benefits were about 10% higher: € 43.1 billion (CBS, 2020a; own calculations). The role of the first pillar is thereby somewhat smaller than in a number of other countries (OECD, 2016). The role of the third pillar has always been relatively modest.²

Pension benefits are quite generous. The OECD estimates that the average gross replacement rate in the OECD economic area equals 53% (OECD, 2017). The Netherlands stand out with an average replacement rate of no less than 97%. This picture applies

2 No detailed information is available about third-pillar wealth. Combined data from CBS, DNB and the Dutch Association of Insurers indicate that third-pillar wealth amounts at most to several percent of total pension wealth.

not only to people with average income. In the OECD area, the replacement rates for people with half or one and a half times average wage income are 65 and 48% respectively; in the Netherlands the corresponding figures are 98 and 97%. In 2012, the Dutch government decided to gradually increase the age at which people start to receive AOW benefits. Between 2012 and 2022, the retirement age was to increase from 65 years to 67 years and three months. From 2022 onwards, the retirement age would go up further in line with life expectancy at the age of 65, such that the period during which people live in retirement would no longer grow. Since then, the rules governing the increase of the AOW eligibility age have been modified, as we will discuss below. These modifications leave unchanged the basic idea of increasing the AOW eligibility age in two steps, the first step being unconditional and the second step being conditional on the development of life expectancy.

2.2 The second pillar

The Dutch second-pillar scheme features a variety of contracts, including final-pay DB contracts, average-pay DB contracts, and individual defined contribution (IDC) contracts. The average-pay DB contract is by far the most common type, with a market share of 88.4% (DNB, 2021b) in terms of number of participants. Below we will therefore focus mainly on the average-pay DB pension contract. But before we continue, a caveat on the terminology used is in place. The benefit of the average-pay DB contract is by no means defined. Indexation against price inflation is subject to conditions, and in extreme circumstances pension benefits may even be lowered in nominal terms. We therefore refer to this average-pay DB contract as a conditional defined benefit (CDB) contract.³

Funding

The financing of second-pillar pensions is based on contributions paid. Given the size of the second pillar in the Netherlands, Dutch pension funds hold very high amounts of financial assets. In fact, in 2019 the combined assets of financial institutions that provide pensions amounted to some 1900 billion euros, more than twice the Dutch GDP (CPB (2021), DNB (2021e), data from Dutch Association of Insurers; own

3 The term CDC contract is sometimes used to refer to the current average-pay DB contract. As we will argue below, we want to reserve the term CDC contract for the contract in the reform proposed in the June 2019 agreement.

calculations).⁴ In an international perspective, Dutch pension assets in terms of GDP are the highest or next to highest in the world.⁵

Coverage

Even when viewing all pension contracts (not just the average-pay DB pension contract), there is no full coverage. As indicated above, the arrangements for supplementary pensions are semi-obligatory. If offered a pension contract by their employer, workers are automatically enrolled. Still, there are workers who do not participate in a second-pillar pension contract. This can happen when an employer is not covered by an industry-wide arrangement or occupational arrangement and chooses not to offer its workers a pension contract, because this is deemed too costly, because the administrative burden is thought to be too high, or because the employer has no trust in pension plans. It also happens that a firm offers a pension contract to only part of its workforce, e.g., if that consists of two separate groups (Giesen *et al.*, 2017). Until recently, these so-called 'white spots' were regarded as only incidental. As recently as 2016, it was estimated that the white spots constituted 4% of salaried workers. The most recent investigation, however, based on improved data and methods, concluded that the problem is much bigger. According to Ministry of SAE (2018), about 13% of salaried workers (about 850,000 persons) do not participate in a pension contract. There is also a second reason why workers are only partly covered by supplementary pension plans. The last ten years have featured a spectacular increase in the number of self-employed, up to a number of about 1.4 million persons in 2017 (CBS, 2018). These self-employed persons are not covered by second-pillar schemes, unless they worked on a salaried basis before becoming self-employed and if they had the opportunity to stay with their previous pension plan. A recent investigation estimated that about two hundred thousand self-employed persons do not accumulate any second-pillar pension (Ministry of SAE, 2018).

Collectivity

The collective nature of the average-pay based CDB system implies redistribution between persons with different mortality characteristics: redistribution from the low-educated to the high-educated and from males to females. Moreover, under the present system of uniformity pricing, it also implies redistribution from young to old

4 2019 GDP amounted to 820 billion euro (CPB, 2021).

5 According to OECD (2019), Dutch pension wealth in terms of GDP was 173.3%, which is lower than our own estimate. The difference in numbers may be due to the year of estimation and the inclusion of insurers in the number.

workers. Traditionally, there have been few possibilities for individual participants to choose alternative arrangements, also in an international perspective (García-Huíttron and Ponds, 2016). Options for individual participants to choose another pension provider, another investment strategy, or a different contribution profile do not exist. Pensions should be paid out on an annuity basis; lumpsum pay-outs are not allowed. However, the pay-out phase has become somewhat more flexible over time. We will come back on this below.

Risk sharing between generations

An important feature of the average-pay DB contract is that it allows for risk sharing between different generations. There are many risks: inflation, the interest rate, the rate of return on equity, and life expectancy can all evolve differently from previous expectations. In an IDC setting, these risks are borne by individuals, without any risk sharing. In the average-pay DB contract, however, risks are shared fully (in case of an unexpected change in longevity) or partly (in case of an unexpected change in financial market variables) with other generations by allowing the coverage ratio of the pension fund (financial wealth of the pension fund relative to current and future pension entitlements) to be temporarily lower or higher than the 100% that characterizes the IDC contract. Many researchers see intergenerational risk sharing as one of the cornerstones of collective pension systems (World Bank, 1994; Barr, 2012; Hinz, 2012), and, in theory, this type of risk sharing generally has a welfare-increasing effect when viewed from an ex-ante perspective.⁶ It is unclear whether participants in pension plans share this view. Particularly, when risk sharing rules are not transparent or not understood well, participants may fail to see the beneficial aspects of risk sharing.

6 The result even holds true when adverse effects upon the labour market are taken into account (Bonenkamp and Westerhout, 2014).

3. The turbulent 2000–2019 period

At several points in time in the past two decades, pension contracts were restructured, sometimes triggered by the pension sector, at other times by the supervisory authorities. Overall, this restructuring led to gradual change in the nature of the pension contract, from a traditional DB plan to a conditional DB plan. Three driving forces for the changes over time can be discerned. The first is the growing maturity of pension funds, requiring adaptation of risk management to flexible benefits. The traditional instrument of flexible contributions became increasingly ineffective as the growth of pension liabilities exceeded the wage sum in maturing funds in relative terms. A second force is the growing burden of defined benefits, due to the combined effect of the increase in longevity and the steady drop of interest rates. This caused a sharp increase in pension liabilities, leading in turn to low coverage ratios. The third driving force is the overhaul of pension fund regulations in 2007, with the introduction of fair valuation principles and stricter rules to restore the low coverage ratios to acceptable levels.

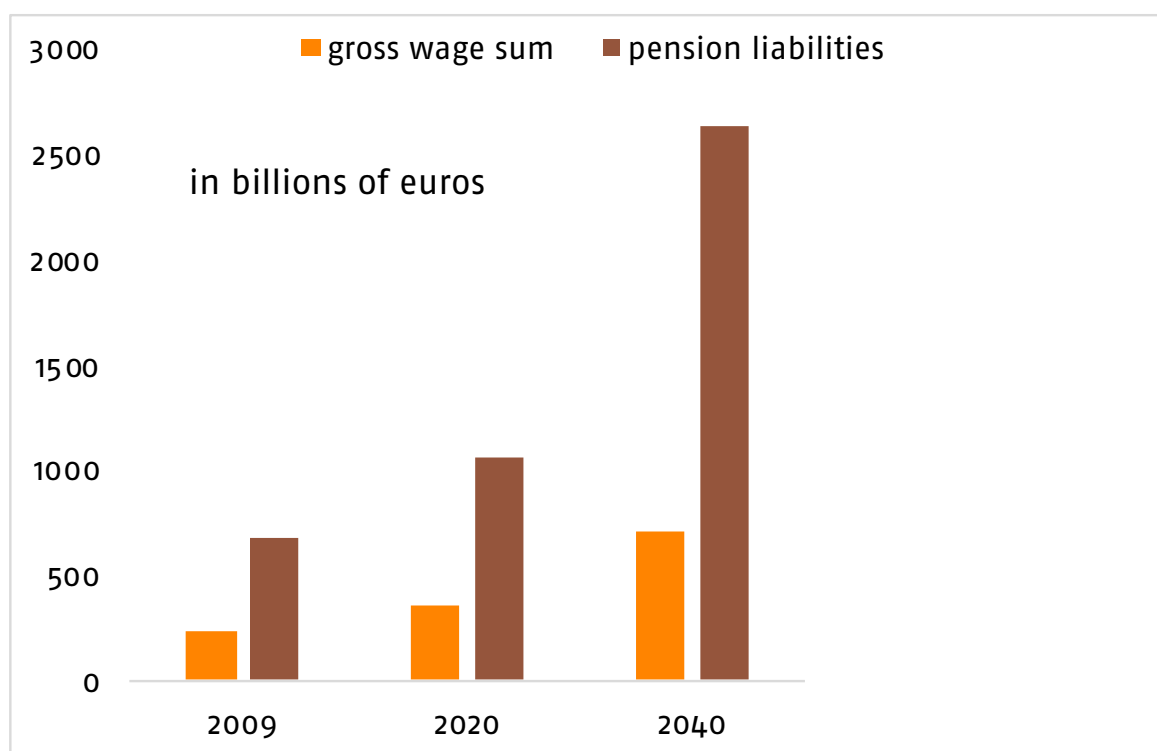
3.1 Erosion of the risk bearing base

Let us go back to the 1950s, when the Dutch pension plans were set up. Similar to the UK and the US, Dutch pension funds were initially set up as DB plans. In particular, the final-pay DB plan was the dominant pension plan (Ponds and Steenkamp, 2000). In this DB plan, a formula was applied to link benefits to wages and the length of the service period. Typically, a full career of 40 years and an accrual rate of 1.75% of pensionable wage per year provided plan members with an annual pension benefit equal to 70% of final pay. Usually, benefits were paid as inflation-indexed annuities. Pensioners thus faced no benefit risk. This pension plan therefore shifted all funding risks related to the benefit provision to the sponsoring company and to current and future workers.

In the UK and the US, these private sector plans were gradually replaced by DC pension plans in the eighties and nineties (Baily and Kirkegaard, 2009). In the Netherlands however, most pension plans continued to be structured as DB plans until 2004. Since then, pension plans have evolved in the direction of DC plans. The primary driving force was the erosion of the risk bearing capacity, for two reasons that stand out.

First, stakeholders became increasingly concerned that DB plans would over time become unsustainable as pension funds mature. The start-up of a funded DB plan goes together with very low risk exposure for the stakeholders. However, over

Figure 1: Aggregate pension liabilities and wage income of Dutch pension funds, 2009–2040



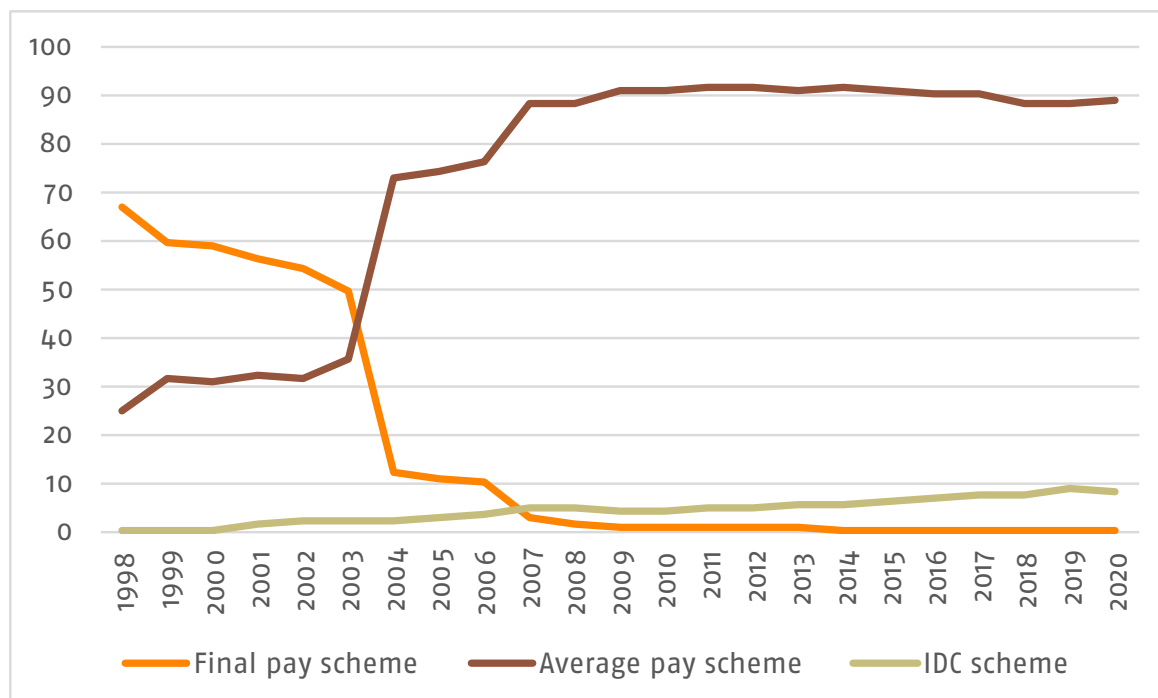
time pension funds become more mature, and the growth of guaranteed pension entitlements implies that more funding risks are to be borne by risk-bearing parties, either the sponsoring company or the workforce. Second, population ageing set in. In particular, the increase in life expectancy implied an increase in pension entitlements that was not foreseen when the plans were set up. Hence, pension entitlements grew much faster than the contribution base. Figure 1 displays the growth in pension entitlements and an aggregate wage income in the Netherlands (Commissie Toekomstbestendigheid Aanvullende Pensioenregelingen, 2010).

Due to the relative increase in the number of retirees versus the number of workers, the pension contribution rate became a less effective instrument to cope with the ageing of pension funds and with financial shocks (Westerhout *et al.*, 2004). It thus became necessary for pension funds to find alternative ways to cope with large combined shocks.

3.2 Introducing conditional indexation

On top of this, equity markets collapsed in 2000–2002, leading to worsening of the financial position of pension funds. In response, pension funds implemented two

Figure 2: Market share of different types of pension contracts



Source: DNB (2021a, 2021b), market shares measured in terms of numbers of participants (percentages).

Note: The data up to and including 2006 do not necessarily match with those from 2007 onwards.

changes in 2004: they introduced conditional indexation and transformed final-pay into average-pay DB plans.

The conditional character of the indexation of pension benefits implied that indexation relates to the financial position of the pension fund. Often this was made explicit by a so-called indexation ladder (Ponds and Van Riel, 2009). The indexation ladder establishes that full indexation is applied when the coverage ratio exceeds a defined threshold, that no indexation is applied when the coverage ratio has fallen below a defined threshold, and that partial indexation is applied when the coverage ratio lies between the lower and upper thresholds.⁷

The transition from final-pay to average-pay plans extended the scope of conditional indexation. In a final-pay contract, indexation applies only to pension benefits. In an average-pay contract, however, indexation also applies to the pension claims accrued by workers.

7 Since the revision of the financial assessment framework in 2015, the lower threshold is 110% and the upper threshold is 125%. The ladder also requires catch-up indexation, meaning that lost indexation will be repaired when the financial position of the pension funds has recovered.

Figure 2 illustrates the quick transition from final-pay DB contracts into average-pay DB contracts that took place. In the year 2000, just before the “dotcom” crisis, the market share of the average-pay contract was only 30.6%, whereas the final-pay DB contract held a share of 58.7%. In 2020, the corresponding market shares were 88.4 and 0.2% respectively.

The transition from the use of pension contributions towards the use of indexation cuts to absorb financial shocks has resulted in less risk sharing between active and retired generations. Before the introduction of conditional indexation, retired generations were effectively protected from aggregate shocks. Under conditional indexation, however, these generations share in the absorption of these shocks. This share can be relatively large if they have built up considerable pension wealth.

3.3 Introduction of fair or market value principles in pension supervision

During this same period, the government worked on upgrading the framework of pension supervision. It finished this task in 2007, when the new Pensions Act came into force, which introduced the Financial Assessment Framework (*Financieel Toetsingskader, FTK*). Since that time, the supervision of pension funds has been based on the principle of fair valuation. For decades, pension accounting had been dominated by what may be called the actuarial approach (Ponds and Steenkamp, 2000). This approach is grounded on rules of thumb regarding the valuation of assets and liabilities. In particular, it was common practice to use a fixed 4% discount rate to establish the value of pension liabilities. An important advantage of this actuarial approach was stability in the valuation of pension liabilities and hence in the pension contribution rate.

The drawback of the actuarial approach was that financial market changes, whether temporary or permanent, did not affect the assessment of pension liabilities. Fair or market valuation repaired this deficiency. The fair-valuation approach implies that a pension entitlement should be regarded as a long-term bond and thus be valued accordingly, using the term structure of interest rates. The fair-valuation method therefore gives a more objective assessment of the solvency of pension funds and of the risks associated with promised pension benefits.

The new pension accounting rules (cf. FRS 17/IAS 19/FAS 87) also prescribed full integration of the balance sheet of the pension fund with that of the sponsoring company. Therefore, under the new rules, the financial position of the pension fund started to have a direct impact on the value of the sponsor. However, for many companies, the revealed financial and actuarial risks of DB pension plans were so high that they dominated the risks stemming from their core business.

In response, some companies started to restructure their pension plans to DC plans in order to shift pension risks explicitly to plan members. The pension risks were thus wiped from their balance sheets.⁸ Contrary to US and UK companies (Baily and Kirkegaard, 2009), Dutch firms preferred to adapt to collective DC plans rather than to IDC plans (cf. the initiators Akzo, DSM, SNS Reaal and Arcadis (Swinkels, 2011)). In both cases, the contribution rate was fixed at a fair level, covering the fair value of new pension entitlements. The new practice implied the elimination of risk sharing between employer and employees. Often, companies paid considerable sums to their pension funds in order to buy off their stake in the risk bearing situation (Hoevenaars *et al.*, 2009).

3.4 Declining interest rates and coverage ratios

As discussed above, the transformation from final-pay towards average-pay contracts and the introduction of conditional indexation helped pension funds to monitor their financial positions better. But the reforms turned out to be insufficient.

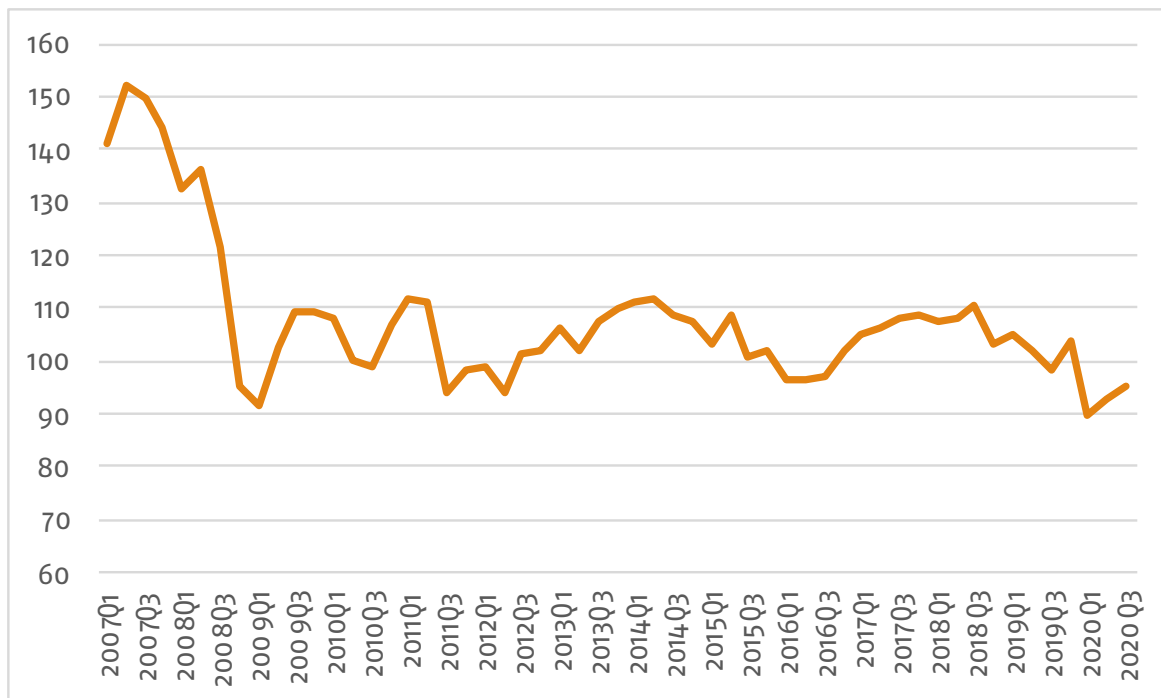
Figure 3 shows the average coverage ratio of Dutch pension funds. It indicates that the average coverage ratio dropped sharply in 2008 and that it stabilized subsequently at a much lower level for more than a decade. The worldwide crash of equity markets in 2008 enhanced the trend of declining coverage ratios due to dropping interest rates. In addition, a series of increases in longevity reinforced this development. However, the most important factor by far was the drop of interest rates. The risk-free rate, which is the rate that the Dutch supervisory authorities require pension funds to use for discounting pension liabilities (see paragraph 3.3), fell sharply, to a level of about zero percent for bonds with a maturity of 10 years (see Figure 4 for the development of the nominal interest rate in selected countries). Note, however, that Figure 3 is not representative for individual funds. Pension funds vary considerably, depending among other things on their portfolio share of equity and their hedging of interest rate risks (OECD, 2010).

We can use data from DNB (2021c), DNB (2021e) and DNB (2021f) to quantify the developments of pension assets and pension liabilities. Between 2007 and 2020⁹, the aggregate financial wealth of pension funds grew at an annual rate of 6.7%. In real

8 Jin *et al.* (2006) show empirically that the equity risk of US firms as measured by beta from the capital asset pricing model reflects the risk of their pension plans, despite the accounting rules for pensions, which they call arcane.

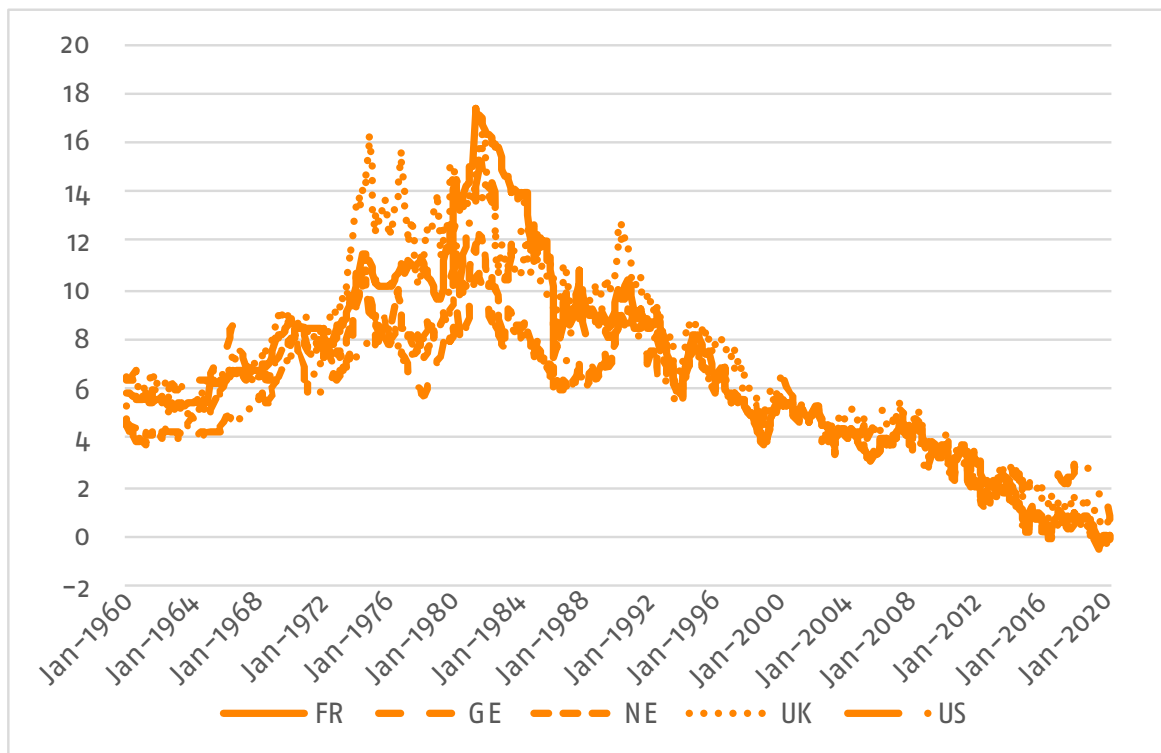
9 Aggregate pension assets for Q4 are not available at the moment of writing. We proxy the number by using the number for Q3.

Figure 3: Average coverage ratio of Dutch pension funds



Source: DNB (2021c), average coverage ratio based on market information (in percentage terms).

Figure 4: 10-year nominal interest rates in some major industrialized countries



Source: OECD (2020a)

Note: FR = France, GE = Germany, NE = The Netherlands, UK = United Kingdom, US = United States

terms, the annual return on pension assets in the 2004–2019 period was 4.8%, which is better than that for most other OECD countries (OECD, 2020b).

Aggregate pension liabilities grew faster, however. We calculate an annual growth rate of 10.1%. This is primarily due to the drop in interest rates, a phenomenon which Figure 4 shows has been going on for more than three decades.¹⁰ As a result, the average coverage ratio dropped from 144% in 2007 to 95% in 2020.¹¹

Pension funds reacted basically in three ways to the worsening of their financial position. First, they raised pension contributions. In the 2007–2020 period, the average pension contribution per employee increased by 40%.¹² Second, pension funds reduced the indexation of pension benefits to almost zero (see Figure 5). To make it concrete, in the 2007–2020 period, pensions increased on account of indexation by 6.3%, while the cumulative price inflation in this same period amounted to 23.6%. Hence, in real terms, pensions dropped by more than 17% on account of lost indexation.¹³ Third, some funds were required to cut their nominal pensions in 2013.^{14,15} On average, the cut was one percent for about one third of the participants in pension plans. Altogether, we calculate a pension decline of about 17.6% in real terms.

Two factors justify qualification of this outcome. On average, AOW benefits make up about half of the sum of AOW plus second-pillar pension. For a median worker, the fraction is about 60% (CBS, 2019). AOW benefits were fully indexed in this same period, and additional measures were taken in many years to maintain the

10 Correcting the increase in pension liabilities for the increase in life expectancy in the same period does not seem to alter the number fundamentally. To get an indicative value, we use data on life expectancy at age 65 in 2007 and 2020 (CBS, 2020b) and calculate an annual increase in life expectancy of 0.3% per year. Hence, the annual increase in pension liabilities not caused by the increase in life expectancy amounts to 9.8%.

11 Westerhout (2020) made a similar calculation for the 2007–2017 period. This resulted in a decline of the coverage ratio from 144% in 2007 to 109% in 2017. Hence, the addition of 3 years has made things worse, not better. Furthermore, the earlier calculation demonstrates that the decline of the average coverage ratio does not hinge upon the inclusion of the last three years.

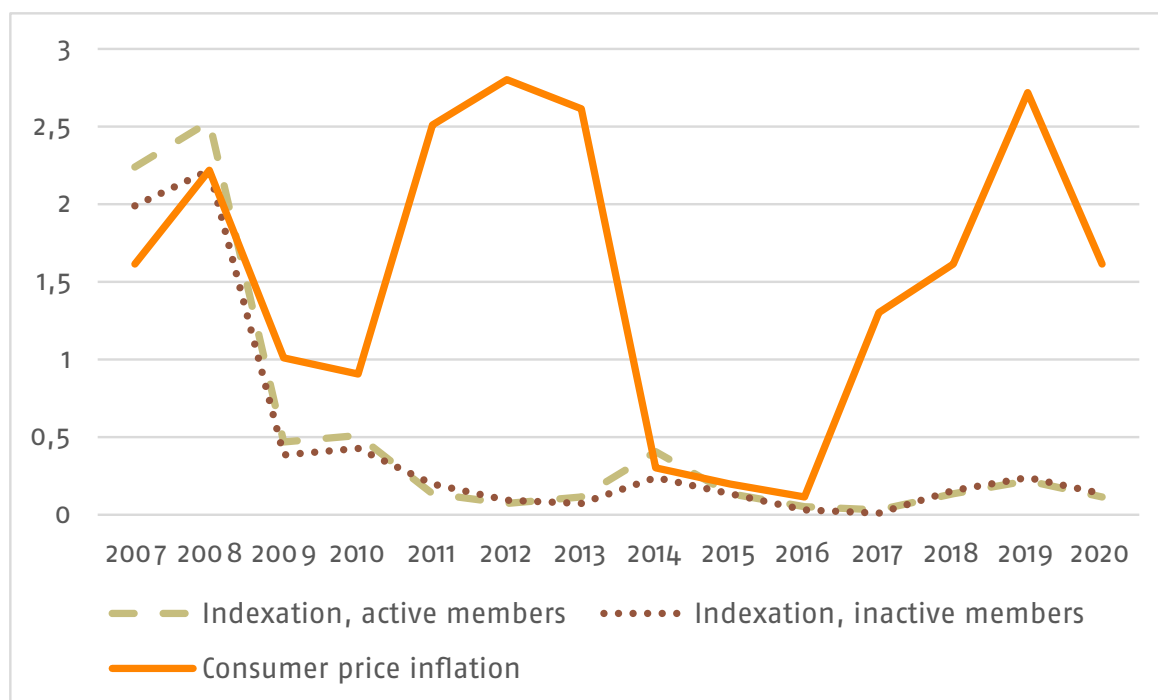
12 Calculated as $\frac{((\text{Premium}(2020)/\text{Number}(2020)))/((\text{Premium}(2007)/\text{Number}(2007)) - 1)}{100\%}$, where Premium (i) refers to aggregate pension contributions in year i and Number (i) refers to the number of participants in year i. Data for both variables are obtained from DNB (2021b).

13 As Figure 5 shows, the indexation of pension rights (indexation of active members) was slightly higher than that of paid pensions. The corresponding loss of purchasing power amounts to 16.3%.

14 Before 2015, the financial assessment framework stipulated that a pension fund must curtail its pensions if it is expected that the fund cannot achieve its target coverage ratio on account of other policy measures within 3 years (5 years in 2008).

15 75 pension funds curtailed their pensions in the 2008–2012 period. Basically, the cuts were applied in 2012 and materialized in 2013 (DNB, 2013).

Figure 5: Indexation of pensions



Source: DNB (2021d), Indexation of active participants, indexation of inactive participants (in percentage terms); CPB (2021), Consumer price inflation (in percentage terms).

purchasing power of the elderly. This roughly cuts the aggregate loss of purchasing power of pensions in half and tilts the largest losses to those for whom the second-pillar pension is relatively important. In general, these are people with a higher-than-average income. On the other hand, differences between pension funds are huge. Therefore, at the individual level, losses for those who happen to be dependent on the financially least healthy pension funds can greatly exceed the average loss.

3.5 Changing the supervisory framework

The cuts in nominal pensions that some pension funds had to apply in 2013 were due to their inadequate financial position. In 2015, the Dutch government changed the supervisory framework that had been introduced along with the new pension act in 2007: the new Financial Assessment Framework (nFTK). The nFTK aimed at achieving two goals: avoiding abrupt large nominal cuts and avoiding too slow recovery from an inadequate financial position.

The new framework involved two changes. First, if the financial assets of a pension fund under the old FTK were so low that recovery to the required coverage

ratio¹⁶ within fifteen years was not possible, the fund would have to apply a nominal cut. Under the new FTK, this period was reduced to ten years; however, the ten-year period would now restart every year if necessary. The cut could be spread over ten years and would be conditional on the financial position of the fund.

The second change was that a pension fund had to apply cuts in nominal pensions immediately if its financial assets were insufficient to reach the minimally required coverage ratio during five consecutive years.¹⁷ Under the old FTK, this was three years. Again, the fund could take ten years to apply the cuts, but now the cuts would have to be applied regardless.

In its evaluation three years later, Willis Towers Watson (2018) concluded that the nFTK was quite successful in achieving the first goal. Since the adjustment of the framework, nominal cuts have hardly been applied. Willis Towers Watson (2018) concluded that, without this adjustment, nominal cuts would have been more frequent and on average larger in size. As to the second goal, the report is more critical. Overall, the recovery of financial position could have been faster, which would have benefited young and future generations.

As we argued above, pension funds have not been successful in improving their financial positions permanently. In 2019, many funds would have had to apply cuts because their coverage ratios were below the minimally required level for five consecutive years. The government prevented this from happening by deciding to extend the assessment period once-only to six years.

In 2020, the year of the outbreak of the COVID-19 pandemic, interest rates, which were already historically low, declined even further, aggravating the financial position of pension funds. Nominal cuts at the end of the year were forthcoming, but again the government took action. Before the end of 2020, the government decided to temporarily lower the minimally required coverage ratio from about 105% to 90%. Largescale nominal cuts seem to have been avoided (PensioenPro, 2021).¹⁸

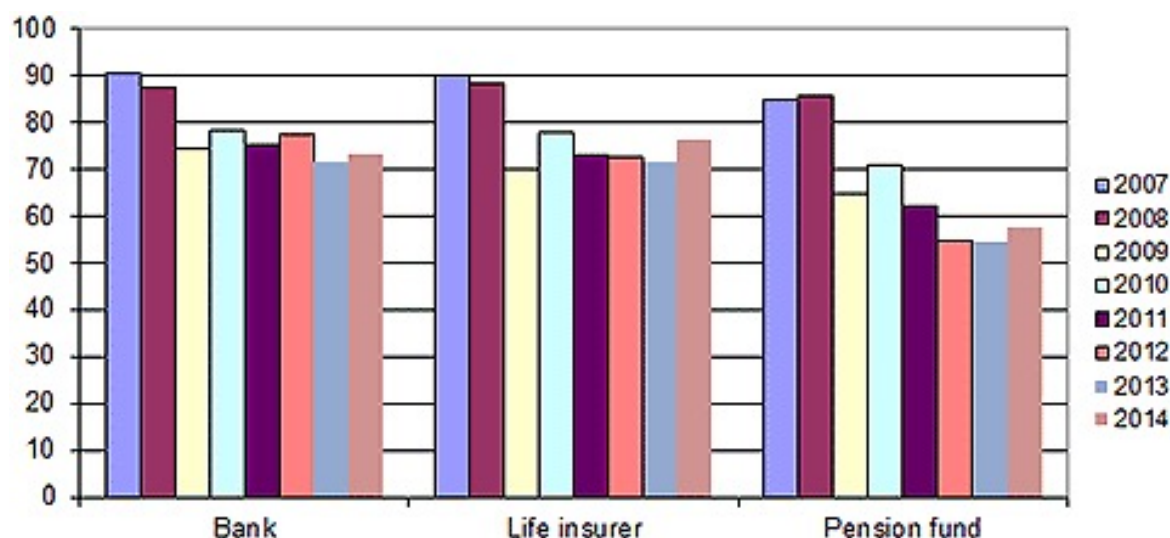
Effectively, the series of policy changes between 2015 and 2020 stopped the decline of pension benefits. They thus led to more intergenerational risk sharing between the young and future generations on the one hand and the elderly on the other hand than would have been the case without policy changes. The measures taken in 2019 and 2020 were said to be temporary. The future will show if this is the case. But the

16 In practice, this required coverage ratio was about 125%.

17 In practice, this minimally required coverage ratio was about 104%.

18 Most pension funds do not need to apply a nominal cut because the coverage ratio is at or above the lower limit of 90%.

Figure 6: Confidence in own bank, life insurer or pension fund



Source: DNB (2014)

fact that these decisions were made following agreement on the principles of reform contributes to the credibility of the statements.

3.6 Confidence in pension funds

Not surprisingly, public confidence in pension funds has suffered. Figure 6, taken from DNB (2014), presents the results of surveys about the confidence that participants have in their pension funds. The indicator of public confidence fell from 85% in 2007 to 57% in 2014. The confidence in other financial institutions such as banks also fell, but much less markedly.

Table 1 adopts a broader perspective by focusing on a longer period and by also including trust in the government. The picture that arises from Table 1 differs somewhat from that sketched in Figure 6. In almost all years, the trust in pension funds is now higher than that in any of the other institutions. Furthermore, the trust in insurance companies declined more than that in pension funds in the 2004–2014 period. However, similar to Figure 6, the decline of trust in pension funds was higher

Table 1: Trust in financial institutions, 2004–2014 (percentage of the general population who (very much) trust specific institutions)

	2004	2006	2009	2011	2014
Pension funds	53	64	44	42	48
Banks	32	37	25	34	30
Insurance companies			18	20	25
Government	37	42	45	41	41

Source: Van Dalen and Henkens (2018)

than that in banks or in the government (the trust in government even increased in the period considered).

The sharp decline of trust in pension funds may relate to a number of factors. First, participants may have gotten used to full indexation against inflation, which was standard before the introduction of conditional indexation. Second, it seems that participants did not understand very well that it was possible that the nominal value of their pensions could be cut under extreme conditions. Third, it was uncommon at the time for pension funds to communicate to their members that pensions are vulnerable to financial market risks.

4. The New Pension Contract

Given that pension funds were unable to return their financial position to healthy levels, despite the introduction of new policy instruments, it is not surprising that the social partners and the government finally succeeded in agreeing on reform of the pension system. This section discusses the most important elements of the New Pension Contract: the move away from pension entitlements towards pension expectations, the abolishment of uniformity pricing, the change in information policy, and the introduction of the option to receive a lump-sum payment upon retirement. First, however, we discuss the reform of the retirement date of the first-pillar pension scheme.

In 2012, long before the completion of the New Pension Contract, the government decided to increase the AOW state pension retirement age. In agreeing on the main principles for the reform of occupational pensions, the government and social partners also agreed to decelerate the future increase of the AOW retirement age. This was done in two ways. First, it was agreed that the graduated increase of the AOW retirement age would be delayed: rather than targeting at the age of 67 years and three months in 2022, the new agreement envisaged an increase in stages to the age of 67 years in 2024. Second, it was agreed that after 2024, any additional year of life expectancy would increase the AOW retirement age by eight rather than twelve months, which was the case since 2012. This adjustment in the AOW retirement age was an important element of the so-called Pension Agreement (Ministry of SAE, 2019).

4.1 The final step towards a CDC scheme

Above, we noted that in the 2008–2017 period, pension funds were unable to get their coverage ratios back to pre-2008 levels. Instead, coverage ratios continued to hover around or only slightly above 100%. One might think that 100% would be sufficient since pension funds can then be expected to be able to pay out pensions on average. However, pension funds are not just required to pay out pensions on average. Rather, they are required to pay out pensions in the majority of cases, which was translated in practice into a probability rate of 97.5%. Given the risk profiles of the portfolios of pension funds, coverage ratios of up to about 130% are required.¹⁹

¹⁹ In theory, pension funds could have opted to hold matching portfolios so that they do not run the risk of being unable to pay the promised nominal amounts. This would imply lower required coverage ratios. However, the drawback of holding a matching portfolio is that this would lower the rate of return on the portfolio on account of a lower equity premium, and that would be inconsistent with the ambition of pension funds to provide pensions that are indexed against price inflation.

Following this logic, one can conclude that coverage ratios can be lowered when pension funds stop guaranteeing future benefits and allow benefits to turn out higher or lower than previously expected. This is exactly the idea behind the transition of pension entitlements to pension expectations. In this system, pension will be adjusted upward or downward if the results on financial markets are above or below average. Under the proposed reform, pensions are more intrinsically related to financial market outcomes. Pension fund investment policy can then turn from guaranteeing pension levels towards achieving good results in the longer term. Importantly, the proposed contract does not feature the sharing of interest risk between generations. In the past, fluctuating and decreasing risk-free interest rates caused wealth transfers between generations, an aspect that led to lively debate in the Dutch national media and among academics (Mehlkopf and Van Bilsen, 2020).

The proposed reform turns the pension contract into a CDC contract (Ministry of SAE, 2020). The contribution is defined since the contribution rate will be fixed (and the same for all ages). And it is collective since the assets of participants are invested collectively and since returns are divided among participants by the pension funds based upon pre-determined rules. It is also collective since, similar to the current pension contract, idiosyncratic longevity risk will be shared among participants. And collective as the New Pension Contract features a mandatory solidarity fund. Part of the contributions to the pension fund can be used to build up this fund, such that the fund can be used to supplement pensions in bad financial times. In that sense, this solidarity fund is similar to the buffers that pension funds use in the current contract. But there are differences. The rules governing the solidarity fund limit its size. First, the fund cannot turn negative, and, second, it cannot exceed 15% of the assets of the pension fund. Third, not more than 10% of pension contributions can be used to fund the solidarity fund. These constraints limit the risk sharing between generations and imply that this type of risk sharing will be less than is currently the case.

The pension agreement also proposes to reform IDC schemes. Currently, the contributions made under these schemes display an increasing age profile. The reform entails that these contributions become age-independent, as is the case for the average-pay contract. Furthermore, in the case of sectoral and occupational funds, partners may choose to include a solidarity fund in their IDC contract. In several ways therefore, the pension agreement establishes a convergence between the average-pay contract and the IDC contract. However, we would not want to label the IDC contract as a collective contract. The average-pay contract continues to include more collective elements than the IDC contract. In particular, investment policies are collective under the average-pay contract, whereas a more individual approach is allowed

for the IDC contract. In addition, participants in the IDC contract may opt for either a fixed or a variable annuity. For participants in the average-pay scheme, on the other hand, a fixed annuity is mandatory (except for the option to split the pay-out phase into two trajectories, as will be discussed in the next section).

4.2 The abolishment of uniformity pricing

In 2007, the new Pensions Act allowed pension funds to include more options for participants than before. Since then, pension funds have introduced four types of options in their pension contracts.

One concerns the retirement date. Until 2005, plan members started receiving a pension at the formal retirement age of 65. After 2005, some pension funds enabled plan members to claim benefits earlier or later than at the age of 65. For example, ABP – the largest pension fund in the Netherlands – allows retirement since then at any age between 60 and 70. Years later, this option turned out to be valuable when the government decided to raise the AOW retirement age.

A second new option concerns the profile of the retirement benefit. Before 2005, the pay-out phase implied a flat benefit, starting at the age of 65. Under the new option, retirees are allowed to modify the flat profile into either a high-low benefit payment or to a low-high payment (on an actuarially fair basis).

The other two options concerned the possibility of shifting between one's old-age pension and one's survivor's pension and the take-up of a part-time pension. Flexibility would be increased further if the system of uniformity pricing – meaning that both the contribution rate and accrual rate are uniform for all participants and thus independent of age – were abolished altogether. But this gives rise to at least three issues: redistribution between employees of different age, lower or higher labor market participation than would be optimal, and a low implicit rate of return on contributions to the pension scheme.

The principle of uniformity pricing implies redistribution between young and old workers, which may be considered as unfair. Why is that? The contributions paid by young employees yield a higher expected pension benefit than those paid by old employees since they are invested for a longer period. However, the accrual of pension rights is the same for the two groups. Hence, uniformity pricing implies implicit transfers from young to old workers if the rate of return on the investment of pension funds exceeds the rate of indexation. In olden times, when it was common for workers to have lifetime employment with a single employer, this was hardly problematic. Over the life course, redistributive transfers received and paid then cancel out against each other. Currently, however, labor markets are much more fragmented. Hence,

it is less likely that redistributive transfers over the life course cancel out, and a job switch will generally involve implicit transfers. This holds true especially for persons who change from salaried worker to self-employed or vice versa. Hence, uniformity pricing may affect labor mobility. Transferring pension rights from one pension fund to another in case of a job switch is a complex exercise, however. Hence, as noted by OECD (2010) and suggested by Dutch data, it is doubtful that uniformity pricing would have significant effect on the labor mobility between jobs, sectors and companies. The second issue concerns labor market participation. The implicit taxes paid by young workers and the implicit subsidies received by old workers may induce the two groups of workers to work fewer or, instead, more hours. In theory, the young are induced to work fewer hours, whereas the old are induced to increase their labor market participation. In practice, there is hardly any empirical evidence for the former effect; for the latter effect the opposite is true. The labor supply of older workers may be more price-elastic than that of younger workers (Fenge *et al.*, 2006; Erosa *et al.*, 2016). The timing difference between young and old workers about their pension plan strengthens this argument.²⁰ We conclude that uniformity pricing may distort the labor market.

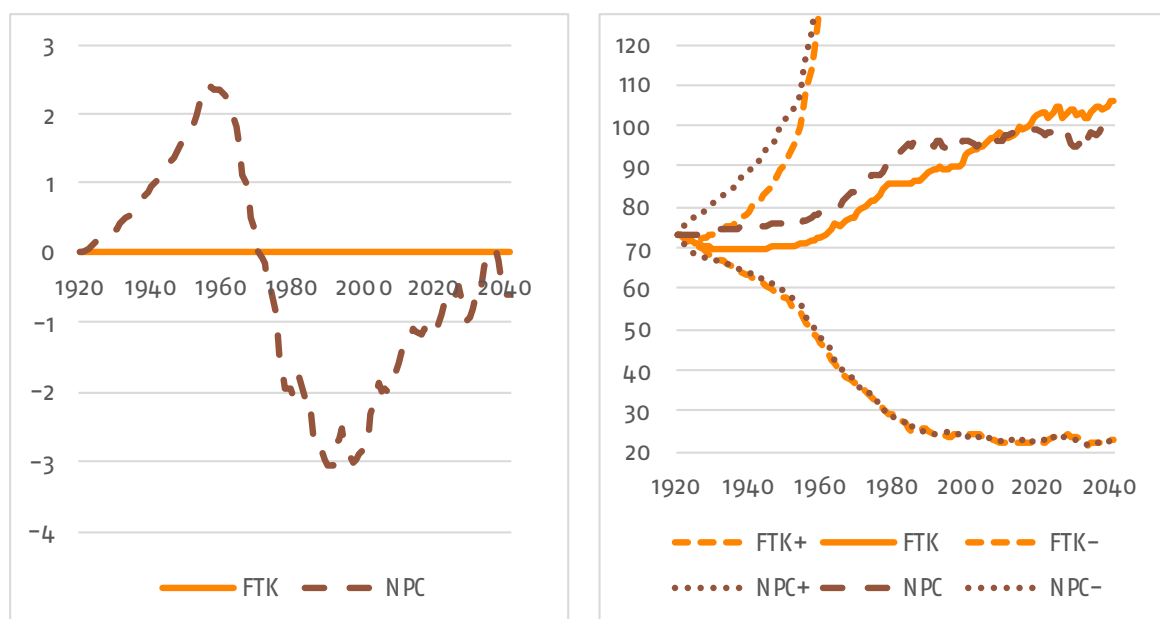
The proposal in the pension agreement is to end uniformity pricing by moving to an actuarially fair scheme, in which wealth accruals equal the contributions made to the scheme. This would end the redistribution between young and old workers, eliminate the distortions in the labor market, and increase the transparency of the pension system. This would also end the current practice in which pension contributions are too low, as pension funds are allowed to use the expected capital market rate of return for calculating contribution rates. Additionally, the move to an actuarially fair system may make it easier to allow more flexibility in the accumulation phase in the future. Under uniformity pricing, such a change would work out differently for workers of different age: young workers would have an incentive to reduce the accrual of pension rights for some time; for older workers, the incentive would be opposite. In an actuarially fair system, however, the incentives for young and old worker are aligned.

4.3 The double transition

If one combines the transition to a New Pension Contract with the abolishment of uniformity pricing, there will be a double transition. The effects of such a combination of policy changes will generally be different for different generations. Figure 7, taken

²⁰ Brinch *et al.* (2017) provide empirical evidence that agents do not account for fiscal incentives in their decision-making if these incentives apply in the future.

Figure 7: The effects of the pension reform on net benefits per age cohort (left panel) and the replacement rate (right panel)



Source: Metselaar *et al.* (2020)

Note: The net benefit per employee that is displayed in the left panel is defined as the present market value of pension benefits minus the present market value of contributions.

Note: In the left panel, FTK refers to the current pension contract and NPC to the new pension contract. FTK+, FTK and FTK- in the right panel refer to the 95th percentile, the median and the 5th percentile of the distribution of the replacement rate under the current contract, respectively. NPC+, NPC and NPC- refer to the same statistics, but now for the distribution of the replacement rate under the new pension contract.

Note: The figure reflects the assumption that the new pension contract will start in 2020. The pension agreement aims at start-up of the new pension contract in 2026.

from Metselaar *et al.* (2020), illustrates this, using two different methods to measure the effects.

Before going into the differences, let us take a look at common outcomes in the two panels. Roughly speaking, the retired generations are better off, whereas future generations are worse off due to the double transition. The older generations are expected to benefit from the double transition. Under the new contract, indexation of pension benefits can occur at lower values of pension wealth, as it is no longer necessary to build up buffers to guarantee future pensions. On the other hand, future generations are worse off, as buffers that can be used to absorb shocks are expected to be smaller. Compared to those for the bulk of the old generations, the latter effects are relatively modest, especially since the replacement rates of younger generations are expected to increase compared with those of the older generations (right panel of Figure 7).

For the middle-aged workers, the two panels tell a different story. The left panel shows that the pension reform leaves participants of middle age worse off, as their net benefits are less under the new contract than under the current contract. The right panel displays the distributions of replacement rates under the two contracts. Based on the medians of the two distributions, the cohorts of middle age are better off. The difference between the two panels is the equity premium. The calculations underlying the figure in the right panel include this equity premium. The calculations underlying the figure in the left panel, based upon risk-neutral valuation, do by definition not take this equity premium into account. What is left is the loss that middle-aged workers face, due to the fact that these age cohorts stop participating in a scheme with backloaded benefits before the end of their working careers.

4.4 Informing participants

A pension is a financial product. Informing participants only about the nominal pension that they have built up, without underlining the risks involved, in particular that this nominal pension may be cut in extreme circumstances, may have contributed to an underestimation of these risks. This may explain the dramatic decline of trust in pension funds in the past that is mentioned above.

The recent pension agreement aims at a different policy. It sets out that pension funds will be required to present their participants with three different scenarios for pension benefits: an expected scenario, a more optimistic scenario, and a more pessimistic scenario. Based on empirical evidence, one cannot expect that such a policy change will be fully effective. Not all participants are interested in their pension, and not all participants have a sufficient degree of financial knowledge. On the other hand, the proposed policy change may help to change the minds of at least part of the participants and prevent that many participants will again lack trust in their pension funds (or in the agreed-upon reform) should financial markets deliver low yields in the future.²¹

4.5 Introducing more flexibility in the pay-out phase

A typical characteristic of Dutch pension funds during the post-war period until recently is that all pension fund members are treated in the same way. The plans left little scope for tailoring the pension product to personal characteristics or preferences.

21 Dolls *et al.* (2019) find that information provided does matter. Sending out annual letters that provide detailed and comprehensible information about the pension system and individual expected public pension payments can lead to increase of tax-deductible private retirement savings and job earnings.

Table 2: Choice in pension plans in different countries

	Participation	Contribution	Lumpsum	Provider	Asset mix
Netherlands	X	X	X → V	X	X
Denmark	X	X	V	X	X
Sweden	X	X	V	V	V
Switzerland	X	X	V	X	X
UK	V	V	V	V	V
Australia	X	X	V	V	V
Chile	X	X	V	V	V
New Zealand	V	V	V	V	V
US	V	V	V	V	V

Source: García-Huíttron and Ponds (2016); with small update

In this respect, The Netherlands diverges strongly from international practice. Table 2 provides a comparison between the Netherlands and some other countries that have substantial funded second pillar plans (García-Huíttron and Ponds, 2016). The Netherlands stands out as providing no choice at all regarding key elements: participation in the plan of the company or industry is mandatory, contributions and asset mix are uniform for all members, and there is no possibility to take up pension assets as a lumpsum upon retirement. The proposed reform introduces the possibility for participants to take up a maximum of 10% of their accrued pension assets at retirement date (Ministry of SAE, 2019).

A uniform setup definitely has benefits. Operating costs can be held low. Illustrative is the ranking of selected OECD countries in terms of operating costs as a percentage of total investment. The Netherlands has costs amounting to only 0.1%, whereas these costs range from 0.1% to 1.5% in the countries reviewed (OECD, 2017). Lacking competition, there is no need for pension funds to spend money on marketing. In addition, many workers have little or no knowledge about their pension (CentiQ *et al.*, 2009). It may then be better to delegate the financial decision-making to a pension fund.

On the other hand, Bart *et al.* (2016) indicate that the uniform setup of collective pension plans may hinder participants in their financial lifecycle planning. Introducing the possibility of a lumpsum might then be a promising idea. Those participants who feel constrained by the current lack of flexibility could choose to take up the lumpsum, whereas other participants could decide not to use this possibility. There is also a downside. More discretion may induce individual participants to front-load their consumption more than is warranted, forcing people into a lower income at old age or forcing the government to bail them out. According to WRR (2017), not

only those with lower education, but also the high educated often suffer from a lack of discipline when it comes to financial decisions.

Two recent studies compare the welfare gains and costs of more flexibility in the pension scheme. Van Ewijk *et al.* (2017) signal that the costs of errors in financial decision-making may be prohibitively high. Folmer *et al.* (2018) conclude that the welfare costs of a small lumpsum may be considerably lower than the gains of more flexibility at the individual level. The difference between the two studies lies in the modeling of the behavior displayed by those who make financial errors in their financial decision-making. Van Ewijk *et al.* (2017) focus on the most extreme cases, whereas Folmer *et al.* (2018) describe the likely behavior of the larger group of people who tend to make errors, both large and small. The latter situation seems to come closer to Brown and Nijman (2012), who argue that the Dutch may be overannuitized and that a move towards more financial flexibility may lead to greater welfare.

The introduction of the possibility to take up a lumpsum at retirement date represents a move towards a more individual scheme. At the same time, a maximum of 10% is small by international standards and does not seem to fundamentally change the position of the Netherlands compared to other countries.

4.6 Halting the drop in coverage ratios

Above, we already indicated the change in the Dutch job market. The job market in the Netherlands has become more fragmented and job market mobility has increased. The share of workers in the total labor force with a flexible employment relationship (including the self-employed) grew from 22% in 2003 to 34% in 2019, an increase from 2.1 million to 3.4 million people (CBS and TNO, 2019).²² These non-standard workers participate less in pension schemes than standard workers.

Differences in pension coverage between standard and non-standard workers can be found in many OECD countries (OECD, 2019). The OECD signals that a pension reform that mitigates such differences would reduce inequalities, increase the scope of risk sharing and facilitate labor mobility. The Dutch pension agreement aims to halt this decline in coverage.²³ The aim is to decrease inequality between different groups of workers, based on voluntary actions by employees, employers, the self-employed,

²² The labor market has not become more flexible in all respects. De Beer (2016) shows that long-life employment (defined as working for the same employer when 55–59 years old as at the age of 30) has not decreased during the past two decades for male salary workers. As indicated above, the role of salaried workers has decreased over time. For female workers, long-life employment has decreased over time.

²³ In addition, the government proposes the introduction of an obligatory disability insurance scheme for the self-employed.

and pension professionals. Various actions and experiments have been initiated. Progress will be evaluated in 2021, and follow-up actions will be discussed thereafter.

5. Concluding remarks

As explained above, one can interpret the reform of occupational pension schemes as proposed by the social partners and the government in 2019 and 2020 as the final step in a series of reforms that transformed strongly collective final-pay DB schemes step by step into more individual CDC schemes. The withdrawal of employers from risk sharing, the introduction of conditional indexation, the move from final-pay towards average-pay, and the now proposed replacement of pension entitlements by pension expectations all reduce the risk sharing of workers with retired generations. The proposed repeal of uniformity pricing and the extension of pension schemes that enable a better match of pensions with individual preferences (in the past and in the proposed reform) give the intended pension scheme a more individual character. On top of that, the gradual increase in market share of IDC contracts, measured in number of participants, contributes to the same transition: away from collective schemes with a strong focus on risk sharing towards more individual schemes with less such focus.

One may consider this final step as essential. As Gérard (2018) has put it, before this final reform the Dutch second-pillar pension scheme had begun to combine the disadvantages associated with DC and DB schemes. In addition, the structural decline of interest rates, which under the current contract rules implies a huge redistribution between generations, may have triggered the creation of the new contract (Ministry of SAE, 2020).

Still, some things have remained unchanged. The final-pay DB schemes that we saw twenty years ago were collective in many regards – investment decisions, participation, the accrual phase. This applies as well to the pension contract proposed in the current reform. Twenty years ago, participation in pension schemes was (semi-) obligatory; again, this has not fundamentally changed.

One thing worth mentioning is that the interpretation of the reform proposed in 2019 and 2020 as a final step does not imply that all issues have been solved. As we write this, the new pension contract is expected to be in actual operation from 2026 onwards. However, there is still one major stumbling block, namely the transfer of pension assets accumulated under the current contract to the new contract. In the end, this is a zero-sum game. But still, the detailed rules that are used for this transfer will determine which generations will benefit and which generations will lose. Obviously, no generation wants to belong to the latter group. A generation that does will have a clear incentive to continue negotiating about the transition to the new pension contract. Right now that issue is still waiting to be resolved.

We do not exclude the possibility that some participants will be left disappointed when the proposed reform has been completed. The current scheme is not well understood by many, and the reform may fail to deliver a pension contract that is easier to understand (Ambachtsheer, 2020). In addition, it may be relatively easy to accept that pensions can be cut if financial markets do not perform well, but difficult to accept the same idea when it turns out to be reality.

The recent COVID-19 crisis does not seem to have played a direct role in the reform process. This process was more or less finalized before the current pandemic started. But the pandemic may have played an indirect role: it accelerated the decline of interest rates, which, as we have argued, has played an important role in the reform process.

References

- Ambachtsheer, K., 2020. Has a 'Sustainable DB Plan' become an oxymoron? Lessons from Canada, the UK, and the Netherlands, *The AMBACHTSHEER Letter*, August.
- Baily, M.N. and J.F. Kirkegaard, 2009. *US Pension Reform, Lessons from Other Countries*, Peterson Institute for International Economics, Columbia University Press.
- Barr, N., 2012. Credit crisis and pensions: international scope, in L. Bovenberg, C. van Ewijk and E. Westerhout (eds.), *The Future of Multi-Pillar Pensions*, Cambridge University Press, Cambridge, 90–141.
- Bart, F. *et al.*, 2016. De routekaart naar een meer integrale benadering van wonen, zorg en pensioen, Netspar Occasional Paper 01.
- Beer, P. de, 2016. De baan voor het leven is nog springlevend, *ESB* 101, August 11.
- Bonenkamp, J. and E. Westerhout, 2014. Intergenerational Risk Sharing and Endogenous Labour Supply within Funded Pension Schemes, *Economica* 81, 566–592.
- Bonenkamp, J., L. Meijdam, E. Ponds and E. Westerhout, 2017. Ageing-driven pension reforms, *Journal of Population Economics* 30, 953–976.
- Brinch, C.N., E. Hernæs and Z. Jia, 2017. Saliency and Social Security Benefits, *Journal of Labor Economics* 35, 265–297.
- Brown, J.R. and T. Nijman, 2012. Opportunities for improving pension wealth decumulation in the Netherlands, in L. Bovenberg, C. van Ewijk and E. Westerhout (eds.), *The Future of Multi-Pillar Pensions*, Cambridge University Press, Cambridge, 330–369.
- CBS, 2018. <https://opendata.cbs.nl/statline/#/CBS/nl/dataset/82309NED/table?ts=1543063126915>.
- CBS, 2019. *AOW'ers met aanvullend pensioen, 2011–2017 (cbs.nl)*.
- CBS and TNO, 2019. Aantal flexwerkers in 15 jaar met drie kwart gegroeid. <https://www.cbs.nl/nl-nl/dossier/dossier-flexwerk/hoofdcategorieen/ontwikkelingen-flexwerk>.
- CBS, 2020a, StatLine.
- CBS, 2020b. <https://opendata.cbs.nl/statline/#/CBS/nl/dataset/37360ned/table?dl=4B677>, <https://opendata.cbs.nl/#/CBS/nl/dataset/84883NED/table?dl=4B67A>.
- CentiQ, Stichting Pensioen kijker.nl and TNS NIPO, 2009. Wijzer in geldzaken, December.
- Commissie Toekomstbestendigheid Aanvullende Pensioenregelingen (2010). Een sterke tweede pijler, The Hague.
- CPB, 2021. *Centraal Economisch Plan (CEP) 2020 plus MLT (17 maart 2020) uitwerking | CPB.nl*, 21–1–2021.
- Dalen, H.P. van and K. Henkens, 2018. The Making and Breaking of Trust in Pension Providers: An Empirical Study of Pension Participants, *The Geneva Papers* 43, 473–491.
- DNB, 2013. Five years in the pensions sector: curtailment and indexation in perspective, *DNBulletin* March 7.
- DNB, 2014. Confidence in financial institutions rises slightly, *DNBulletin* August 14.
- DNB, 2021a. Pensioenmonitor; 1998–2006, *Data zoeken – De Nederlandsche Bank (dnb.nl)*, January 21, 2021.
- DNB, 2021b. Pensioenovereenkomsten (Jaar), *Data zoeken – De Nederlandsche Bank (dnb.nl)*, January 21, 2021.
- DNB, 2021c. Financiële positie van pensioenfondsen (Kwartaal), *Data zoeken – De Nederlandsche Bank (dnb.nl)*, January 21, 2021.
- DNB, 2021d. Hoogte toeslagverlening pensioenfondsen, *Data zoeken – De Nederlandsche Bank (dnb.nl)*, January 21, 2021.

- DNB, 2021e. Balans van pensioenfondsen (Jaar; breukvrij), *Data zoeken – De Nederlandsche Bank (dnb.nl)*, January 23, 2021.
- DNB, 2021f. Verkorte balansen van pensioenfondsen naar type (Kwartaal; breukvrij), *Data zoeken – De Nederlandsche Bank (dnb.nl)*, January 23, 2021.
- Dolls, M., P. Doerrenberg, A. Peichl and H. Stichnoth, 2019. Do retirement savings increase in response to information about retirement and expected pensions?, *Journal of Public Economics* 171, 105–116.
- Erosa, A., L. Fuster and G. Kambourov, 2016. Towards a Micro-Founded Theory of Aggregate Labour Supply, *Review of Economic Studies* 83, 1001–1039.
- Ewijk, C. van, R. Mehlkopf, S. van den Bleeken and C. Hoets, 2017. Welke keuzemogelijkheden zijn wenselijk vanuit het perspectief van de deelnemer?, Netspar Design Paper 71.
- Fenge, R., S. Uebelmesser and M. Werding, 2006. On the Optimal Timing of Implicit Social Security Taxes Over the Life Cycle, *FinanzArchive/Public Finance Analysis* 62, 68–107.
- Folmer, C., M. Lever, E. Ponds, B. Starink and E. Westerhout, 2018. Effecten van meer keuzevrijheid bij pensioenuitkering, Netspar Design Paper 105.
- García-Huítón, M. and E. Ponds, 2016. Participation and choice in funded pension plans, Netspar Design Paper 55.
- Gérard, M., 2018. Reform Options for Mature Defined Benefit Pension Plans: The Case of the Netherlands, IMF Working Paper WP/19/22.
- Giesen, D., L. Engelen and J. Menger, 2017. Pensioenregelingen bij werkgevers zonder verplichtstelling. Verdiepend kwalitatief onderzoek bij analyse witte vlekken, CBS.
- Hinz, R., 2012. The World Bank's pension policy framework and the Dutch pension system: a paradigm for the multi-pillar design?, in L. Bovenberg, C. van Ewijk and E. Westerhout (eds.), *The Future of Multi-Pillar Pensions*, Cambridge University Press, Cambridge, 46–89.
- Hoevenaars, R., T. Kocken and E. Ponds, 2009. Pricing risk in corporate pension plans: Understanding the real pension deal, *Rotman International Journal of Pension Management* 2, 56–62.
- Holzmann, R., 2013. Global pension systems and their reform: Worldwide drivers, trends and challenges, *International Social Security Review* 66, 1–29.
- Jensen, S.E.H., J. Lassila, N. Määtänen, T. Valkonen and E. Westerhout, 2020. The Top Three Pension Systems: Denmark, Finland, and the Netherlands, *Journal of Retirement, Summer*. <https://doi.org/10.3905/jor.2020.1.071>.
- Jin, L., R.C. Merton and Z. Bodie, 2006. Do a firm's equity returns reflect the risk of its pension plan?, *Journal of Financial Economics* 81, 1–26.
- Lever, M., E. Ponds, R. Cox and M. García Huítón, 2015. Internationale vergelijking van kapitaalgedekte pensioenstelsels, Netspar Brief 3.
- Mehlkopf, R. and S. van Bilsen, 2020. Renterisico, lifecycle en pensioenakkoord, Netspar Brief 19.
- Metselaar, L., A. Nibbelink and P. Zwaneveld, 2020. Nieuwe pensioenregels: effecten en opties van het doorontwikkelde contract en een overgang naar een vlak premiepercentage, CPB Notitie.
- Ministry of SAE, 2018. Verzamelbrief Pensioenonderwerpen en het vervolgonderzoek over de witte vlek. https://www.tweedekamer.nl/kamerstukken/brieven_regering/detail?id=2018Z21492&did=2018D55293.
- Ministry of SAE, 2019. Kamerbrief principeakkoord vernieuwing pensioenstelsel. <https://www.rijksoverheid.nl/documenten/kamerstukken/2019/06/05/kamerbrief-principeakkoord-vernieuwing-pensioenstelsel>.
- Ministry of SAE, 2020. Hoofdlijnennotitie Pensioenakkoord. <https://www.rijksoverheid.nl/documenten/publicaties/2020/06/22/hoofdlijnennotitie-pensioenakkoord>

- OECD, 2010. *OECD Economic Surveys: Netherlands*, June, Paris.
- OECD, 2016. *Pensions Outlook 2016*, OECD Publishing, Paris. http://dx.doi.org/10.1787/pens_outlook-2016-en.
- OECD, 2017. *Pensions at a Glance 2017: OECD and G20 indicators*, OECD Publishing, Paris. http://dx.doi.org/10.1787/pension_glance-2017-en.
- OECD, 2019. *Pensions at a Glance 2019: OECD and G20 indicators*, OECD Publishing, Paris. <https://doi.org/10.1787/b6d3dcfc-en>.
- OECD, 2020a. Main Economic Indicators. *OECD Statistics*, January 25, 2021.
- OECD, 2020b. Pension Markets in Focus 2020, www.oecd.org/finance/pensionmarketsinfocus.htm.
- PensioenPro, 2020. Invaren: 'De laatste grote herverdeling'. <https://pensioenpro.nl/pensioenpro/30040607/invaren-de-laatste-grote-herverdeling>.
- PensioenPro, 2021. Hoogstens bij enkele fondsen kleine verlagingen. <https://pensioenpro.nl/pensioenpro/30042076/hoogstens-bij-enkele-fondsen-kleine-verlagingen>.
- Ponds, E.H.M. and T.B.M. Steenkamp, 2000. Van vuistregels naar risico-analyse, *ESB*, September 6.
- Ponds, E. H. M. and B. van Riel, 2009. Sharing risk: The Netherlands' new approach to pensions, *Journal of Pension Economics and Finance* 8, 91-105.
- Rauh, J.D., I. Stefanescu and S.P. Zeldes, 2020. Cost saving and the freezing of corporate pension plans, *Journal of Public Economics* 188, 104211.
- Swinkels, L., 2011. Have Pension Plans Changed after the Introduction of IFRS?, *Pensions* 16, 244-255.
- Westerhout, E., M. van de Ven, C. van Ewijk and N. Draper, 2004. Naar een schokbestendig pensioenstelsel, CPB document 67, The Hague.
- Westerhout, E., 2020, Pension Reform in the Netherlands, CENTER for Economic Research Discussion Paper 2020-012.
- Willis Towers Watson, 2016. Global Pension Assets Study 2016.
- Willis Towers Watson, 2018. Evaluatie Wet aanpassing Financieel Toetsingskader, January 31.
- World Bank, 1994. *Averting the Old Age Crisis: Policies to Protect the Old and Promote Growth*, Oxford University Press.
- WRR, 2017. Weten is nog geen doen. Een realistisch perspectief op redzaamheid, Rapport 87, The Hague.

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