

Economic Policy Committee - Ageing Working Group

# **2024 Ageing Report**

## **The Netherlands - Country Fiche**

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## Table of contents

<b>1. Overview of the pension system</b> .....	6
<b>1.1. Description of the pension system</b> .....	6
First pillar: the state old-age pension (AOW).....	6
Second pillar: occupational pensions.....	9
Disability benefits.....	12
Survivors benefits.....	13
<b>1.2. Recent reforms of the pension system</b> .....	13
<b>1.3. Description of the actual ‘constant policy’ assumptions used in the projection</b> .....	14
<b>2. Overview of the demographic and labour force projections</b> .....	15
<b>2.1. Demographic projections</b> .....	15
<b>2.2. Labour force projections</b> .....	16
<b>3. Pension projection results</b> .....	18
<b>3.1. Coverage of the pension projections</b> .....	18
<b>3.2. Overview of projection results</b> .....	18
<b>3.3. Description of main driving forces behind the projection results and their implications</b> .....	20
<b>3.4. Financing of the pension system</b> .....	23
<b>3.5. Sensitivity analysis</b> .....	25
<b>3.6. Changes in comparison with previous Ageing Report projections</b> .....	26
<b>4. Description of the pension projection model and the base data</b> .....	29
The first pillar .....	29
The second pillar .....	30
<b>Methodological annex</b> .....	32

## List of tables

Table 1 – Qualifying conditions for retirement .....	9
Table 2 – Main demographic variables .....	15
Table 3 – Participation rate, employment rate and share of workers .....	17
Table 4 – Labour market exit behaviour .....	17
Table 5 – ESSPROS and AWG definition of pension expenditure (%GDP) .....	18

Table 6 – Projected gross and net pension spending and contributions (%GDP).....	19
Table 7 – Gross public pension spending by scheme (%GDP).....	19
Table 8 – Factors behind the change in public pension expenditure between 2022 and 2070 (pps of GDP) – pensioners .....	20
Table 9 – Benefit ratio (BR), replacement rate at retirement (RR) and coverage by pension scheme (in %).....	21
Table 10 – System dependency ratio and old-age dependency ratio.....	21
Table 11 – Public pensioners to (inactive) population by age group (%).....	22
Table 12 – Female pensioners to (inactive) population by age group (%).....	23
Table 14 – Financing of the public pension system.....	24
Table 15 – Revenue from contributions and number of contributors in the public scheme.....	24
Table 17 – Expenditure projections under different scenarios (pps deviation from baseline).....	26
Table 18 – Disaggregation of the change in the public pension expenditure-to-GDP ratio in consecutive Ageing Reports (pps of GDP).....	27
Table 19 – Disaggregation of the difference between the 2021 projections and actual public pension expenditure in 2019-2022 (%GDP).....	28
Table 20 – Disaggregation of the difference between the 2021 and the new public pension projections (%GDP) .....	28
Table A1 – Economy-wide average wage at retirement (1000 EUR) .....	32
Table A2 – Disability rates by age groups (%) .....	32
Table A3 – Factors behind the change in public pension expenditure between 2022 and 2070 (pps of GDP) – pensions .....	32

## List of figures

Figure 1 – Overall sketch of the 1st and 2nd pillar system of old-age pensions.....	6
Figure 2 – Evolution of the retirement age over time.....	8
Figure 3 – Age structure: 2022 vs 2070.....	16

## Introduction

The present country fiche for the Netherlands is part of the 2024 Ageing Report, which provides long-term projections of the economic and budgetary impact of population ageing at unchanged policy. The 2024 edition is the eighth update and covers the period up to 2070.

This fiche was prepared by CPB Netherlands Bureau for Economic Policy Analysis in agreement with the *Ageing Working Group* of the *Economic Policy Committee* and based on a common set of assumptions and methodologies. The pension expenditure projections presented in this fiche have been peer reviewed by the other Member States and the European Commission within the *Ageing Working Group*. The projections were finalised in the autumn of 2023 and represent the situation of the pension system on 01/12/2023.

Section 1 provides a general overview of the pension system in the Netherlands. Section 2 describes the demographic and labour market assumptions underlying the pension expenditure projections presented in Section 3, which also discusses the sensitivity scenarios around the baseline. Finally, Section 4 gives an overview of the methodology used to produce the pension projections.

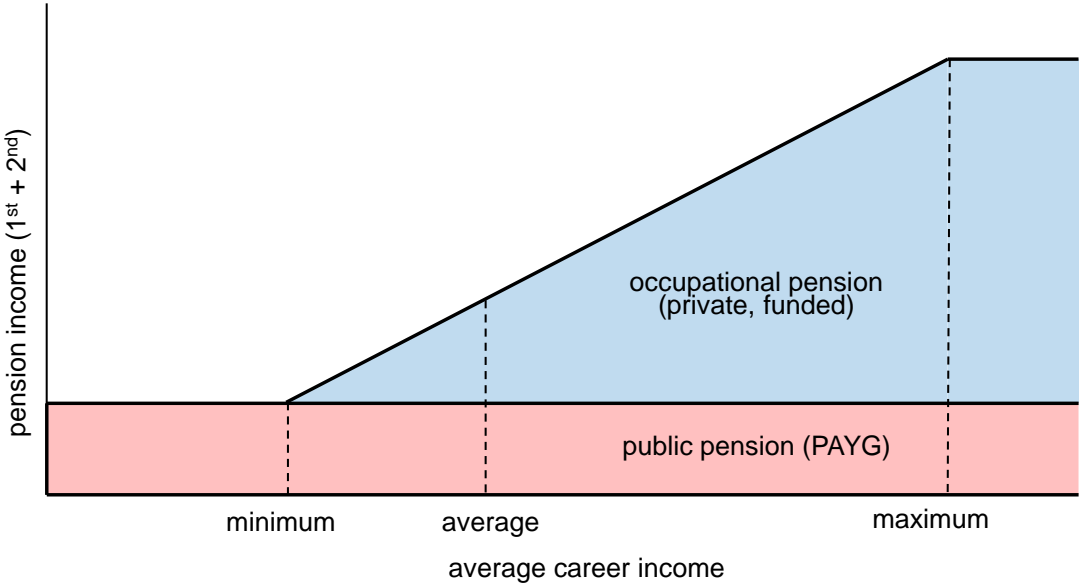
# 1. Overview of the pension system<sup>1</sup>

## 1.1. Description of the pension system

The mandatory part of the Dutch pension system comprises the government provided basic old-age pension scheme (first pillar), occupational pension schemes (second pillar), disability benefits and survivor benefits. The basic old-age pension provides an income for all pensioners at a level related to the net minimum wage. The state pension in the Netherlands is only a part of the total old-age pension system. The second pillar comprises the occupational pension schemes. It is funded, supplements the state pension and is related to past contributions and previously earned income. The annual build-up of second pillar pension rights is capped at an income level of 114,866 euros (in 2022), a level that is indexed each year in line with wages. On average the two pensions are roughly equal in size. Due to the dependency on past income however, the weights for individuals differ substantially. Figure 1 sketches how both pensions are related to past earnings. In 2022 the aggregates of paid out public and occupational old-age pensions were comparable in size, the public pension amounting to 4.5% of GDP and the occupational pension to 5.1%.

Disability benefits and survivor benefits currently make up 1.8% and 0.1% of GDP respectively. The rest of this section describes these pensions separately.

FIGURE 1 – OVERALL SKETCH OF THE 1ST AND 2ND PILLAR SYSTEM OF OLD-AGE PENSIONS



### First pillar: the state old-age pension (AOW)

The AOW is the statutory old-age pension scheme of the Netherlands. It provides all residents of the Netherlands a flat-rate pension benefit as from the eligibility age (see below). In 2019 the pension for a single amounts to 17,498 euros annually in gross terms and 16,548 euros in net terms.<sup>2</sup> For a couple these figures are 23,836 euros and 22,542 euros respectively, each of the partners receiving half. It is a basic provision. In net terms, the pension equals roughly 70% of the minimum wage for singles. For a couple, consisting of both retired people, this is roughly 100%. The pensions rise in line with minimum

<sup>1</sup> For an exhaustive description of pension schemes, please consult the [PENSREF database](#).

<sup>2</sup> Data on public old-age pensions are obtained from the Dutch Social Insurance Bank (SVB).

wages, which in turn are decided each year by the Minister of Social Affairs and Employment. There is no means-test for the eligibility of benefits; other forms of income have no effect on the AOW benefit.

All residents of the Netherlands are insured for the AOW during the 50 years before they reach the eligibility age. No distinction is made between men and women and between civil servants, employees and the self-employed. Past contributions have no effect on the benefit level. During the period of insurance, entitlement is accrued in 2% steps for every insured year. This leads to a 100% entitlement to the relevant pension benefit on reaching the eligibility age, provided there are no gaps in the period of insurance. A gap, of 2% per year, occurs when a person resides outside the Netherlands during (part of) the insured period. People who are not entitled to the full AOW benefit and who have, together with other sources of income, a total income below the subsistence level (i.e. less than 70% of the legal minimum wage) are entitled to receive a supplementary social assistance benefit.

State old-age pensions are financed according to the pay-as-you-go system: today's contributors finance the pension payments made to the pensioners of today. The administrative body for the AOW is the Social Insurance Bank (SVB). The SVB is independent of the government in its day-to-day operations. The Board of Directors manages the Bank in consultation with the Board of Advisors. The Ministry of Social Affairs and Employment (SZW) appoints the members of both the Board of Directors and Board of Advisors and approves its annual plan and budget. The SVB is subject to inspection by the Work and Income Inspectorate (IWI), part of SZW. SZW is also responsible for the design of the pension system as well as changes therein such as the various pension reforms (see below).

The eligibility age for the AOW used to be 65 ever since its introduction in 1957. However, the eligibility age was raised by one month per year in the period 2013 till 2015, three months per year in 2016-2018 and four months in 2019. By that time, it had reached a value of 66 years and 4 months. In 2020 and 2021, there were no further increases. After a three-month increase in 2022 and 2023 and a two-month increase in 2024, the eligibility age will be 67 years in 2024. After that year it will be linked to the remaining life expectancy for 65-year-olds, as projected by Statistics Netherlands,<sup>3</sup> in a way that is laid down in law by the formula:

$$V = \frac{2}{3}(L - 20.64) - (P - 67)$$

in which:

V = the increase of the eligibility age (in years)

L = projected average remaining life expectancy at the age of 65 as projected by Statistics Netherlands (in years)

P = the eligibility age in the year preceding the year in which the rise is considered (in years).

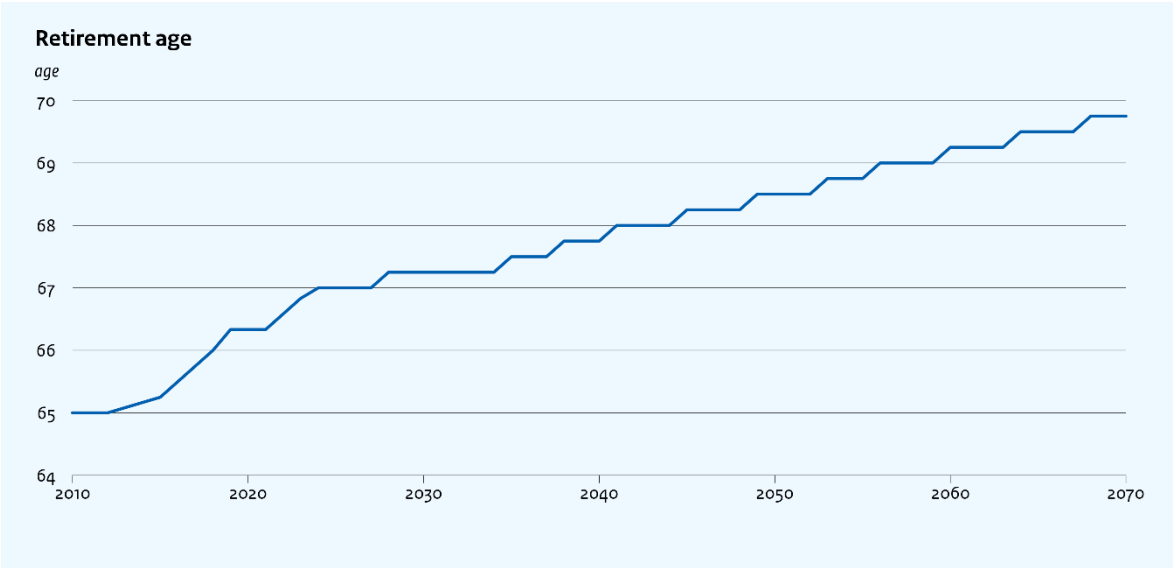
The formula is applied to all future years. If V is negative or smaller than 0.25 the eligibility age remains unchanged. However, if V exceeds the value of 0.25, the eligibility age is raised by three months. The rise is announced five years before it is to become effective and is based on the latest projection of life expectancies at the time.

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<sup>3</sup> According to the most recent projection, average life expectancy (in years) as projected by Statistics Netherlands rises from its 2021 level of 19.49 to 21.27 in 2030, and 22.43 in 2040.

According to the AWG projections of life expectancy, this effectively leads to a further rise of the eligibility age to 69 years and 9 months in 2070, the last year of the projection (see Figure 1).<sup>4</sup> This will take place in 11 three-month steps in 2028, 2035, 2038, 2041, 2045, 2049, 2053, 2056, 2060, and 2064, 2068. This time path is imputed in the calculations presented in section 3. Table 1 shows the accumulated effect for a selection of years. Changes in the projection of life expectancies will lead to corresponding adjustments of this time path, but not before five years after the change is made public by Statistics Netherlands. The level of the pension will remain unaffected. As the public pension remains to be a flat rate system, the table features a uniform across the board rise in the eligibility age. Variables that are not relevant in the Dutch pension system, such as the contributory period, are left empty in table 1.

**FIGURE 2 – EVOLUTION OF THE RETIREMENT AGE OVER TIME**



<sup>4</sup> The ages at which the pension rights are accrued move up in line with the eligibility age. They will remain to be built up in the 50 years preceding the eligibility age, at a rate of 2% for each year.

**TABLE 1 – QUALIFYING CONDITIONS FOR RETIREMENT**

		2022	2030	2040	2050	2060	2070	
Qualifying condition for retiring <i>with</i> a full pension	Statutory retirement age - men	66 + 7m	67 + 3m	67 + 9m	68 + 6m	69 + 3m	69 + 9m	
	Statutory retirement age - w omen	66 + 7m	67 + 3m	67 + 9m	68 + 6m	69 + 3m	69 + 9m	
	Minimum requirements	Contributory period - men						
		Retirement age - men	66 + 7m	67 + 3m	67 + 9m	68 + 6m	69 + 3m	69 + 9m
		Contributory period - w omen						
		Retirement age - w omen	66 + 7m	67 + 3m	67 + 9m	68 + 6m	69 + 3m	69 + 9m
Qualifying condition for retirement <i>without</i> a full pension	Early retirement age - men							
	Early retirement age - w omen							
	Penalty in case of earliest retirement a							
	Bonus in case of late retirement							
	Minimum contributory period - men							
	Minimum contributory period - w omen							
	Minimum residence period - men	see text						
Minimum residence period - w omen	see text							

Source: The Netherlands.

## Second pillar: occupational pensions

In the Netherlands there are mainly four types of occupational pension providers:

1. industry-wide pension fund providers that administer the pension scheme of a whole branch or industry;
2. company-specific pension fund providers that administer the pension scheme of a larger enterprise;
3. pension funds for professional groups which have to do with self-employed professionals within a particular profession (there are only active members and pensioners and no employer).
4. insurance providers who have to deal with group life insurance contracts for separate enterprises.

The joint assets of these pension providers are estimated to have been 1,707 billion euros at the end of 2022.<sup>5</sup> The largest fund, with assets of 474 billion euros<sup>6</sup> (The Dutch Civil Servants' Pension Fund ABP), represents around 28% of total assets. At present (end of 2022), 175 pension funds are in operation.<sup>7</sup> All these pension providers are being supervised by the Dutch Central Bank (DNB).

The vast majority of those employed in the Netherlands participate in an occupational pension scheme. This form of saving is attractive for most employees as it is tax favoured.<sup>8</sup> As of 2015 it is capped. The 2020 level at which it is capped is a gross income of 114,866 euros. About 80% of people above the statutory retirement receive additional pension income in addition to the state old-age pension (AOW).

<sup>5</sup> [Pensioenfondsen \(macro-economisch\) \(dnb.nl\)](#)

<sup>6</sup> [Current financial situation | ABP](#)

<sup>7</sup> [Pensioenfondsen \(pensioenfederatie.nl\)](#)

<sup>8</sup> Saving via the occupational pension system falls under an EET arrangement. This means that the contribution to the pension fund is tax exempt (the first E), that the accrual of revenues to the pension fund are tax exempt as well (the second E) and that the paid out pensions are taxed (the T). As for many employees the tax rate at which the contributions to the fund can be deducted is higher than the tax rate that is due on the paid out pensions this form of saving is considered to be subsidized.



For example, for people aged 65-70 years old, this share has increased from 74% in 2011 to 80% in 2017.<sup>9</sup>

Occupational pensions are subject to negotiation between the social partners at industry level and are legally binding for all firms in that industry.<sup>10</sup> Individual firms can be exempt from these if they offer a company specific pension scheme of comparable or better quality. The pension funds have to be financed by capital funding. A pension scheme is part of the employment conditions laid down in an agreement (which may be a collective agreement). A vast majority of pension funds currently have an average pay scheme promising a maximum yearly accrual rate of 1.875% of average career salary (including first pillar benefits). If the collective labour agreement lasts for 40 years, total pension benefit (first plus second pillar) therefore will be 75% of the average salary. For half of the working population, indexation of pension rights was equal to the wage rise and for the other half equal to the price rise. In recent years price indexation seems to have become more dominant, especially for the retired. Occupational pension schemes are considered supplementary to the public old-age pension (AOW). The AOW benefit is therefore a factor included in most calculations of second pillar pension schemes in order to arrive at the 75% aim referred to above. This factor is known as the AOW franchise. Pension premiums are only paid over income above this franchise. On average, pension contribution rates amount to 24% of gross income above this franchise, of which roughly 70% is covered by the employers and 30% by the employees. Together these two parts of the contribution to pension funds currently amount to around 14% of aggregate gross labour income. Most employees participate in a pension scheme. However, around 13% of them do not.<sup>11, 12</sup>

In addition, the last ten years have featured a spectacular increase in the number of self-employed, up to a number of about 1.5 million persons in 2022.<sup>13</sup> These self-employed persons are not covered by second-pillar schemes at all, except if they were employees before they became self-employed and if they had the opportunity to stay with their previous pension scheme. In 2020 research showed that about 882.000 self-employed do not accumulate any second-pillar pension at all.<sup>14</sup> Moreover, also 814.000 employees are not accumulating pensions in the second pillar. The Dutch government investigates possibilities to enlarge the coverage of the second-pillar schemes of employees and the self-employed.<sup>15</sup>

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<sup>9</sup> <https://www.cbs.nl/nl-nl/maatwerk/2019/27/aow-ers-met-aanvullend-pensioen-2011-2017>

<sup>10</sup> In 2023 a pension reform in the second pillar (see section 1.2) has been approved by parliament.

<sup>11</sup> [Cijfers CBS 2019 over werknemers zonder aanvullend pensioen | SER](#)

<sup>12</sup> As mentioned above, occupational pensions are subject to negotiations between the social partners at industry level and are legally binding for all firms in that industry. Hence, if social partners do not agree on a mandatory occupational pension scheme (or a minimal fee of 0% is agreed upon), employees may not participate. Some employees can also be exempted from participation in a pension scheme. These include students/interns, employees receiving a youth minimum wage (i.e. a wage below the adult minimum wage), recently started employees (during the first 2-6 months, participating in a pension scheme is not compulsory), or employees working in a recently started firm.

<sup>13</sup> CBS, 2018. <https://opendata.cbs.nl/statline/#/CBS/nl/dataset/82309NED/table?ts=1543063126915>

<sup>14</sup> [Werkenden zonder pensioenopbouw \(dnb.nl\)](#)

<sup>15</sup> Ministerie van SZW, 2020. Kamerbrief uitwerking Pensioenakkoord. <https://www.rijksoverheid.nl/documenten/kamerstukken/2020/07/06/uitwerking-pensioenakkoord>

Finally, there are also a third (non-mandatory savings via life insurance companies) and fourth (free savings) pillar in the Netherlands. In case one does not save enough in the first and second pillar it is possible to save additionally, with – in the third pillar – tax advantages similar to the second pillar, to fill the savings shortfall ('pensioengat').

#### The financial position of pension funds

The second pillar of the Dutch pension system is characterised by the legal obligation of full funding for the nominal, i.e. non-indexed, liabilities of pension funds. Pension funds invest in risky assets such as equity, bonds and real estate. In order to compensate the higher risks involved in these investments, the supervisor requires that a Dutch pension fund holds additional reserves (buffers).

Since the 1990's certain developments took place, including a systemic increase in pension obligations (and costs) due to a higher life expectancy, a reduction of contributions paid (during the 1990's) and – most importantly – until recently a continuous drop of the capital market risk free interest rate. Despite an increase in contributions paid during the first decade of the 21<sup>st</sup> century and favourable rates of return on pension wealth, these developments led to a sharp fall of the funding ratio. This ratio, which is defined as the ratio between assets and nominal, that is non-indexed, liabilities fell from approximately 230% in 1990, to 115% in 2004 and to 95% at the end of the fourth quarter of 2020. Since then the ratio recovered to a current level of 120% at the end of the second quarter of 2023.<sup>16,17</sup>

The supervision structure, the financial assessment framework (FTK), has been revised in 2015. The government, social partners, pension fund administrators and the supervising authority agreed that stop-gap regulations aimed at short-term financial stability could be counterproductive to the long-term quality of the pension system. Achieving a balance between short-term exigent requirements and the long-term robustness of the pension system remains a challenging task. Pension funds are allowed to base their indexation policies on the year-averaged funding ratio instead of the funding ratio at the end of the year. Moreover, current rules already allow the cost-effective contribution rate to be based on the ten-year-averaged interest term structure. These measures intend to make the participants in the pension system less vulnerable to short-term fluctuations in the interest rate and the capitalization rate of the funds.

It is legally required for pension funds to determine a cost-effective contribution rate and a minimum solvency rate in order to guarantee their members a pension benefit. If the amount is less than this basic limit, pension funds are compelled to take measures (including cutting promised pension benefits) to restore this level. According to the FTK, pension funds have to state in a clear way whether or not they will index the pension rights and under what conditions they intend to do so. The parameters used in FTK, such as the expected returns on assets and expected inflation, are assessed every five years.

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<sup>16</sup> [Data zoeken - DNB](#)

<sup>17</sup> If the funding ratio of a pension fund is considered insufficient, the pension fund is expected to come up with plans to restore this. Most do so by freezing indexation of pensions. Importantly, the Dutch government does not provide guarantees in case pension funds are unable to meet their obligations. Therefore, pension cuts can not be ruled out.

## Disability benefits

The system of disability pensions consists of three major parts: the WAO, the WIA and the Wajong. Around 780 thousand people currently depend on one of these schemes, corresponding to 8% of the workforce.<sup>18</sup> The WAO and WIA are financed by social security contributions paid by employers, the Wajong is financed by general taxation.

The WAO covers individuals who became disabled before 2004 and had past earnings. For these people the old benefit levels apply. It involves a benefit that depends on past earnings, age and degree of disability. It can amount to a maximum of 75% of past earnings and is capped at around 67,000 euros (in 2023). Between 2002 and 2007 several reforms were implemented and the WAO was replaced by the WIA for new claimants. These reforms involved a number of measures that substantially affected the disability schemes. The reforms intend to curb the inflow into these schemes. This inflow had always been very high in the Netherlands and had resulted in a stock of beneficiaries that amounted to almost one million around the turn of the century.

The first round of measures consisted of three parts. First, it involved the extension from 1 to two years of the duration of the period in which employers have to continue to pay 70% of the wages of sick employees.<sup>19</sup> This measure has a direct limiting effect on eligibility which sharply reduced the inflow in 2005. Apart from this, it is also expected to curb the future inflow by raising the incentives for employers to enhance working conditions and to increase the effort to fit the involved employees into the workforce. A further improvement may come from recovery from sickness during the period of the extension. The second 2004 measure involves a restriction of eligibility by raising the requirements to qualify for these schemes. Not only the new claimants are submitted to the new, more restrictive criteria, the measure also applies to the existing stock of beneficiaries who were subject to a one-off screening on the basis of the revised criteria. The third measure taken in 2004 was the abolition of the, separate, public scheme for the self-employed. These people have to resort to private insurers.

The second round of measures in 2006 distinguish between degrees of disability. It restricted the eligibility of those who are partially disabled. Especially those with a low degree of disability (smaller than 35%) can in the future not apply at all. For fully and permanently disabled a new benefit scheme is introduced that provides an earnings related benefit till the pensionable age. Between 2007 and 2022, the total stock of persons that benefit from either the WAO scheme or the WIA scheme decreased by roughly a third.<sup>20</sup>

The third part of the system of disability benefits, the Wajong, covers young individuals. Its benefit levels are low and generally do not exceed those of social assistance. It has shown a sharp rise in the number of claimants from 2007 up to 2012 that partially counteracts the favourable effects of the replacement of the WAO by the WIA. From 2012 onwards, the number of claimants has remained quite stable; at the end of the fourth quarter in 2022 it amounted to 215,000 persons. Most claimants did

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<sup>18</sup> Data on disability pensions are obtained from Statistics Netherlands.

<sup>19</sup> The organizations of employees and employers can agree on a higher level in collective agreements.

<sup>20</sup> CBS, 2020, [StatLine - Personen met een uitkering; uitkeringsontvangers per regio \(cbs.nl\)](https://statline.cbs.nl/rozet/Personen-met-een-uitkering-uitkeringsontvangers-per-regio)

not participate in the labour market at all, even though a substantial number was expected to be able to do so (at least partially). In 2010 several changes were introduced in the Wajong, aiming to stimulate labour force participation among claimants. But although these changes have reduced the inflow into the Wajong, the total number of claimants remains substantial.

In total (WAO + WIA + Wajong), the number of disability claimants has decreased from 810,000 in 2007 to 780,000 in 2022. Pension reforms affect the disability scheme by prolonging or shortening the ages at which one can be eligible for this benefit. This age rises in line with the old-age public pension.

## Survivors benefits

The scheme of survivors benefits covers widowers, widows and orphans, as long as these survivors have not yet reached the old-age retirement age. The benefit level has a maximum of 70% of the minimum wage. This level applies only to individuals with no income from labour. Child survivors get a benefit if both parents died and when they are below 21 and are studying. In net terms it equals the social assistance level. In case the involved individual has income from labour, the benefit is reduced by a level that equals 50% of minimum wage plus two thirds of the surplus of labour income. Possession of personal wealth or incomes from pensions do not lead to a reduction in the benefit. A reform that was implemented in 1996, that mainly affects individuals born as of 1950, has substantially restricted the eligibility to this scheme and consequently curbed the inflow of claimants. For individuals born as of 1950 it is now required to have a degree of disability to work of at least 45% or to be responsible for the care of a child below the age of 18. As soon as the retirement age is reached people transfer from the survivor to the old-age scheme. Pension reforms only affect the survivor scheme by prolonging or shortening the ages at which one can be eligible for this benefit. This age rises in line with the old-age retirement age.

### 1.2. Recent reforms of the pension system

On May 30<sup>th</sup> 2023 parliament approved the new law for reform of the second pillar, Wet toekomst pensioenen. This entails the introduction of a new pension contract in the second pillar. This turns the Dutch occupational pension contract into a Defined Contribution system rather than a Defined Benefit system. The new pension contract should be used in practice from 2028 onward;<sup>21</sup> however, since this involves a reform in the private pension system, its effects on public finances will be very modest.<sup>22</sup>

Regarding the second pillar, probably the most important element of the proposed reform is the change from pension *entitlements* to pension *expectations*, based upon individually accumulated wealth. Hence, accrual rates and funding ratios on the basis of the actual risk free rate play no role in

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<sup>21</sup> The new pension contract will apply to *all* participants (rather than only new entrants). In principle, all pension wealth will be transferred to the new pension contract. Significant attention is being paid to balanced intergenerational effects of the new pension contract. Participants who are expected to be worse off as a result of the reform will likely receive adequate compensation. The practical details are still being worked out.

<sup>22</sup> Current expectations are that the new pension contract will lead to somewhat higher pension benefits in the short run and somewhat lower benefits in the long run vis-à-vis the current contract (see CPB, 2020 [[link](#), in Dutch]). As a result, there might be some redistributive effects over time, but these are expected to (more or less) cancel out on aggregate. Moreover, note that, from a government perspective, only taxes on pensions are relevant for the projections as far as the occupational pension scheme is concerned. Even if the new pension contract would have a non-zero effect on private pension benefits, the net effect on tax income would be much smaller (given the 35% marginal tax rate on pension income which is assumed in our projections).

this new contract. In the current arrangement, participants are entitled to a benefit which is related to the average wage in their labour career, conditional on the funding ratio of the pension fund. The proposed reform turns the pension contract more into a “collective defined contribution” contract. The contribution rate will be fixed and the same for all ages. The “collective” element of the contract comes from the fact that wealth of participants will be invested collectively and returns are divided among participants based upon pre-determined rules. Moreover, similar to the current pension contract, idiosyncratic longevity risk is shared between all participants. Finally, a solidarity reserve can be implemented and reductions in pension entitlements are smoothed over several years. Part of the contributions are used to build up this reserve which will be used during bad financial times to supplement pensions.

### 1.3. Description of the actual ‘constant policy’ assumptions used in the projection

In principle, all public pensions are fully indexed to wages after the upcoming government period. However, our model does take into account policy measures that affect the (average) level of pensions, including measures that do so by affecting the number of beneficiaries.<sup>23</sup> More information on the model can be found in chapter 4.

In the previous section we described the pension reform in the second pillar. In this cycle we do not take this reform into account. First the reform will, most likely, only be implemented as of 2028. Second, there is still unclarity on how the new system will be implemented. Finally, switching from the current framework to the new framework as of 2028 would violate the constant policy assumption.

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<sup>23</sup> The so-called ‘Participatiewet’, which reduces the inflow in the Wajong scheme, is an example of such a policy measure.

## 2. Overview of the demographic and labour force projections<sup>24</sup>

### 2.1. Demographic projections

Table 2 provides an overview of the demographic development until 2070. It shows that the total size of the population will gradually increase in the next two decades from its current level of around 17.7 million to 18.8 million in 2046. This is largely due to net migration. Afterwards, the population size remains roughly constant. Importantly, the age composition shows significant changes: the old-age dependency ratio increases from 34.3% in 2022 to 56.3% in 2070. This results from two factors: an larger sizes of the cohorts that reach the age of 65 and beyond (relative to the working age population) and the increase in life expectancy at 65. The latter of the two rises by 4.8 years (from 18.8 to 23.6 years) for men and by 5.1 years (from 21.3 to 26.4 years) for women.

TABLE 2 – MAIN DEMOGRAPHIC VARIABLES

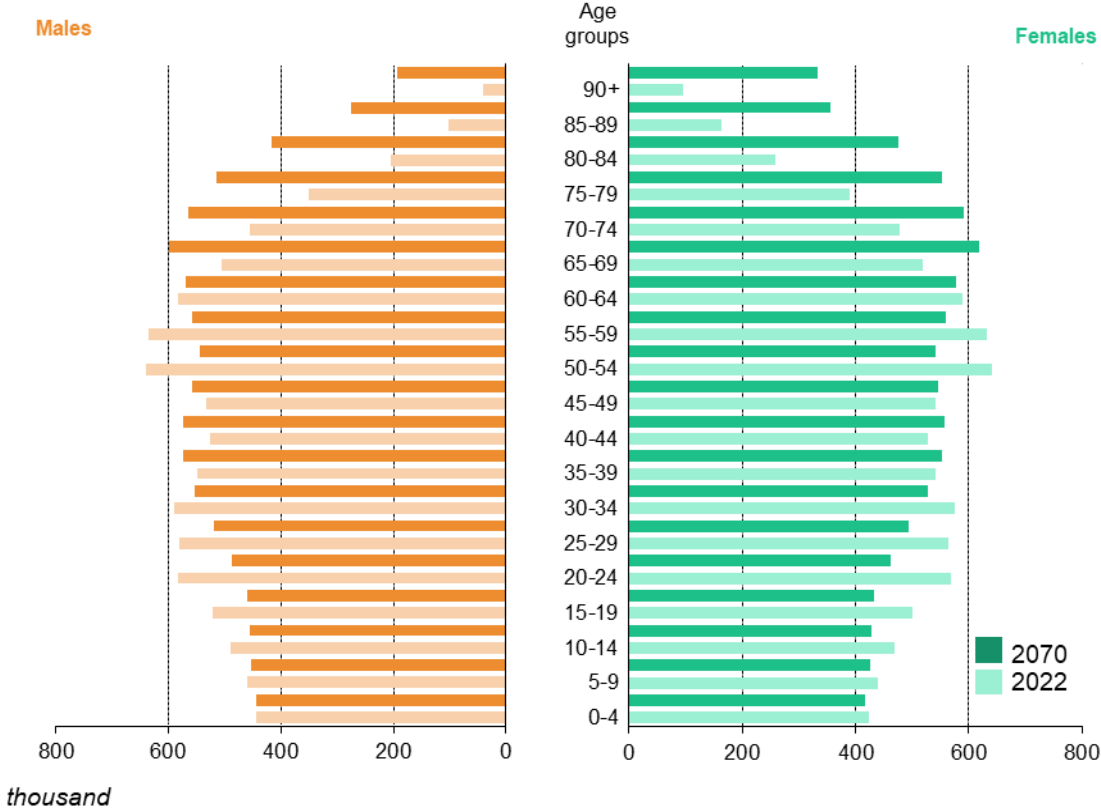
	2022	2030	2040	2050	2060	2070	peak value	peak year	change 2022-2070
Population (thousand)	17,707	18,366	18,718	18,740	18,689	18,749	18,758	2046	1,042
Population growth rate	1.0%	0.3%	0.1%	0.0%	0.0%	0.0%	1.0%	2023	-1.0%
Old-age dependency ratio (pop 65+ / pop 20-64)	34.3	40.3	46.4	46.4	49.6	56.3	56.3	2070	22.0
Old-age dependency ratio (pop 75+ / pop 20-74)	13.0	16.1	20.5	23.3	22.7	25.7	25.7	2070	12.7
Ageing of the aged (pop 80+ / pop 65+)	24.2	28.5	32.4	39.8	37.8	37.4	40.6	2053	13.2
Men - Life expectancy at birth	80.3	81.6	83.0	84.3	85.5	86.7	86.7	2070	6.4
Women - Life expectancy at birth	83.6	84.8	86.2	87.6	88.8	90.0	90.0	2070	6.4
Men - Life expectancy at 65	18.8	19.8	20.8	21.7	22.7	23.6	23.6	2070	4.8
Women - Life expectancy at 65	21.3	22.3	23.4	24.4	25.4	26.4	26.4	2070	5.1
Men - Survivor rate at 65+	89.6	90.7	92.0	93.2	94.1	94.9	94.9	2070	5.3
Women - Survivor rate at 65+	92.4	93.2	94.3	95.2	95.9	96.5	96.5	2070	4.1
Men - Survivor rate at 80+	61.5	65.7	70.0	73.9	77.3	80.3	80.3	2070	18.8
Women - Survivor rate at 80+	72.0	75.3	79.1	82.3	85.1	87.5	87.5	2070	15.5
Net migration (thousand)	234.9	45.3	44.3	42.4	44.3	42.1	234.9	2022	-192.7
Net migration (% population previous year)	1.3%	0.2%	0.2%	0.2%	0.2%	0.2%	1.3%	2022	-1.1%

Source: European Commission, EPC.

<sup>24</sup> For more details, see European Commission and EPC (2023), '[2024 Ageing Report: Underlying assumptions and projection methodologies](#).' European Economy, Institutional Paper 257.

Figure 1 compares the age distribution in 2022 with that at the end of the projection interval in 2070. For both males and females, the size and shares of all age groups above 65 are projected to increase between 2022 and 2070. Consequently, pension expenditure as a percentage of GDP will increase over time.

**FIGURE 3 – AGE STRUCTURE: 2022 VS 2070**



Source: Eurostat, European Commission.

### 2.2. Labour force projections

Table 3 provides an overview of the main changes that are expected in the labour market in the period from 2022 to 2070. It shows that in this time period the labour force participation rates of the 20 to 64 year olds will rise from 85.4% to 90.4% and those of the 20 to 74 year olds from 74.6% to 78.6%.

**TABLE 3 – PARTICIPATION RATE, EMPLOYMENT RATE AND SHARE OF WORKERS**

	2022	2030	2040	2050	2060	2070	peak value	peak year	change 2022-2070
Labour force participation rate 20-64	85.4	86.2	88.1	88.8	89.7	90.4	90.4	2070	5.0
Employment rate of workers aged 20-64	82.9	83.6	85.5	86.2	87.0	87.7	87.7	2070	4.8
Share of workers aged 20-64 in the labour force 20-64	97.1	97.0	97.0	97.0	97.0	97.0	97.1	2022	-0.1
Labour force participation rate 20-74	74.6	74.2	75.5	78.3	78.3	78.6	78.6	2070	4.0
Employment rate of workers aged 20-74	72.4	71.9	73.2	75.9	75.9	76.1	76.1	2070	3.7
Share of workers aged 20-74 in the labour force 20-74	97.0	96.9	96.9	96.9	96.9	96.8	97.0	2022	-0.2
Labour force participation rate 55-64	75.3	72.5	75.6	78.4	82.0	84.2	84.2	2070	8.9
Employment rate of workers aged 55-64	73.1	70.3	73.4	76.1	79.5	81.6	81.6	2070	8.4
Share of workers aged 55-64 in the labour force 55-64	97.2	97.0	97.0	97.0	97.0	96.9	97.2	2022	-0.3
Labour force participation rate 65-74	17.0	16.8	17.3	22.2	26.4	30.0	30.0	2070	13.0
Employment rate of workers aged 65-74	16.2	15.9	16.4	21.1	25.0	28.5	28.5	2070	12.2
Share of workers aged 65-74 in the labour force 65-74	95.4	95.0	94.9	95.0	95.0	94.8	95.4	2022	-0.7
Median age of the labour force	39.0	38.0	39.0	41.0	41.0	41.0	41.0	2050	2.0

Source: European Commission, EPC.

Tables 4 focuses on careers lengths and durations of retirement for men and women combined and split out. It shows that the average labour market exit age rises by 2.8 years for men (from 65.0 to 67.8) and by 3.0 years for women (from 64.8 to 67.8). Due to their higher life expectancy, women have a longer duration of retirement than men.<sup>25</sup>

**TABLE 4 – LABOUR MARKET EXIT BEHAVIOUR**

TOTAL	2022	2030	2040	2050	2060	2070	peak value	peak year	change 2022-2070
Average effective retirement age*	64.8	66.3	66.8	67.2	67.5	68.6	68.6	2070	3.8
Average labour market exit age (CSM)**	64.9	65.3	65.9	66.6	67.2	67.8	67.8	2070	2.9
Contributory period	:	:	:	:	:	:	:	:	:
Duration of retirement***	17.3	21.1	21.2	21.3	22.3	22.3	22.7	2064	5.0
Duration of retirement/contributory period	:	:	:	:	:	:	:	:	:
Percentage of adult life spent in retirement****	26%	32%	32%	31%	32%	32%	32%	2064	6%
Early/late exit*****	2.0	1.7	1.7	2.8	1.8	2.9	3.2	2063	0.9
MEN	2022	2030	2040	2050	2060	2070	peak value	peak year	change 2022-2070
Average effective retirement age*	64.9								
Average labour market exit age (CSM)**	65.0	65.4	65.9	66.6	67.3	67.8	67.8	2070	2.8
Contributory period	:	:	:	:	:	:	:	:	:
Duration of retirement***	15.7	19.8	19.9	20.0	20.9	20.9	21.3	2064	5.2
Duration of retirement/contributory period	:	:	:	:	:	:	:	:	:
Percentage of adult life spent in retirement****	24%	30%	30%	30%	31%	30%	31%	2064	6%
Early/late exit*****	1.3	1.7	1.7	3.0	1.8	3.2	3.5	2063	1.9
WOMEN	2022	2030	2040	2050	2060	2070	peak value	peak year	change 2022-2070
Average effective retirement age*	64.6								
Average labour market exit age (CSM)**	64.8	65.2	65.9	66.6	67.2	67.8	67.8	2070	3.0
Contributory period	:	:	:	:	:	:	:	:	:
Duration of retirement***	18.8	22.3	22.5	22.6	23.6	23.6	24.0	2064	4.8
Duration of retirement/contributory period	:	:	:	:	:	:	:	:	:
Percentage of adult life spent in retirement****	28%	33%	33%	33%	33%	33%	34%	2064	5%
Early/late exit*****	2.7	1.7	1.6	2.5	1.8	2.7	2.9	2063	-0.1

\* The 'average effective retirement age' is the age at which people start receiving a pension benefit (old-age, early or disability). It is calculated on the basis of the administrative data on new pensioners for 2022, showing projected data for the other years for the total. \*\* 'Average labour market exit age (Cohort Simulation Model)' refers to 2023 instead of 2022. \*\*\* 'Duration of retirement' is the remaining life expectancy at the average labour market exit age. \*\*\*\* The 'percentage of adult life spent in retirement' is calculated as the ratio between the duration of retirement and the life expectancy minus 20 years. \*\*\*\*\* 'Early/late exit' is the ratio between those who exit the labour market before reaching the statutory retirement age and those who exit at or beyond the statutory retirement age. For 2022, the value refers to 2023.

Source: European Commission, EPC.

<sup>25</sup> There are no data available regarding the contributory period. As explained in section 1.1.1 this is not relevant for the pension.



## 3. Pension projection results

### 3.1. Coverage of the pension projections

We focus on the last two years for which we have Eurostat data. Table 5 shows that the Eurostat ESSPROS definition of pensions for 2019 and 2020 amounts to respectively 12.0 and 12.8% of GDP. Of these, 6.6% and 7.0% of GDP are classified as public pension expenditure, respectively. In the AWG definition, the latter figures equal 6.7% and 7.2% of GDP which is slightly higher.

**TABLE 5 – ESSPROS AND AWG DEFINITION OF PENSION EXPENDITURE (%GDP)**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	change 2013- last available year
Eurostat total pension expenditure	13.0	13.0	12.8	12.8	12.5	12.2	12.0	12.8	12.3	-0.7
Eurostat public pension expenditure (A)	6.9	7.0	7.0	7.0	6.8	6.7	6.6	7.0	:	0.1
Public pension expenditure (AWG: outcome) (B)	6.7	7.1	7.1	7.2	7.0	6.8	6.7	7.2	7.0	0.3
Difference Eurostat/AWG: (A)-(B)	0.2	-0.1	-0.2	-0.1	-0.2	-0.2	-0.2	-0.2	:	-0.4

Source: Eurostat, European Commission.

### 3.2. Overview of projection results

Table 6 presents the results of the projections for both public and occupational pensions. All variables are expressed as a percentage of GDP. It shows that the public pensions, comprising old-age pensions, the disability benefits and survivors benefits, rise from 6.5% of GDP in 2022 to a level of 8.0% of GDP in 2040, and further increases to 8.5% in 2070, when the effects of the ageing population have fully kicked in.<sup>26</sup>

Public pension expenditure exceeds the directly designated (employer and employee) contributions to these schemes as the Wajong part of the disability scheme is financed from general taxation and the designated contribution to the old-age pension is capped.<sup>27</sup> The remainder is supplemented by the government from other forms of taxation (state contributions), see section 3.4.

Private occupational pensions will rise from their current level of 5.1% of GDP to eventually 5.9% in 2070. The smaller increase in private versus public old-age pensions is due to the lower indexation, especially for higher ages, in the private pensions. Taken together, total pension expenditure will rise from 11.7% of GDP in 2022 to a level of 14.4% of GDP in 2070. Total pension contributions rise more or less in line with expenditures, and will increase from their current level of 11.6% of GDP to eventually 13.5% in 2070.

By construction, projected net public and total pension expenditure rise in line with their gross counterparts. This results from the assumption of constant implicit tax rates on pensions.

<sup>26</sup> The projected ratio of public pension expenditure to GDP is lower than in the previous round (AR 2021: 9.1% of GDP in 2070).

<sup>27</sup> These contributions are capped at 17.9% of taxable income in the first tax bracket. Individuals who have reached the retirement age are exempt from paying this contribution.

**TABLE 6 – PROJECTED GROSS AND NET PENSION SPENDING AND CONTRIBUTIONS (%GDP)**

	2022	2030	2040	2050	2060	2070	peak value	peak year	change 2022-2070
<b>Expenditure</b>									
<b>Gross public pension expenditure</b>	<b>6.5</b>	<b>7.3</b>	<b>8.0</b>	<b>7.9</b>	<b>8.0</b>	<b>8.5</b>	<b>8.5</b>	<b>2070</b>	<b>2.0</b>
Private occupational pensions	5.1	5.3	5.5	5.1	5.1	5.9	5.9	2070	0.8
Private individual mandatory pensions	:	:	:	:	:	:	:	:	:
Private individual non-mandatory pensions	:	:	:	:	:	:	:	:	:
Gross total pension expenditure	11.7	12.6	13.5	12.9	13.1	14.4	14.4	2070	2.8
Net public pension expenditure*	5.5	6.2	6.8	6.7	6.7	7.2	7.2	2070	1.7
Net total pension expenditure*	8.9	9.6	10.4	10.0	10.1	11.1	11.1	2070	2.2
<b>Contributions</b>									
Public pension contributions	6.9	7.8	8.4	8.2	8.2	8.7	8.7	2070	1.9
Total pension contributions	11.6	13.1	13.6	13.1	12.7	13.5	13.6	2044	1.9
<b>Balance of the public pension system (%GDP)**</b>	<b>0.3%</b>	<b>0.5%</b>	<b>0.5%</b>	<b>0.4%</b>	<b>0.2%</b>	<b>0.2%</b>	<b>0.2%</b>	<b>2068</b>	<b>-0.1%</b>

\*Net pension expenditure excludes taxes on pensions and compulsory social security contributions paid by beneficiaries. \*\*Public pension contributions - gross public pension expenditure (peak value/year shows most negative value).

Source: European Commission, EPC.

Table 7 separately presents the projection of the three components of public pensions. It shows that the (state) first pillar old-age pensions rise from 4.7% of GDP in 2022 to 6.3% in 2070. This mainly results from two counterbalancing effects. The first is the rise of the old-age dependency ratio from 34.3% to 56.3%, (see Table 2), which given the flat rate nature and linkage of benefit levels to wages, leads to an equal upward pressure on expenditure. The second is the effect of the increase in the eligibility age over time, which reduces the number of beneficiaries. Rising labour participation rates (see section 2) add to this downward effect. However, expenditure on old-age pensions still shows an increase because cohorts of future pensioners are larger in size than those of the current ones. Moreover, the link between the retirement age and life expectancy is limited to an 8-month increase per year of life expectancy gains (see section 1).

Table 7 also shows that disability benefits are projected to increase slightly from 1.8% of GDP in 2022 to eventually 2.2% in 2070. Most importantly, this is due to the prolongation of this scheme, which is a result of the rise of the eligibility age for the old-age pension. This leads to an increase in the number of claimants over time. Table 7 also shows that expenditure on survivors benefits will remain less than 0.1% of GDP throughout the period.

**TABLE 7 – GROSS PUBLIC PENSION SPENDING BY SCHEME (%GDP)**

	2022	2030	2040	2050	2060	2070	peak value	peak year	change 2022-2070
<b>Total public pensions</b>	<b>6.5</b>	<b>7.3</b>	<b>8.0</b>	<b>7.9</b>	<b>8.0</b>	<b>8.5</b>	<b>8.5</b>	<b>2070</b>	<b>2.0</b>
Old-age and early pensions	4.7	5.2	6.0	5.8	5.8	6.3	6.3	2070	1.6
Flat component	4.7	5.2	6.0	5.8	5.8	6.3	6.3	2070	1.6
Earnings-related	:	:	:	:	:	:	:	:	:
Minimum pensions (non-contributory)	:	:	:	:	:	:	:	:	:
Disability pensions	1.8	2.0	2.0	2.1	2.2	2.2	2.2	2068	0.4
Survivor pensions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2023	0.0
Other pensions	:	:	:	:	:	:	:	:	:

Source: European Commission, EPC.

### 3.3. Description of main driving forces behind the projection results and their implications

Table 8 decomposes the increase in the ratio of pension expenditures to GDP into the effects of changes in the dependency, coverage, benefit ratio and in labour market effects and a residual. It shows that the 2.0%-point rise in the ratio of public pension expenditure to GDP between 2022 and 2070 is driven by the 3.8%-point increase in the dependency ratio which results from the ageing population.

The other factors exert mitigating effects. The coverage ratio mainly decreases due to the rising eligibility age for public old-age pensions. Over the full period this dampens the rise by 1.2%-points.

The labour market developments also exert a downward effect on the ratio of pension expenditure to GDP. The total labour market effect in 2022-2070 is -0.7%-points. This is mostly driven by the rise in participation levels below 65 and the career shift effect (hours worked by people 20-64 to hours worked by people 20-74), which, again, results from the increasing retirement age.

**TABLE 8 – FACTORS BEHIND THE CHANGE IN PUBLIC PENSION EXPENDITURE BETWEEN 2022 AND 2070 (PPS OF GDP) – PENSIONERS<sup>28</sup>**

	2022-30	2030-40	2040-50	2050-60	2060-70	2022-70
<b>Public pensions to GDP</b>	0.7	0.7	-0.1	0.1	0.5	2.0
<b>Dependency ratio effect</b>	1.2	1.1	0.0	0.5	1.1	3.8
<b>Coverage ratio effect*</b>	-0.4	-0.1	-0.2	-0.4	-0.2	-1.2
<i>Coverage ratio old-age</i>	-0.2	0.1	-0.2	-0.3	-0.1	-0.7
<i>Coverage ratio early-age</i>	0.6	0.3	-0.7	-0.4	0.2	0.0
<i>Cohort effect</i>	-1.6	-1.2	0.8	-0.3	-1.3	-3.6
<b>Benefit ratio effect</b>	0.1	-0.1	0.2	0.2	-0.1	0.2
<b>Labour market effect</b>	-0.1	-0.2	-0.1	-0.2	-0.2	-0.7
<i>Employment ratio effect</i>	-0.1	-0.2	-0.1	-0.1	-0.1	-0.4
<i>Labour intensity effect</i>	0.0	0.0	0.0	0.0	0.0	0.0
<i>Career shift effect</i>	0.0	0.0	0.0	-0.1	-0.1	-0.3
<b>Residual</b>	0.0	0.0	0.0	0.0	0.0	-0.1

\* Subcomponents of the coverage ratio effect do not add up necessarily.

Source: European Commission, EPC.

Table 9 shows the development of the replacement rate at retirement<sup>29</sup> (RR) and the benefit ratio<sup>30</sup> (BR). Over the full period the changes turn out to be small.<sup>31</sup> The RRs feature only the first pillar old-age pension whereas the BRs comprise all benefits including the second pillar. When comparing the RR including the second pillar benefits (which is not shown in the table below) with the BR, the RR turns out to be lower. This is because the Netherlands features a strong rise of wages with age. Wages just before retirement are therefore relatively high, leading to a larger decline in income at retirement.

<sup>28</sup> For the disaggregation based on the number of pensions, see Table A3 in the methodological annex.

<sup>29</sup> The replacement rate at retirement (RR) is defined as the average first pension in the first pillar of those who retire in a given year over the average wage they earned just before retirement.

<sup>30</sup> The benefit ratio (BR) measures the average pension benefit of all pensioners against the average, economy-wide wage.

<sup>31</sup> The benefit ratio and replacement rate are relatively high in 2022 for the private occupational scheme. This and the next decade these ratios decline. This is due to lower indexation (see footnote 28). In the long run, the total BR and RR are very similar to those projected in AR 2021.

**TABLE 9 – BENEFIT RATIO (BR), REPLACEMENT RATE AT RETIREMENT (RR) AND COVERAGE BY PENSION SCHEME (IN %)**

	2022	2030	2040	2050	2060	2070	change 2022-2070 (pps)
Public scheme (BR)	38%	39%	38%	39%	40%	39%	1%
Coverage	100%	100%	100%	100%	100%	100%	0%
Public scheme: old-age earnings related (BR)	34%	34%	35%	35%	35%	35%	1%
Public scheme: old-age earnings related (RR)	27%	27%	27%	27%	27%	27%	0%
Coverage	79%	80%	82%	81%	81%	82%	3%
Private occupational scheme (BR)	50%	46%	42%	41%	42%	44%	-6%
Private occupational scheme (RR)	48%	43%	40%	41%	45%	45%	-3%
Coverage	59%	60%	62%	61%	60%	61%	3%
Private individual schemes (BR)	:	:	:	:	:	:	:
Private individual schemes (RR)	:	:	:	:	:	:	:
Coverage	:	:	:	:	:	:	:
Total benefit ratio	67%	67%	64%	64%	65%	66%	-1%
Total replacement rate (earnings-related benefits)	27%	27%	27%	27%	27%	27%	0%

Coverage of each pension scheme is calculated as a ratio of the number of pensioners within the scheme and the total number of pensioners in the country. In case data on pensioners are not available, the calculation is based on the number of pensions.

Source: European Commission, EPC.

Table 10 provides insight in the dependency ratios and the impact of demographic factors on the financial sustainability of public pension schemes. It shows that, over the full period, the number of pensioners will increase by 30% (from 4.1 million to 5.3 million). Employment increases slightly with 2% from 2022 to 2070. In the 2021 Ageing Report there was still a decrease in employment from 2019 to 2070 of 5%. This the result of higher employment rates. Moreover, the level of employment in 2022 is more than 6% higher than in 2019. The latter is driven by a combination of higher migration figures and higher employment rates. Although the Pension System Dependency Ratio (SDR, row 3) rises from 42% in 2022 to 54% in 2070; the ratio was projected to be 61% in 2070 in the previous cycle.

Comparing this rise to the steeper, purely demographically determined rise in the old-age dependency ratio (OADR, row 6) reveals how other factors than demographic ones affect the SDR. It turns out that these factors are beneficial by exerting a dampening effect on the rise in SDR. This effect is expressed in the System efficiency variable (SDR/OADR, last row) which shows a decrease of 28% (from 123% to 96%) over the full period. The dampening effect follows from higher employment rates of which one of the driving factors is the increase of the eligibility age.

**TABLE 10 – SYSTEM DEPENDENCY RATIO AND OLD-AGE DEPENDENCY RATIO**

	2022	2030	2040	2050	2060	2070	change 2022-2070
Number of pensioners (thousand) (I)	4075	4560	5068	4998	5008	5305	1230
Employment (thousand) (II)	9655	9768	9762	9995	10046	9858	203
Pension system dependency ratio (SDR) (I)/(II)	42%	47%	52%	50%	50%	54%	12%
Number of people aged 65+ (thousand) (III)	3564	4211	4737	4779	5036	5489	1925
Working-age population 20-64 (thousand) (IV)	10396	10440	10206	10301	10144	9747	-650
Old-age dependency ratio (OADR) (III)/(IV)	34%	40%	46%	46%	50%	56%	22%
System efficiency (SDR/OADR)	123%	116%	112%	108%	100%	96%	-28%

Source: European Commission, EPC.

Table 11 presents the ratio of all pensioners (men and women) to respectively the inactive population and the total population by age group. Table 12 does the same for the female population. The most important feature is that all show a marked decline in these ratios in the 65-69 age group. This is due to the rise in the eligibility age of the old-age pension. It is only partially offset by an increase of people that draw from the disability and survivor schemes that are accordingly prolonged in their age coverage. In 2070, when the eligibility age has reached 69 years and 9 months, most people in this age group are no longer entitled to the old-age benefit. Almost all remaining pensioners, 28% of the total population in this age group (table 11), are then individuals who draw from the disability and survivor schemes. This decline is far stronger than that of inactivity and results in a drop in the number of pensioners relative to that of the inactive population in this age group (top part of table 11). Compared to the previous cycle the number of pensioners to the total population in 2070 decreased or remained constant across all age groups. This is again a reflection of the higher employment rate across age groups.

For females the ratios in this age group are somewhat lower (see table 12). There are two reasons for this. The first is that females feature fewer disability claimants as a result of their lower labour participation, leading to a lower numerator. The second, which applies when comparing pensioners to the inactive population, is that inactivity among females is higher (participation lower), which pushes up the denominator.

Pensioners in the age groups under 65 are in either the disability scheme or the survivor scheme. The future increase in the ratios for these groups in the top tables of 11 and 12 mainly reflect the decrease in inactivity (the denominator) and much less the relatively (compared to population growth) stronger rise in number of people participating in these schemes (the numerator). The bottom tables of 11 and 12, where these pensioners are expressed as a share of the total population in these age groups, makes this clear. Slightly counterintuitively, it turns out that the 55-59 age group in the top tables show higher percentages than the 60-64 age group. Here too, it is the result of the denominator. It is caused by the fact that participation rates of the 60-64 group are lower than those of the 55-59 group and this outflow is only partially absorbed by the public pension schemes.

**TABLE 11 – PUBLIC PENSIONERS TO (INACTIVE) POPULATION BY AGE GROUP (%)**

<i><b>pensioners / inactive population</b></i>	2022	2030	2040	2050	2060	2070
Age group -54	9.6	9.9	10.9	11.1	10.6	10.4
Age group 55-59	80.2	74.3	85.6	91.8	107.6	114.8
Age group 60-64	59.2	55.1	61.4	65.6	75.0	87.9
Age group 65-69	98.3	87.4	85.5	71.6	60.2	53.8
Age group 70-74	110.0	105.8	106.3	108.1	110.0	111.5
Age group 75+	100.0	99.9	99.9	99.8	99.8	100.0

<i><b>pensioners / total population</b></i>	2022	2030	2040	2050	2060	2070
Age group -54	3.2	3.1	3.4	3.3	3.2	3.2
Age group 55-59	13.8	13.9	14.0	13.3	12.6	12.4
Age group 60-64	19.4	19.7	20.2	19.2	18.3	18.2
Age group 65-69	74.5	64.3	60.5	46.1	34.9	27.6
Age group 70-74	100.0	100.0	100.0	100.0	100.0	100.0
Age group 75+	100.0	99.9	99.9	99.8	99.8	100.0

Source: European Commission, EPC.

**TABLE 12 – FEMALE PENSIONERS TO (INACTIVE) POPULATION BY AGE GROUP (%)**

<b>female pensioners / inactive population</b>	2022	2030	2040	2050	2060	2070
Age group -54	7.5	7.8	8.7	8.9	8.5	8.3
Age group 55-59	50.9	48.1	58.4	66.4	80.2	84.9
Age group 60-64	38.0	38.1	43.1	46.5	55.1	63.8
Age group 65-69	88.7	84.2	80.9	65.0	51.9	43.7
Age group 70-74	105.3	106.8	107.6	109.2	110.7	113.4
Age group 75+	100.0	99.9	99.9	99.8	99.8	100.0

<b>female pensioners / total population</b>	2022	2030	2040	2050	2060	2070
Age group -54	2.6	2.6	2.8	2.8	2.6	2.6
Age group 55-59	11.3	11.2	11.3	10.8	10.2	10.1
Age group 60-64	15.8	15.9	16.1	15.5	14.8	14.7
Age group 65-69	73.0	62.2	57.9	42.7	31.0	23.1
Age group 70-74	100.0	100.0	100.0	100.0	100.0	100.0
Age group 75+	100.0	99.9	99.9	99.8	99.8	100.0

Source: European Commission, EPC.

### 3.4. Financing of the pension system

Table 14 shows the system of contributions to the public old-age scheme in 2023. Employees and self-employed are taxed at a rate of 17.9% in the first tax brackets. The government supplements the shortfall between the expenditure on the old-age pension and the funds raised by the 17.9% tax levy. The survivor scheme is financed by a tax levy of 0.1% over the first tax bracket. The disability scheme is financed by both general taxation (Wajong) and a levy on employers (WAO and WIA). The minimum contribution to the old-age scheme is equal to 558 euros and the maximum contribution to 5588 euros<sup>32</sup> in 2023.

<sup>32</sup> This figure is lower than 17.9% of the qualifying income in 2023, because of a deduction that accounts for the effect of a general tax rebate.

**TABLE 13 – FINANCING OF THE PUBLIC PENSION SYSTEM**

	Public employees	Private employees	Self-employed
Contribution base	First tax bracket	First tax bracket	First tax bracket
Contribution rate/contribution			
<i>Employer</i>	-	-	17.9%
<i>Employee</i>	17.9%	17.9%	
<i>State*</i>	See text	See text	See text
<i>Other revenues*</i>	-	-	-
Maximum contribution	5588	5588	5588
Minimum contribution	558	558	558

\*Only legislated contributions are reported.

Table 15 shows the contributions to the three schemes. The employer contributions rise slightly with 0.3%-points as a fraction of GDP and the employee contributions decline a bit with 0.1%-points.<sup>33</sup> However, the state contribution grows at a far higher pace. This can be explained by the fact that the state picks up the shortfall in revenues, which is caused by the combined facts that the old-age premium is capped (see above) and that expenditure on public old-age pensions is projected to grow faster than wages.

The total number of contributors increases from 2022 to 2070, whereas it declined slightly between 2019 and 2070 in the previous projection round. Demographic developments are the main explanation for this. In the current projection round, the total size of the population increases from 2022 to 2070 with 5.9% whereas it increased with 3.7% from 2019 to 2070 in the previous cycle.

**TABLE 14 – REVENUE FROM CONTRIBUTIONS AND NUMBER OF CONTRIBUTORS IN THE PUBLIC SCHEME**

	2022	2030	2040	2050	2060	2070	change 2022-2070 (pps)
Public pension contributions (%GDP)	6.9	7.8	8.4	8.2	8.2	8.7	1.9
<i>Employer contributions</i>	2.2	2.5	2.4	2.4	2.4	2.4	0.3
<i>Employee contributions</i>	2.7	2.8	2.6	2.6	2.6	2.6	-0.1
<i>State contribution*</i>	2.0	2.5	3.4	3.2	3.1	3.7	1.7
<i>Other revenues*</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Number of contributors (I) (1000)	9984	10135	10121	10363	10416	10213	229
Employment (II) (1000)	9655	9768	9762	9995	10046	9858	203
(I) / (II)	1.03	1.04	1.04	1.04	1.04	1.04	0.0

\*Includes only legislated contributions.

Source: European Commission, EPC.

<sup>33</sup> This follows from the fact that employer and employee contributions rise in line with aggregate wages in our projections. In doing so, we make sure that the implicit contribution rate is constant over the projection horizon.

### 3.5. Sensitivity analysis

Table 17 presents the effects on public pensions (upper part) and total pensions (lower part) for assumptions that deviate from the baseline assumptions. The higher life expectancy scenario shows small effects on old-age (public) pensions expenditure. Since the eligibility age is linked on a  $\frac{2}{3}$ -to-1 basis to life expectancy, old-age pension expenditure rises when people live longer. At the same time, GDP increases as a result of a higher labour force participation rate, thereby having a mitigating effect on the expenditure-to-GDP ratio.

The higher migration scenario shows a downward effect on the public pension expenditure-to-GDP ratio that eventually amounts to 0.2% of GDP. This figure equals -0.5%-point for total pension expenditure. This is mostly due to an increase in the denominator (GDP): the change in the numerator (pension expenditure) is far smaller. This is because a large part of the immigrants, who typically enter the country at a young age, haven't yet reached the eligibility age for the old-age pension before 2070. The lower migration scenario has similar effects, though with the opposite sign.

The lower fertility scenario features an increase in pension expenditure relative to GDP. As in the migration scenarios, this is largely due to the drop in GDP (the denominator). There is only a small effect on pension expenditure (the numerator) as none of the newborns reach the eligibility age for the old-age pension before 2070. There is a smaller countering effect on the disability and survivor schemes.

Higher inflation leads to a higher nominal GDP. At the same time public pension expenditures are indexed. Hence there is no effect on public expenditure to GDP compared to the baseline. Second pillar benefits to GDP do show a decline. Because of the higher inflation, rights that were already built up before the higher inflation set in, are not fully indexed.

A higher employment rate of older workers leads to a tiny drop in pensions relative to GDP in the long run. This is due to an increase in GDP (the denominator).

In the higher and lower productivity growth scenarios, the ratios of public pensions to GDP remain unchanged. This reflects the wage indexation rules of public schemes. However, the ratio of total pensions to GDP declines somewhat in the high growth scenario due to an insufficient build-up of rights before the growth impulse. This gap leads to a funding ratio shortage ultimately leading to a rights cut. In the low growth scenario the opposite effects occur.

Reinstalling the link between the retirement age for public old-age pensions and life expectancy at 65, increases the retirement age with 3 months in 2070. This minor increase compared to the baseline is the consequence of a small difference in link between the sensitivity test ( $\frac{3}{4}$  year increase for extra year of life expectancy) and the link in our baseline ( $\frac{2}{3}$  year increase for extra year of life expectancy). Since this is a relatively small change the effects are small as well. It reduces public pension expenditure by 0.1%-points at the end of the projection horizon. This reduction is a combination of a higher GDP level (denominator) due to the increase in labour force participation and lower expenditures because the number of years in retirement is reduced. Similar effects are observed in the occupational pension scheme. Consequently, the effects on total pension expenditure are about twice the size of the effects on public pension expenditure.

Keeping the retirement age for public old-age pensions constant at its 2023 level, the retirement age will be 2 years and 11 months lower in 2070. This would raise public pension expenditure by 1.1%-points at the end of the projection horizon, driven by a combination of a lower GDP level (denominator)



due to a reduction in labour force participation and higher pension expenditures because people retire sooner. The effects in the occupational pension scheme are a bit smaller.<sup>34</sup> Consequently, total pension expenditure is projected to increase by 1.9%-points in 2070 vis-à-vis the baseline.

**TABLE 15 – EXPENDITURE PROJECTIONS UNDER DIFFERENT SCENARIOS (PPS DEVIATION FROM BASELINE)<sup>35</sup>**

<i>Public pension expenditure</i>	2022	2030	2040	2050	2060	2070	change 2022-2070 (pps)
Baseline (%GDP)	6.5	7.3	8.0	7.9	8.0	8.5	2.0
Higher life expectancy at birth (+2y)	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Higher migration (+33%)	0.0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2
Lower migration (-33%)	0.0	0.1	0.1	0.2	0.2	0.2	0.2
Lower fertility (-20%)	0.0	0.0	0.0	0.3	0.5	0.7	0.7
Higher inflation scenario (2% by 2052)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Higher employment rate of older workers (+10 pps)	0.0	0.0	0.0	0.0	0.0	-0.1	0.0
Higher productivity (TFP converges to 1%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lower productivity (TFP converges to 0.6%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Policy scenario: link retirement age to longevity	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
Policy scenario: constant retirement age	0.0	0.1	0.2	0.4	0.8	1.1	1.1
Policy scenario: constant benefit ratio	:	:	:	:	:	:	:

<i>Total pension expenditure</i>	2022	2030	2040	2050	2060	2070	change 2022-2070 (pps)
Baseline (%GDP)	11.7	12.6	13.5	12.9	13.1	14.4	2.8
Higher life expectancy at birth (+2y)	-0.1	-0.1	0.0	0.1	0.3	0.1	0.1
Higher migration (+33%)	0.0	-0.1	-0.3	-0.4	-0.5	-0.4	-0.4
Lower migration (-33%)	0.0	0.1	0.3	0.4	0.5	0.5	0.5
Lower fertility (-20%)	0.0	0.0	0.1	0.4	0.7	1.2	1.2
Higher inflation scenario (2% by 2052)	0.0	-0.2	-0.4	-0.4	-0.3	-0.2	-0.2
Higher employment rate of older workers (+10 pps)	0.0	0.0	0.0	0.1	0.0	-0.1	-0.1
Higher productivity (TFP converges to 1%)	0.0	0.0	0.0	0.0	-0.1	-0.2	-0.2
Lower productivity (TFP converges to 0.6%)	0.0	0.0	0.1	0.1	0.2	0.3	0.2
Policy scenario: link retirement age to longevity	0.0	0.0	-0.1	-0.1	-0.1	-0.2	-0.2
Policy scenario: constant retirement age	0.0	0.2	0.5	0.8	1.4	1.9	1.9
Policy scenario: constant benefit ratio	:	:	:	:	:	:	:

Source: European Commission, EPC.

It should be noted that the effects on government finances of the migration and low fertility scenarios up until 2070 do not show the structural (ultimate) effects of these scenarios and therefore are inappropriate to derive the sustainability effects from. This would require an analysis that covers the full life cycle of immigrants and newborns and thus also the years in which the built up pension entitlements are actually paid out. In our analysis, which only covers the period up to 2070, this is not the case. This is reflected in the small changes in pension expenditure in these scenarios. In the migration scenarios there is also a second reason. It is that immigrants may have economic characteristics that differ from those of the native population which are neglected here.

### 3.6. Changes in comparison with previous Ageing Report projections

Table 18 compares the rise in the public pension to GDP ratio in this round of projections to their equivalents in the previous rounds. As the 2006 and 2009 projections are similar the difference

<sup>34</sup> Recall that adjustments of the retirement age in the second pillar take place in full one-year steps. In this case, a two-year reduction (which is a smaller decrease than that of the retirement age in the first pillar) would be sufficient.

<sup>35</sup> For more information on the design of the sensitivity scenarios, see Chapter 5 of Part I in European Commission and EPC (2023), *'2024 Ageing Report: Underlying assumptions and projection methodologies'*, European Economy, Institutional Paper 257.

between these will not be discussed and we will focus only on the differences between the later projections.

The table shows that the 2012 projection differs much from the previous one in 2009. The 2.2%-point lower overall increase in public pension expenditure of the 2012 projection, 1.7% of GDP versus the 4.0%, is mainly the result of the 2012 pension reform (which raised the statutory retirement age). This explains 1.8%-point. The remaining 0.5%-point stems mainly from the rising employment which increases GDP and in this way reduces the rise of the ratio of pensions to GDP.

In the 2015 round the rise in pension expenditure drops by a further 0.8% of GDP, 0.9% versus 1.7% in the 2012 round. This can mainly be attributed to the fact that the Statistics Netherlands projection of life expectancy at 65, on which the increase of the eligibility age is based, is then higher than in 2012 round. It results in a 6½ year increase in the eligibility age over the full time horizon compared to 4¾ in the 2012 round. As the Eurostat projection of life expectancy remained basically unchanged, this leads to a smaller number of benefit claimants. The 2018 round shows a further drop, by 0.4%-points, to 0.6% of GDP. Demographic factors formed the most important explanation for this: the old-age dependency ratio rose less sharply than in the previous round.

In the 2021 round, the rise in pension expenditure increases again to 2.3% of GDP. This results mainly from the 2019 pension reform, as can be seen by the substantially less mitigating coverage ratio effect. Due to a lower increase in employment (mostly caused by the pension reform, but also driven by higher base-year values), labour market effects are also less mitigating than in the previous projection round.

In this vintage the rise in pension expenditures drops back to 2.0% between 2022 and 2070. This reduction compared to the previous cycle is driven by a smaller effect of the dependency ratio and an improvement in the labour market. The dampening effect of the labour market is stronger than last time. The increase in employment rate of workers between 20 and 64 in 2070 compared to 2019 (ageing report 2021) and 2022 (ageing report 2024) was 0.6% and 4.8%, respectively.<sup>36</sup>

**TABLE 16 – DISAGGREGATION OF THE CHANGE IN THE PUBLIC PENSION EXPENDITURE-TO-GDP RATIO IN CONSECUTIVE AGEING REPORTS (PPS OF GDP)**

	Public pension expenditure	Dependency ratio effect	Coverage ratio effect	Benefit ratio effect	Labour market effect	Residual (incl. interaction effect)
2006 Ageing Report (2004-2050)	3.8	6.3	-1.6	-0.4	-0.2	-0.3
2009 Ageing Report (2007-2060)	4.0	6.6	-1.5	-0.6	-0.2	-0.4
2012 Ageing Report (2010-2060)	1.7	5.6	-2.0	-0.6	-0.5	-0.7
2015 Ageing Report (2013-2060)	0.9	4.8	-2.2	-0.5	-0.8	-0.3
2018 Ageing Report (2016-2070)	0.6	4.2	-2.7	0.0	-0.8	-0.2
2021 Ageing Report (2019-2070)	2.3	4.3	-1.2	-0.3	-0.4	-0.1
2024 Ageing Report (2022-2070)	2.0	3.8	-1.2	0.2	-0.7	-0.1

- The disaggregation for 2006/2009/2012 is on the basis of the number of pensions; for the other vintages it is on the basis of pensioners.

- The projection horizon has been extended over consecutive Ageing Reports, limiting comparability over time.

Source: European Commission, EPC.

Table 19 attributes the difference between the current public pension expenditure outcomes and the projection from the previous round (2021) to its causes in terms of changes in modelling assumptions, policy etc. In AR 2021, it was projected that pension expenditure as a fraction of GDP would increase

<sup>36</sup> The levels in participation and employment rate between this and last cycle are not entirely comparable as the criterion has been relaxed. Until 2022 the criterion was a minimum of 8 hours of participation; this has been relaxed to more than 0 hours.

between 2019 and 2022 with 0.5%-points. Although an initial increase in 2020 was indeed seen, which is mainly driven by an increase in old-age and disability pensions and a decline in GDP as a consequence of the corona pandemic. From 2020 to 2022 the expenditure declines with 0.7%-points, which is caused by a denominator effect. Pension expenditures increased with 7.1% but GDP increased with 18.2%. There were neither changes in the coverage of the pension projection, nor changes in policy nor in the interpretation of constant policy in these years. Therefore, the differences between the current public expenditure outcomes and the projections from the previous round are solely attributed to changes in assumptions.

**TABLE 17 – DISAGGREGATION OF THE DIFFERENCE BETWEEN THE 2021 PROJECTIONS AND ACTUAL PUBLIC PENSION EXPENDITURE IN 2019-2022 (%GDP)**

	2019	2020	2021	2022
<b>Ageing Report 2021 projections (%GDP)</b>	6.8	7.6	7.4	7.3
<i>Assumptions (pps of GDP)</i>	-0.1	-0.4	-0.4	-0.8
<i>Coverage of projections (pps of GDP)</i>				
<i>Constant policy impact (pps of GDP)</i>				
<i>Policy-related impact (pps of GDP)</i>				
<b>Actual public pension expenditure (%GDP)</b>	6.7	7.2	7.0	6.5

Source: European Commission, EPC.

Table 20 performs a similar analysis for selected years in the projection period. In the current projection round, the expenditure-to-GDP ratio is 0.8%-points lower in 2030 vis-à-vis the previous projection round. This effect is discussed in the previous section and is mainly driven by the relative increase in GDP compared to the pension expenditures.

We have also slightly improved our modelling approach. First, in the previous cycle we kept the macro pension expenditures equal while the population projections differed between Statistics Netherlands and Eurostat. We revised this approach and improved the methodology by keeping the pension expenditure constant at the micro level and let the macro figures vary with the number of people. Second, we also deactivated the calibration factors which were set in such way as to replicate our national public old-age pension projection (with different assumptions) from 2023 to 2031. Third, we discard adjustment costs for companies when labour supply changes.

We are unfortunately not able to precisely disentangle the effect of the change in assumption and the effect of the improved modelling. However, given the discussion of the results presented in table 19, the largest effect is due to the former effect. There were no changes in the coverage, in the interpretation of constant policy and policy related changes.

**TABLE 18 – DISAGGREGATION OF THE DIFFERENCE BETWEEN THE 2021 AND THE NEW PUBLIC PENSION PROJECTIONS (%GDP)**

	2022	2030	2040	2050	2060	2070
<b>Ageing Report 2021 projections</b>	7.3	8.1	9.1	8.9	8.9	9.1
<i>Change in assumptions (pps of GDP)</i>	-0.8	-0.8	-1.1	-1.1	-0.9	-0.6
<i>Improvement in the coverage or in the modelling (pps of GDP)</i>						
<i>Change in the interpretation of constant policy (pps of GDP)</i>						
<i>Policy-related changes (pps of GDP)</i>						
<b>New projections</b>	6.5	7.3	8.0	7.9	8.0	8.5

Source: European Commission, EPC.

## 4. Description of the pension projection model and the base data

This section describes the methodology that is used to carry out the long term projections of pensions. The two pillars that form the main part of pension system are treated separately (see below). The projections, similar to all previous projections, are made by using a partial equilibrium model of the Netherlands, GAMMA, which is developed and maintained by the CPB Netherlands Bureau for Economic Policy Analysis and is used from the year 2000 onwards for Dutch sustainability calculations. The model itself does not distinguish between males and females. It works with (weighted) averages. In the projections presented in this paper this distinction was made by supplementary calculations.

GAMMA is a long-term model with overlapping generations, featuring 107 representative agents (one for each age group between 0 and 107) in each year. The size of each cohort  $j$  at time  $t$  is based on population projections (usually provided by Statistics Netherlands). Given the pattern of government expenditure and tax income across age groups, this allows us to analyse the effects of demographic trends – such as ageing – on government finances.

The model uses National Accounts data up to the latest available year (2022) and is also calibrated on these data. For the subsequent years up to 2031, the model is calibrated based on detailed midterm forecasts provided by CPB (the so-called middellangetermijnverkenning, or mlt).

After 2031, all implicit tax rates are held constant. On the individual level, average public pension benefits are then assumed to grow in line with wages, after which total expenditure results from the aggregation over all individuals and age groups. The assumptions of constant implicit tax rates and indexation of public pensions to wages follow from the main GAMMA assumption of ‘constant arrangements’. The idea behind this is that all generations benefit equally (over their lifetime) from the government. We do, however, take into account (planned) policy measures and/or reforms that have an effect after 2031, such as the rise of the statutory retirement age.

### The first pillar

The flat rate nature of the Dutch system of public pensions entails that a relatively simple methodology suffices to carry out projections. GAMMA relates the development of public old-age pension expenditure to only two factors: the productivity in the economy and the number of people who have reached the eligibility age. The link with productivity is linear and reflects the fact that state old-pension pensions (AOW) are linked to the (minimum) wage level. In turn, wage levels are assumed to increase in line with productivity. The link with the number of pensioners is slightly more complicated. Some age-specificity within this group is introduced to take account of the positive correlation between age and the share of singles. As shown in section 1.1.1, singles are more expensive than married couples on a per capita basis. In the absence of any policy change such as an increase in the eligibility age, the flat rate system leads to an increase of the ratio of public pensions to GDP that almost exactly coincides with the rise of the old-age dependency ratio.

Technically, the starting point in the exercise is realized aggregate public pensions in the base year. From this we derive the average pension per person for each age, thereby taking account of the slightly rising pensions per person with age (due to the positive correlation between age and the share of singles). This age profile is subsequently extrapolated into the future by letting it rise with the growth rate of (minimum) wages. Aggregate expenditure in year  $t$  is then calculated by multiplying this resulting vector for year  $t$  with the vector of the numbers of people of each age in year  $t$ :

$$X_t = \sum_i \sum_{j=0}^{99} X_t^{i,j} = \sum_{j=0}^{99} (n_t^j X_t^{i,j}).^{37}$$

Projections for the disability benefits are also based on an age profile, describing the population-average disability pension (including zero values) received per person within each age group. Since disability increases with age and benefits are related to previously earned wages (see section 1.1.3), this age profile has an upward slope. We subsequently extrapolate it into the future by letting it rise with the growth rate of wages. In order to allow for potential changes in the number of claimants over time (thereby having an effect on the population-average benefit), the age profile is also allowed to shift as a result of changes in participation, life expectancy, and policy. Aggregate expenditure is then calculated by multiplying the resulting vector of average benefits of each age group with the vector of the numbers of people that have not yet reached the statutory retirement age. In doing so, we take into account the fact that eligibility for the disability pension stops as soon as people reach the eligibility age for the public old-age pension (disability pensions are then transformed into old-age benefits).

Finally, survivors benefits are exogenously imputed by using projections made by specialists. These projections also incorporate the effects of the reforms on the number of claimants and average benefit levels.

## The second pillar

To project the development of contribution rates, pension payments, assets of pension funds etcetera, the pension funds in the Netherlands are assembled in a model of a single average pension fund. This average pension fund offers a pre-funded average pay scheme, aiming at a replacement rate of 75% of average pay in case of a 40-year career. Survivors pensions are not modelled explicitly but are taken into account through a surcharge on the old-age pension. The existence of the flat rate public pension, the AOW, is taken into account by the pension fund through a franchise. Only workers with a wage above this franchise are building up an occupational pension. The accumulated assets are invested in a mixed portfolio of bonds and equity. For the baseline case the portfolio mix is 50-50. Furthermore, actuarial cost-effective contribution rates are charged. It should be noted that the contribution rate is cost effective on an aggregate level, i.e. for the whole pension fund. Because building up pension rights is usually linear, e.g. 1.825% of the pension wage per year worked, the contribution rate is not cost-effective on an individual level. Younger workers pay more than the actuarial value of the additional pension right they receive, older workers pay less. This will change from 2028 onwards (see section 1.2).

Most pension funds in the Netherlands aim at wage or price indexation. It is, however, not guaranteed but conditional on the financial position of the fund (funding ratio). In our projection we use cost-effective pension premiums to obtain the stated replacement rate. For workers, indexation of pension rights equals the average of the rise in wages and prices. For the retired, it is mostly the price rise.

The pension fund has to follow the supervision rules of the FTK. These rules prescribe, among other things, the required levels of the funding ratio and which part of the liabilities has to be covered by the cost-effective contribution rate. For our average pension fund, the funding ratio required by the FTK is about 130% of the nominal, i.e. non-indexed, liabilities. Liabilities are discounted by the current risk free interest rate to calculate the funding ratio. In the long term, the pension fund aims at full funding

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<sup>37</sup> Where  $n_t^j$  represents the number of individuals in age group  $j$  at time  $t$ .

of the indexed liabilities. Given the indexation assumptions, the interest rate, inflation rate, and real wage growth, this amounts to a 100% funding of the indexed liabilities in the model.

The pension model, as well as the GAMMA model, contains 107 overlapping generations (see above). For the first year of the projections, the total level of occupational pension liabilities (based on National Accounts data) is divided over the different generations. For every subsequent year the liabilities of each generation grow with the additional rights build up through an additional year of work. Of course, only workers build up occupational pension rights. The level of the pension benefit depends on the number of contributing years and the average wage. The assets grow with the contribution rates paid by the workers, the investment returns minus the pension benefits paid to the retirees.

In case shocks occur that affect the funding ratio (e.g. stock market crashes, changes in the interest rate, productivity shocks, etcetera) the pension fund restores the funding ratio by cutting indexation as well as raising contribution rates. Because of the ageing of the population, the wage sum will become much smaller relative to the size of the liabilities. As a result, cutting indexation will become a more important instrument to deal with shocks than increasing contribution rates.

## Methodological annex

### Economy-wide average wage at retirement

**TABLE A1 – ECONOMY-WIDE AVERAGE WAGE AT RETIREMENT (1000 EUR)**

	2022	2030	2040	2050	2060	2070
Economy-wide average gross wage at retirement	48.3	63.3	85.8	120.6	167.7	231.9
Economy-wide average gross wage	40.0	52.5	71.2	100.0	139.1	192.3

Source: European Commission, EPC.

### Disability pensioners

**TABLE A2 – DISABILITY RATES BY AGE GROUPS (%)**

	2022	2030	2040	2050	2060	2070
Age group -54	3%	3%	3%	3%	3%	3%
Age group 55-59	13%	14%	14%	13%	12%	12%
Age group 60-64	19%	19%	20%	19%	18%	18%
Age group 65-69	7%	10%	13%	16%	20%	22%
Age group 70-74	0%	0%	0%	0%	0%	0%
Age group 75+	0%	0%	0%	0%	0%	0%

Source: The Netherlands.

### Alternative pension spending disaggregation

Table A3 is similar to Table 8 but provides a disaggregation of the change in pension expenditure based on the number of pensions as compared to the number of pensioners in Table 8.

**TABLE A3 – FACTORS BEHIND THE CHANGE IN PUBLIC PENSION EXPENDITURE BETWEEN 2022 AND 2070 (PPS OF GDP) – PENSIONS**

	2022-30	2030-40	2040-50	2050-60	2060-70	2022-70
<b>Public pensions to GDP</b>	0.7	0.7	-0.1	0.1	0.5	2.0
<b>Dependency ratio effect</b>	1.1	1.1	0.0	0.5	1.1	3.8
<b>Coverage ratio effect*</b>	-0.3	-0.1	-0.2	-0.4	-0.2	-1.2
<i>Coverage ratio old-age</i>	-0.1	0.1	-0.2	-0.3	-0.1	-0.7
<i>Coverage ratio early-age</i>	0.5	0.3	-0.7	-0.4	0.2	-0.1
<i>Cohort effect</i>	-1.5	-1.2	0.8	-0.3	-1.3	-3.5
<b>Benefit ratio effect</b>	0.0	-0.1	0.2	0.2	-0.1	0.2
<b>Labour market effect</b>	-0.1	-0.2	-0.1	-0.2	-0.2	-0.8
<i>Employment ratio effect</i>	-0.1	-0.2	-0.1	-0.1	-0.1	-0.4
<i>Labour intensity effect</i>	0.0	0.0	0.0	0.0	0.0	0.0
<i>Career shift effect</i>	0.0	0.0	0.0	-0.1	-0.1	-0.3
<b>Residual</b>	0.0	0.0	0.0	0.0	0.0	0.0

\* Subcomponents of the coverage ratio effect do not add up necessarily.

Source: European Commission, EPC.