Greek Pension System Fiche
European Commission
Economic Policy Committee
Ageing Working Group

Ageing Projections Exercise 2021

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Introduction

The present country fiche of the Greek public pension system has been prepared in accordance with the requirements of the Ageing Working Group of the Economic Policy Committee (the "AWG") based on a common set of assumptions and methodologies.

The results included in the fiche are based on :

✓ Administrative data for base year 2019 provided from e-EFKA, IDIKA, General Accounting Office of the State, NAT and Ministry of Labor & Social Affairs.

✓ Legislation related to the Greek Pension System up to August 2020.

✓ Demographic and macroeconomic assumptions of the 2021 Ageing Report.

The scope of this study is to present the current and projected (2019-2070) financial situation of the public pension system.

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1. OVERVIEW OF THE GREEK PUBLIC PENSION SYSTEM

1.1. Description

The Greek public pension system comprises:

- ✓ Main pension provision on a mandatory basis for salaried employees, self-employed persons, seamen and agricultural workers.

- ✓ Auxiliary pension provision for a big part of insured; Also, additional benefits are provided to specific professions, such as : lump sum benefits (ETEAEP - civil servants, military staff, engineers, lawyers, etc.) and dividends (civil servants, military staff).

- ✓ Means-tested benefits a) Uninsured elderly benefits b) Social solidarity grant provision (EKAS, which will be abolished as of 2020).

The main social security scheme which provides main, auxiliary pensions and lump sum benefits is e-EFKA. Means-tested benefits for uninsured elderly are provided by OPEKA and dividend benefits by relevant Dividend Funds.

Table A shows insured individuals in main and auxiliary pension by type of occupation/profession.

TABLE A			
Correspondence of main and auxiliary pension funds			
	Main Fund	**Occupational type**	**Auxiliary Pension**
I.	e-EFKA (Unified Social Insurance Fund)	Private sector employees	✓
I.a.		Public electricity company employees	✓
II.		Civil servants & Military (Firefighters-Policemen-Air Force-Army-Navy)	✓
			Dividend Funds
III.		Self-employed	On voluntary basis
IV.		Agricultural workers	-
V.		Lawyers- Notaries - Engineers	✓
		Doctors	-
VI.		Media Employees	✓
VII.		Seamen	✓

A brief description of social pension system is given below.

1.1.1. Main pension provision

The most important laws over social pension system up to 2015 were 2084/1992, 3029/2002, 3655/2008, 3863/2010, 3865/2010 and 4336/2015.

In May 2016, the Greek Parliament adopted a pension reform by law 4387/2016. Laws 4499/2017, 4578/2018, 4583/2018, 4584/2018, 4611/2019 and 4618/2019 introduced legislation amendments on law 4387/2016.

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In February 2020, a new law 4670/2020 was adopted, taking also into account the Council of State rulings on specific provisions of law 4387/2016.

A brief description of the key elements of laws 4387/2016 and 4670/2020 is given below:

- ✓ All social insurance main pension funds, are integrated into one single social insurance pension fund (e-EFKA) with common governance, administration and accounting framework.
- ✓ Auxiliary pension fund (former ETEAEP) is also integrated into e-EFKA as an independent financial sector.
- ✓ Harmonized contribution rates and pension benefit rules for all, with a small transition period 2016-2018. A greater transition period is only allowed for former OGA fund.
- ✓ Already accrued rights of both pensioners (except former OGA) and active insured (for former OGA insureds a 15 years transition period is provided) are affected by applying the common pension benefit rules on those as well.

The key elements for main pension provision are:

(i)   Immediate application of the main pension reform as of May 2016 (entry into force of law 4387/2016).

(ii)   The introduction of a flat-rate pension (national pension) set at 384€/month (12 yearly payments) for at least 20 years of contributions. The amount of 384€ is decreased by 2% yearly for contributory period between 19 and 15 years (reduces to 345.60€ for 15 years). National pension is financed by the state.

(iii)   The system introduces marginally applied accrual rates with the same profile for all workers that depend only on the length of the career.

(iv)   Pensionable earnings are calculated based on the full-earnings history. The valorisation mechanism for the calculation of pensionable earnings is based on the change in the average annual general consumer price index up to 2024 and for the period from 2025 onwards is based on the annual change in wages (calculated by ELSTAT).

(v)   Pro-rating pension benefits:

For former OGA, there is a 15 years transition period for new retirees. During this period a pro-rata pension is granted, as the sum of a decreasing proportion of the old system pension and an increasing proportion of the new system pension.[1]

(vi)   Pension indexation (national and contributory part) is equal to the minimum of CPI and the sum of 50% CPI and 50% GDP growth [min(50% GDP growth +50% CPI, CPI)]. Indexation is frozen up to 2022.

(vii)   All main pensions granted up to the entry into force of the law 4387 are recalibrated according to the new system's rules. Each pension consists of the

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[1] A 3 years transition period for new retirees (except of former OGA) was provided from 2016 to 2018, during which a pro-rata pension has been granted. Two amounts were calculated. One amount was calculated on the basis of the old system and the other one based on the new system. If the amount resulting from the provisions of new system was lower than the amount resulting from the old calculation method by more than 20% then a proportion of the difference was paid as a personal difference to the retiree. (Proportion for 2016 : 50%, 2017 : 33%, 2018 : 25%).

following components: a) National pension, b) Contributory pension according to the new rules and c) Personal difference, as the difference between the total pension amount according to the old and new rules.

Personal differences that correspond to pensions with lower pension amount according to the new rules are compensated until total elimination with future pension indexation starting from 2023 onwards.[2]

Personal differences that correspond to pensions with higher pension amount according to the new rules are granted in 5 installments starting from 2019 onwards.

(viii)   The full contributory period is set 40 years.

(ix)   Unified statutory retirement ages are set for all (67 years). The minimum age for retirement was set initially at 62. (L.4093/2012 & L.4336/2015)

(x)   As from 2021, the minimum and statutory retirement ages are adjusted in line with changes in life expectancy every three years.

(xi)   Unified transfer rates to survivors are set. The transfer rate for spouses is set to 70%.[3] The transfer rate for orphans is set to 25%.

(xii)   A minimum amount to insureds' survivors is introduced by Law 4499/2017, defined as the full amount of the national pension for 20 years of insurance (€ 384) or, in case of the insured's death with 15 years of insurance, € 360 per month.

(xiii)   A maximum monthly pension amount of 4608€ (12 times the monthly national pension amount) is introduced by law 4623/2019.

(xiv)   For those with less than 15 years of contributions (elderly uninsured), and thus not eligible for pension, a flat rate means-tested benefit (360€) is provided which constitutes an important social safety net.

 (xv)   The legislation includes a sustainability clause, which stipulates that if long-term projections show a rise in public pension expenditure over 2.5 percentage points of GDP in reference to 2009 expenditure, then relevant parameters of the pension system are changed to bring the increase of expenditure below the targeted threshold.

NOTE : A thirteenth (13th) pension payment was provided, by law 4611/2019, to all beneficiaries of main pensions (including elderly uninsured) from 2019 onwards. This provision was abolished by law 4670/2020, thus, only one payment of the 13th pension took place (in May 2019).

Special Pension Schemes

In old age main pensions also special pensions are included concerning subgroups of insured who work under difficult conditions. Special pension subgroups are:
- ✓ Insured in arduous professions
- ✓ Military Staff
- ✓ Recipients of OGA "Basic" pension (a non contributory pension for a closed group of insured farmers)

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[2] According to 2017 legislation, personal differences that correspond to pensions with lower pension amount according to the new rules were fully or partially to be eliminated in 2019. Pension cut could not exceed 18% of the pension paid (calculated according to the old rules). The remaining personal differences are compensated with future pension indexation starting from 2023 onwards. This provision for the reduction up to 18% of the pension paid was abolished by law 4583/2018 (article 1).

[3] The transfer rate for spouses was initially set to 50% which was amended to 70% by law 4611/2019.

The first two groups have lower age thresholds for retirement. Insured in arduous professions have higher contribution rate for both employee and employer compared to common professions.

The number of insured in special pensions schemes has been decreasing in the last years.

Additionally, reforms adopted in the recent years affect also special pensions. As a result expenditure (% of GDP) is expected to be decreasing.

1.1.2. Auxiliary pension provision

The auxiliary pension provision began forming in the 1930s, based on the legislation of the main pension provision which had already come into effect. The employees of many different professions and companies founded several auxiliary funds. As of 1983 the auxiliary pension extended to the majority of employees.

In 1992 law 2084 unified the pension formula for those first insured from 1/1/1993, since each fund had its own provisions until then. Law 3655/2008 merged and incorporated many of these funds into newfound ones, according to the type of professions of their insured population.

The auxiliary pension provision works in parallel to the main pension provision and is mandatory for most people. Auxiliary pension is financed separately from the main pension from both employer and employee, without any state contribution. It is awarded under the prerequisite of receiving a main pension.

On February 2012 the Parliament adopted a reform of auxiliary pension system by law 4052/2012, which established a unified auxiliary pension fund aiming to incorporate all employees' funds, and introduced a pay-as-you-go (PAYG) notional defined contribution system (NDC). On May 2016 law 4387/2016 mainly introduced a unified calculation method for already accrued rights. By law 4670/2020, auxiliary pension fund (former ETEAEP) is integrated into e-EFKA as an independent financial sector.

The key elements of the law are:

i) A pro-rata pension calculation is applied for those insured before 1.1.2014. The new system is implemented starting on 1.1.2015 and the pension comprises two components: a) the first component part is using the arrangements of the DB system (accrual rate 045% and pensionable earnings calculated according to the method of the main pension) for as many years as the insured worked before 1.1.2015; b) the second component is using the NDC arrangements for as many years as the insured worked after 1.1.2015.

Those insured after 1.1.2014 are fully encompassed in the new NDC system.

ii) All auxiliary pensions granted up to 31.12.2014 are recalibrated according to the new system's rules. Each pension consists of the following components:
- ✓ Contributory pension according to the new rules.
- ✓ Personal difference, as the difference between the pension amount according to the old and new rules, only for the cases in which the new pension amount is lower than the old one.

Personal differences were eliminated starting from the 2nd half of 2016 in cases in which the sum of pension amounts (main and auxiliary) was higher than €1300. Law 4670/2020 restored the eliminated personal difference for those with sum of

pension amounts higher than €1300 with effect from 1.10.2019. This amendment was adopted due to the Council of State ruling.[4]

ii) A balancing mechanism is applied to guarantee the system's financial stability, (no pension indexation in case of deficit). Any deficits are covered by fund's assets.

1.1.3 Lump sum benefits

A reform is also adopted regarding the lump sum benefits. The benefit consists of two parts. The first part concerns accrued rights up to 31.12.2013 and is calculated based on DB rules unified for all insured. The second part corresponds to accrued rights as from 1.1.2014 and is calculated based on NDC rules.

1.1.4 Means-tested benefits

Social solidarity grant (EKAS) is paid to already existing pensioners who legally reside in Greece. It is gradually eliminated up to 2019 and completely eliminated from 2020 onwards. It is a non-contributory, flat-rate, means tested benefit. Its value depends on the pensioner's annual income from pensions, as well as the total annual personal and family taxable income.

Law 4387/2016, also provides means-tested benefits for uninsured elders under specific conditions.

1.1.5 Eligibility rules

Laws 3863/2010, 3865/2010, 4093/2012 and 4336/2015 increased retirement ages significantly by: i) unifying age thresholds for males and females, ii) imposing longer career prerequisites iii) closing paths to early retirement gradually up to 2021(more details in Annex I) and iv) introducing the life expectancy factor.

According to recent legislation the age thresholds are re-determined in line with the change in life expectancy of the country's population with 65 years of age as point of reference. This will come into effect as of 1.1.2021 and upon its first implementation the change within the 2010 - 2020 ten-year period will be taken into account. After the first implementation the change in life expectancy will be re-examined every three years.

Table 1 below shows the evolution of the statutory retirement age, earliest retirement age and penalties for early retirement over the projection period 2019-70.

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[4] According to 2017 law, remaining personal differences (for the cases that the sum of pension amounts -main and auxiliary - is lower than €1300) were to be eliminated fully or partially in 2019. Pension cut could not exceed 18% of the pension paid (calculated according to the old rules). By law 4583/2018 the provisions for the reduction of supplementary pensions in 2019 (for the cases that the sum of pension amounts -main and auxiliary - is lower than €1300) were abolished.

TABLE 1								
Qualifying condition for retiring								
			2019	2030	2040	2050	2060	2070
Qualifying condition for retiring with a full pension	Minimum requirements	Contributory period - men	40	40	40	40	40	40
		Retirement age - men	62	62+	62+	62+	62+	62+
		Contributory period - women	40	40	40	40	40	40
		Retirement age - women	62	62+	62+	62+	62+	62+
	Statutory retirement age - men		67	67+	67+	67+	67+	67+
	Statutory retirement age - women		67	67+	67+	67+	67+	67+
Qualifying condition for retirement WITHOUT a full pension	Early retirement age - men		62	62+	62+	62+	62+	62+
	Early retirement age - women		62	62+	62+	62+	62+	62+
	Penalty in case of earliest retirement age*		1/200	1/200	1/200	1/200	1/200	1/200
	Bonus in case of late retirement		-	-	-	-	-	-
	Minimum contributory period - men		15	15	15	15	15	15
	Minimum contributory period - women		15	15	15	15	15	15
	Minimum residence period – men**		15	15	15	15	15	15
	Minimum residence period – women**		15	15	15	15	15	15

*   applied on national pension
** required for the national pension

If the estimations regarding the change in life expectancy of the population, according to the EUROPOP2019 population projections released by Eurostat, are materialized, then table 1 will be revised as follows (table 1a):

TABLE1a								
Qualifying condition for retiring***								
			2019	2030	2040	2050	2060	2070
Qualifying condition for retiring with a full pension	Minimum requirements	Contributory period - men	40	40	40	40	40	40
		Retirement age - men	62	63.8	64.8	65.8	66.7	67.6
		Contributory period - women	40	40	40	40	40	40
		Retirement age - women	62	63.8	64.8	65.8	66.7	67.6
	Statutory retirement age - men		67	68.8	69.8	70.8	71.7	72.6
	Statutory retirement age - women		67	68.8	69.8	70.8	71.7	72.6
Qualifying condition for retirement WITHOUT a full pension	Early retirement age - men		62	63.8	64.8	65.8	66.7	67.6
	Early retirement age - women		62	63.8	64.8	65.8	66.7	67.6
	Penalty in case of earliest retirement age*		1/200	1/200	1/200	1/200	1/200	1/200
	Bonus in case of late retirement		-	-	-	-	-	-
	Minimum contributory period - men		15	15	15	15	15	15
	Minimum contributory period - women		15	15	15	15	15	15
	Minimum residence period – men**		15	15	15	15	15	15
	Minimum residence period – women**		15	15	15	15	15	15

*   applied on national pension
**   required for the national pension
*** Estimated according to the EUROPOP2019 population/life expectancy projections released by Eurostat

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1.2. Recent reforms of the pension system included in the projection

All recent reforms are included in the projection exercise.

Paragraphs 1.2.1–1.2.4. describe the main elements of recent years reforms. The pension legislation amendments following the last pension projections (Autumn 2019) are briefly described in paragraph 1.2.5.

1.2.1.   Main pension provision

A summary of main provisions of the new legislation (l.4336/2015, l.4387/2016, l.4670/2020), regarding all main pensions, is provided below.

The pension amount consists of two components, namely the:

National pension: It is a flat-rate pension which is granted only if at least 15 years of contributions are accrued (for old age pensions). Initially, it is set at €384 per month for at least 20 years of contributions (payable 12 times a year). The national pension is reduced :
- ✓ by 2% for each year of contributions below 20 years, between 19 and 15 years (reduces to 345.60€ for 15 years),
- ✓ by 2.5% for each year of residence below 40 years, and
- ✓ by 0.5% for each month the insured is younger than the normal retirement age.

Also, for pensioners receiving a reduced pension due to disability, with a disability rate of:
- ✓ 67% up to 79.99%, 75% of the national pension is granted,
- ✓ 50% up to 66.99%, 50% of the national pension is granted
- ✓ Especially for the Public Sector for a percentage disability up to 49.99%, 40% of the national pension is granted.

The cost of national pension is financed by the state through annual transfers to the social insurance system.

NOTE : Pensioners with two or more pensions by own rights are entitled to only one national pension. This, however, was not taken into account in the projections, which makes results prudent.

Contributory pension: The amount of pension which is in proportion to the amount of insurance contributions pertaining to the years of insurance. The contributory pension amount aims at rewarding insured people who choose to prolong their working lives. Contributory pension component for invalidity and survivors pensions is calculated under the same rules as old age pension.

Accrual Rates of contributory pension:

Law 4387/2016 introduced marginally applied accrual rates (table B1), for the contributory part of the pension that depend only on the length of the career (for all pension categories), with the same profile for all workers.

Law 4670/2020 introduced new scale of accrual rates for main pensions (table B2), effective from 1.10.2019 onwards, actually increasing the accrual rates over 30 years of contributions. The new scale is applied to the new pensions, as well as the existing

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ones for the calculation of personal differences with effect from 1.10.2020 onwards. This amendment was adopted due to Council of State ruling.

Accrual rates are applied marginally and not on the entire contributory career:

TABLE B1 Statutory Accrual Rates for the contributory pension component - Law 4387/2016		
Contributory Years		Annual Accrual Rate
From	To	
0	15	0.77%
15.01	18	0.84%
18.01	21	0.90%
21.01	24	0.96%
24.01	27	1.03%
27.01	30	1.21%
30.01	33	1.42%
33.01	36	1.59%
36.01	39	1.80%
39.01+		2.00%

TABLE B2 Statutory Accrual Rates for the contributory pension component - Law 4670/2020		
Contributory Years		Annual Accrual Rate
From	To	
0	15	0.77%
15.01	18	0.84%
18.01	21	0.90%
21.01	24	0.96%
24.01	27	1.03%
27.01	30	1.21%
30.01	33	1.98%
33.01	36	2.50%
36.01	40	2.55%
40.01 onwards		0.50%

Average pensionable salary:

For calculating the contributory component of the pension, the pensionable earnings are derived taking into account the average monthly earnings of the insured for the whole of his insurance life. This average is calculated as the total earnings divided by his total insurance period. Total earnings are the sum of the monthly earnings subject to contributions throughout his insurance life.

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From 1.1.2019 onwards, for the calculation of pensionable salary of self-employed the level of pensions' contributions paid, divided by 0,20, is taken into account. Specifically, for farmers and for the period until 31.12.2019 the contributions paid are divided by 0.18, for the period from 1.1.2020 to 31.12.2020 the contributions paid are divided by 0.19 and for the period from 1.1.2021 to 31.12.2021 the contributions paid are divided by 0.195. Any social sources in favor of the corresponding funds for the pre 2016 period and any contributions paid by the employer is taken into account on an individual basis.

For insured retiring from the entry into force of the law 4387 the pensionable earnings are derived taking into account monthly earnings of the insured from 2002 until the day the person applies for pension.

Maximum and minimum pensionable earnings for salaried insured with full employment are given in table C.

TABLE C Pensionable Earnings for Salaried Insured (from 1.2.2019)	
Max pensionable earnings	6,500 €
Min pensionable earnings	650 €

Valorization of pensionable earnings:

For the period up to 2024, pensionable earnings are valorized by the change in the average annual general consumer price index (CPI) published by Hellenic Statistical Authority (ELSTAT) while from 2025 onwards pensionable earnings are valorized by annual change in wages (a salary change index will be calculated by ELSTAT).

Harmonization of contributions:

Under law 4387, all social insurance contribution rates are gradually harmonized with those of IKA-ETAM (20%). In cases of insured persons who have paid or will pay contributions higher than those of IKA-ETAM, the contributory pension is increased by an additional amount. This amount is calculated with an annual replacement rate of 0.075% for each percentage point (1%) of additional contribution. The pensionable salary in this case is derived taking into account the basis for calculating the additional contribution.

Law 4670/2020 introduced insurance classes for self-employed, effective from 2020 onwards. For all self-employed except former OGA (famers) contributions range from 155 to 500€ (table D1). For farmers (ex. OGA) contributions range from 87-280€ in 2020 (table D2). The insured can freely choose the class to be insured every year. Choosing one of the six levels is compulsory. If the insured does not choose a level, he / she shall be forcibly classified in the first one. The insured may at his/her request choose a higher level.[5]

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[5] For all self-employed, initially law 4387/2016 introduced that the monthly earnings are the actual income on which contributions have been paid throughout their insurance life.

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Insurance classes amounts are adjusted in 2023 and 2024 by CPI and from 2025 onwards by the annual change in wages.

This amendment was adopted by law 4670/2020, due to Council of State ruling.

TABLE D1	
SSC for Main Pension - Self Employed	
Level of SCC	Monthly Amount (in euro)
1st	155 €
2nd	186 €
3rd	236 €
4th	297 €
5th	369 €
6th	500 €

TABLE D2			
SSC for Main Pension - Farmers			
Monthly Amounts (in euro)			
Levels of SSC	2020	2021	2022
1st	87	89	91
2nd	104	107	110
3rd	132	136	139
4th	166	171	175
5th	207	212	218
6th	280	288	296

Pro-rating pension benefits:

There is a 15 years transition period for new retirees of OGA, during which a pro-rata pension is granted. For insured retiring from 1.1.2017 until the end of 2030 the amount of pension is derived from the sum of two sub-amounts: by a% of the amount resulting from the old provisions of OGA and by b% of the sum of the national and the contributory pension according to L.4387/2016. Table D below shows the values for a% & b%.

For insured of OGA retiring during 2016 the old provisions of OGA are applied.

TABLE D					
% PRO RATA FOR NEW RETIREES OF OGA (FARMERS)					
2017	6.20%		2017	93.80%	
2018	12.90%		2018	87.10%	
2019	19.60%		2019	80.40%	
2020	26.30%		2020	73.70%	
2021	33.00%		2021	67.00%	
2022	39.70%		2022	60.30%	
2023	46.40%	New System	2023	53.60%	Old System
2024	53.10%		2024	46.90%	
2025	59.80%		2025	40.20%	
2026	66.50%		2026	33.50%	
2027	73.20%		2027	26.80%	
2028	79.90%		2028	20.10%	
2029	86.60%		2029	13.40%	
2030	93.30%		2030	6.70%	
2031	100.00%		2031	0.00%	

Pension indexation:

Pension indexation is fully linked to a uniform adjustment index which cannot exceed CPI. In particular, the index is equal to the minimum of CPI and the sum of 50% CPI and 50% GDP growth [min (50% GDP growth +50% CPI, CPI)].

Minimum/maximum pension amount:

A monthly minimum amount for survivors' pensions was introduced by Law 4499/2017. This is defined as the full amount of the national pension for 20 years of insurance (€ 384) or, in case of the insured's death with up to 15 years of insurance, € 360 per month.

A monthly maximum pension amount of 4608€ was introduced by law 4623/2019.

Invalidity pensions:

Current legislation provides unified eligibility rules for invalidity pensions. The contributory pension component is calculated under the same rules (accrual rates, pensionable salary calculation) as old age pensions.

Survivor pensions:

The eligibility rules for survivor pensions have been unified. The contributory pension amount is awarded under the same rules (accrual rates, pensionable salary calculation) as old age pensions. The survivor pensions are paid to surviving spouses regardless of their age.[6]

Survivors pensions to orphan children are paid if they are unmarried and under 24 years of age.[7]

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[6] Initially with Law 4387/2016 pension was awarded to the surviving spouse, provided he/she had completed the 55th year of age at the time of death of the pensioner or of the insured person. If he/she had completed the 52nd year of age at the above time, he/she was entitled to a pension for a period of three (3) years, after the lapse of which the payment of the pension would be suspended until the completion of the 67th year of age. If he/she had not completed the 52nd year of age at the above time, he/she was entitled to a pension for a period of three (3) years. The above age threshold of 52 and 55 years were abolished by law 4611/2019.

[7] For children, initially with Law 4387/2016 pension was awarded under the condition that: a) they are not married and they have not completed the 18th year of their age. This limit is extended until the 24th year of their age, provided they are studying. With law 4611/2019, survivors pensions to orphan children are paid if they are unmarried and under 24 years of age (other limitations, e.g. eligibility of students only, are abolished).

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Life expectancy:

The legislation stipulates a retirement age increase mechanism from year 2021 onwards, that will adjust the retirement age in line with life expectancy every three years.

NOTE : A thirteenth (13th) pension payment was provided, by law 4611/2019, to all beneficiaries of main pensions (including elderly uninsured) from 2019 onwards. This provision was abolished by law 4670/2020, thus, only one payment of the 13th pension took place, that in May 2019.

1.2.2. Auxiliary pension provision

NDC system

The auxiliary pension scheme provides old-age pensions as well as pensions to disabled and survivors. Before 1.1.2014 a defined benefit system was implemented.

A pay-as-you-go (PAYG) notional defined contribution system (NDC) was introduced with the following elements:

(i) The notional rate of return, which is the annual growth in pensionable earnings (contributory earnings) of all insured with the Fund, applied for the accumulation of contributions.

(ii) The life expectancy at retirement, applied for the calculation of the amount of pension.

(iii) A balancing mechanism applied to guarantee the system's financial stability (no pension indexation in case of deficit).

Benefits Calculation:

The amount of pension paid must be entirely linked to the pensioner's age. All insured after 1.1.2014 are fully encompassed in the new system.

In order to calculate the amount of old-age pension, a whole life annuity is used, taking into account the transfer of pension rights to Assignees (survivors).
Disability pensions are calculated using the proper age annuity for each case.
Whole life annuities are recalculated every three years (change in life expectancy).

Pro-rating pension benefits :

For those insured before 1.1.2014, the new system is implemented pro rata starting on 1.1.2015 and they are awarded a pension which consists of two components:
✓ The first component part is using the arrangements of the DB system (accrual rate 0.45% and pensionable earnings calculated according to the method of the main pension) for as many years as the insured worked before 1.1.2015.
✓ The second component is using the NDC arrangements for as many years as the insured worked after 1.1.2015.

Indexation:

The formula for auxiliary pensions benefit indexation is: $\gamma_t = \min\left(\left[1 + g_{t-2} - r\right] - 1, \text{CPI}_{t-1}\right)$

Where

g_{t-2} : notional rate of return,

r :discount rate=1.3% (used in annuities calculation)

CPI_{t-1} : Consumer Price Indexation

The indexation can take negative values.

1.2.3. Other welfare benefits

a) Uninsured elders benefits

A social allowance is granted to the uninsured elders if they meet the following conditions:

✓ They have reached the age of 67.
✓ They do not receive or are not entitled to a pension.

The allowance is a non-contributory, flat-rate, means tested benefit. Its current value is €360 per month, payable 12 months per year.

b) Pensioners' Social Solidarity Allowance (EKAS)

EKAS is a non-contributory, flat-rate, means tested benefit. Its value depends on the pensioner's income from pensions. It is paid to already existing pensioners. EKAS is fully eliminated up to 2020.

1.2.4. Additional measures to control expenditure

Measures to control main pension expenditure include:

i. Benefits indexation is frozen up to 2022.
ii. Main Pensions Recalibration

All pensions granted up to the entry into force of the law 4387 are recalibrated according to the new system's rules. Each pension is captured in the IT System files with the following components:

✓ National pension
✓ Contributory pension according to the new rules
✓ Personal difference, as the difference between the pension amount according to the old and new rules.

Personal differences that correspond to pensions with lower pension amount according to the new rules are compensated with future pension indexation starting from 2023 onwards.

Personal differences that correspond to pensions with higher pension amount according to the new rules are granted in 5 installments starting from 2019 onwards.

1.2.5.   Overview of legislation amendments after 2019 update projections

The legislation amendments related to the Greek Pension System following the last pension projections (peer reviewed in Autumn 2019) are briefly described below :

- **New self-employed and farmers' contributions based on insurance classes**

By law 4578/2018, from 1/1/2019 the contribution rate for the main pension of self-employed was set to 13.33%, but the monthly contribution could not be less than 20% of the minimum wage. The pensionable earnings after the entry into force of law 4387/2016 as amended by law 4578/2018 are defined as the amount which corresponds to the insured monthly income derived by taking into account the amount of contributions actually paid for each month of insurance and contribution rate 20%.

Law 4670/2020 introduced insurance classes for self-employed, effective from 1.1.2020. The contributions amounts range from 155 to 500€, while for farmers range from 87-280€ (for more details see table C1 and C2 above). The insured can freely chooses the class to be insured every year. If the insured does not choose a level, he / she shall be forcibly classified in the first one. The insured may at his/her request choose a higher level. Insurance classes amounts are adjusted in 2023 and 2024 by CPI and from 2025 onwards by the annual change in wages. This amendment was adopted due to the Council of State ruling.

For the calculation of the pensionable salary of self-employed and farmers the level of pensions' contributions paid, divided by 0,20, is taken into account.

Specifically, for farmers and for the period until 31.12.2021 the contributions paid are divided by : 0.18 for year 2019, 0.19 for year 2020, 0.195 for year 2021.

For more details see relevant sections above.

- **Abolition of auxiliary pension cuts applied since 2016 for those with monthly sum of main and auxiliary pension amount over 1.300€, with effect from 1.10.2019**

Personal differences, in case the sum of pension amounts (main and auxiliary) is higher than €1300, were eliminated starting from the 2nd half of 2016 by law 4387/2016. Law 4670/2020 restored the eliminated personal difference (for those with sum of pension amounts higher than €1300) with effect from 1.10.2019. This amendment was adopted due to the Council of State ruling. This provision affects only a closed group of pensioners, those who had applied for a supplementary pension up to 31.12.2014.

- **New scale of main pension accrual rates effective from 1.10.2019 onwards**

Law 4670/2020 introduced new scale of accrual rates for main pensions (table B2), effective from 1.10.2019 onwards, actually increasing the accrual rates over 30 years of contributory years. The new scale is applied to the new pensions, as well as the existing ones for the calculation of personal differences with effect from 1.10.2020 onwards. This amendment was adopted due to Council of State ruling.

For more details see tables B1 and B2 above with the corresponding old and new accrual rates.

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- **Abolition (non-application of Article 120 of the Law .4611 / 2019) of 13th payment to the pensioners.**

According to law 4611/2019, a thirteenth (13th) pension was granted to all beneficiaries of main pensions from 2019 onwards. Elderly uninsured were also entitled to the 13th pension.

The 13th pension amount was determined based on the monthly gross pension as follows:

a) For amounts up to 500.00 euro, 100%.

b) For amounts from 500.01 up to 600.00 euro, 70%.

c) For amounts from 600.01 up to 1.000.00 euro, 50%.

d) For amounts over 1000.00 euro, 30%.

If the same person was entitled to more than one main pensions, the 13th pension amount was determined based on their sum.

The provision of the 13th pension payment was abolished by article 47 of Law 4670/2020. Thus, regarding 13th pension, only one payment took place (in May 2019).

- **Return of main pension cuts applied due to laws 4051/2012 & 4093/2012 from 11.6.2015 until the entry into force of law 4387/2016.**

This provision refers to only one off payment in 2020. The amount to be returned to the beneficiaries is 1.4 billion. This provision was adopted due to the Council of State ruling.

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2. DEMOGRAPHIC AND LABOUR FORCES PROJECTIONS

2.1. Demographic Development

The evolution of main demographic variables is given in table 3. The population is projected by EUROSTAT and decreases from 10.711 million in 2019 to 8.585 million in 2070. Furthermore, the old-age dependency ratio increases from 37.9 in 2019 up to 68.2 in 2050 and then decreases to 65.2 in 2070.

Life expectancy at birth, for men increases from 79.0 in 2019 to 86.4 in 2070 and for women, also increases from 84.3 in 2019 to 90.3 in 2070. Life expectancy at 65 for men, goes from 18.8 in the base year to 23.9 at the end of the projection period, while for women goes from 21.8 to 26.7. Increased life expectancy at 65 is an important factor for the projection, as statutory retirement ages are automatically linked to this factor.

The net migration over population change goes from -0,6 in 2019 to -0,7 in 2070.

Table 2 Main demographic variables evolution									
	2019	2030	2040	2050	2060	2070	peak value	peak year	change 2019-2070
Population (thousand)	10,711	10,283	9,891	9,481	9,015	8,585	10,711	2019	-2,125
Population growth rate	-0.2	-0.4	-0.4	-0.5	-0.5	-0.4	-0.2	2019	-0.2
Old-age dependency ratio (pop 65+ / pop 20-64)	37.9	46.1	57.8	68.2	67.3	65.2	68.5	2054	27.3
Old-age dependency ratio (pop 75+ / pop 20-74)	16.2	19.5	24.4	31.2	35.6	33.5	35.6	2059	17.3
Ageing of the aged (pop 80+ / pop 65+)	32.3	32.1	34.1	38.7	45.9	46.4	47.6	2064	14.1
Men - Life expectancy at birth	79.0	80.8	82.4	83.8	85.2	86.4	86.4	2070	7.4
Women - Life expectancy at birth	84.3	85.7	86.9	88.1	89.3	90.3	90.3	2070	6.0
Men - Life expectancy at 65	18.8	20.0	21.1	22.1	23.0	23.9	23.9	2070	5.1
Women - Life expectancy at 65	21.8	22.9	23.9	24.9	25.8	26.7	26.7	2070	4.9
Men - Survivor rate at 65+	85.9	88.2	90.0	91.5	92.8	93.8	93.8	2070	7.9
Women - Survivor rate at 65+	93.4	94.4	95.2	95.8	96.4	96.9	96.9	2070	3.5
Men - Survivor rate at 80+	59.3	64.7	69.2	73.2	76.7	79.9	79.9	2070	20.6
Women - Survivor rate at 80+	76.9	80.4	83.2	85.5	87.6	89.4	89.4	2070	12.4
Net migration (thousand)	13.7	11.6	16.0	20.7	23.8	26.0	26.0	2070	12.3
Net migration over population change	-0.6	-0.3	-0.4	-0.5	-0.5	-0.7	-0.2	2024	-0.1

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GRAPH 1 shows the age pyramid comparison between 2019 and 2070 for men and women.
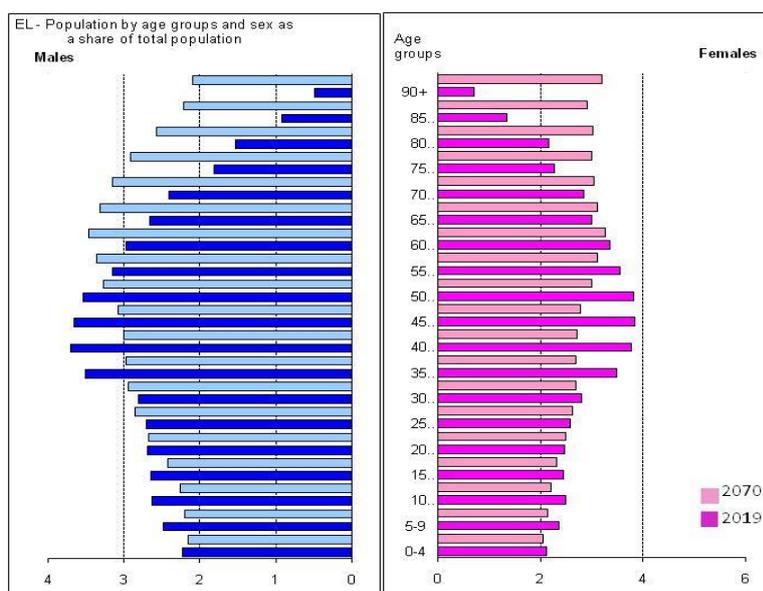
2.2. Labour Force

Overall, labor force participation is projected to increase for workers aged 20-64 (from 73.8% in 2019 to 82.2% in 2070 – table 3) as well as for workers aged 20-74 (from 63.5% in 2019 to 71.4% at the end of the projection– table 3).

Increase in labor force participation is projected for workers aged 55-64 (from 50.4% in 2019 to 80.8% in 2070 – table 3) and also for workers aged 65-74 (from 8.0% in 2019 to 25.7% in 2070 – table 3).

Employment rate for workers aged 65-74, increases from 7.2 in 2019 to 24.7 in 2070, which affects the projection results.

Table 3 Participation rate, employment rate and share of workers for the age groups 55-64 and 65-74									
	2019	2030	2040	2050	2060	2070	peak value	peak year	change 2019-2070
Labour force participation rate 20-64	73.8	77.4	79.5	81.8	82.1	82.2	82.2	2070	8.4
Employment rate of workers aged 20-64	60.9	68.0	71.9	76.0	76.4	76.5	76.5	2070	15.6
Share of workers aged 20-64 in the labour force 20-64	82.5	87.9	90.4	92.9	93.1	93.1	93.1	2060	10.5
Labour force participation rate 20-74	63.5	65.1	65.8	67.5	70.6	71.4	71.4	2070	7.9
Employment rate of workers aged 20-74	52.5	57.3	59.6	62.9	65.9	66.5	66.5	2070	14.1
Share of workers aged 20-74 in the labour force 20-74	82.7	88.0	90.6	93.1	93.2	93.3	93.3	2070	10.6
Labour force participation rate 55-64	50.4	65.8	71.2	77.2	79.8	80.8	80.8	2070	30.4
Employment rate of workers aged 55-64	43.7	59.6	65.9	72.9	75.5	76.4	76.4	2070	32.7
Share of workers aged 55-64 in the labour force 55-64	86.6	90.6	92.6	94.4	94.6	94.6	94.6	2070	8.0
Labour force participation rate 65-74	8.0	10.1	14.8	16.9	21.7	25.7	25.7	2070	17.7
Employment rate of workers aged 65-74	7.2	9.4	14.0	16.2	20.8	24.7	24.7	2070	17.5
Share of workers aged 65-74 in the labour force 65-74	89.5	92.9	94.4	95.8	95.9	95.9	95.9	2070	6.4
Median age of the labour force	42.0	44.0	43.0	43.0	44.0	44.0	44.0	2027	2.0

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Due to pension reforms the average contributory period will reach 37.8 years for both men and women by 2070 (tables 4a & 4b respectively).
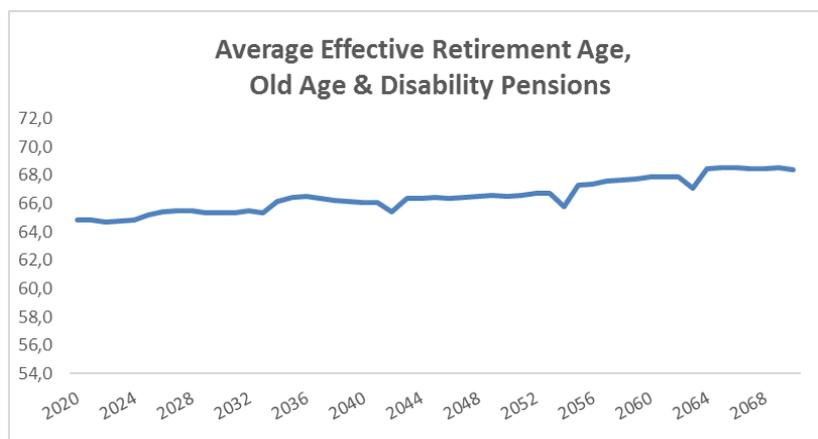
Percentage of adult life spent in retirement decreases for both men and women.

TABLE 4a Labour market effective exit age and expected duration of life spent at retirement - MEN									
	2020	2030	2040	2050	2060	2070	peak value	peak year	change 2019-2070
Average effective retirement age (administrative data)*	63.9								
Average labour market exit age (CSM)**	63.0	64.8	65.8	66.6	67.1	67.6	67.6	2070	4.6
Contributory period	31.8	33.0	33.9	35.6	36.6	37.8	38.2	2063	6.0
Duration of retirement***	20.4	20.0	20.3	20.4	21.3	21.3	21.9	2067	0.9
Duration of retirement/contributory period	0.6	0.6	0.6	0.6	0.6	0.6	0.6	2020	0.1
Percentage of adult life spent in retirement****	31.2	29.9	29.8	29.6	30.3	30.0	31.2	2020	-1.2
Early/late exit*****	2.8	5.2	5.2	7.3	9.1	15.2	15.2	2069	12.4

TABLE 4b Labour market effective exit ahe and expected duration of life spent at retirement - WOMEN									
	2020	2030	2040	2050	2060	2070	peak value	peak year	change 2019-2070
Average effective retirement age (administrative data)*	65.1								
Average labour market exit age (CSM)**	62.9	64.8	65.8	66.6	67.1	67.6	67.6	2070	4.8
Contributory period	30.5	31.4	31.7	34.4	35.6	37.8	37.8	2069	7.3
Duration of retirement***	23.6	22.9	23.0	23.0	24.0	23.9	24.6	2067	0.3
Duration of retirement/contributory period	0.8	0.7	0.7	0.7	0.7	0.6	0.7	2020	0.1
Percentage of adult life spent in retirement****	34.5	32.9	32.5	32.1	32.8	32.5	34.5	2020	-2.0
Early/late exit*****	3.4	5.6	5.1	5.4	6.5	11.9	11.9	2069	8.5

* The effective retirement age shows the age at which people on average start receiving an old-age pension benefit. It is calculated on the basis of the administrative data for 2019 (see Annex Tables A4a and A4b); ** The labour market exit age as calculated based on Labour Force Survey data for the base year and estimated by the Cohort Simulation Model thereafter; *** 'Duration of retirement' is calculated as the difference between the life expectancy at the average labour market exit age and that exit age itself; **** The 'percentage of adult life spent in retirement' is calculated as the ratio between the duration of retirement and the life expectancy minus 18 years; ***** Early/late exit is the ratio between those who retire and are below the statutory retirement age and those who retire at the statutory retirement age or above

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GRAPH 2 shows the evolution of the average retirement age over the projection period.

Average Effective Retirement Age,
Old Age & Disability Pensions

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3. PENSION PROJECTION RESULTS

3.1. Extent of the coverage of the pension schemes in the projections

This projection covers the pension expenditure of the main, auxiliary and social solidarity grant provision.

In table 5, the total public pension expenditure is presented as defined by Eurostat (ESSPROS)and AWG.

TABLE 5 Eurostat (ESSPROS) vs. Ageing Working Group definition of pension expenditure (% GDP)											
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	change 2009-2017
Eurostat total pension expenditure	14.3	14.8	16.4	17.7	16.7	17.2	17.7	17.5	16.5	:	2.2
Eurostat public pension expenditure (A)	14.3	14.8	16.4	17.7	16.6	17.1	17.6	17.4	16.4	:	2.1
Public pension expenditure (AWG: outcome) (B)	:	:	:	:	:	:	:	:	:	:	:
Difference Eurostat/AWG: (A)-(B)	:	:	:	:	:	:	:	:	:	:	:
Expenditure categories not considered in the AWG definition	:	:	:	:	:	:	:	:	:	:	:
- [please specify]	:	:	:	:	:	:	:	:	:	:	:
- [please specify]	:	:	:	:	:	:	:	:	:	:	:
- …	:	:	:	:	:	:	:	:	:	:	:

In line 2 of the above table, benefit expenditure of main and auxiliary pension as well as dividends are included.

3.1.1. Main pension provision

The schemes modeled cover 100% of the 2019 main pension benefit expenditure. The total main benefit expenditure is13.7%, of GDP in 2019.

3.1.2. Auxiliary pension provision

The public auxiliary scheme under e-EFKA (ex. ETEAEP) was modeled.

The total auxiliary benefit expenditure is 1.9% of GDP in 2019.

The pension expenditure of ex. ETEAEP is approximately 83.7% (1.57% of GDP) of the total auxiliary benefit expenditure for the year 2019.

In order to guarantee the full (100%) coverage in the projections, there has been a loading on the amount of total benefits (0.3% of GDP in 2019) for the rest of the funds which are not explicitly modeled. The loading covers dividend schemes (public sector/MTPY, army, navy, and air force).

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3.2. Overview of projection results

TABLE 6 Projected gross and net pension spending and contributions (% of GDP)									
Expenditure	2019	2030	2040	2050	2060	2070	peak value	peak year	change 2019-2070
Gross public pension expenditure	15.7	13.8	14.0	13.6	12.0	11.9	18.0	2020	-3.8
Private occupational pensions	:	:	:	:	:	:	:	:	:
Private individual mandatory pensions	:	:	:	:	:	:	:	:	:
Private individual non-mandatory pensions	:	:	:	:	:	:	:	:	:
Gross total pension expenditure	15.7	13.8	14.0	13.6	12.0	11.9	18.0	2020	-3.8
Net public pension expenditure*	13.8	12.1	12.2	11.9	10.6	10.4	15.8	2020	-3.3
Net total pension expenditure*	13.8	12.1	12.2	11.9	10.6	10.4	15.8	2020	-3.3
Contributions	2019	2030	2040	2050	2060	2070	peak value	peak year	change 2019-2070
Public pension contributions	13.3	13.4	13.3	12.9	12.0	11.4	14.7	2020	-2.0
Total pension contributions	13.3	13.4	13.3	12.9	12.0	11.4	14.7	2020	-2.0

The main points in relation to table 6 are:
✓ Overall, the total public pension expenditure amounted to 15.7% of GDP in 2019 while the respective amount for 2070 reaches 11.9%. This represents a total decrease of 3.8% of GDP over the projection period 2019-70. The maximum value of 18.0% of GDP is obtained in 2020.
✓ The total amount of contributions from employers, employees and state for the public pension funds decreases from 13.3% of GDP in 2019 to 11.4% of GDP in 2070.

NOTES:

1) Legislated state contribution is included in the projections. Other revenues, like assets revenues, additional government grants e.t.c. are not included in this study.

2) The decline of the total contributions is due to the decrease of state contributions. State contribution includes the financing of national pension and means-tested benefits. Thus, the evolution of state contributions is affected by the evolution of national pension expenditure as % of GDP. Especially in the first years of the projection, all pensions are frozen up to 2022, including national pension. This also affects the evolution of state contribution.

3) Table 6 includes :
   i) Main, auxiliary, EKAS (for 2019 only) and uninsured benefit expenditure and the respective contributions.
   ii) Outstanding claims (new awards) for both main and auxiliary and the respective benefit expenditures.
   iii) Loadings for benefits/contributions for main and auxiliary funds.
   iv) LEPETE benefits/contributions are included in the projections.
   v) In 2020, one off payment amounted 1.4 bil € is included in benefit expenditure. This payment resulted due to Council of State ruling and concerns the return to beneficiaries of pension cuts applied in the period from 11.6.2015 until the entry into force of law 4387/2016.

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4) Pensions taxes (including social security contributions)
   a) In base year 2019 the gross benefit expenditure is subject to
      i)   Social Solidarity Contribution for pensioners (1.1% average)
      ii)   5.3% Health contribution
      iii)   Taxes (5.9% average)
   b) According to the above, net expenditure is about 87.6% of the gross expenditure. Above tax revenues correspond to 1.9% of GDP in the base year. A detailed description of taxation system can be found in Annex II.
5) According to legislation, no state funding is provided for possible deficits of the auxiliary pension (ETEAEP). Deficits are covered by fund's assets. At the end of the base year, assets (securities, cash and deposits) amount about 3.2 billion €.
6) Lump sum benefits for the base year amounted 459mil. (i.e. 0.24% GDP) while the respective contributions amounted 814mil. (0.43% GDP).

3.2.1. Projection results disaggregation

TABLE 6a									
Projection results disaggregation (% GDP)									
Pension scheme	2019	2030	2040	2050	2060	2070	peak value	peak year	change 2019-2070
Gross public pension expenditure	15.7	13.8	14.0	13.6	12.0	11.9	18.0	2020	-3.8
Main pension expenditure	13.7	12.1	12.2	11.8	10.3	10.1	15.6	2020	-3.6
Auxiliary pension expenditure	1.9	1.7	1.7	1.7	1.6	1.7	2.3	2020	-0.2
Minimum pensions non-contributory (uninsured benefits)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2060	0.0
EKAS	0.02						0.02	2019	
Public pension contributions	13.3	13.4	13.3	12.9	12.0	11.4	14.7	2020	-2.0
Main Employer & Employee	6.0	6.5	6.5	6.4	6.5	6.5	6.7	2020	0.5
Auxiliary (Employer & Employee)	1.9	1.7	1.7	1.7	1.7	1.7	2.0	2020	-0.2
State	5.5	5.1	5.1	4.7	3.8	3.2	6.0	2020	-2.3

Table 6a gives the disaggregation of benefit expenditure and contributions into main and auxiliary pensions and also to means-tested benefits (uninsured benefits and EKAS).

It is noted that the total pension expenditure is reduced by 1.9pps from 2019 to 2030. This result is due to the following reasons :
   ✓ Impact of the reform regarding eligibility rules (unified for men and women) by closing paths to early retirement gradually up to 2021
   ✓ Impact of the reform on new main pensions
   ✓ Compensation of personal differences of main pensions, awarded up to May 2016, with future pension indexation starting from 2023 onwards
   ✓ Impact of the reform on the new auxiliary pensions, (gradual application of NDC system)
   ✓ Freezing of pensions up to 2022
   ✓ Abolition of 13th pension

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In the period 2030-2050 the benefit expenditure remains almost stable mainly due to :

✓ The positive effect of the increasing number of pensioners in the same period, which results from the increasing employment in the first years of the projection,

✓ The negative effect of the reforms on main and auxiliary pensions as well as the abolition of the 13th pension

From 2050 onwards the benefit expenditure is gradually decreasing due to :

✓ the decreasing number of pensioners, resulting from the decreasing population,

✓ the impact of the reform regarding eligibility rules (retirement age linked to life expectancy) and

✓ pension calculation rules (i.e. whole career pensionable salary, full introduction of NDC system).

✓ Abolition of 13th pension

Expenditure includes earnings related and flat components benefits. From 2030 onwards the earnings related component of main and auxiliary benefits is mostly financed by employers and employees contributions.

GRAPH 3 shows the evolution of the earnings related benefits without flat component, versus employers and employees contributions.

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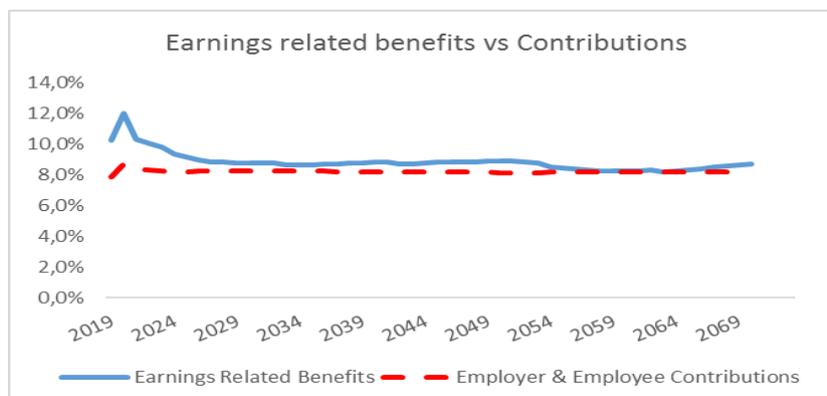
3.2.2. Projection results by scheme

Table 7 gives the analysis of the expenditure results by pension scheme.

TABLE 7									
Projection results disaggregation (%GDP)									
Pension scheme	2019	2030	2040	2050	2060	2070	peak value	peak year	change 2019-2070
Total public pensions	15.7	13.8	14.0	13.6	12.0	11.9	18.0	2020	-3.8
Old-age and early pensions	11.2	10.2	10.5	10.5	9.2	9.2	12.7	2020	-2.0
Flat component	4.0	3.7	3.8	3.6	2.8	2.4	4.4	2020	-1.6
Earnings-related	7.2	6.4	6.6	6.8	6.2	6.8	8.2	2020	-0.4
Minimum pensions (non-contributory) i.e. minimum income guarantee for people above 65	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2060	0.0
Disability pensions	1.0	0.9	0.9	0.8	0.8	0.8	1.1	2020	-0.2
Survivors' pensions	2.2	2.5	2.3	2.0	1.8	1.6	2.5	2020	-0.6
Loadings (Main & Auxiliary)	1.3	0.3	0.3	0.3	0.3	0.3	1.6	2020	-1.0
Other pensions									
EKAS	0.02	:	:	:	:	:	:	:	:

Old-age benefits, decline from 11.2% at 2019 to 10.2% to 2030 and then increase to 10.5% up to 2050 and finally decline to 9.2% at the end of the projection period.

Survivors' pensions benefits are also decreasing from 2.2% of GDP in 2019 to 1.6% in 2070.

For disability pensions, expenditure decreases from 1.0% of GDP in 2019 to 0.8% in 2070.

The decrease in pension expenditure for all pension schemes is due to the reasons referred in paragraph 3.2.1.

Loadings for 2019 include also 13th pension payment and retroactive amounts regarding up to the base year outstanding claims. Loadings for 2020 include also the one off payment regarding the return to beneficiaries of pension cuts applied (due to laws 4051/2012 & 4093/2012) from 11.6.2015 until the entry into force of law 4387/2016 as well as retroactive amounts regarding up to the base year outstanding claims.

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3.2.3. Projection results for Special Pension Schemes

Tables 7a & 7b show the evolution regarding benefit expenditure and number of pensions for special pensions schemes.

TABLE 7a									
Special Pensions: Benefit Expenditure (%GDP)									
	2019	2030	2040	2050	2060	2070	peak value	peak year	change 2019-2070
Total (%GDP)	2.2	1.9	2.1	2.0	1.5	1.2	2.4	2020	-0.9
Difficult conditions	1.4	1.4	1.4	1.2	0.9	0.7	1.6	2020	-0.7
Security and defence	0.7	0.5	0.7	0.8	0.6	0.5	0.8	2020	-0.2

TABLE 7b									
Special Pensions: Number of Pensions (% of public pensions)									
	2019	2030	2040	2050	2060	2070	peak value	peak year	change 2019-2070
Total (% of public pensions)	14.0	12.9	13.3	12.8	10.9	8.9	14.0	2019	-5.0
Difficult conditions	11.0	10.3	10.2	9.3	8.0	6.3	11.0	2019	-4.7
Security and defence	3.0	2.6	3.1	3.5	2.8	2.7	3.5	2050	-0.3

It is noted that the total pension expenditure for special pensions is reduced from 2.2% from 2019 to 1.2% to 2070. Also the share of special pensions (as a % of total number of pensions) decreases by 5pps between 2019 and 2070.

The decrease in special pensions (number of pensions, benefit expenditure) is mainly due to:

✓ The reduction of the number of insured under difficult conditions professions in the last years

✓ the evolution of pensions and expenditure for the total main pension over the projection horizon due to the impact of the reforms.

Figures on special pensions are already included in the pension projections results.

NOTE : For arduous professions' subgroup, the contribution rate for both employee and employer is higher compared to common professions.

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3.3. Description of main driving forces behind the projection results and their implications for main items from a pension questionnaire

This part provides more details about the development of public pension expenditures (Table 8). It uses a standard arithmetic decomposition of a ratio of pension expenditures to GDP into the dependency, coverage, benefit ratio, employment rate and labour intensity.

$$\frac{\text{Pension Exp}}{\text{GDP}} = \overbrace{\frac{\text{Population 65}+}{\text{Population 20}-64}}^{\text{Dependency Ratio}} \times \overbrace{\frac{\text{Number of Pensioners (Pensions)}}{\text{Population 65}+}}^{\text{Coverage Ratio}}$$

$$\times \overbrace{\frac{\dfrac{\text{Average income from pensions (Average Pension)}}{\text{GDP}}}{\text{Hours Worked 20}-74}}^{\text{Benefit Ratio}} \times \overbrace{\frac{\text{Population 20}-64}{\text{Hours Worked 20}-74}}^{\text{Labour Market / Labour Intensity}} \quad [1]$$

The coverage ratio is further split with the scope of investigating the take-up ratios for old-age pensions and early pensions as below:

$$\overbrace{\frac{\text{Number of Pensioners}}{\text{Population 65}+}}^{\text{Coverage Ratio}} =$$

$$= \overbrace{\frac{\text{Number of Pensioners 65}+}{\text{Population 65}+}}^{\text{Coverrage Ratio Old-Age}} + \left(\overbrace{\frac{\text{Number of Pensioners} \le 65}{\text{Population 50}-64}}^{\text{Coverage Ratio Early-Age}} \times \overbrace{\frac{\text{Population 50}-64}{\text{Population 65}+}}^{\text{Cohort effect}} \right) \quad [2]$$

The labour market indicator is further decomposed according to the following:

$$\overbrace{\frac{\text{Population 20}-64}{\text{Hours Worked 20}-74}}^{\text{Labour Market / Labour Intensity}} =$$

$$\overbrace{\frac{\text{Population 20}-64}{\text{Working People 20}-64}}^{1/\text{Employment Rate}} \times \overbrace{\frac{\text{Working People 20}-64}{\text{Hours Worked 20}-64}}^{1/\text{Labour intensity}} \times \overbrace{\frac{\text{Hours Worked 20}-64}{\text{Hours Worked 20}-74}}^{1/\text{Career shift}} \quad [3]$$

The decomposition, which is calculated using data on pensioners (Table 8), is shown below.

The following table describes the disaggregation of the total cost into its major components. These are: benefit ratio, dependency ratio, coverage ratio and ratio of labor market and labor intensity. The impact of these components to the GDP change between 2016 and 2070 varies depending on the importance of each one of them.

Pension expenditure as a percentage of GDP is lower at the end of the projection period compared to the starting year.

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It is evident that the major strike of the dependency ratio due to ageing is tackled by the reform.

In particular:

i) The coverage ratio change by -1.5 pp of GDP, which mainly comes from an impressive decrease of coverage ratio early-age. This results due to the enforcement of much stricter criteria for old-age pension acquisition and the increase of the retirement ages by as many years as the life expectancy is estimated to be increased.

ii) The improved employment effect.

iii) The reduced benefit ratio

TABLE 8 Factors behind the change in public pension expenditures between 2019 and 2070 using pension data (in percentage points of GDP) - pensioners						
	2019-30	2030-40	2040-50	2050-60	2060-70	2019-70
Public pensions to GDP	-1.9	0.1	-0.4	-1.5	-0.2	-3.8
Dependency ratio effect	3.3	3.3	2.4	-0.2	-0.4	8.4
Coverage ratio effect*	-1.6	-0.1	0.0	-0.1	0.3	-1.5
Coverage ratio old-age	0.2	0.5	0.1	0.1	0.4	1.4
Coverage ratio early-age	-8.6	-2.6	-2.2	-2.6	-1.7	-17.7
Cohort effect	-1.2	-3.4	-3.2	0.7	0.6	-6.6
Benefit ratio effect	-1.6	-1.7	-1.8	-1.2	0.1	-6.2
Labour market effect	-1.9	-1.0	-0.9	-0.1	-0.2	-4.1
Employment ratio effect	-1.8	-0.8	-0.8	-0.1	0.0	-3.4
Labour intensity effect	0.04	0.00	0.00	0.00	0.00	0.05
Career shift effect	-0.1	-0.3	-0.1	0.0	-0.1	-0.7
Residual	0.0	-0.3	-0.2	0.0	0.0	-0.4

* Subcomponents of the coverage ratio effect do not add up necessarily.
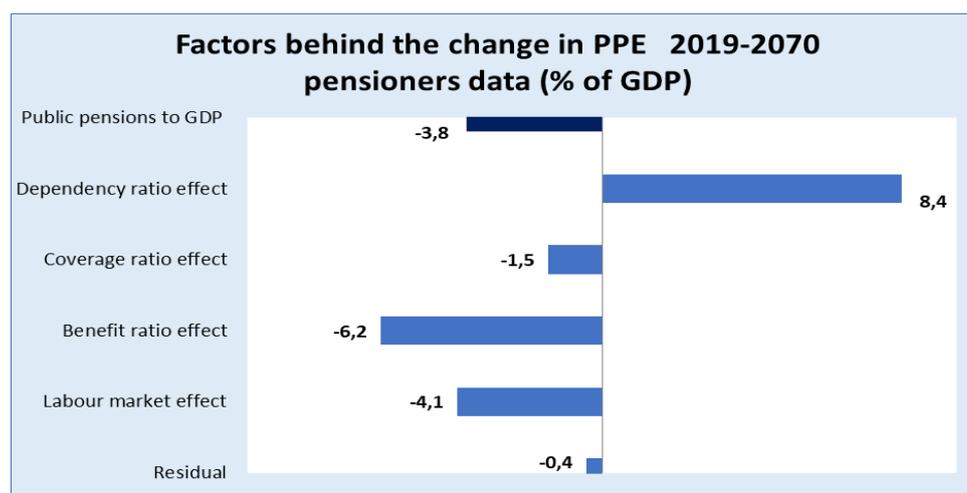
NOTE: Benefit ratio and coverage ratio effects differ, when calculated in terms of pensions or pensioners because a large number of pensioners receive more than one pension (mainly auxiliary, survivor pension e.t.c.).

Table 9 shows the evolution of the overall replacement rates for the main and auxiliary pension provision over the projection period 2019-70.

TABLE 9							
Replacement rate at retirement (RR). benefit ratio (BR) and coverage by pension scheme (in %)							
	2019	2030	2040	2050	2060	2070	change 2019-2070 (pps)
Public scheme (BR)	0.65	0.62	0.54	0.47	0.43	0.43	-0.22
Coverage	100.0	100.0	100.0	100.0	100.0	100.0	0.0
Public scheme: old-age earnings related (BR)	0.68	0.64	0.56	0.50	0.46	0.46	-0.22
Public scheme: old-age earnings related (RR)*	0.69	0.63	0.59	0.57	0.55	0.56	-0.13
Coverage	74.4	71.4	73.1	74.2	72.4	73.6	-0.8
Private occupational scheme (BR)	:	:	:	:	:	:	:
Private occupational scheme (RR)	:	:	:	:	:	:	:
Coverage	:	:	:	:	:	:	:
Private individual schemes (BR)	:	:	:	:	:	:	:
Private individual schemes (RR)	:	:	:	:	:	:	:
Coverage	:	:	:	:	:	:	:
Total benefit ratio	0.65	0.62	0.54	0.47	0.43	0.43	-0.22
Total replacement rate	0.69	0.63	0.59	0.57	0.55	0.56	-0.13

* Replacement rate refers to year 2020 instead of 2019.

The replacement rate (RR) of old age pension in the period 2019-2040 is decreasing as :
✓ contributory period remains almost stable due to the unemployment impact at the years of the crisis,
✓ pensionable salary is affected by a long transition period for its calculation (15 years salaries/income at the beginning combined with higher salaries for the pre-crisis period, moving to full career salaries/income).

In the period 2041-2070 the old age pension replacement rate (RR) remains almost stable as the impact of the increase of the contributory period and the effect of the higher accrual rates for more than 30 years of contributions is compensated by the evolution of the pensionable salary (moving to a full career calculation), and also the full introduction of NDC system.

The benefit ratio (BR) is expected to drop as it is affected by the measures described in paragraph 3.2.1 .

For the calculation of the figures of table 10 dividend benefits (apply to certain professions, see paragraph 3.1.2.) are not taken in account.

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GRAPH 5 *shows the Replacement Rate development of main, auxiliary and total old-age pension.*

Replacement Rates Old age Pensions
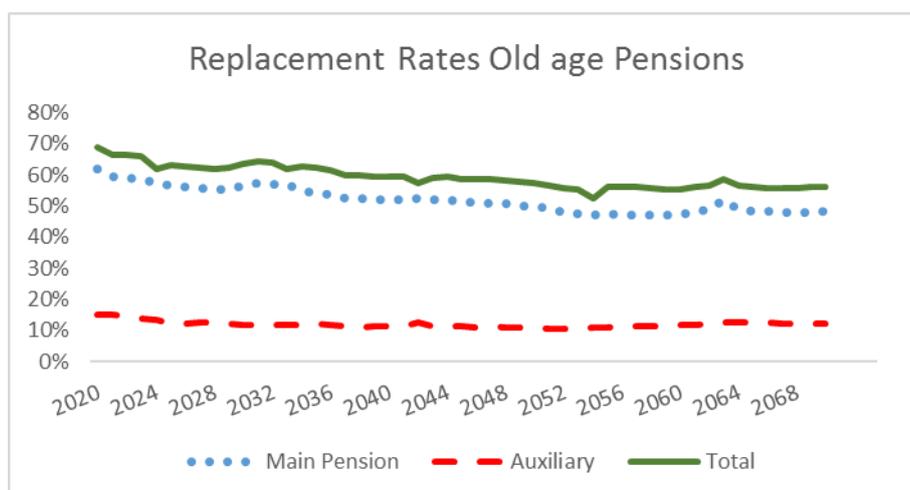
Dependency Ratios

Table 11 analyses the impact of demographic factors on the financial sustainability of public pension schemes.

TABLE 10 System dependency ratio and old-age dependency ratio							
	2019	2030	2040	2050	2060	2070	change 2019-2070
Number of pensioners (thousand) (I)	2506.2	2562.4	2867.0	3036.4	2834.1	2714.9	208.7
Employment (thousand) (II)	3915.4	4093.2	3986.3	3802.6	3662.7	3575.8	-339.6
Pension system dependency ratio (SDR) (I)/(II)	64.0	62.6	71.9	79.8	77.4	75.9	11.9
Number of people aged 65+ (thousand) (III)	2374.1	2677.7	3030.6	3204.3	3018.6	2817.3	443.2
Working age population 20-64 (thousand) (IV)	6259.3	5810.4	5245.4	4697.3	4486.3	4319.8	-1939.5
Old-age dependency ratio (OADR) (III)/(IV)	37.9	46.1	57.8	68.2	67.3	65.2	27.3
System efficiency (SDR/OADR)	1.7	1.4	1.2	1.2	1.2	1.2	-0.5

The number of pensioners and pensions covered by public schemes remains almost stable up to 2030 (due to reforms legislated over the previous years) and afterwards increases up to 2050 (due to the increasing employment in the first years of the projection).
From 2050 onwards the number of pensioners is gradually decreasing due to the decreasing population.
Pension system dependency ratio (SDR) follows the same trend.
Old-age dependency ratio (ODR) increases also up to 2050 mainly because working population 20-64 decreases fast, while the number of people aged 65+ increases.

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The ratio between the SDR and ODR as a measure of 'System Efficiency', shown in table 10, indicates a significant decrease from 1.7 to 1.2 over the projection period, highlighting the effectiveness of the pension reform.

Pensioners compared with inactive and total population

Tables 11a and 11b show the evolution of the total number of pensioners, as a percentage of the total inactive population and as percentage of the total population respectively. Tables 12a and 12b provide the same information for female pensioners.

TABLE 11a Pensioners (public scheme) to inactive population ratio by age group (%)						
	2019	2030	2040	2050	2060	2070
Age group -54	4.4	3.4	2.6	2.3	2.0	1.8
Age group 55-59	48.0	33.5	29.3	35.3	31.4	27.2
Age group 60-64	63.7	45.6	42.1	41.5	40.2	34.6
Age group 65-69	74.4	73.0	77.3	65.8	56.1	58.1
Age group 70-74	85.4	89.3	95.6	97.4	98.6	108.5
Age group 75+	92.7	94.7	98.5	100.7	102.2	107.4

TABLE 11b Pensioners (public schemes) to total population ratio by age group (%)						
	2019	2030	2040	2050	2060	2070
Age group -54	1.9	1.4	1.1	1.0	0.8	0.8
Age group 55-59	18.1	7.2	5.5	5.8	5.0	4.3
Age group 60-64	39.6	21.4	16.0	12.1	9.9	7.8
Age group 65-69	64.4	60.3	57.7	46.2	35.4	33.9
Age group 70-74	83.5	87.2	91.8	92.9	92.0	98.6
Age group 75+	92.7	94.7	98.5	100.7	102.2	107.4

TABLE 12a Female pensioners (public scheme) to inactive population ratio by age group (%)						
	2019	2030	2040	2050	2060	2070
Age group -54	4.3	4.1	3.3	3.0	2.5	2.3
Age group 55-59	40.8	29.2	27.4	33.8	32.0	25.9
Age group 60-64	51.8	39.4	35.5	37.6	40.7	32.9
Age group 65-69	61.8	63.9	67.5	58.9	51.5	54.8
Age group 70-74	75.5	80.9	90.7	92.8	96.3	107.1
Age group 75+	90.5	93.5	98.5	102.0	104.7	113.5

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TABLE 12b Female pensioners (public scheme) to total population ratio by age group (%)						
	2019	2030	2040	2050	2060	2070
Age group -54	2.0	1.9	1.5	1.3	1.1	1.0
Age group 55-59	21.3	8.9	6.8	6.8	6.2	5.0
Age group 60-64	37.5	21.0	15.1	12.6	11.4	8.5
Age group 65-69	56.2	54.9	52.5	42.6	33.6	33.0
Age group 70-74	74.7	79.6	87.6	88.2	89.4	97.2
Age group 75+	90.5	93.5	98.5	102.0	104.7	113.5

In the first years of the projection paths to early retirement (based on special provisions for those first insured before 1993, especially for women, more details in Annex I) are gradually eliminated up to 2021, thus the ratio of pensioners in the age brackets up to 64 years is reduced.

As also expected, due to the increase of the statutory retirement ages in line with the increase of life expectancy from 2021 onwards, the pensioners move to higher age groups during the projection period.

In the last part of the projection, the number of pensioners in the 60-64 bracket is low due to increased statutory ages as they are linked with changes of life expectancy. In the same period, since the statutory retirement age is expected to become 72.6 years, ratios in the 70-74 bracket are increased accordingly.

In the base year the ratios of the female to inactive population for the age-groups 70+ fall below 100%, as in Greece there are women that do not receive any pension or welfare benefit and live with the family (spouse) income. These ratios are gradually increasing and reach 100% or more at the end of the projection period, following the trend of the increasing participation/employment rates for women during the forecasting period.

The coverage ratio (pensioners to population, pensioners to inactive population) for age group 70-74 and 75+ exceeds 100% in the last years of the projection, due to the increasing employment in the first years of the projection and the constant coefficients used for estimating pensioners throughout the projection.

NOTE
The Greek national projection model is based on the number of pensions and not on the number of pensioners. The number of pensioners is estimated approximately, based on coefficients derived from data of "HELIOS" system in the base year.

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New Pensions expenditure

- **Main Pensions**

Table 13a shows the specific factors related to new pensions under the main pension provision. Tables 13b and 13c give the same factors for male and female pensioners.

The contributory part of new pensions' expenditure is analyzed to its components which are:

- ✓ Average contributory period
- ✓ Average pensionable earnings
- ✓ Average accrual rates
- ✓ The number of new pensioners

The product of these factors is approximately equal to the new old-age pensions expenditure (earnings related component).

TABLE 13a Projected and disaggregated new public pension expenditure (old-age and early earnings-related pensions)						
New old-age earnings-related pensions	2020	2030	2040	2050	2060	2070
Projected new pension expenditure (million EUR)*	408.0	615.9	1.156.7	1.549.4	1.995.6	3.362.6
I. Number of new pensions (1000)	71.0	94.5	125.8	104.8	91.7	99.1
II. Average contributory period (years)	31.2	32.3	32.9	35.1	36.1	37.8
III. Average accrual rate (%)	1.1	1.1	1.1	1.1	1.1	1.2
IV. Monthly average pensionable earnings (1000 EUR)	1.4	1.5	2.2	3.2	4.4	6.3
V. Sustainability/adjustment factors	1.0	1.0	1.0	1.0	1.0	1.0
VI. Average number of months paid the first year	12.0	12.0	12.0	12.0	12.0	12.0
(Monthly average pensionable earnings) / (monthly economy-wide average wage)	1.05	0.91	0.88	0.86	0.81	0.81

*New pension expenditure equals the product of I, II, III, IV, V & VI

TABLE 13b Disaggregated new public pension expenditure (old-age and early earnings-related pensions) - MEN						
New old-age earnings-related pensions	2020	2030	2040	2050	2060	2070
Projected new pension expenditure (million EUR)*	244.6	382.6	681.2	906.3	1.177.6	1.907.7
I. Number of new pensions (1000)	39.6	53.3	66.3	55.4	48.2	51.0
II. Average contributory period (years)	31.8	33.0	33.9	35.6	36.6	37.8
III. Average accrual rate (%)	1.1	1.1	1.1	1.1	1.1	1.2
IV. Monthly average pensionable earnings (1000 EUR)	1.5	1.7	2.3	3.4	4.9	7.0
V. Sustainability/adjustment factors	1.0	1.0	1.0	1.0	1.0	1.0
VI. Average number of months paid the first year	12.0	12.0	12.0	12.0	12.0	12.0
(Monthly average pensionable earnings) / (monthly economy-wide average wage)	1.12	0.97	0.94	0.92	0.89	0.89

*New pension expenditure equals the product of I, II, III, IV, V & VI

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TABLE 13c
Disaggregated new public pension expenditure (old-age and early earnings-related pensions) - WOMEN

New old-age earnings-related pensions	2020	2030	2040	2050	2060	2070
Projected new pension expenditure (million EUR)*	163.3	233.3	475.5	643.1	817.9	1.454.9
I. Number of new pensions (1000)	31.4	41.2	59.5	49.4	43.5	48.1
II. Average contributory period (years)	30.5	31.4	31.7	34.4	35.6	37.8
III. Average accrual rate (%)	1.1	1.1	1.0	1.1	1.1	1.2
IV. Monthly average pensionable earnings (1000 EUR)	1.3	1.4	2.0	2.9	4.0	5.7
V. Sustainability/adjustment factors	1.0	1.0	1.0	1.0	1.0	1.0
VI. Average number of months paid the first year	12.0	12.0	12.0	12.0	12.0	12.0
(Monthly average pensionable earnings) / (monthly economy-wide average wage)	0.95	0.82	0.81	0.78	0.73	0.73

*New pension expenditure equals the product of I, II, III, IV, V & VI

The contributory period increases slightly in the first decade due to the unemployment impact at the years of the crisis. Afterwards the contributory period is increasing (for both men and women) due to the linkage of statutory retirement ages to life expectancy.

Accrual rates for contributory main pensions increase from 1.1% to 1.2% during the projection horizon.

Pensionable earnings are affected by a long transition period for its calculation (15 years salaries/income/insurance classes at the beginning combined with higher salaries for the pre-crisis period, moving to full career salaries/income).

According to 2016 reform, pensionable earnings are derived taking into account the average monthly earnings of the insured for his entire insurance life. For insured retiring from the entry into force of the new law until the end of 2016 the pensionable earnings are derived taking into account monthly earnings of the insured from 2002 until the end of his insurance life. From 2017 onwards this reference period increases by one year. So, the number of years taken into account for the pensionable earnings calculation is only 15 years in the first year, which number is gradually increasing in order to achieve a full career calculation.

Also, according to the 4670/2020 law the insurable base of self-employed changed from actual income to notional (based on insurance classes), with effect from year 2020. Pensionable earnings is defined as the amount which corresponds to division of class amount by the contribution rate 20% ([amount of contributions actually paid] / 20%).

The higher salaries/income in the pre-crisis period (2002-2008) for private sector employees and self-employed, affect the evolution of pensionable earnings up to the middle of the projection.

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- **Auxiliary Pensions**

Table 13d shows the specific factors related to new pensions under the auxiliary pension provision.

Tables 13e and 13f give the same factors for male and female pensioners.

New pension expenditure is analyzed to its components which are:

✓ The number of new pensions

✓ Average contributory period

✓ Average accrual rates

✓ Average pensionable earnings

TABLE 13d						
Projected and disaggregated new public pension expenditure AUXILIARY FUNDS (old-age and early earnings-related pensions)						
New old-age earnings-related pensions	2020	2030	2040	2050	2060	2070
Projected new pension expenditure (million EUR)*	79.0	129.5	272.5	347.8	485.5	755.6
I. Number of new pensions (1000)	32.9	53.6	81.1	72.6	63.7	66.1
II. Average contributory period (years)	27.6	26.4	30.5	33.8	35.8	37.5
III. Average accrual rate (%) (c/A)	0.44	0.41	0.37	0.34	0.35	0.35
Notional-accounts contribution rate (c)						
Annuity factor (A)						
IV. Monthly average pensionable earnings (1000 EUR)	1.7	1.9	2.5	3.5	5.0	7.3
V. Sustainability/adjustment factors	1.00	1.00	1.00	1.00	1.00	1.00
VI. Average number of months paid the first year	12.0	12.0	12.0	12.0	12.0	12.0
(Monthly average pensionable earnings) / (monthly economy-wide average wage)	1.2	1.1	1.0	0.9	0.9	0.9

*New pension expenditure equals the product of I, II, III, IV, V & VI

TABLE 13e						
Disaggregated new public pension expenditure AUXILIARY FUNDS (old-age and early earnings-related pensions) - MEN						
New old-age earnings-related pensions	2020	2030	2040	2050	2060	2070
Projected new pension expenditure (million EUR)*	52.3	78,6	156,5	198,2	273,3	416,2
I. Number of new pensions (1000)	21.7	31.5	41.5	36.1	31.1	32.5
II. Average contributory period (years)	26.4	25.8	31.1	33.9	36.1	37.5
III. Average accrual rate (%) (c/A)	0.45	0.42	0.39	0.36	0.37	0.36
Notional-accounts contribution rate (c)	:	:	:	:	:	:
Annuity factor (A)	:	:	:	:	:	:
IV. Monthly average pensionable earnings (1000 EUR)	1.7	1.9	2.6	3.8	5.5	8.0
V. Sustainability/adjustment factors	1.00	1.00	1.00	1.00	1.00	1.00
VI. Average number of months paid the first year	12.0	12.0	12.0	12.0	12.0	12.0
(Monthly average pensionable earnings) / (monthly economy-wide average wage)	1.3	1.1	1.1	1.0	1.0	1.0

*New pension expenditure equals the product of I, II, III, IV, V & VI

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TABLE 13f Disaggregated new public pension expenditure AUXILIARY FUNDS (old-age and early earnings-related pensions) - WOMEN						
New old-age earnings-related pensions	2020	2030	2040	2050	2060	2070
Projected new pension expenditure (million EUR)*	26.7	50.9	116.0	149.6	212.2	339.3
I. Number of new pensions (1000)	11.2	22.1	39.6	36.5	32.6	33.6
II. Average contributory period (years)	29.8	27.2	29.9	33.7	35.5	37.5
III. Average accrual rate (%) (c/A)	0.43	0.40	0.36	0.32	0.33	0.33
Notional-accounts contribution rate (c)	:	:	:	:	:	:
Annuity factor (A)	:	:	:	:	:	:
IV. Monthly average pensionable earnings (1000 EUR)	1.5	1.8	2.3	3.2	4.6	6.7
V. Sustainability/adjustment factors	1.00	1.00	1.00	1.00	1.00	1.00
VI. Average number of months paid the first year	12.0	12.0	12.0	12.0	12.0	12.0
(Monthly average pensionable earnings) / (monthly economy-wide average wage)	1.2	1.0	0.9	0.9	0.8	0.9

*New pension expenditure equals the product of I, II, III, IV, V & VI

The direct impact of the reforms is evident on auxiliary pensions also.

Average years of service for new pensioners increase gradually (for both men and women) due to the linkage of statutory retirement ages to life expectancy.

Average accrual rate for men declines from 0.45% to 0.36% at 2070, while for women declines from 0.43% to 0.33% at 2070, due to the phase out of the pro-rata calculation period and the full transition to NDC system.

Pensionable earnings evolution is affected by the same reasons as referred to main pension (i.e. transition period from last 15 to full career, higher salaries for the pre-crisis period).

3.4. Financing of the pension system

Table 14 shows the sources for financing the pension schemes.

TABLE 14 Financing of Public Pension System		
	Private & Public employees	**Self-employed**
Contribution base (millions)	42,691.91	10,156.54
Contribution rate /contribution		
Employer	Main*pensions majority: 13.33%; Auxiliary** pensions: 3%	Based on insurance classes ranging from 155-500
Employee	Main*pensions majority: 6.67%; Auxiliary** pensions: 3%	
State***	-	-
Other revenues	National budget / other sources	National budget / other sources
Maximum contribution €****	6500	500
Minimum contribution €*****	650	155

* Main Pensions : Unified rates from 2022 onwards.

**Auxiliary pensions : 6/2019 - 5/2022 : 3.25%

*** State is financing national pension & means-tested benefits

****Employees:Maximum monthly insurable earnings for full employment

***** Employees:Minimum monthly insurable earnings for full employment

There is an additional contribution rate for insured in arduous professions (3.6% main pension/2% auxiliary pension).

Also, a portion (30%) of the co-collected employer and employee contributions of the sectors and accounts of OAED [Greek Working Force Organisation] constitutes a resource of main pension system.

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Table 15 presents the evolution of contributions, number of contributors and employment.

TABLE 15 Revenue from contribution (Millions), number of contributors in the public scheme (in 1000), total employment (in 1000) and related ratios (%)							
	2019	2030	2040	2050	2060	2070	change 2019-2070 (pps)
Public pension contributions (%GDP)	13.3	13.4	13.3	12.9	12.0	11.4	-2.0
Employer contributions	4.1	4.3	4.3	4.2	4.2	4.2	0.2
Employee contributions	3.8	3.9	3.9	3.9	3.9	3.9	0.1
State contribution*	5.5	5.1	5.1	4.7	3.8	3.2	-2.3
Other revenues*	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Number of contributors (I) (1000)	4843.1	5071.4	4941.2	4714.1	4540.1	4433.0	-410.1
Employment (II) (1000)	3915.4	4093.2	3986.3	3802.6	3662.7	3575.8	-339.6
(I) / (II)	1.2	1.2	1.2	1.2	1.2	1.2	1.2

The contribution rates for the main pension system of all salaried insureds are gradually harmonized with those of private sector employees (ex. IKA-ETAM) up to 2022.

In the above table, state contribution includes the financing of national pension and means-tested benefits.

A loading of 0.3% of GDP for the year 2019 for auxiliary pension is included, for the rest schemes (Dividend Funds) which are not explicitly modeled.

3.5. Pension assets

Table 16 shows the assets of e-EFKA for main and auxiliary pension system.

TABLE 16 Pension assets* in bil. €	
Public pension scheme	2019
e-EFKA Main Pension	10.36
e-EFKA Auxiliary Pension	3.24

*Only financial assets are included (i.e. securities, cash and deposits)

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3.6. Sensitivity analysis

Table 17 shows the evolution of total pension expenditure under different scenarios.

TABLE 17 Public and total pension expenditure under different scenarios (p.p. deviation from the baseline)							
Public pension expenditure	2019	2030	2040	2050	2060	2070	change 2019-2070 (pps)
Baseline (% GDP)	15.7	13.8	14.0	13.6	12.0	11.9	-3.8
Higher life expectancy at birth (+2y)	0.0	-0.2	-0.3	-0.2	-0.2	-0.1	-0.1
Higher migration (+33%)	0.0	0.0	-0.1	-0.2	-0.4	-0.5	-0.5
Lower migration (-33%)	0.0	0.0	0.0	0.2	0.4	0.5	0.5
Lower fertility (-20%)	0.0	0.0	0.0	0.3	0.7	1.1	1.1
Higher employment rate of older workers (+10 pps.)	0.0	-0.5	-0.7	-0.7	-0.4	-0.1	-0.1
Higher TFP growth (convergence to 1.2%)	0.0	-0.3	-0.5	-0.6	-0.7	-0.7	-0.7
TFP risk scenario (convergence to 0.8%)	0.0	-0.1	0.1	0.4	0.6	0.7	0.7
Policy scenario: linking retirement age to change in life expectancy	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Policy scenario: unchanged retirement age	0.0	0.7	1.4	1.4	1.7	1.4	1.4
Policy scenario: offset declining pension benefit ratio	0.0	0.0	1.2	3.2	4.3	4.1	4.1
Lagged recovery scenario	0.0	0.1	0.0	0.0	0.1	-0.1	-0.1
Adverse structural scenario	0.0	0.2	0.5	0.6	0.9	0.9	0.9

On the "Higher Life Expectancy" scenario pension spending is expected to drop slightly by 0.1 p.p. compared to the baseline scenario in 2070. The increase in life expectancy and consequently increase in the retirement age results to a reduction in the number of new pensioners. On the other hand the increase in life expectancy results to lower mortality rates, which gradually increase the number of total pensioners. The two previously referred reasons have as a consequence small difference in 2070 between the two scenarios.

The impact on pension expenditure for "Higher/Lower Migration" scenario is symmetric during the entire projection period. Pension expenditure decreases/increases by 0.5 p.p. of GDP compared to the baseline projection in 2070.

On the "Lower fertility" scenario, an increase of pension expenditure by 1.1 p.p. of GDP appears in 2070, compared to the baseline scenario. The effect of this scenario on pensions appears in the last part of the projection. This result is explained by a decrease in the number of employees, and consequently to the GDP level.

On the "Higher emp. of older workers" scenario, a decrease of pension expenditure appears in the middle of projection compared to the baseline scenario. Afterwards this decrease gradually shrinks.

Pension expenditure on "Higher TFP" scenario is projected to drop by 0.7 p.p. of GDP until 2070 compared to the baseline scenario. The increase of the average pension, caused by the higher wage growth, is offset by the increase in GDP side. The results

of this scenario is affected by the weight of national pension on total pension during the projection (the contributory component increases due to the increasing contributory period).

On the "TFP Risk" scenario, an increase of pension expenditure by 0.7p.p. of GDP appears in 2070, compared to the baseline scenario.

The macroeconomic assumptions of "Policy scenario" (linking retirement age to change in life expectancy) are the same with those of baseline scenario, thus no difference is observed.

The "Policy scenario: unchanged retirement age" results in an increase of 1.4.p.p in pension expenditure compared to baseline scenario in 2070.

The "Policy scenario: offset declining pension benefit ratio" results in the largest increase of pension expenditure of all policy scenarios in 2070 compared to baseline scenario (an increase of 4.1 p.p in 2070).

Finally, the so called "COVID-19" scenarios were examined in this projection round. The first one, "Lagged recovery scenario" ends with a slight difference in pension expenditure in 2070 (-0.1 p.p.). The second one "Adverse structural scenario" affects the projections resulting in an increase of pension expenditure by 0.9 p.p. in 2070 (compared to baseline scenario).

GRAPH 7 shows pension expenditure under different scenarios in 2070 (% of GDP)

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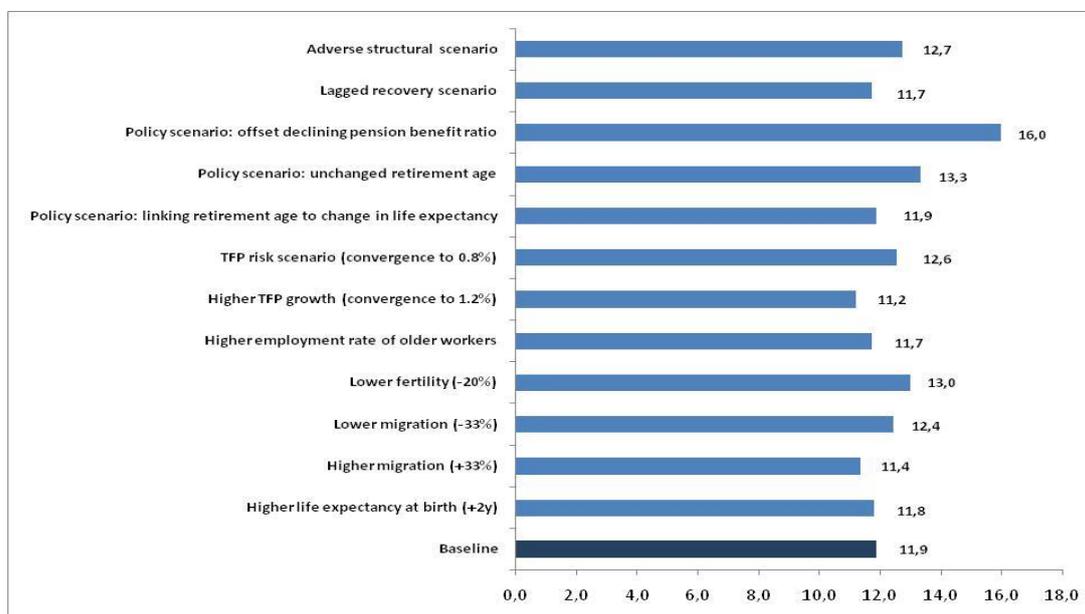
3.7. Description of the changes in comparison with the 2006, 2009, 2012, 2015, 2018, 2019 update & 2021 projections

In previous rounds pension expenditure would increase due to the demographics, but reforms adopted regarding eligibility conditions and rules for pension calculation as well as the employment effect tackled/countered expenditure increase.

The 2021 round projection results are mainly affected by the new demographic & macroeconomic assumptions, as well as by new law 4670/2020.

TABLE 18						
Overall change in public pension expenditure to GDP under the 2006, 2009, 2012, 2015, 2018 and 2021 projection exercises						
	Public pension expenditure	Dependency ratio effect	Coverage ratio effect	Benefit ratio effect	Labour market effect	Residual (incl. interaction effect)
2006 Ageing Report (2004-2050)	:	:	:	:	:	:
2009 Ageing Report (2007-2060)	:	:	:	:	:	:
2012 Ageing Report (2010-2060)	1.0	10.4	-3.4	-3.6	-1.8	-0.6
2015 Ageing Report (2013-2060)	-1.9	10.6	-3.2	-2.1	-6.2	-1.0
2018 Ageing Report (2016-2070)	-6.6	9.1	-1.9	-8.3	-4.9	-0.7
2021 Ageing Report (2019-2070)	-3.8	8.4	-1.5	-6.2	-4.1	-0.4

- The disaggregation for 2006/2009/2012 is on the basis of pensions; for 2015/2018/2021 it is on the basis of pensioners.
- The projection horizon has been extended over consecutive Ageing Reports, limiting comparability over time.

Note: In 2006 the Hellenic Republic did not prepare comprehensive projections for the Ageing Working Group. In 2009 the projections incorporated separate results of four main pension schemes (IKA, OAEE, Public Sector and OGA) and aggregate results for the rest of the main and auxiliary pension schemes.

Table 19A shows the differences between the 2018 projections, the update 2019 projections and the actual public pension expenditure in 2016-2019 (% GDP). The differences are minor, and resulted due to the change in assumptions.

Between round 2018 and 2021, the following are observed:
✓ According to the realized figures the nominal GDP increased by 5.3% from 2016 to 2019.
✓ The 2019 nominal GDP value for the new round is 3.4% lower than the 2018 round estimated value for 2019 nominal GDP
✓ The increase in the 2019 pension expenditure as percentage of GDP is mainly due to the decrease of the Greek GDP.

TABLE 19A				
DISAGGREGATION OF THE DIFFERENCE BETWEEN THE 2018 PROJECTIONS AND ACTUAL PUBLIC PENSION EXPENDITURE IN 2016-2019 (% GDP)				
	2016	2017	2018	2019
Ageing Report 2018 projections	17.3%	16.3%	15.6%	13.8%
Assumptions (pps of GDP)			-0.1%	
Coverage of projections (pps of GDP)				
Constant policy impact (pps of GDP)				
Policy-related impact (pps of GDP)				1.4%
Ageing Report 2018 projections (2019 Update)	17.3%	16.3%	15.5%	15.2%
Assumptions (pps of GDP)	0.1%	0.1%	0.1%	0.5%
Coverage of projections (pps of GDP)				
Constant policy impact (pps of GDP)				
Policy-related impact (pps of GDP)				
Actual public pension expenditure	17.4%	16.4%	15.6%	15.7%

The decomposition of the difference in pension projections between AR2018 and 2019 update projections as well as the new public pension projection (AR2021) is reported in Table 19B.

TABLE 19B						
DISAGGREGATION OF THE DIFFERENCE BETWEEN THE 2018 AND THE NEW PUBLIC PENSION PROJECTIONS (% GDP)						
	2019	2030	2040	2050	2060	2070
Ageing report 2018	13..8%	12.0%	12.9%	12.5%	11.5%	10.6%
Change in assumptions						
Improvement in the coverage or in the modelling						
Change in the interpretation of constant policy						
Policy related changes	1.4%	1.1%	1.2%	1.2%	1.2%	1.0%
2019 Update projections	15.2%	13.2%	14.1%	13.8%	12.7%	11.7%
Change in assumptions	0.5%	0.9%	0.0%	-0.4%	-0.7%	-0.3%
Improvement in the coverage or in the modelling						
Change in the interpretation of constant policy						
Policy related changes	0.0%	-0.2%	-0.1%	0.2%	0.0%	0.5%
New projections	15.7%	13.8%	14.0%	13.6%	12.0%	11.9%

The difference in the evolution between the 2018 and 2021 rounds results from changes in assumptions regarding the demographic development, employment, GDP growth and policy/reform changes.

The difference between 2018 round and the new pension projections (2019 update) is due to the new legislation amendments:

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- ✓ no reduction of personal differences of pre-reform pensions in 2019 and annually offsetting them until their total elimination with the respective indexation from 2023 onwards,
- ✓ introduction of 13th pension payment,
- ✓ new calculation method for AKAGE and health contributions of pre-reform pensions,
- ✓ survivors pensions amendments,
- ✓ new definition of pensionable salary for self-employed

The difference between 2019 update and the new pension projections (round 2021) is due to the change in macro-assumptions as well as the new legislation amendments.

Taking into account only the effect of the legislation amendments, in the first part of the projections the expenditure as %GDP is expected to be lower compared to Update 2019 projections. In the beginning, the decrease because of the abolition of the 13th pension is not compensated due to the effect of the other measures. This gap gradually closes up to the middle of the projections. Summarizing, the expenditure in the first part of the projections is affected mainly due to:
- ✓ a permanent reduction because of the abolition of the 13th payment,
- ✓ an increase because of the abolition of auxiliary pension cuts in the beginning of the projections which is declining as the affected group phases out,
- ✓ a gradual increase of the expenditure due to the new scale of accrual rates, which are increased only for the years of service over 30 years.

Taking into account also the effect of the new macroeconomic assumptions, which in the first part of the projection period are less favorable compared to the AR2018 projections, the expenditure as %GDP results to a higher level compared to the update 2019 projections.

The macroeconomic assumptions for the second half of the projection period (after 2040) have an opposite effect since they are more favorable compared to the AR2018 projections. The expenditure as %GDP due to new macro-assumptions result to a lower level compared to update 2019 projections.

Graph 8 (next page) shows the evolution of benefit expenditure as a share of GDP between round 2018 (updated projections) and 2021.

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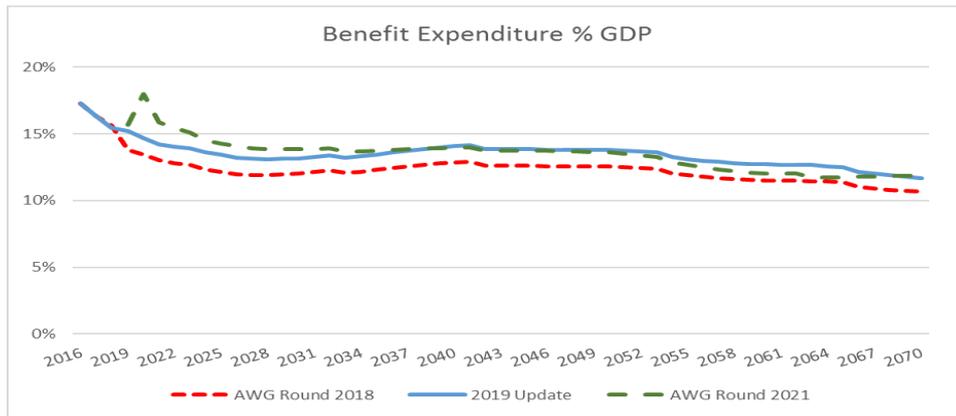
GRAPH 8

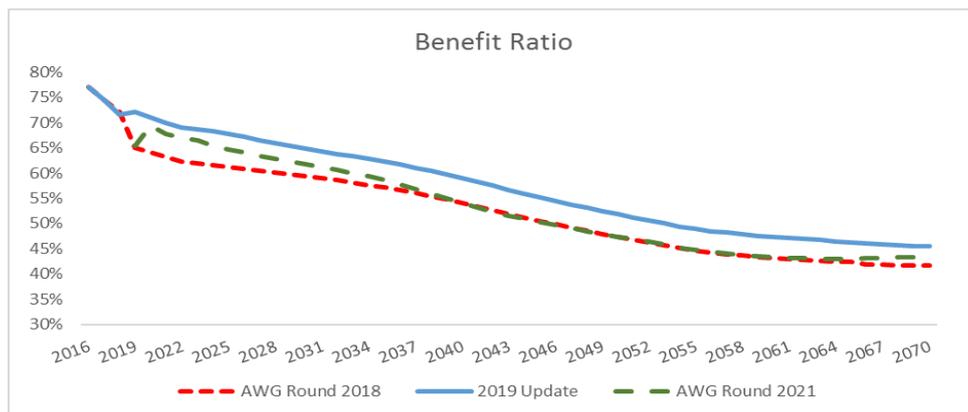Graph 9 shows the evolution of benefit ratio between 2015 and 2018 rounds, which is also affected by the pre-referred reasons (measures to control expenditure, reforms).

GRAPH 9

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4. DESCRIPTION OF THE PENSION PROJECTION MODEL AND ITS BASE DATA

4.1. Institutional context

The 2019 round projections for the main and auxiliary pension provision were undertaken by the National Actuarial Authority of Greece.

4.2. Assumptions and methodologies applied

The pension projections were carried out based on the agreed AWG 2018 macroeconomic framework.

General Population:

General population starts with the current data and it is projected applying the mortality, fertility and migration assumptions, which are in line with the EUROPOP2019population projections released by Eurostat. In addition, existing pensioners and new pensioners are projected according to the mortality rates of Eurostat, retirement rates, invalidity rates, family statistics and legal provisions of each pension scheme.

Labor Force, employment:

AWG assumptions on labor force participation rates, employment rates have been taken into account. According to the analytical data of the schemes in the base year, the total number of insured workers is higher than that of AWG given. However the evolution of employees is assumed proportional to the evolution given by AWG. There are also some other assumptions made, regarding the evolution of three groups of employed population.
- ✓ The public sector insured population remains stable up to 2040 and thereafter follows the evolution of total employment.
- ✓ The evolution of former IKA-ETAM employees is assumed proportional to the evolution given by AWG, adding up the population, per sex, who move from groups of former Public Sector.

Wages:

The wage growth is obtained as the product of inflation and labor productivity. No negative growth is applied.

Salary valorization for the calculation of pensionable earnings is adjusted by the inflation and labor productivity. Needless to say that this adjustment is higher than the actual increase in the salaries observed in the past years. For the period up to 2020, CPI is used for salary valorization.

Benefit Indexation:

Main pensions benefit indexation is fully linked to a uniform adjustment index which cannot exceed CPI. In particular, the index is equal to the minimum of CPI and the sum of 50% CPI and 50% GDP growth [min (50% GDP growth +50% CPI, CPI)]. No nominal increase in pensions up to 2022 is applied.

The indexation percentages actually applied in the projections are as follows :

Period	2019-2022	2023-2070
Benefits indexation rate	0.00%	2.00%

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The formula for auxiliary pensions benefit indexation according to legal provision is

$$\gamma_t = \min\left(\left[1 + g_{t-2} - r\right] - 1, \text{inflation}_{t-1}\right)$$

where
g : notional rate of return,
r : discount rate=1,3%,
This indexation can take negative values.
No pension indexation is applied in case of deficit (balancing mechanism).

Period	2020-2030	2031-2040	2041-2050	2051-2060	2061-2070
Indexation applied on auxiliary pensions, taking into account balancing mechanism (average)	0.4%	1.7%	1.6%	2.0%	2.0%

Age thresholds:

Current legislation provides that age thresholds will be re-determined according to the change in life expectancy of the country's population with the age of 65 years as point of reference. This will come into effect as of 1.1.2021 and upon its first implementation the change within the 2010 - 2020 ten-year period will be taken into account. After the first implementation the change in life expectancy will be re-examined every three years.

In the projections, age thresholds are increased by the integral part of the estimated increase in life expectancy. Age thresholds are increased by one additional year on 2024, 2033, 2042, 2054 and 2063.

4.3.   Data used to run the model

Data used to run the model for the main and auxiliary pension provision was provided by pension funds and HDIKA.

The database includes person-by-person information, from which all required inputs for the model are produced. The analytical information is aggregated by age, gender, group of similar characteristics, and by legal provisions, for producing the required inputs such as: distribution of active insured and inactive insured, distribution of past service, distribution of wages/income, density of payments, entry age, distribution of pensions in-payment, average pension, family statistics, disability statistics.

4.4.   Reforms incorporated in the model

The reforms incorporated in the modeling exercises for the main and auxiliary pension provision, are those described in the previous sections of this report.

4.5.   General description of the model

The present version of ILO pension model has been developed to support actuarial reviews or studies of statutory social security pension funds. It thus helps to provide the quantitative basis for making policy decisions on social security pension funds.

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The model estimates future cost on the basis of the cohort decomposition method and various statuses of a person and associated values (average wage, average pensions) are provided year by year. To the extent possible, a distribution is considered for income level. For each generation, the transition of a status of a person (active person, inactive person, pensioners) is mapped onto the next year's status by using actuarially assumed transition probabilities (mortality rate, retirement rate, invalidity rate) and applying the eligibility conditions and pension formula. This cycle is iterated until the end of the projection period. By summarizing age-specific results, global future costs are obtained. Additional information can be found in the ILO Pension Model manual.

4.6.   Additional features of the projection model

The general description of features of the projection model is given in previous paragraphs.

Methodological annex

- ## Economy-wide average wage at retirement

TABLE A1 Economy-wide average wage at retirement evolution (in thousand euros)							
	2019	2030	2040	2050	2060	2070	% change 2019-2070
Economy-wide average gross wage at retirement	16.5	20.5	29.6	44.6	65.6	94.2	471.5
Economy-wide average gross wage	16.5	20.5	29.6	44.6	65.6	94.2	471.5

The economy-wide average wage at retirement on base year, is the wage at the age corresponding to the effective retirement age. In the projection it was evolved in accordance to the economy-wide average wage evolvement.

- ## Pensions vs Pensioners

The number of pensioners was estimated approximately, based on data of "HELIOS" system for base year.

- ## Pensions taxation

Pension taxes were projected based on 2020 administrative data regarding the effective tax rate (including compulsory social security contributions paid by pensioners). The effective tax rate was kept constant during the projection period.

- ## Disability pension

Invalidity pensions are under tight scrutiny by a committee of independently and randomly chosen doctors (KEPA authority). Also a new and more precise disability percentage table was introduced.

Invalidity incident rates are based on data from e-EFKA (new invalidity pensions awarded). Disability rates by age groups (%) are given in table A2.

TABLE A2 Disability rates by age groups (%)	
	2019-2070
Age group -54	0.1%
Age group 55-59	0.4%
Age group 60-64	0.6%
Age group 65-69	0.7%
Age group 70+	0.8%

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- **Survivors pensions**

Survivors pensions are estimated using family statistics based on data provided by e-EFKA. The following parameters regarding family statistics are estimated by age of the deceased:
- ✓ probability of having a spouse and the respective average age of spouse,
- ✓ average number of children and the respective average age of the children.

- **Alternative pension spending decomposition**

Table A3 is equivalent to Table 8. Tables contained in the body of the country fiche are calculated by dividing into sub-intervals so to have smaller residual effect (interaction effect). Reduction of the residual is not allowed for table A3.

TABLE A3 Factors behind the change in public pension expenditures between 2016 and 2070 using pension data (in percentage points of GDP) - pensions						
	2019-30	2030-40	2040-50	2050-60	2060-70	2019-70
Public pensions to GDP	-1.9	0.1	-0.4	-1.5	-0.2	-3.8
Dependency ratio effect	3.3	3.3	2.4	-0.2	-0.4	8.4
Coverage ratio effect*	-0.8	0.4	0.3	0.1	0.3	0.3
Coverage ratio old-age	1.2	1.0	0.7	0.2	0.3	3.4
Coverage ratio early-age	-8.6	-2.0	-2.3	-2.2	-1.4	-16.5
Cohort effect	-1.2	-3.4	-3.2	0.7	0.6	-6.6
Benefit ratio effect	-2.4	-2.2	-2.0	-1.4	0.1	-7.9
Labour market effect	-1.9	-1.0	-0.9	-0.1	-0.2	-4.1
Employment ratio effect	-1.8	-0.8	-0.8	-0.1	0.0	-3.4
Labour intensity effect	0.0	0.0	0.0	0.0	0.0	0.1
Career shift effect	-0.1	-0.3	-0.1	0.0	-0.1	-0.7
Residual	-0.1	-0.3	-0.2	0.0	0.0	-0.6

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

- **Administrative data on new pensioners**

The actual distribution of new retirees by age group and pension category, based in administrative data for 2019 is given in tables A4A, A4b & A4Cc (men, women & total respectively).

TABLE A4a Number of new pensioners by age group - administrative data (MEN)					
Age group	All	Old-age	Disability	Survivor	Other (including minimum)
15 - 49	2739	211	970	1558	0
50 - 54	1723	753	761	209	0
55 - 59	4199	2716	1225	258	0
60 - 64	19347	17929	1075	343	0
65 - 69	11721	10983	354	384	0
70 - 74	2755	2309	19	427	0
75+	2004	491	4	1509	0

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TABLE A4b				
Number of new pensioners by age group - administrative data (WOMEN)				
Age group	All	Old-age	Disability	Survivor	Other (including minimum)
15 - 49	3613	75	856	2682	0
50 - 54	2636	533	659	1444	0
55 - 59	5741	2825	664	2252	0
60 - 64	7786	3808	615	3363	0
65 - 69	15407	10969	243	4195	0
70 - 74	6540	1429	15	5096	0
75+	12072	239	8	11825	0

TABLE A4c				
Number of new pensioners by age group - administrative data (TOTAL)				
Age group	All	Old-age	Disability	Survivor	Other (including minimum)
15 - 49	6352	286	1826	4240	0
50 - 54	4359	1286	1420	1653	0
55 - 59	9940	5541	1889	2510	0
60 - 64	27133	21737	1690	3706	0
65 - 69	27128	21952	597	4579	0
70 - 74	9295	3738	34	5523	0
75+	14076	730	12	13334	0

Administrative data reveal a significant reduction in the number of new disability pensions (as of 2017) and also a decline in the number of new old age pensions (up to 2016-17 there were massive retirement due to increased unemployment and the expected pension reform regarding eligibility rules).

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Annex I

According to provisions applied before last 2015 reform, there were options for early retirement with either fewer years of service or lower retirement age than the statutory one.

Indicative clauses of such pre-reform provisions are given below:

i) <u>Men/Women of Private Sector insured in ex.IKA-ETAM before 1.1.1993, with at least 10.500 service days</u>

MEN / WOMEN (INSURED BEFORE 1993)	10.500 service days completed in YEAR	SERVICE DAYS Required for retirement	AGE LIMIT Required for full pension
	2010	10500	58
	2011	10800	58
	2012	11100	59
	2013	12000	62

The insured is entitled pension upon completing the service days and age limit in force in the year of completing 10500 service days

ii) <u>Women of Private Sector insured in ex.IKA-ETAM before 1.1.1993, with at least 4.500 service days</u>

The insured is entitled pension upon completing the age limit in force in the year of attaining age 60.

YEAR of attaining age 60 for full pension & 55 for reduced	SERVICE DAYS Required for retirement	AGE LIMIT Required for full pension	AGE LIMIT Required for reduced pension
2010	4500	60	55
2011	4500	61	56
2012	4500	62	57
2013	4500	67	62

Insured women with vested rights to an old-age reduced pension before 31.12.2010 (i.e. at that date had the age of 55 and 4500 service days, of which at least 100 per year during the last 5 years), keep the right to a full pension at the age of 60.

iii) <u>Women of Private Sector insured in ex.IKA-ETAM before 1.1.1993/ mothers of minor children</u>

In order to vest pension rights it is required to have at least 5500 service days and the age limit in force in the year of completion of the 5500 service days provided that the child is a minor at the completion of the 5500 service days.

5.500 service days completed in YEAR	SERVICE DAYS Required for retirement	AGE LIMIT Required for full pension	AGE LIMIT Required for reduced pension
2010	5500	55	50
2011	5500	57	52
2012	5500	60	55
2013	5500	67	62

iv) Women in Public Sector insured from 01/01/83 up to 31.12.1992

	Year of vesting rights (1)	Years of service & pension payment age limit (2)	Years of service & reduced pension payment age limit (3)
Women without children or with adult children	2010	25/60	25/55
	2011	25/61	25/56
	2012	25/63	25/58
	2013	15/67	15/62
Women with underage children	2010	25/50	-
	2011	25/52	-
	2012	25/55	-
	2013	15/67	15/62

(1) : It is the year that 25 years of service are completed
(2) : Years of service and age limit required for full pension
(3) : Years of service and age limit required for reduced pension

NOTE: 300 service days correspond to 1 service year

A. According to the 2015 reform all age limits applicable, until the date of publication of law 4336/2015 are gradually increasing according to the tales below until 31.12.2021, in order to reach the statutory age limits. Already vested rights are not affected by this measure.

Statutory eligibility conditions are:

- At least 15 years of insurance and corresponding statutory retirement age of 67 years.
- At least 40 years of insurance and corresponding statutory retirement age of 62.
- Reduced pension with at least 15 years of insurance and corresponding statutory retirement age of 62 years. The penalty is 6% per year for each year of retirement earlier than 67.

Full Pension. Age limit : 67							
2015 B' semester		**2016**		**2017**		**2018**	
Age	**Legislated Age**	**Age**	**Legislated Age**	**Age**	**Legislated Age**	**Age**	**Legislated Age**
50	55.0	50	56.7	50	58.4	50	60.1
51	55.0	51	56.7	51	58.4	51	60.1
52	55.0	52	56.7	52	58.4	52	60.1
53	56.5	53	58.0	53	59.5	53	61.0
54	56.5	54	58.0	54	59.5	54	61.0
55	56.5	55	58.0	55	59.5	55	61.0
56	57.4	56	58.8	56	60.1	56	61.5
57	58.3	57	59.5	57	60.8	57	62.0
58	59.1	58	60.3	58	61.4	58	62.5
59	60.0	59	61.0	59	62.0	59	63.0
60	60.9	60	61.8	60	62.6	60	63.5
61	61.8	61	62.5	61	63.3	61	64.0
62	62.6	62	63.3	62	63.9	62	64.5
63	63.5	63	64.0	63	64.5	63	65.0
64	64.4	64	64.8	64	65.1	64	65.5
65	65.3	65	65.5	65	65.8	65	66.0
66	66.1	66	66.3	66	66.4	66	66.5
67	67.0	67	67.0	67	67.0	67	67.0

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2019		2020		2021		2022	
Age	Legislated Age	Age	Legislated Age	Age	Legislated Age	Age	Legislated Age
50	61.9	50	63.6	50	65.3	50	67.0
51	61.9	51	63.6	51	65.3	51	67.0
52	61.9	52	63.6	52	65.3	52	67.0
53	62.5	53	64.0	53	65.5	53	67.0
54	62.5	54	64.0	54	65.5	54	67.0
55	62.5	55	64.0	55	65.5	55	67.0
56	62.9	56	64.3	56	65.6	56	67.0
57	63.3	57	64.5	57	65.8	57	67.0
58	63.6	58	64.8	58	65.9	58	67.0
59	64.0	59	65.0	59	66.0	59	67.0
60	64.4	60	65.3	60	66.1	60	67.0
61	64.8	61	65.5	61	66.3	61	67.0
62	65.1	62	65.8	62	66.4	62	67.0
63	65.5	63	66.0	63	66.5	63	67.0
64	65.9	64	66.3	64	66.6	64	67.0
65	66.3	65	66.5	65	66.8	65	67.0
66	66.6	66	66.8	66	66.9	66	67.0
67	67.0	67	67.0	67	67.0	67	67.0

Full Pension.
Age limit : 62

2015 B' semester		2016		2017		2018	
Age	Legislated Age	Age	Legislated Age	Age	Legislated Age	Age	Legislated Age
50	55.0	50	56.0	50	57.0	50	58.0
51	55.0	51	56.0	51	57.0	51	58.0
52	55.0	52	56.0	52	57.0	52	58.0
53	55.9	53	56.8	53	57.6	53	58.5
54	55.9	54	56.8	54	57.6	54	58.5
55	55.9	55	56.8	55	57.6	55	58.5
56	56.8	56	57.5	56	58.3	56	59.0
57	57.6	57	58.3	57	58.9	57	59.5
58	58.5	58	59.0	58	59.5	58	60.0
59	59.4	59	59.8	59	60.1	59	60.5
60	60.3	60	60.5	60	60.8	60	61.0
61	61.1	61	61.3	61	61.4	61	61.5
62	62.0	62	62.0	62	62.0	62	62.0

2019		2020		2021		2022	
age	Legislated age	age	Legislated age	age	Legislated age	age	Legislated age
50	59.0	50	60.0	50	61.0	50	62.0
51	59.0	51	60.0	51	61.0	51	62.0
52	59.0	52	60.0	52	61.0	52	62.0
53	59.4	53	60.3	53	61.1	53	62.0
54	59.4	54	60.3	54	61.1	54	62.0
55	59.4	55	60.3	55	61.1	55	62.0
56	59.8	56	60.5	56	61.3	56	62.0
57	60.1	57	60.8	57	61.4	57	62.0
58	60.5	58	61.0	58	61.5	58	62.0
59	60.9	59	61.3	59	61.6	59	62.0
60	61.3	60	61.5	60	61.8	60	62.0
61	61.6	61	61.8	61	61.9	61	62.0
62	62.0	62	62.0	62	62.0	62	62.0

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Country Fiche EL –March 2021

Annex II

Net Pensions Expenditure

Pensions are subject to:
  i. Pensioner's solidarity contribution
  ii. Social security contribution for health (6%)
  iii. Taxes

Details on pensioner's solidarity contribution and taxes and given below.

Pensioner's solidarity contribution for main and auxiliary pensions

I. Pensioner's solidarity contribution for main pensions is calculated under the following rules:

- For main pension amounts between 1400.01 € and 1700.0€, 3% rate. The remaining pension amount cannot fall below 1400 €
- For pension amounts between 1700.01 € and 2000.0€, rate 6%
- For pension amounts between 2000.01 € and 2300.0€, rate 7%
- For pension amounts between 2300.01 € and 2600.0€, rate 9%
- For pension amounts between 2600.01 € and 2900.0€, rate 10%
- For pension amounts between 2900.01 € and 3200.0€, rate 12%
- For pension amounts between 3200.01 € and 3500.0€, rate 13%
- For pension amounts over 3500.01 €, rate 14%

II. For auxiliary pensions different rates/bands apply:

- For auxiliary pension amounts between 300.01 € and 350.00 €, rate 3%. The remaining pension amount cannot fall below300€.
- For pension amounts between 350.01 € and 400.00 €, rate 4%
- For pension amounts between 400.01 € and 450.00 €, rate 5%
- For pension amounts between 450.01 € and 500.00 €, rate6%
- For pension amounts between 500.01 € and 550.00 €, rate 7%
- For pension amounts between 550.01 € and 600.00 €, rate 8%
- For pension amounts between 600.01 € and 650.00 €, rate 9%
- For pension amounts over 650.01 €, rate 10%.

Health Contribution

To what is left after the calculation of pensioner's solidarity contribution a 6% contribution for health is calculated both on main and auxiliary pensions.

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Tax Schedule, Tax Credit and Solidarity Contribution

The Greek Tax Schedule scheme is progressive and applies a withholding tax on wages and pensions, comprised of four bands of taxable income. The starting band covers incomes ranging from 0 to 10,000 Euros and every successive band consists of 10,000 euros increments, up until the band for incomes of 40,000 euros and above. The respective tax rates for each band, applied in a marginal way, are 9, 22, 28, 36, and 44 percent.

Pensioners, as well as salaried individuals and farmers are eligible to a tax credit varying with the number of children. According to the scheme, it amounts to 777 euros for the case of no children, 810 in the case of one child, 900 for two children and plus 220 for every additional child. After income threshold of €12,000, the tax credit is reduced by €20 for every €1,000 in income scale.

When all types on personal incomes are pooled, another PIT tax named "Solidarity Contribution" is imposed on the total amount. The bands are [0 – 12,000], [12,001 – 20,000], [20,001 – 30,000], [30,001 – 40,000], [40,001 – 65,000], [65,001 – 220,000] and [220,001 and above] with respective rates applied in a marginal way [0, 2.2, 5, 6.5, 7.5, 9, 10] percent.

Annex II Table 1. Income Tax

	Tax rates and Income Bands	
Tax Schedule for pooled Wage – Pensions	9.00%	10,000
	22.00%	20,000
	28.00%	30,000
	36.00%	40,000
	44.00%	> 40,000

Annex II Table 2. Tax Credit

No. of Children	0	1	2	≥3
Personal Tax Credit	777	810	900	+220 each additional child

Annex II Table 3. Solidarity Contribution

	Tax rates and Income Bands	
Tax Schedule for Solidarity Contribution	0	12,000
	2.20%	20,000
	5.00%	30,000
	6.50%	40,000
	7.50%	65,000
	9.00%	220,000
	10.00%	>220,000

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