2024
Ageing Report

MALTA - COUNTRY FICHE

Economic Policy Department
Ministry for Finance and Employment

November 2023

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Introduction

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

This fiche was prepared by the Economic Policy Department of the Ministry for Finance and Employment. Pension projections presented in this fiche incorporate the macroeconomic assumptions and methodologies agreed within the *Ageing Working Group of the Economic Policy Committee*. The projections have been peer reviewed by the other Member States and the European Commission within the *Ageing Working Group*. The projections were finalised in the autumn of 2023 and represent the situation of the pension system on 01/12/2023.

Section 1 provides a general overview of the pension system in Malta. Section 2 describes the demographic and labour market assumptions underlying the pension expenditure projections presented in Section 3, which also discusses the sensitivity scenarios around the baseline. Finally, Section 4 gives an overview of the model used to produce the pension projections, with complementary data provided in the methodological annex[1].

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[1] The assistance of the World Bank and the Ministry for Social Policy and Children's rights is acknowledged.

CHAPTER 1
Overview of the pension system[2]

1.1 Description of the pension system

The current pension scheme in Malta is based on the Social Security Act, Chapter 318 of the Laws of Malta. The Act provides for two basic schemes, the Contributory Scheme, and the Non-Contributory Scheme. In the Contributory Scheme, the basic requirement for entitlement is that specific contribution conditions are satisfied. In the Non-Contributory Scheme, the basic requirement is that the conditions of the means test are satisfied.

The Non-Contributory Scheme has made possible the allocation of more than one benefit at the same time, thus providing simultaneous coverage in those cases where more than one contingency is present. Through the process of targeting, this scheme has succeeded in the provision of additional assistance to certain specific categories such as, in the case of persons with a disability, in the case of single parents, as well as in the case of the family as a single unit.

The Contributory Scheme is universal since it practically covers all strata of the Maltese society. Within this scheme, employees, self-occupied and self-employed persons acquire social insurance rights through the payment of a weekly contribution as laid down by the Social Security Act. A description of the contributory and non-contributory benefits can be found in Annex III.

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[2] For an exhaustive description of pension schemes, please consult the PENSREF database.

Contributions are payable by all gainfully occupied persons between the age of 16 and their pension age.[3] The scheme allows for several types of contributions to extend coverage to all types of persons in employment. Employed persons pay Class One contributions, while the self-occupied pay Class Two contributions. Class One contributions imply that any person employed under a contract of service in Malta is in insurable employment and subject to the payment of these contributions. For each person, a tripartite contribution is payable: the employed person, the employer and the State each pay 10 per cent of the basic salary of the employee; with the contribution capped to the Maximum Pensionable Income as described in Section 1.1.4. The rate of Class Two contributions is shared by the State and self-occupied persons, whereby the self-occupied pays 15 per cent and the State pays 7.5 per cent of their annual income that is subject to the same ceiling that applies for employees.

The following categories of persons are statutorily exempt from the payment of a Class Two contribution:

a) Persons in receipt of full-time education or training.

b) Non-gainfully occupied married persons.

c) Persons in receipt of a pension in respect of widowhood, invalidity or retirement or persons in receipt of a Parent's Pension. Persons in receipt of non-contributory Social Assistance or a Non-Contributory pension.

d) Persons in receipt of non-contributory Social Assistance or a Non-Contributory pension.

The projections take into account the legislated pension reforms, including measures to be phased in gradually. What follows is an outline of the main pension parameters

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[3] Contributions are also payable by pensioners in gainful employment that retired after 5 of January 2008. Pensioners who retired earlier than this date are allowed to work without prejudicing their pension rights in the ages of 61 years to 65 years without paying social security contributions, subject to a ceiling on earnings equivalent to the national minimum wage. For this group, ceiling on earnings is removed at age of 65 years and no further contributions are due.

of the contributory old-age pension also known as the two-thirds pension scheme. The House of Representatives formally adopted a series of parametric reforms in 2006 (Act No. XIX of 2006) and in 2016. Table 1 in Section 1.1.1 summarises the qualifying conditions for retiring, showing the statutory retirement age, earliest retirement age and the contributory period for full pension eligibility.

1.1.1 The definition of pension age

The 2006 reform included a gradual increase in the retirement age from 61 years for men and 60 years for women to 65 years by 2027. Pension age currently stands at 63 years. In the case of a person born during the calendar years 1952 to 1955, pension age shall be 62 years; for persons born during the period 1956 to 1958, pension age shall be 63 years; for persons born in the period 1959 to 1961, pension age shall be 64 years; and for persons born after 1962, pension age shall be 65 years.

The increase in pension age contributes to later retirement and, therefore, besides the macroeconomic effects, results into few new pensioners, lengthier years of service, and consequently raising the effective exit age.

Table 1
Qualifying Conditions for Retirement

			2022	2030	2040	2050	2060	2070
	Statutory retirement age - men		63	65	65	65	65	65
	Statutory retirement age - women		63	65	65	65	65	65
Qualifying condition for retiring **with** a full pension	Minimum requirements	Contributory period - men	35	40	41	41	41	41
		Retirement age - men	61	61	61	61	61	61
		Contributory period - women	35	40	41	41	41	41
		Retirement age - women	61	61	61	61	61	61
Qualifying condition for retirement **without** a full pension	Early retirement age - men		61	61	61	61	61	61
	Early retirement age - women		61	61	61	61	61	61
	Penalty in case of earliest retirement age							
	Bonus in case of late retirement							
	Minimum contributory period - men		10	10	10	10	10	10
	Minimum contributory period - women		10	10	10	10	10	10
	Minimum residence period - men							
	Minimum residence period - women							

Source: Based on the Social Security Act

1.1.2 Retirement before statutory pension age

The reforms legislated in 2016, as described below, introduced a stricter rule for persons born after 1968 to access the early exit option. This is intended to lengthen careers and defer early retirement. A person who has attained the age of 61 years but has not yet attained pension age, can after attaining 61 years of age claim a pension in respect of retirement if such person is no longer gainfully occupied. The claimant must have a total of:

i) 1,820 (or 35 years) paid or credited contributions in the case of a person born between 1/1/1952 and 31/12/1961,

ii) 2,080 (or 40 years) paid or credited contributions in the case of a person born between 1/1/1962 and 31/12/1968,

iii) 2,132 (or 41 years) contributions for a person born on or after 1/1/1969

    a. persons born in 1969 must have 31 years paid contributions;

    b. persons born in 1970 must have 32 years paid contributions;

    c. persons born in 1971 must have 33 years paid contributions;

    d. persons born in 1972 must have 34 years paid contributions;

    e. persons born in 1973 or later must have 35 years paid contributions.

1.1.3 Pensionable Income

In case of employees:[4]

i) born on or before the 31st December 1951, the pension is determined based on the yearly average of the basic wage during the best 3 years of the last 10 years;

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[4] The basic wage refers to the gross wage or salary that is payable to an employed person by or on behalf of his employer excluding any remuneration for overtime, any form of bonus, any extra allowances, any remuneration in-kind and commissions.

ii) born during the years 1952 to 1955, the pension is determined based on the yearly average of the basic wage during the best 3 years of the last 11 years;

iii) born during the years 1956 to 1958, the pension is determined based on the yearly average of the basic wage during the best 3 years of the last 12 years;

iv) born during the years 1959 to 1961, the pension is determined based on the yearly average of the basic wage during the best 3 years of the last 13 years.

In case of self-employed/self-occupied persons:

i) born on or before the 31st December 1951, the pension is determined based on the yearly average of his net income on which the required contribution has been paid during the last 10 years;

ii) born during the years 1952 to 1955, the pension is determined based on the yearly average of his net income on which the required contribution has been paid during the best 10 consecutive years of the last 11 years;

iii) born during the years 1956 to 1958, the pension is determined based on the yearly average of his net income on which the required contribution has been paid during the best 10 consecutive years of the last 12 years;

iv) born during the years 1959 to 1961, the pension is determined based on the yearly average of his net income on which the required contribution has been paid during the best 10 consecutive years of the last 13 years.

By virtue of the 2006 reform, in the case of a person born on or after the 1 January 1962, the pension shall be determined by taking the yearly average of the basic wage/salary/ net income/net earnings as the case may be, during the best 10 calendar years within the last 40 years immediately preceding his retirement or invalidity. In determining pensionable income, past wages and incomes are updated with the cost-of-living adjustment (COLA) granted with respect to those years.[5]

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[5] COLA is a flat rate increase in wages and pensions (the latter granted in full as from Budget for 2008) that reflects the indexation of the basic wage to the average Retail Price Index inflation of the last 12 months to September of that year.

1.1.4 The Maximum Pensionable Income

Prior to the 2006 reform, the maximum pensionable income was fixed by law and was revised in recent years in line with the COLA. Following the reform, in the case of a person born on or before the 31 December 1961, whose retirement occurs on or after the 1 January 2007, the basic wage/salary/net income/net earnings and the resultant pensionable income, shall not exceed €16,207.78 increased by such sum as the Government may award as a cost-of-living increase. The following provisions stand: (i) for a person born on or before the 31 December 1951, the resultant pensionable income including any such cost-of-living increase shall not exceed the sum of €17,470.30; (ii) in the case of a person born during calendar years 1952 to 1961, the resultant pensionable income including any such cost of living increase shall not exceed the sum of €20,964.36.[6]

In the case of a person born on or after the 1 January 1962 whose retirement occurs on or after the 1 January 2007, the resultant pensionable income shall not exceed:

i) €16,207.78 increased by such sum that the Government awards for the cost of living, in respect of the years 2007 to 2010;

ii) €16,207.78 increased on the 1 January of each year between 2011 and 2013 by one third of the difference between the sum referred to above and €20,964.36;

iii) €20,964.36 increased annually by 70 per cent of the percentage increase in the national average wage for the previous calendar year, plus 30 per cent of the inflation rate for that same year. This has applied as from the 1 January 2014.

This means that while pension expenditure for persons born before 1962 is contained by indexing the pension ceiling with the COLA, the more generous indexation for persons born after 1/1/1962 contributes to higher revenue from social contributions but also entitling pensioners to more a generous maximum pension, even if not fully indexed with average wage growth.

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[6] Going forward, this will be amended as highlighted in Section 1.2.

1.1.5 Pension formula

Following the reform in 1978, the main type of retirement regime is the Two-thirds pension, an earnings-related pension payable to persons who have retired after January 1979. This scheme basically provides for a pension equivalent to two-thirds of the insured person's pensionable income, subject to the thresholds. The pension formula for the two thirds pension is as follows:

Contribution Average*2/3*Pensionable Income-Service Pension

where the Contribution Average is determined as the average of two averages with the first average being the average weekly contribution over the last 10 years prior to retirement (Avg_Cont_{10}) and second being the average weekly contribution paid during a maximum of 25 years falling prior the last ten years before the retirement of an insured person (Avg_Cont_{25}):

Prior to the 2006 reform, the contribution average consisted of Avg_Cont_{10} and Avg_Cont_{20}, with the latter being the average weekly contribution paid during a maximum of 20 years falling prior the last ten years before the retirement of an insured person.

The Social Security Act defines the 'service pension' as a pension or any allowance awarded to a person at any time before and after 1st of April 1978 that is payable by or on behalf of their employer with respect to past services in Malta or abroad. Over the years there were a number of changes made to the definition of service pension, however the principle introduced in 1978 remained in place as in the case where a person is in receipt of a service pension that exceeds two-thirds of his or her pensionable income then he or she is entitled to a flat-rate Retirement Pension (classified under 'top-ups'). On the other hand, if the person's service pension is less than two-thirds of pensionable income then the person is awarded an Increased Retirement Pension (classified under '2/3 retirement pension') that is equivalent to the difference between the two-thirds of pensionable income and the service pension.

Therefore, prior to the enactment of the reform, the full rate of the Two-Thirds Pension was equal to 2/3 of pensionable income for a claimant who has paid or been credited with a yearly average of 50 contributions over a period of thirty-years. Under the reform law, the yearly average of contributions for the purposes of awarding a Two-Thirds Pension shall be:

i) 40 years in the case of a person born between the 1st January 1962 and the 31st December 1968, or

ii) 41 years in the case of a person born on or after the 1st January 1969.

1.1.6 The Guaranteed National Minimum Pension (GNMP)

A person born on or before the 31st December 1961 who is not entitled to a Service Pension shall be entitled to a contributory National Minimum Pension, which is equivalent to:

i) in the case of a married person whose spouse is not in receipt of a social security pension, four-fifths, and

ii) in the case of any other person, two-thirds of the national minimum wage.

Following the enactment of the 2006 reform law, a person born on or after the 1st January 1962 who reaches pensionable age and who is not entitled to a Service Pension shall be entitled to a Guaranteed National Minimum Pension (GNMP) which shall be payable at a rate that is not less than 60 per cent of the National Median Income. This represents a higher rate than that awarded to pensioners at present. The exact rate shall be determined by the Minister in charge of the Department of Social Security with the concurrence of the Minister responsible for Finance. In any case, the rate of GNMP cannot be less than that declared for the preceding year.

The above amendment still necessitated the determination of an appropriate benchmark for the "National Median Income". In this light, as part of the reforms in 2016, the Government established the value of the Guaranteed Minimum Level of Pension. With

effect from the 1st January 2016, a person not in receipt of a Service Pension shall be entitled to the Guaranteed Minimum Level of Pension, which in 2016 stood at €140.00 per week, where the yearly contribution average of paid or credited contributions is not less than 50. Such minimum level is increased annually by COLA.

1.1.7 Crediting of contributions

Crediting of contributions is allowed during certain contingencies, mainly:

i) A widow, where such widow is not gainfully occupied for any period during which he/she does not remarry.

ii) An ex-member of the Malta Police Force or the Armed Forces of Malta who retires on a service pension on completion of the full service prior to reaching pension age, for any period during which he or she is not gainfully occupied and has not yet reached pension age.

iii) A person who goes abroad as a volunteer worker on projects in the areas of human welfare and development and environmental protection for any period he or she is performing such volunteer work and has not yet reached pension age subject to statutory defined criteria.

iv) A person who is entitled to sickness, injury, or unemployment benefits or to an Invalidity Pension.

Following the implementation of the 2006 pension reform, the categories of persons to whom credit of contributions is allowed has been extended to include persons born on or after the 1 January 1962, who have the legal care and custody of a child who is less than six years old, or ten years old in the case of a child suffering from a serious disability.

Prior to the 2016 reform the credits for child rearing could be claimed for a maximum period of 2 years in the case of a parent who has stopped working to take care of his/her child for parents born on or after 1st January 1962.

Under the reform law (Social Security Act, Article 16): the credits for child rearing are as follows:

Number of Children	First 3 children	Fourth child onwards*
Persons born between 1/1/1952 and 31/12/1961	Shall not exceed 312 credited contributions (6 years) in any period of 6 years. Thus, 104 credited contributions (2 years) per child.	52 credited contributions (1 year) per child
Persons born on 1/1/1962 or after	Shall not exceed 624 credited contributions (12 years) in any period of 12 years. Thus, 208 (4 years) credited contributions per child.	104 credited contributions (2 years) per child

* Shall only be awarded insofar as, prior to the pension age, such parent, resumes gainful occupation for a minimum period equivalent to that period for which such number of credits would have been awarded for the fourth child onwards.

This means that following the 2016 reform, child crediting is subject to capping equivalent to 12 years for persons born on or after 1st January 1962 and at 6 years for persons born between 1st January 1952 and 31st December 1961.

In 2016 there were also amendments in the Act with the introduction of credits for human capital development and lifelong learning, as outlined in the schedule below.

Level of Study*	Persons born between 1/1/1952 and 31/12/1961	Persons born on 1/1/1962 or after
Lifelong Learning	One month for each year	One month for each year
Level 5	Two months for each year	Two months for each year
Level 6	Three months for each year	Three months for each year
Level 7	Three months for each year	Six months for each year
Level 8	Six months for each year	One year for each year

* in accordance with the Mutual Recognition of Qualification Act (Cap. 451).

1.1.8 Pension Indexation

Persons born before the 1st January 1962 (including present retirees) have their pension updated based on the COLA as well as any increases in wages presently awarded through collective bargaining to the occupation or salary scale previously occupied by the person

in retirement. Following the 2006 pension reform, persons born after the 1st January 1962 will have their pension updated annually by such a sum that corresponds to 70 per cent of the increase in the national average wage and 30 per cent of the inflation rate as published by the National Statistics Office. In November 2023, the Government announced the removal of the different indexation rules applying to those pensioners born before 1962 and those born after. As from 2023, both groups will share the same indexation rule corresponding to 70-30 rule previously only applicable to the post-1962 cohort, which is more generous than the indexation previously applied to the pre-62 cohort.[7]

1.1.9 Incentivise later retirement

In 2016 Government introduced an incentive mechanism (Legal Notice LN289/16) intended to incentivise later retirement and lengthening working lives. The scheme was initially open to workers in the private sector but was later extended for public sector employees in 2020.

Those employees who would have accumulated enough social security contributions to retire will get a top up on their pension for every additional year they stay in employment until they reach 65 years of age, with the scale increasing for each additional year. Following the increase in the rates as announced in the Budget 2024, those who for instance are eligible to retire at 61 with full contributions paid but choose to continue working until 62 years will receive an increase of 6.5 per cent in their pension. A person who works until 63 years would receive an increase of 13.5 per cent. A person deferring retirement by 4 years and 5 years, to retire at 64 and 65 respectively, would receive an increase of 21 per cent and 29 per cent, respectively. In addition, another amendment was affected to Article 64A whereby persons born on or after 1 January 1969, such as to access the early exit option, require 35 years of paid contributions with a maximum of 6 years of credits. Both measures are intended to lengthen careers and deter early retirement.

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[7] Given that the announcement was made late in 2023, this change in indexation applicable to the pre-62 cohort is not included in the projections.

The two measures, i.e. the incentives to encourage later retirement and the linking of the contributory period to the period spent in retirement, are expected to contribute to the strengthening of the long-term sustainability of public finances. In addition, in 2022, in its strive to encourage individuals to continue working post-retirement, the Government announced that over a period of five years starting from the aforementioned year, pension income will gradually no longer be considered as part of the taxable income. In 2022, 20 per cent of income deriving from pensions for those in work was excluded from taxation, with 40 per cent of income from pensions excluded in 2023. This is in the context of all pensionable income becoming tax exempt over a 5-year period for those in work.

In September 2023, a new scheme was launched to incentivise officers in disciplined forces, including police, army, firefighters, and prison guards, who can retire after 25 years of service to postpone their retirement. If an officer opts to defer retirement by 4 years and remain in service for 29 years instead, their pension will be topped up by 23 per cent. Those officers who choose to remain in employment even longer, will receive a lump sum amounting to six months' worth of their basic salary for every additional year, over the 29 years they remain in service, capped at a maximum of four years[8].

Furthermore, the government is also introducing measures that encourage pensioners to remain active and continue working beyond retirement age. In the Budget for 2023, the Government announced that over a period of five years starting from 2022, pension income will gradually no longer be considered as part of the taxable income. In 2022, 20 per cent of income deriving from pensions for those in work was excluded from taxation, with 40 per cent of income from pensions excluded in 2023. This is in the context of all pensionable income becoming tax exempt over a 5-year period for those in work.

At the same time, the adequacy element was also safeguarded through the increase in the minimum pension, better crediting for child rearing (which is designed to mitigate against gaps in the contributory periods of particularly women arising due to family

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[8] Given the announcement in late 2023, this is not modelled in the projections.

responsibilities and as policy instrument contributing positively toward fertility increases) and the introduction of credits for human capital development and lifelong learning, alongside other measures.

1.1.10 Regulating the award of the invalidity pensions

Apart from the pension reform described above, the Maltese Government also introduced changes to the regime regulating the award of the invalidity pensions and the review procedure. The new regime was implemented over the course of 2007 after the necessary legislative and organisational changes were instituted.

These measures introduced a new medical review process for this benefit that include:

- Change in the application format – to include more medical data and further responsibility on the part of the claimant to prove his case. No invalidity pension is issued for life and each case is subject to regular reviews. All cases are reviewed every three to four years – where updated medical evidence is requested from the beneficiary.

- Change in the current medical panel system – under the new system, the Department of Social Security will be recruiting medical practitioners through an Expression of Interest to act as a Medical Review Team. The Team's main function is to advise the Director (Social Security) on the medical aspects of Invalidity claims.

- Establish specific medical criteria for the award of benefits – this has been achieved by establishing "Impairment Tables" that provide the basic guidelines under which the Medical Review Team would decide on work- related impairment for Invalidity pension.

- Establish an independent systems audit – establish a medical audit for benefit claims awarded and rejected on medical grounds, in order to establish whether such benefits have been awarded correctly.

Changes were also made to minimum period of sickness prior to payment of invalidity pension benefit which is now set at six months. However, this waiting period does not apply in the case of sudden severe or terminally ill persons.

1.1.11 Other Reforms

Apart from the pension reforms described in in the previous subsections, the Maltese Government also introduced changes to the regime with the aim to improve adequacy as well as sustainability of pensions.

Amendments for those who were not entitled to a pension yet

In addition, the projections also incorporate amendments introduced in the Budgets for 2022 and 2023 for people who paid contributions but were not eligible for a pension, as announced in 2021 and 2022. Specifically, persons born before 1962 and who did not qualify for a pension, started having any contributions paid before 19 years of age being taken into account, and if the required minimum is reached, the person would then qualify for a reduced minimum pension. In addition, in 2022, the Government announced that persons who paid at least ten years' contributions but were not yet entitled to a pension as they did not pay any contributions from January 1979 onwards, will also become eligible for the equivalent of the minimum two-thirds pension rate amounting to about €50 weekly.

Linking contributory period with life expectancy

The Minister in charge of the Department of Social Security will, within intervals not exceeding five years, prepare a report, to be laid on the Table of the House of Representatives, reviewing the workings regarding the Retirement Pensions together with recommendations for achieving further adequacy, sustainability and social solidarity in such manner that a stable proportion is kept between the contribution periods and the periods of time during which it is expected that the pension will be paid.

The report shall be discussed in the Social Affairs Committee or any other committee substituting the same. The Committee deals with all matters of social policy which may be referred to it by the House or by the Standing Committee on House Business. The report tabled by the Minister would serve to operationalise the link outlined in Article 64B and would be a clear statement of Government's policy. The report is necessary to measure the gains in life expectancy, as measured in the latest demographic projections, and thus, outline any necessary adjustments to the contributory period (as outlined in Article 53), with a view to keep a stable proportion between the contribution periods and life expectancy at retirement. The application of the principle of achieving a fair balance between the contributory period and the period spent in retirement across generations ensures that the contribution period for a full pension is now based on a stable ratio between years contributing and years drawing a pension.

The last report was submitted in 2020, followed by a consultation process with stakeholders. The Malta Pension Action Plan for 2021-2027 was published in November 2022, and includes measures that have been implemented since 2021 or announced to be implemented till 2027. Indeed, it is planned that in order to continue ensuring sustainability and in order to retain the relationship of a fair balance between contributions and benefits across generations, (a) the target ratio is to be set at 1.97; and (b) contributory period is to be increased to 42 years for those born in 1976 or after[9].

Third Pillar and Voluntary Occupational Pensions

Government policy is also focused on diversifying retirement income and reducing dependency on state pensions. In 2015, the Government launched the Voluntary Third Pillar Pension Scheme, referred to as the Personal Retirement Scheme (LN 468 of 2014). This scheme is supplemented by another scheme, namely the Individual Savings Account (LN 469 of 2014). The qualifying personal retirement scheme must be registered under the Special Funds Regulation Act. It is estimated that in 2022, 17,878 members (i.e. taxpayers) were enrolled in a personal retirement scheme, equivalent to 6.6 per cent of total employment in the 20-64 year age bracket.

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[9] Not included in projections as details on implementation start have not yet been announced.

In the Budget for 2017, the Government announced a measure intended to incentivise the take-up of voluntary occupational pensions. The Voluntary Occupational Pension Scheme Rules, which was introduced by virtue of Legal Notice 228 of 2017, provides tax credits to both employees and employers (including self-occupied persons) with the aim to incentivise an occupational pension system in Malta. The occupational retirement scheme is regulated by the Retirement Pensions Act or a long-term contract of insurance satisfying certain prescribed criteria. Estimates show that in 2022, there were a total of 2,826 members in Voluntary Occupational Pension Scheme.

Furthermore, in November 2023, the Government announced that it will be introducing a mandatory automatic enrollment in a private pension scheme, with voluntary withdrawal. Talks with social partners are to start in 2024.

Financial Literacy

Government's financial capability platform is branded as ĠEMMA – with responsibility resting with the Ministry for Social Policy and Children's Rights. Initiatives are three tiered. The first initiative concerns the provision of independent trusted advice. The portal is updated twice a week encompassing over 70 educational videos and , over 20 calculators. Furthermore, eBooks are periodically launched and a Webinar on financial capability matters is held monthly. The second initiative is education wherein projects include interactive play as a teaching tool, poster competitions, fun financial education ebooks for primary school competition, while financial education capability gamification is to be launched, amongst others. A third tier focusing on vulnerable groups has been initiated. The primary target group are people with mental health problems. A programme drawn up between Malta HSBC Foundation, Mental Health Services Agency and ĠEMMA has been launched. Other strategic partnerships established include the University of Malta, the Central Bank of Malta, Bank of Valletta, eSkills Malta Foundation. In 2021 the Financial Capability Strategy 2021-2025 was published.

Ministerial Powers and Responsibilities

The Minister responsible for Social Policy in concurrence with the Minister for Finance has the power to make and vary any regulations requiring persons who have not reached pension age and their employers as the case may be, to make contributions into Mandatory Second Pension Funds. Such regulations may provide for the rate of contribution payable, method and frequency of payment. Second Pension funds shall be governed by the Special Funds (Regulation) Act (Cap. 450). The Minister responsible for Social Policy may, with the concurrence of the Minister responsible for Finance, provide for exemptions, deductions against chargeable income, or relief from income tax in respect of contributions made by any person to a Third Pension in line with the provisions of the Special Funds (Regulation) Act or the Retirement Pensions Act.

1.2 Recent reforms of the pension system included in the projections

The modelling work assumes a "no policy change" scenario and reflects as strictly as possible the pension rules, both current as well as those applying in future following the reform acts. The projections include the amendments introduced from 2022 and 2023 for those individuals who were not yet in receipt of a pension, described in more detail in Section 1.1.11.

Given their announcement late in 2023, the change in indexation for the individuals born prior to 1962 as well as the increase in retirement mechanism for uniformed members are not included in these projections. With regards to the latter measure, the impact on the total expenditure to GDP is expected to be marginal, given the relatively small share of the 'other pensions' component relative to the other pension groups. With regards to the change in indexation rule to persons born before 1962, this implies a more generous indexation for this age cohort. However, specific details on this change at time of writing are still unknown. Nevertheless, the increased expenditure relative to the baseline projections resulting from this measure will only impact the short to medium term given the age of the pre-62 cohort.

The projections also exclude the impact of the linking of the contributory period to life expectancy as the AWG methodology is based on current legislation. The Maltese Government believes that the linking of the contributory period to life expectancy remains an important lynchpin in its strategy to ensure sustainable pensions and consequently considers the projections presented here as conservative in terms of their potential to generate lower increases in pensions expenditure over the long-term. Indeed, as highlighted previously, the Government intends to continue enhancing this link through the planned measures included in the Malta Pension Action Plan 2021-2027.

CHAPTER 2

Overview of the demographic and labour force projections[10]

In projecting pensions, the demographic assumptions are the latest population projections by Eurostat (2022), EUROPOP2023 and the changes in the labour force as projected by the Cohort Simulation Model, while the macroeconomic assumptions are the commonly agreed methodology in the Economic Policy Committee.

2.1 Demographic projections

Population projections indicate that total population in Malta is projected to rise from 527,806 in 2022 to around 810,981 in 2070. As shown in Figure 1, the age structure is projected to change significantly. While the share of the very young people (aged 0-14 years) in the total population is projected to decrease from a 13.4 per cent share in 2022 to 11.1 per cent share in 2070, the share of the people aged 65+ is projected to increase from 19.3 per cent to 33.6 per cent.

From an economic perspective, the most important change in demography concerns the working-age population (aged 20-64 years), which reflects the share of the population that will bear the financial 'burden' of the elderly. From a share of 63.2 per cent in 2022, this ratio is projected to subsequently fall to 51.5 per cent by 2070.

As indicated in Table 2, life expectancy at birth for men is assumed to rise by 6.1 years from 2022 to reach 87.0 years in 2070, whilst in the case of women it is expected to reach 90.8 years, an increase of 6.2 years over 2022. This implies that despite some

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

Figure 1
Age Structure: 2022 vs 2070
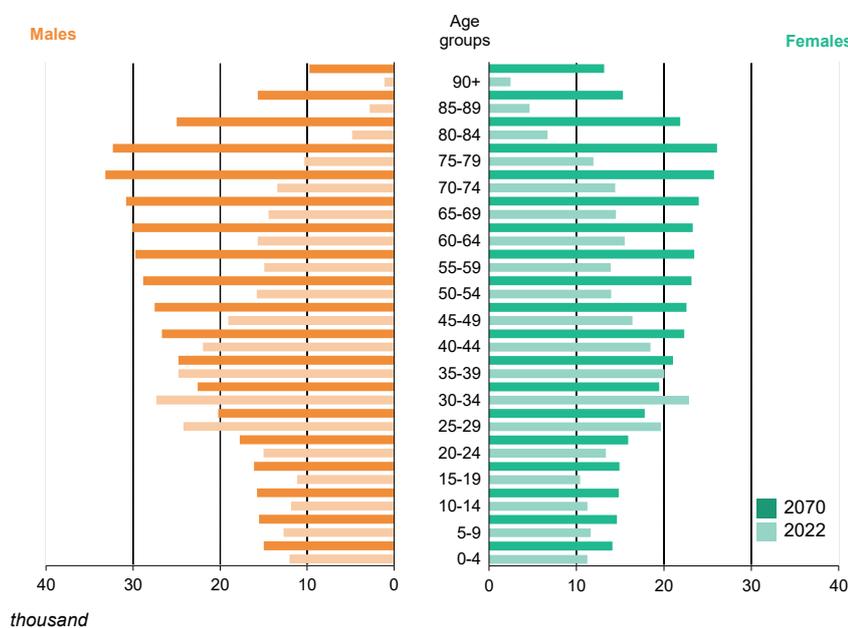
Source: Eurostat, European Commission

Table 2
Main Demographic Variables

	2022	2030	2040	2050	2060	2070	peak value	peak year	change 2022-2070
Population (thousand)	527	609	689	747	790	811	811	2070	284
Population growth rate	1.6%	1.6%	1.0%	0.7%	0.5%	0.1%	2.1%	2023	-1.5%
Old-age dependency ratio (pop 65+ / pop 20-64)	30.5	31.0	30.5	37.0	52.6	65.4	65.4	2070	34.9
Old-age dependency ratio (pop 75+ / pop 20-74)	11.5	13.7	14.6	15.0	20.1	30.0	30.0	2070	18.5
Ageing of the aged (pop 80+ / pop 65+)	22.2	30.7	35.3	30.5	29.5	36.9	36.9	2070	14.7
Men - Life expectancy at birth	80.9	81.9	83.4	84.7	85.9	87.0	87.0	2070	6.1
Women - Life expectancy at birth	84.6	85.6	87.1	88.5	89.7	90.8	90.8	2070	6.2
Men - Life expectancy at 65	19.5	20.3	21.3	22.2	23.1	24.0	24.0	2070	4.5
Women - Life expectancy at 65	22.5	23.4	24.4	25.3	26.3	27.1	27.1	2070	4.6
Men - Survivor rate at 65+	89.6	90.8	92.2	93.3	94.2	95.0	95.0	2070	5.4
Women - Survivor rate at 65+	93.3	93.7	94.8	95.6	96.2	96.8	96.8	2070	3.5
Men - Survivor rate at 80+	62.9	66.5	70.7	74.5	77.8	80.8	80.8	2070	17.8
Women - Survivor rate at 80+	75.6	78.4	81.6	84.4	86.7	88.7	88.7	2070	13.1
Net migration (thousand)	11.5	9.4	7.5	6.0	5.1	4.0	11.5	2022	-7.5
Net migration (% population previous year)	2.2%	1.6%	1.1%	0.8%	0.6%	0.5%	2.2%	2022	-1.7%

Source: Eurostat, European Commission

convergence, female life expectancy in 2070 is projected to remain 3.8 years higher than that of males. Meanwhile, life expectancy at 65 years for males and females is projected to increase by 4.5 and 4.6 years respectively over the whole period. The survivor rate for men aged over 65 years is projected to increase from 89.6 years in 2022 to 95 years in 2070, while that for women is projected to increase from 93.3 years in 2022 to 96.8 years in 2070. Following a similar upward trend, the survivor rate for men aged over 80 years, is projected to increase from 62.9 years in 2022 to 80.8 years in 2070, and that for women is projected to increase from 75.6 years in 2022 to 88.7 years in 2070.

Another important variable in the evolution of the demography is net migration. As shown in Table 2, net migration inflows are projected to decline from 11,456 in 2022 to 3,992 in 2070.

The dynamics of the ageing process could be better appreciated by analysing the developments in the relative share of the elderly to the working-age population. These dependency ratios relate the number of individuals that are likely to be "dependent" on the support of others for their daily living – youths and the elderly – to the number of those individuals who can provide such support. Key indicators of age dependency presented in Table 3 are the old-age-dependency ratio (calculated for both persons aged 65 years and more relative to the number of individuals aged 20-64 years and for persons aged 75 years or more relative to the number of individuals aged 20-74 years) and the ageing of the aged ratio. The old-age dependency ratio (65+ year bracket as a percentage of the 20–64-year bracket) is projected to increase consistently from 30.5 per cent in 2022 to 65.4 per cent in 2070, an increase of 34.9 percentage points. The old-age dependency ratio (75+ year bracket as a percentage of the 20-74 year bracket) is projected to increase by 18.5 percentage points from 11.5 per cent in 2022 to 30.0 per cent in 2070. Meanwhile, the ageing of the aged ratio, is projected to increase from 22.2 per cent in 2022 to 35.3 per cent in 2040, declining to 29.5 per cent by 2060 and increasing again to 36.9 per cent by 2070.

2.2 Labour force projections

Table 3 presents indicators related to the labour force projections for the age groups of 20-64 years, 20-74 years, 55-64 years and 65-74 years. The labour force participation rate for the 55-64 age bracket is projected to increase from 55.3 per cent in 2022 to 73.2 per cent in 2048, after which it will decline until 2061 before increasing again to reach 71.8 per cent in 2070. Meanwhile, the employment rate for workers aged 55-64 is projected to increase by 15.7 percentage points, from 54.3 per cent in 2022 to 70.0 per cent in 2070.

Table 3
Participation Rate, Employment Rate and Share of Workers

	2022	2030	2040	2050	2060	2070	peak value	peak year	change 2022-2070
Labour force participation rate 20-64	83.3	87.7	88.2	87.2	86.6	87.0	88.3	2035	3.8
Employment rate of workers aged 20-64	81.0	84.5	84.6	83.6	83.1	83.5	84.7	2035	2.5
Share of workers aged 20-64 in the labour force 20-64	97.3	96.3	95.9	95.9	95.9	96.0	97.3	2024	-1.3
Labour force participation rate 20-74	72.8	77.0	78.6	74.7	70.1	70.3	78.8	2037	-2.5
Employment rate of workers aged 20-74	70.8	74.2	75.3	71.7	67.3	67.4	75.6	2037	-3.4
Share of workers aged 20-74 in the labour force 20-74	97.3	96.3	95.9	95.9	95.9	95.9	97.4	2023	-1.3
Labour force participation rate 55-64	55.3	66.1	71.8	73.0	70.9	71.8	73.2	2048	16.5
Employment rate of workers aged 55-64	54.3	64.6	69.8	71.0	69.1	70.0	71.3	2048	15.7
Share of workers aged 55-64 in the labour force 55-64	98.3	97.6	97.3	97.3	97.5	97.5	98.4	2024	-0.8
Labour force participation rate 65-74	11.1	6.6	8.9	9.5	9.4	8.6	11.1	2022	-2.4
Employment rate of workers aged 65-74	10.9	6.4	8.5	9.0	8.9	8.3	10.9	2022	-2.6
Share of workers aged 65-74 in the labour force 65-74	98.2	96.3	95.6	95.5	95.4	95.6	98.5	2023	-2.6
Median age of the labour force	37.0	39.0	42.0	43.0	43.0	43.0	43.0	2042	6.0

Source: European Commission

Table 4 presents indicators on the labour market entry age, exit age and expected duration of life spent at retirement by gender. The average effective exit age for men is assumed to increase from 62.9 years in 2022 to 63.6 years in 2070, while that for women is assumed to increase from 63.1 years in 2022 to 63.6 years in 2070. The increase in both the average effective exit age and the contributory period incorporates the effect of increases in the statutory retirement age by 2027, lengthening of the contributory period by 2034, and the incentives to defer retirement. This should result in more people with full contribution postponing retirement by 1 to 4 years.

Table 4
Labour Market Exit Behaviour

TOTAL	2022	2030	2040	2050	2060	2070	peak value	peak year	change 2022-2070
Average effective retirement age*	63.5	63.2	63.4	63.8	64.2	64.4	64.4	2070	0.9
Average labour market exit age (CSM)**	63.0	63.5	63.6	63.6	63.6	63.6	63.6	2070	0.6
Contributory period	36.4	35.6	36.0	36.4	36.7	37.0	37.0	2070	0.6
Duration of retirement***	23.1	23.2	23.7	24.7	25.6	26.5	26.5	2070	3.4
Duration of retirement/contributory period	63%	65%	66%	68%	70%	72%	72%	2070	8%
Percentage of adult life spent in retirement****	35%	35%	35%	36%	37%	38%	38%	2070	2%
Early/late exit*****	1.0	1.7	2.0	1.8	1.4	2.0	2.2	2035	1.0

MEN	2022	2030	2040	2050	2060	2070	peak value	peak year	change 2022-2070
Average effective retirement age*	62.1								
Average labour market exit age (CSM)**	62.9	63.4	63.6	63.6	63.6	63.6	63.6	2048	0.7
Contributory period	40.0	40.3	40.4	40.7	40.9	41.1	41.1	2070	1.1
Duration of retirement***	22.9	22.0	22.1	23.1	24.0	24.9	24.9	2070	2.0
Duration of retirement/contributory period	57%	55%	55%	57%	59%	61%	61%	2070	3%
Percentage of adult life spent in retirement****	36%	34%	34%	35%	36%	36%	36%	2070	1%
Early/late exit*****	1.1	1.7	2.1	1.9	1.5	2.2	2.3	2036	1.1

WOMEN	2022	2030	2040	2050	2060	2070	peak value	peak year	change 2022-2070
Average effective retirement age*	65.3								
Average labour market exit age (CSM)**	63.1	63.6	63.6	63.6	63.6	63.6	63.6	2046	0.5
Contributory period	27.0	28.4	29.7	30.9	32.2	33.4	33.4	2070	6.4
Duration of retirement***	23.3	24.3	25.3	26.3	27.2	28.1	28.1	2070	4.8
Duration of retirement/contributory period	86%	85%	85%	85%	85%	84%	90%	2023	-2%
Percentage of adult life spent in retirement****	35%	36%	37%	38%	38%	39%	39%	2070	4%
Early/late exit*****	1.0	1.7	1.9	1.8	1.4	1.9	2.1	2035	0.9

* The 'average effective retirement age' is the age at which people start receiving a pension benefit (old-age, early or disability). It is calculated on the basis of the administrative data on new pensioners for 2022, showing projected data for the other years for the total.

** 'Average labour market exit age (Cohort Simulation Model)' refers to 2023 instead of 2022.

*** 'Duration of retirement' is the remaining life expectancy at the average labour market exit age.

**** The 'percentage of adult life spent in retirement' is calculated as the ratio between the duration of retirement and the life expectancy minus 20 years.

***** 'Early/late exit' is the ratio between those who exit the labour market before reaching the statutory retirement age and those who exit at or beyond the statutory retirement age. For 2022, the value refers to 2023.

Source: European Commission

CHAPTER 3
Pension projection results

The pension projection exercise covers contributory and non-contributory old-age pension paid under the social security scheme. The coverage of pension schemes also includes the expenditure on non-contributory old-age pension together with the share paid on the contributory and non-contributory bonus payment. At present, private pensions play a minor role in pension provision for old-aged persons.

3.1 Coverage of the pension projections

Table 5 shows the difference in the definition of pension expenditure available in Eurostat versus the pension schemes taken into consideration under the AWG.

Table 5
ESSPROS and AWG Definition of Pension Expenditure (% GDP)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	change 2013- last available year
Eurostat total pension expenditure	8.5	8.0	7.2	7.3	6.8	6.5	6.2	7.0	6.5	-2.0
Eurostat public pension expenditure (A)	8.5	8.0	7.2	7.3	6.8	6.5	6.2	7.0	:	-1.5
Public pension expenditure (AWG: outcome) (B)	8.4	7.9	7.1	7.2	6.8	6.5	6.1	7.0	6.4	-1.9
Difference Eurostat/AWG: (A)-(B)	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	:	-0.1
Expenditure categories not included in the AWG definition	*0.3*	*0.3*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*-0.1*
5.1 Disability Pensions allowance	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*-0.1*
5.2 Orphans Allowance	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
5.3 Pensions under the MDD/MSL/MSY Voluntary Early Retirement Scheme	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
5.4 Injury Pension	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*

Source: Eurostat, European Commission

When compared to ESSPROS, the AWG definition excludes the means tested disability pensions (including the disability child allowance, the disability pension and the severely disability pension), orphans' allowance, early retirement schemes and injury pensions, which in the social security system are minor schemes and amount to around 0.2 per cent of GDP in 2022. The AWG definition covers the contributory and the non-contributory bonus with the result that expenditure under the AWG definition is higher than under ESSPROS. ESSPROS figures do not include statutory bonuses since bonuses are classified under a separate item.

3.2 Overview of projection results

Pension expenditure is composed as follows:

- Old age pensions – earnings related
    - 2/3 retirement pension (TTP)
    - National Minimum Pension (NMP)
    - Increased National Minimum Pension (INMP)
    - Decreased National Minimum Pension (DNMP)
- Old age pensions – minimum pensions (non-contributory)
    - Non-Contributory Age Pension (AP)
- Old age pensions – flat component
    - Share of contributory bonus payment for earnings related and non-contributory minimum pensions Old age pensions
- Disability – earnings related
    - Decreased National Invalidity Pension (DNIP)
    - National Minimum Invalidity Pension (NMIP)
    - Share of contributory bonus payment
- Survivors – earnings related
    - Early Survivors Pension (ESRP)

- National Minimum Widows' Pension (NMWP)

- Survivors Pension (SRP)

- Share of contributory bonus payment

• Other pensions – earnings related

- Invalidity Pension (IP)

- Increased Invalidity Pension (IIP)

- Increased Retirement pension (IRP)

- Retirement Pension (RP)

- Widows Pension (WP)

- Service Pensions (Treasury Pension)

- Share of contributory bonus payment.

Table 6 shows the projected gross pension spending and contributions as a percentage of GDP. Over the projection period, pension expenditure is projected to decrease from

Table 6
Projected Gross and Net Pension Spending and Contributions (% GDP)

	2022	2030	2040	2050	2060	2070	peak value	peak year	change 2022-2070
Expenditure									
Gross public pension expenditure	**6.2**	**5.4**	**5.2**	**6.4**	**8.8**	**10.5**	**10.5**	**2070**	**4.4**
Private occupational pensions	:	:	:	:	:	:	:	:	:
Private individual mandatory pensions	:	:	:	:	:	:	:	:	:
Private individual non-mandatory pensions	:	:	:	:	:	:	:	:	:
Gross total pension expenditure	6.2	5.4	5.2	6.4	8.8	10.5	10.5	2070	4.4
Net public pension expenditure*	:	:	:	:	:	:	:	:	:
Net total pension expenditure*	:	:	:	:	:	:	:	:	:
Contributions									
Public pension contributions	7.6	8.4	8.1	7.7	7.4	7.2	8.5	2026	-0.4
Total pension contributions	7.6	8.4	8.1	7.7	7.4	7.2	8.5	2026	-0.4
Balance of the public pension system (%GDP)**	1.4%	3.0%	2.9%	1.4%	-1.4%	-3.4%	-3.4%	2070	-4.8%

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

Source: European Commission, EPC

Table 7
Gross Public Pension Spending by Scheme (% GDP)

	2022	2030	2040	2050	2060	2070	peak value	peak year	change 2022-2070
Total public pensions	6.2	5.4	5.2	6.4	8.8	10.5	10.5	2070	4.4
Old-age and early pensions	4.2	3.9	3.9	5.1	7.4	9.1	9.1	2070	4.9
Flat component	0.2	0.1	0.1	0.1	0.1	0.1	0.2	2022	-0.1
Earnings-related	3.9	3.6	3.7	4.9	7.2	8.9	8.9	2070	5.0
Minimum pensions (non-contributory)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2024	-0.0
Disability pensions	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2051	0.0
Survivor pensions	1.0	0.9	0.8	0.8	0.8	0.8	1.0	2022	-0.2
Other pensions	0.8	0.5	0.4	0.3	0.4	0.5	0.8	2022	-0.3

Source: European Commission, EPC

6.2 per cent of GDP in 2022 to 5.2 per cent in 2040, and thereby increasing to 10.5 per cent in 2070. Meanwhile, revenue from contributions is expected to decrease from 7.6 per cent to 7.2 per cent over the projection period.

The expected increase in pension expenditure over the entire period is primarily attributable to an increase in expenditure on old-age pensions (earnings-related) that increases from 4.2 per cent of GDP in 2022 to 9.1 per cent in 2070. However, up to 2030, expenditure on old-age pensions is expected to remain constrained due to a higher retirement age and indexation of the maximum pensionable income with the COLA. Thereafter, the increase in old-age pension expenditure is driven by the ageing process, in reflection of the projected demographic developments particularly related to net migration. At the same time, one notes that the parametric changes introduced in the pension reform – specifically, the more dynamic indexation of the ceiling on pensionable income and the statutory changes to indexation for old-age pensions – also contribute to raise expenditure. On the other hand, the increase in the retirement age, the increase in the contribution period for full pension eligibility (which translates into a lower accrual rate), and the changes to the benefit formula contribute to lower the projected increase in pension expenditure.

The effect of extending child credits and the introduction of human capital credits is minimal over the projection period, albeit translating into a higher incremental replacement rate for both men and women.

The average old-age earnings related pension dynamics capture a transition effect, with persons born before 1962 having a more constrained indexation rule than persons born in and after 1962. Towards the outer years of the projection period, the transition is more or less complete. Nevertheless, despite having a more favourable index rule whereby the average pension for those born before 1962 is indexed with wage growth, the fact that this indexation is less than 100 per cent of wage growth implicitly means that the growth in average pension is still lower than the average wages. Expenditures on disability pensions and on old age (non-contributory) pensions are projected to stay relatively constant, both at 0.1 per cent of GDP. Expenditure on survivors' pensions is projected to decrease from 1.0 per cent of GDP to 0.8 per cent of GDP by 2070. This decline reflects the fact that most claimants of survivor pension are females and therefore less survivors will be expected once females will have an old-age pension in their own right.

Expenditure on other pensions is projected to decrease from 0.8 per cent of GDP to 0.5 per cent of GDP over the whole period. The decreasing contributions of other pensions (includes top-ups and treasury pensions) reflect a combination of factors. The 'top-up' pension covers benefits currently payable to persons in receipt of service pensions, including former servicemen in receipt of overseas pensions. This expenditure category is projected to decrease in importance over time in line with the life expectancy of the recipients of this pension, given that this is closed to new entrants. Similarly, the Treasury Pension is projected to decrease in importance over time given that it has been closed to new Government employees since 1979. Those who qualify for a Treasury Pension are:

a. all government employees who started service with government before 15th January 1979 (closed system);

b. Police, AFM personnel, Correctional Facilities officials and members of the Civil Protection;

c. Widows of public officers who held a pensionable post and who contributed to the widows' pension scheme; and

d. Members of Parliament, Members of the Judiciary and the Attorney General.

Public officers as per (a) above are eligible to receive a service pension only if they were employed with government before 15th January 1979 and the service rendered was continuous; implying that new intakes from part (a) has been closed for almost 40 years. The number of expected new pensioners as per scheme (a) in 2023 is 7. The service pension as per (b)-(d) is still an open system, but the number of beneficiaries are rather insignificant.

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

This section provides more details about the development of public pension expenditures (Table 8). It uses a standard arithmetic disaggregation of the pension expenditures-to-GDP ratio into the dependency ratio, coverage ratio, benefit ratio and a labour market effect (Figure 2, first equation). In addition, there are two further sub-decompositions. First, the coverage ratio can be split to look into the take-up ratios for old-age pensions and early pensions (second equation in Figure 2). Second, the labour market indicator is further disaggregated according to the third equation in Figure 2.

The breakdown is calculated on the basis of pensioners (Table 8), with the disaggregation based on pensions reported in annex Table A3.

A deeper insight into the drivers of these results may be obtained by looking at the results of the decomposition of pension expenditure between 2022 and 2070 into the dependency ratio, coverage ratio, the benefit ratio, employment rate and labour intensity. Table 8 shows the developments in these factors behind the change in public pension expenditures during the projection period using pension data.

Figure 2
Disaggregation of Public Pension Expenditure

$$\underbrace{\frac{pension\ \ expenditure}{GDP}} = \underbrace{\frac{population\ \ 65+}{population\ \ 20-64}}_{dependency\ ratio} \times \underbrace{\frac{number\ \ of\ pensioners}{population\ \ 65+}}_{coverage\ ratio} \times \underbrace{\frac{average\ \ pension\ \ income}{\frac{GDP}{hours\ worked\ \ 20-74}}}_{benefit\ ratio} \times \underbrace{\frac{population\ \ 20-64}{hours\ worked\ \ 20-74}}_{labour\ market\ effect} \qquad [1]$$

$$\frac{number\ \ of\ pensioners}{population\ \ 65+} = \underbrace{\frac{number\ \ of\ pensioners\ \ 65+}{population\ \ 65+}}_{coverage\ ratio\ old\text{-}age} + \left(\underbrace{\frac{number\ \ of\ pensioners\ \leq 65}{population\ \ 50-64}}_{coverage\ ratio\ early\text{-}age} \times \underbrace{\frac{population\ \ 50-64}{population\ \ 65+}}_{cohort\ effect} \right) \qquad [2]$$

$$\frac{population\ \ 20-64}{hours\ worked\ \ 20-74} = \underbrace{\frac{population\ \ 20-64}{employed\ \ people\ \ 20-64}}_{1/employment\ rate} \times \underbrace{\frac{employed\ \ people\ \ 20-64}{hours\ worked\ \ by\ people\ \ 20-64}}_{1/labour\ intensity} \times \underbrace{\frac{hours\ worked\ \ by\ people\ \ 20-64}{hours\ worked\ \ by\ people\ \ 20-74}}_{1/career\ shift} \qquad [3]$$

Source: European Commission, EPC

As shown in Table 8, over the period 2022-2070, pension expenditure as a percentage of GDP increases by 4.4 pp. of GDP. Taking into consideration the entire projection horizon, this increase is entirely driven by the developments in the dependency ratio. The largest countereffect stems from the benefit ratio effect, followed by the labour market effect.

Table 9 shows the replacement rate at retirement, the benefit ratio and the coverage of the public pension scheme in Malta. The public scheme benefit ratio initiates at 39.0 per cent in 2022 and progressively decreases to 32.0 per cent by 2070. This is mostly due to the cohort effect coming from the indexation assumptions. Persons born before 1962 have their maximum pension/ceiling indexed with COLA, whereas the maximum pension indexation for persons born after 1 January 1962 is much more generous, being composed of 70 per cent wages and 30 per cent inflation. Thus, the average pension will have a cumulative effect on the rate of indexation of pensions and it is understandable that in the beginning of the projection period, the average pensions increase at a rate that is slower than average wages. The ratio seems to stabilize mid-period which is the

Table 8
Factors behind the change in Public Pension Expenditure between 2019 and 2070 (PPS of GDP) - Pensioners[11]

	2022-30	2030-40	2040-50	2050-60	2060-70	2022-70
Public pensions to GDP	-0.7	-0.2	1.1	2.4	1.8	4.4
Dependency ratio effect	0.1	-0.1	1.1	2.7	2.1	5.9
Coverage ratio effect*	-0.1	0.3	0.1	-0.2	-0.0	0.0
Coverage ratio old-age	0.1	0.1	0.1	0.1	0.2	0.6
Coverage ratio early-age	-1.6	-0.2	0.2	0.9	-0.2	-1.0
Cohort effect	-0.0	1.3	-0.1	-2.5	-2.1	-3.3
Benefit ratio effect	-0.5	-0.4	-0.1	-0.1	-0.3	-1.3
Labour market effect	-0.2	-0.0	0.0	-0.0	-0.0	-0.2
Employment ratio effect	-0.3	-0.0	0.1	0.0	-0.0	-0.2
Labour intensity effect	-0.0	0.0	0.0	0.0	0.0	0.0
Career shift effect	0.1	-0.0	-0.0	-0.1	0.0	-0.0
Residual	0.0	-0.0	0.0	-0.0	-0.0	-0.1

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

Source: European Commission, EPC

Table 9
Benefit Ratio (BR), replacement rate at retirement (RR) and coverage by pension scheme (in %)

	2022	2030	2040	2050	2060	2070	change 2022-2070 (pps)
Public scheme (BR)	39%	36%	33%	33%	33%	32%	-7%
Coverage	100%	100%	100%	100%	100%	100%	0%
Public scheme: old-age earnings related (BR)	36%	35%	32%	33%	32%	31%	-5%
Public scheme: old-age earnings related (RR)	52%	50%	49%	49%	49%	50%	-2%
Coverage	71%	72%	75%	80%	85%	87%	17%
Private occupational scheme (BR)	:	:	:	:	:	:	:
Private occupational scheme (RR)	:	:	:	:	:	:	:
Coverage	:	:	:	:	:	:	:
Private individual schemes (BR)	:	:	:	:	:	:	:
Private individual schemes (RR)	:	:	:	:	:	:	:
Coverage	:	:	:	:	:	:	:
Total benefit ratio	39%	36%	33%	33%	33%	32%	-7%
Total replacement rate (earnings-related benefits)	52%	50%	49%	49%	49%	50%	-2%

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

Source: European Commission, EPC

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[11] For the disaggregation based on the number of pensions, see Table A3 in the methodological annex.

result of having a higher share of post-62 individuals who have higher average pensions. This transition would be more or less complete towards the outer years of the projection period. Nevertheless, despite having more favourable pension indexation for persons born post 1962, their pension is not fully indexed to wages and thus, the average pension will also grow at a slower rate than average wages in the outer years too.

Meanwhile, the total coverage for old-age earnings related pensions is projected to increase consistently from 71 per cent in 2022 to 87 per cent in 2070. This progressive increase is once again reflective of the labour market assumptions, in which a larger share of people in employment in the short to medium term eventually transforms itself into a larger pensioner group.

Table 10 provides an insight into the impact of demographic factors on the financial sustainability of public pension schemes. The number of pensioners is projected to rise by around 173,000 persons over the projection period, in reflection of increases in the number of old-age pensioners. The number of persons in employment is projected to rise from around 280,882 in 2022 to around 399,555 in 2050. Subsequently, it decreases in line with the ageing process of the Maltese population as the number of new entrants in the labour market is not enough to compensate for the number of persons entering retirement. As a result, the pension system dependency ratio is projected to increase from 36.8 per cent in 2022 to 75.1 per cent in 2070.

Table 10
System Dependency Ratio and Old-Age Dependency Ratio

	2022	2030	2040	2050	2060	2070	change 2022-2070
Number of pensioners (thousand) (I)	101	116	137	175	232	273	173
Employment (thousand) (II)	281	335	385	400	382	364	83
Pension system dependency ratio (SDR) (I)/(II)	0.4	0.3	0.4	0.4	0.6	0.8	0.4
Number of people aged 65+ (thousand) (III)	102	120	135	170	231	273	171
Working-age population 20-64 (thousand) (IV)	333	386	442	461	440	417	84
Old-age dependency ratio (OADR) (III)/(IV)	0.3	0.3	0.3	0.4	0.5	0.7	0.3
System efficiency (SDR/OADR)	1.2	1.1	1.2	1.2	1.2	1.1	-0.0

Source: European Commission, EPC

Table 11 shows the ratio of the pensioners to the inactive population and the ratio of the pensioners to total population by age category. Tables 12 show the same ratios for females.

The coverage of pensioners relative to inactive population ratio is projected to improve. The increase for the 65-69 and 70-74 is mainly attributable to the improved labour market prospects, particularly for females. Similarly, improvements in coverage for the older age cohorts can also be observed when taking pensioners as a ratio of total population. On the other hand, coverage for the 55-59 and 60-64 age cohorts are expected to decline, reflective of the longer working lives arising from the increased retirement age and increased contributory period.

Table 13 focuses on new public pension expenditure data, which is the product of the average contributory period, average pensionable earnings, average accrual rates, and the number of new pensions.

Table 11
Public Pensioners to (inactive) Population by Age Group (%)

pensioners / inactive population	2022	2030	2040	2050	2060	2070
Age group -54	2.2	2.3	2.7	2.3	2.2	2.2
Age group 55-59	21.9	32.7	36.8	38.6	35.6	38.1
Age group 60-64	58.0	55.1	64.2	67.8	69.6	71.2
Age group 65-69	91.5	89.3	95.2	99.2	102.3	106.2
Age group 70-74	82.2	83.5	84.5	87.3	89.7	91.9
Age group 75+	92.7	90.9	93.1	93.7	92.9	93.7

pensioners / total population	2022	2030	2040	2050	2060	2070
Age group -54	0.7	0.7	0.8	0.7	0.7	0.7
Age group 55-59	6.0	6.0	5.3	5.1	4.7	5.1
Age group 60-64	35.3	29.1	28.8	28.8	30.3	30.7
Age group 65-69	77.4	79.5	82.1	84.7	87.3	90.8
Age group 70-74	76.8	81.6	82.2	84.5	86.7	89.1
Age group 75+	92.7	90.9	93.1	93.7	92.9	93.7

Source: European Commission, EPC

Table 12
Female Pensioners to (inactive) Population by Age Group (%)

female pensioners / inactive population	2022	2030	2040	2050	2060	2070
Age group -54	1.9	2.2	2.6	2.3	1.9	1.7
Age group 55-59	15.7	26.7	37.8	42.0	38.2	37.1
Age group 60-64	43.1	40.0	49.4	55.0	58.6	63.0
Age group 65-69	69.8	81.9	92.2	101.6	110.2	119.9
Age group 70-74	65.2	79.0	82.8	88.6	94.7	101.0
Age group 75+	85.1	86.9	97.1	101.3	101.3	103.9

female pensioners / total population	2022	2030	2040	2050	2060	2070
Age group -54	0.7	0.7	0.8	0.8	0.7	0.6
Age group 55-59	7.0	6.8	6.3	5.9	5.5	5.3
Age group 60-64	29.3	23.4	23.2	23.6	25.5	27.1
Age group 65-69	65.2	74.6	80.4	87.1	94.2	102.5
Age group 70-74	62.4	78.1	81.1	86.4	92.1	98.3
Age group 75+	85.1	86.9	97.1	101.3	101.3	103.9

Source: European Commission, EPC

The number of new pensioners is projected to increase from around 7,504 in 2022 to around 14,281 in 2070. The total average contributory period is expected to increase from 34.9 years in 2022 to 37 years in 2070. The increase in the average contributory period primarily reflects a mix of policy reforms, including a rise in the pension age, widening of the contributory period to attain a full-pension rate as well as the retainment of females in the labour market. At the same time, the lengthening of the contributory period translates into a lower accrual rate because of longer required length of service to qualify for the full pension benefit rate.

Furthermore, it is pertinent to underline that in the case of Malta, the new pension expenditure for new pensioners does not depend on the average wage at retirement but on the pensionable income – discussed in detail in Section 1.[12] The total new pension expenditure in 2022, as calculated on the basis of the drivers of the decomposition, is estimated to be slightly higher than the actual new pension expenditure being produced by the Model. This divergence is attributed to the fact that the critical variable to be

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[12] In determining pensionable income, past wages and incomes are valorised with the COLA granted with respect to those years.

Table 13

Breakdown of New Public Pension Expenditure (Old-Age and Early Earnings-Related Pensions)

TOTAL	2022	2030	2040	2050	2060	2070
Projected new pension expenditure (million EUR)*	23.5	63.9	130.2	260.5	423.3	510.6
I. Number of new pensions (1000)	2.1	4.2	6.0	8.7	10.4	9.3
II. Average contributory period (years)	36.4	35.6	36.0	36.4	36.7	37.0
III. Average accrual rate (%)	0.0	0.0	0.0	0.0	0.0	0.0
IV. Monthly average pensionable earnings (1000 EUR)	1.4	2.1	3.0	4.1	5.5	7.4
V. Sustainability/adjustment factors	:	:	:	:	:	:
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	61%	69%	68%	66%	64%	62%

MEN	2022	2030	2040	2050	2060	2070
Projected new pension expenditure (million EUR)*	19.2	46.0	92.0	178.3	272.2	307.3
I. Number of new pensions (1000)	1.5	2.5	3.6	5.1	5.8	4.8
II. Average contributory period (years)	40.0	40.3	40.4	40.7	40.9	41.1
III. Average accrual rate (%)	0.0	0.0	0.0	0.0	0.0	0.0
IV. Monthly average pensionable earnings (1000 EUR)	1.4	2.3	3.2	4.4	5.9	7.8
V. Sustainability/adjustment factors	:	:	:	:	:	:
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	63%	74%	72%	70%	67%	65%

WOMEN	2022	2030	2040	2050	2060	2070
Projected new pension expenditure (million EUR)*	4.5	18.6	39.4	84.1	153.8	205.8
I. Number of new pensions (1000)	0.6	1.7	2.4	3.6	4.6	4.4
II. Average contributory period (years)	27.0	28.4	29.7	30.9	32.2	33.4
III. Average accrual rate (%)	0.0	0.0	0.0	0.0	0.0	0.0
IV. Monthly average pensionable earnings (1000 EUR)	1.2	1.9	2.7	3.8	5.1	6.9
V. Sustainability/adjustment factors	:	:	:	:	:	:
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	56%	62%	61%	60%	59%	58%

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

Source: European Commission, EPC

used in calculating new pensions is pensionable income and not average pensionable wage at retirement.

Table 14
Financing of the Public Pension System

	Public employees	Private employees	Self-employed
Contribution base	€9,508 - €19,707 for persons born up to 31/12/1961	€9,508 - €19,707 for persons born up to 31/12/1961	€10,849 - €19,707 for persons born up to 31/12/1961
	€9,508 - €25,987 for persons born from 1/1/1962	€9,508 - €25,987 for persons born from 1/1/1962	€10,849 - €25,987 for persons born from 1/1/1962
Contribution rate			
Employer	10.00%	10.00%	15.00%
Employee	10.00%	10.00%	-
*State**	10.00%	10.00%	7.50%
*Other revenues**	-	-	-
Maximum contribution	€1,971 for persons born up to 31/12/1961	€1,971 for persons born up to 31/12/1961	€2,956 for persons born up to 31/12/1961
	€2,598 for persons born from 1/1/1962	€2,598 for persons born from 1/1/1962	€3,898 for persons born from 1/1/1962
Minimum contribution	€951 for persons born up to 31/12/1961	€951 for persons born up to 31/12/1961	€1,627 for persons born up to 31/12/1961
	€951 for persons born from 1/1/1962	€951 for persons born from 1/1/1962	€1,627 for persons born from 1/1/1962

*Only legislated contributions are reported

Source: European Commission, EPC

3.4 Financing of the pension system

Table 15 presents the revenue from contribution, the number of contributors in the public scheme, total employment and related ratios. A typology of the financing of the system is provided in Section 1. Table 15 shows that the increase in the number of contributors is in line with total employment.

Table 15
Revenue from Contributions and number of Contributors in the Public Scheme

	2022	2030	2040	2050	2060	2070	change 2022-2070 (pps)
Public pension contributions (%GDP)	7.6	8.4	8.1	7.7	7.4	7.2	-0.4
Employer contributions	*2.6*	*2.8*	*2.7*	*2.6*	*2.5*	*2.4*	*-0.2*
Employee contributions	*2.6*	*2.8*	*2.7*	*2.6*	*2.5*	*2.4*	*-0.2*
*State contribution**	*2.5*	*2.8*	*2.7*	*2.6*	*2.4*	*2.4*	*-0.1*
*Other revenues**	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Number of contributors (I) (1000)	282	336	387	403	386	368	86
Employment (II) (1000)	281	335	385	400	382	364	83
(I) / (II)	1.00	1.00	1.01	1.01	1.01	1.01	0.0

*Includes only legislated contributions.

Source: European Commission, EPC

3.5 Sensitivity analysis

Table 16 shows the impact of different shocks on public pension expenditure as a percentage of GDP.

• **Higher life expectancy at birth** - This scenario models an increase in life expectancy at birth of two years, with the demographic effects being realised in the outer years. The improved life expectancy and the resulting increase in the duration of retirement translates in a 0.5 percentage points increase in the expenditure in 2070, when compared to that projected in the baseline.

• **Higher/Lower migration** - Under a scenario which models a 33 per cent higher/lower migration compared with the baseline over the entire projection period, expenditure on public pensions in 2070 is projected to decrease/increase by 0.8/1.3 percentage points of GDP over the baseline. These changes reflect the outcome of more/less contributors – that result in a higher/lower expenditure outlay – which are outweighed by the increase/decrease in the rate of GDP growth owing higher/lower labour input relative to the baseline. Moreover, it is to be noted that in the higher and lower migration scenarios, the deviations in GDP from the baseline are not symmetric. The downward revision in GDP in the lower migration scenario is larger than the upward revision in the GDP under the higher migration scenario. These asymmetric effects

explain the asymmetric divergences in total expenditure as a percentage of GDP relative to the baseline in the two scenarios.

- **Fertility** - Under this scenario, the fertility rate is assumed to be 20 per cent lower compared to the baseline scenario over the entire projection period, resulting in a 0.6 percentage points increase in expenditure when compared to the baseline. This increase in expenditure is largely due to the denominator effect from the drop in the GDP.

- **Higher inflation scenario** – According to this scenario, inflation rates converge linearly from current country-specific values to market-based (euro area) inflation rates by T+10. Beyond T+10, inflation rates converge by T+30 to 2 per cent for euro area countries. Expenditure in 2070 under this scenario is projected to be very close to that projected under the baseline, signifying an unsignificant impact on pension expenditure in the long term.

- **Higher employment rate of older workers** - This scenario models a 10.0 percentage points increase in the employment rate of older workers (55-74 years) as compared to the baseline projections. Here, the denominator effect coming from the increase in GDP results in a lowering of 0.4 percentage points in expenditure in 2070 when compared to the baseline.

- **Higher/Lower productivity** - In the higher productivity scenario, the TFP growth rate will converge to 1 per cent rather than the 0.8 per cent in the baseline. Under this scenario, expenditure in 2070 is projected to be 0.3 percentage points lower. On the other hand, expenditure in 2070 is projected to be 0.5 percentage points higher under a scenario that assumes lower productivity (where the TFP growth rate converges to 0.6 per cent).

- **Link retirement age to longevity** - this scenario considers the adoption of an automatic mechanism to revise the effective retirement age (the exit age from the labour market as estimated by the Cohort Simulation Model), thereby changing the statutory and early retirement ages in line with changes in life expectancy. Under this scenario, expenditure in 2070 is projected to be 0.7 percentage points lower.

- **Constant retirement age** - The early and statutory retirement ages, as well as the career requirements are frozen at the situation in the base year, resulting in a 0.2 percentage points higher pension expenditure in 2070 when compared to the baseline scenario.

- **Constant benefit ratio** - This scenario assumes policy measures are taken when the (earnings-related) public pension benefit ratio would decrease by 10.0 per cent relative to the base year to keep the benefit ratio constant at this 10.0 per cent lower point for the remaining projection period. Such a policy would result in expenditure in 2070 being 0.2 percentage points higher than that projected in the baseline.

Table 16
Expenditure Projections under different Scenarios (PPS deviation from Baseline)[13]

Public pension expenditure	2022	2030	2040	2050	2060	2070	change 2022-2070 (pps)
Baseline (%GDP)	6.2	5.4	5.2	6.4	8.8	10.5	4.4
Higher life expectancy at birth (+2y)	0.0	0.0	0.1	0.1	0.3	0.5	0.5
Higher migration (+33%)	0.0	-0.2	-0.4	-0.6	-1.0	-1.3	-1.3
Lower migration (-33%)	0.0	0.3	0.4	0.7	1.0	0.8	0.8
Lower fertility (-20%)	0.0	-0.0	-0.0	0.1	0.3	0.6	0.6
Higher inflation scenario (2% by 2052)	0.0	-0.1	-0.1	-0.1	0.0	0.0	0.0
Higher employment rate of older workers (+10 pps)	0.0	-0.1	-0.1	-0.2	-0.4	-0.4	-0.4
Higher productivity (TFP converges to 1%)	0.0	0.0	0.0	0.0	-0.1	-0.3	-0.3
Lower productivity (TFP converges to 0.6%)	0.0	0.0	0.0	0.1	0.3	0.5	0.5
Policy scenario: link retirement age to longevity	0.0	0.0	-0.1	-0.2	-0.5	-0.7	-0.7
Policy scenario: constant retirement age	0.0	0.1	0.1	0.2	0.3	0.2	0.2
Policy scenario: constant benefit ratio	0.0	0.0	0.0	0.0	0.1	0.4	0.4

Source: European Commission, EPC

3.6 Changes in comparison with previous Ageing Report projection

Table 17 compares the decomposition of the main drivers in the pension expenditure ratio over the period 2022-2070 with previous projections.

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

Table 17

Disaggregation of the change in the Public Pension Expenditure-to-GDP Ratio in consecutive Ageing Reports (PPS of GDP)

	Public pension expenditure	Dependency ratio effect	Coverage ratio effect	Benefit ratio effect	Labour market effect	Residual (incl. interaction effect)
2006 Ageing Report (2004-2050)	**-0.5**	7.3	-1.0	-5.0	-1.2	-0.6
2009 Ageing Report (2007-2060)	**6.2**	11.3	-3.1	-0.5	-0.7	-0.8
2012 Ageing Report (2010-2060)	**5.5**	11.3	-2.6	-1.0	-1.4	-0.8
2015 Ageing Report (2013-2060)	**3.2**	7.2	-0.9	-1.4	-1.4	-0.3
2018 Ageing Report (2016-2070)	**2.9**	5.7	0.6	-2.3	-1.0	-0.2
2021 Ageing Report (2019-2070)	**3.8**	6.2	0.1	-1.9	-0.5	-0.1
2024 Ageing Report (2022-2070)	**4.4**	5.9	0.0	-1.3	-0.2	-0.1

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

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

Source: European Commission, EPC

- The benefit ratio had a strong negative effect on expenditure in the 2006 projection. This effect has remained negative, but it has declined in its impact particularly in 2009 and 2012. This development reflects the impact of the expenditure-increasing aspect of the reform. In addition, the COLA indexation for persons born before 1962 and the partial wage indexation in case of persons born after 1962 explains the negative effect of the benefit ratio, although the 2024 round's benefit ratios are less negative than the 2021 equivalent. Importantly, the modelling assumptions are identical to those adopted in the 2021 Ageing Report, but the more positive macro assumptions accentuate this effect.

- The dependency ratio has a smaller impact on pension expenditure in the 2024 exercise when compared to the 2021 exercise. Changes in net migration projections are the underlying driver behind the demographic assumptions.

- The Labour market effect has recorded the lowest impact compared to previous Ageing Reports. The revised demographic and macroeconomic assumptions underpin the employment effect dynamics.

- The contribution of the coverage ratio is less strong in 2024 relative to the 2021 scenario, a development that is likely to reflect the adopted demographic assumptions particularly relating to net migration.

Tables 18 presents the difference between the 2021 projections and the actual outcome of selected components, whilst Table 19 shows the decomposition of the difference between 2021 and the new public pension projection as a percentage of GDP. As indicated in this Table, the change in assumptions is the only factor that is explaining the difference between 2021 and the new public pension projections.

Table 18
Disaggregation of the difference between the 2021 projections and Actual Public Pension Expenditure in 2019-2022 (% GDP)

	2019	2020	2021	2022
Ageing Report 2021 projections (%GDP)	7.1	7.7	7.5	7.3
Assumptions (pps of GDP)	-1.0	-0.7	-1.1	-1.1
Coverage of projections (pps of GDP)	0.0	0.0	0.0	0.0
Constant policy impact (pps of GDP)	0.0	0.0	0.0	0.0
Policy-related impact (pps of GDP)	0.0	0.0	0.0	0.0
Actual public pension expenditure (%GDP)	6.1	7.0	6.4	6.2

Source: European Commission, EPC

Table 19
Disaggregation of the difference between the 2021 and the New Public Pension Projections (% GDP)

	2022	2030	2040	2050	2060	2070
Ageing Report 2021 projections	7.3	6.6	6.6	8.1	10.1	10.9
Change in assumptions (pps of GDP)	-1.1	-1.2	-1.4	-1.7	-1.3	-0.4
Improvement in the coverage or in the modelling (pps of GDP)	0.0	0.0	0.0	0.0	0.0	0.0
Change in the interpretation of constant policy (pps of GDP)	0.0	0.0	0.0	0.0	0.0	0.0
Policy-related changes (pps of GDP)	0.0	0.0	0.0	0.0	0.0	0.0
New projections	6.2	5.4	5.2	6.4	8.8	10.5

Source: European Commission, EPC

Description of the pension projection model and the base data

4.1 Institutional context in which the projections are made.

The model used in projecting pension expenditure was the World Bank's Pension Reform Options Simulation Toolkit (PROST 15), being the same model used in the projection- of pension expenditure for the previous AWG budgetary projections exercise. Staff from the Economic Policy Department within the Ministry for Finance and Employment (MFE) were licensed to use PROST 15 in order to model the development of the current pension system and analyse various options for the pension reform.

The pension projections baseline was prepared by the MFE with the assistance of expertise from the World Bank and the Ministry for Social Policy and Children's Rights (MSPC). The results obtained were subject to a process of internal review by pension experts within Government.

4.2 Data used to run the model

Modelling in PROST is based on the main input sheet which includes general assumptions pertaining to the economy and various parameters of the pension system. Inputs are further subdivided into sheets related to Population, the Labour market, and Pensions. For this exercise data was collected from national sources, including the National Statistics Office, the Malta Tax and Customs Administration, and the Social Security Department within the MSPC.

The base year used in the model is 2022. While some input variables require assumptions for the projection interval others are generated in the various output sheets of PROST.

The main inputs variables set in the *General* sheet include:

- GDP in Nominal terms in the base year;

- The contribution ceiling (for employee and government contributions);

- Wage and pension cumulative income distributions for base year;

- Demographic trends – sex ratio at birth, mortality rate multiplier for disabled and for old age pensioners;

- Macroeconomic growth trends for real GDP, the inflation rate, the real interest rate, Government bond rate and the discount rate;

- The retirement age by sex;

- Revenue sources mainly from contributions of employees, employers and Government;

- Pension indexation assumptions, minimum and maximum pension indexation, minimum wage indexation and contribution ceiling indexation;

- Benefit formula parameters: required years of service for basic replacement rate, the maximum replacement rate, etc.

The *Population* worksheet in PROST includes inputs for the following main variables:

- Maltese population by age and by sex for the base year;

- The age specific fertility rate for the base year and any projections or theories about the way fertility rates are most likely to behave over the simulation horizon (as per Eurostat projections);

- Probability of dying (males and females): age specific probability of dying for males/females in the base year as well as over the projection period in line with Eurostat projections assumptions regarding life-expectancy;

- Net migration (males and females): age specific net immigration in each age group. Data in the base year as well as for the projection period in line with Eurostat projections.

The *Labour* worksheet in PROST includes inputs for the following main variables:

- Labour force participation (males and females): data are entered for the base year and for the projection period in line with AWG assumptions;

- Unemployment rate (males and females): data for each age group by gender are entered for the base year and for the projection period in line with AWG assumptions;

- Earnings profile for males and females in terms of minimum wage: this reflects the average gross wage of individuals relative to the minimum wage;

- Pension profile in terms of the minimum pension: this represents the initial distribution of pensions across pensioners of different ages.

The *Pensions* worksheet in PROST includes inputs for the following main variables:

- Contributors (males and females): data is entered for each age cohort for the base year;

- Specific pensions category: data is entered for the number of pensioners receiving 2/3 pensions, number of invalids and survivors for the base year;

- Assumptions for the length of service at retirement;

- The evolution of the number of pensioners as a stock of population over the projection period.

4.3 Reforms incorporated in the model

The modelling work reflected as far as possible to the rules spelled out by the legislation thus covering the reforms enacted in 2006 and in 2016, as well as any other related budget measures up to 2023.

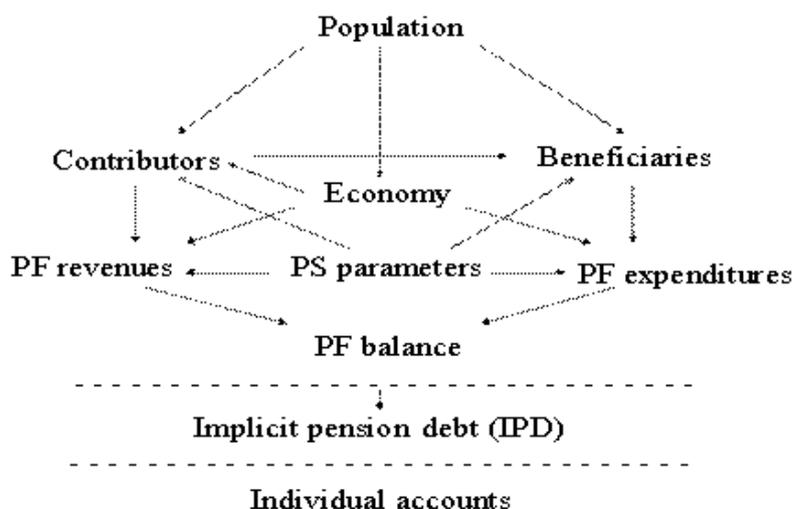## 4.4 General description of the model(s)

4.4.1 Overview

PROST projects pension contributions, entitlements, system revenues, and system expenditure over the long term. It is designed to promote informed policymaking, bridging the gap between quantitative and qualitative analysis of pension regimes. It is a flexible, computer-based toolkit, easily adapted to a wide range of countries' circumstances.

PROST is designed to answer the following kinds of question:

- How much will the pension system cost in the future? Is it viable and sustainable?
- What kind of benefits can people expect to receive in the future?
- Is the pension system equitable? Does it provide a decent retirement income to different categories of people?
- How large are the government's implicit pension liabilities?
- How would broadening coverage, changing eligibility, changing benefits, or adjusting contribution rates affect the system? How will costs, expenditures and liabilities change under various reforms?

The model takes country specific data provided by the user. It generates population projections, which, combined with economic assumptions, are used to forecast future numbers of contributors and beneficiaries. These in turn generate flows of revenues and expenditures. The model then projects fiscal balances, taking account of any partial pre-funding of liabilities.

In the most simplified way the general calculation scheme can be summarized in the Figure below.

```
                         Population
                        /    |    \
                       /     |     \
             Contributors ←-----→ Beneficiaries
                 \      Economy      /
                  \      /  \       /
              PF revenues ← PS parameters → PF expenditures
                      \                   /
                       \                 /
                          PF balance
         - - - - - - - - - - - | - - - - - - - - - - - -
                  Implicit pension debt (IPD)
         - - - - - - - - - - - - - - - - - - - - - - - -
                       Individual accounts
```

PROST follows single age/gender cohorts over time and generates population projections, which, combined with labour market assumptions, are used to forecast future numbers of contributors and beneficiaries. These in turn generate flows of revenues and expenditure. The model then projects fiscal balances and calculates the implicit pension debt. The required contribution rates and affordable replacement rates for zero pension fund balance in each year of the simulation period are also calculated. Finally, PROST produces outputs related to individuals – what an individual would contribute to the system and what he/she obtain under PAYG DB and multipillar schemes. This allows both intra- and intergenerational analysis.

The PROST program produces five output modules:

1. *Population projections*: including life tables, population pyramids, population dependency ratios etc.
2. *Demographic structure*: labour force and employment, numbers of contributors and beneficiaries, demographic structure of the pension system, and system dependency ratio.
3. *Finances of Monopillar PAYG*: macroeconomic trends, projections of wages, pension benefits for the existing and new pensioners, pension scheme balance and the implicit pension debt. The financial flows module also calculates the adjustments—to benefit

levels or contribution rates—that would 'balance' the system, i.e. bring revenues and expenditures into line.

4. *Finances of Multipillar System*: this module looks at the effect of a shift to a 'multipillar' regime, incorporating both a pay-as-you-go, notional pay-as-you-go, and a funded, defined contribution scheme or exclusively one or the other. Again, it measures the impact both on the public finances and on individual's pension entitlements, including measurements of transition costs. The total pension benefit and the value of each of the pillars are provided separately. It also compares benefit projections and financial standing under the monopillar pay-as-you-go and multipillar scenarios.

5. *Individual accounts*: the model works out contributions and benefits for six different example individuals, specified by age, sex, age of labour market entry, retirement age, earnings profile, mortality etc.

4.4.2 Main equations

When using PROST, the user needs to specify a time- and age-frame. The simulation horizon is defined by two time points: the base year (2022 and the end year (2070). PROST processes data in terms of single-year age cohorts. The starting age is 0 (infants younger than 1 year old) and the maximum age is usually set in the interval between 75 and 100 years. This time and age frame can be changed to accommodate the data availability.

4.5 Other features of the projection model

This section presents an outline of some of the main relationships in PROST15. This material was extracted from an unpublished PROST manual named 'Calculus for PROST15', property of the World Bank.

- *Number of different persons modelled per generation.*

PROST groups the population into three age-related categories: young (*YP*), working (*WP*), and old (*OP*). To show how it is modelled on PROST, let a_r be the retirement age. Then:

$$YP(t,g) = \sum_{a=0}^{14} P(a,t,g), \quad WP(t,g) = \sum_{a=15}^{a_r} P(a,t,g), \quad OP(t,g) = \sum_{a=a_r}^{a_{max}} P(a,t,g)$$

The total population and the ratio of males to females in the total population will respectively be:

$$TP(t,g) = YP(t,g) + WP(t,g) + OP(t,g), \quad MF\%(t) = \frac{TP(t,1)}{TP(t,2)}$$

For each category, PROST calculates their annual growth rates,

$$YG\%(t) = \left(\frac{YP(t,3)}{YP(t-1,3)} - 1 \right), \quad WG\%(t) = \left(\frac{WP(t,3)}{WP(t-1,3)} - 1 \right)$$

$$OG\%(t) = \left(\frac{OP(t,3)}{OP(t-1,3)} - 1 \right), \quad TG\%(t) = \left(\frac{TP(t,3)}{TP(t-1,3)} - 1 \right)$$

as well as their share in the total population:

$$YS\%(t) = \frac{YP(t,3)}{TP(t,3)}, \quad WS\%(t) = \frac{WP(t,3)}{TP(t,3)}, \quad OS\%(t) = \frac{OP(t,3)}{TP(t,3)}$$

Here, *OS%(t)* is often used as an indicator of population aging for the whole society. In PROST, the young and old population dependency rates, defined as how many young and old individuals every 100 people of working age need to support, are calculated as:

$$SY(t) = 100 \cdot \frac{YP(t,3)}{WP(t,3)}, \quad SO(t) = 100 \cdot \frac{OP(t,3)}{WP(t,3)}, \quad ST(t) = SY(t) + SO(t)$$

where *ST(t)* is the total population dependency rate. The old-age support ratio, defined as on how many working age persons a 100 old-age person depends, is calculated as:

$$OD(t) = \frac{WP(t,3)}{OP(t,3)}$$

- *Replacement Rate of New Retirees*

The replacement rate for income groups other than the minimum wage worker (*REPL%(a,t,g,1)*) is calculated as follows:

$$REPL\%(a,t>1,g,i) = \left(WAGE\_GR\_C(a,t,g,i) - WAGE\_GR\_C(a,t,g,1) \right) \cdot$$
$$\frac{REPL\%(a,t,g,i=aver) - REPL\%(a,t,g,1)}{WAGE\_C(a,t,g) - WAGE\_GR\_C(a,t,g,1)} + REPL\%(a,t,g,1)$$

where:

WAGE_GR_C(a,t,g,i) is the average insured wage for contributor groups

WAGE_C is the average insured wage for contributor groups.

- *Average length of service*

In PROST the 'Pension' worksheet in the Input module, contains data specific to the pension system. In particular, this worksheet contains age-specific distributions on old age pensioners, disability pensioners and contributors for the base year along with some assumptions about how these are expected to behave over time. One of the projection parameters in this sheet is the 'average length of service' for the new retiree for each age and gender cohort. Individuals who retire at older ages often have the same or fewer years of service than those who retire younger due to factors such as extended periods out of the labour force and later entry to the labour force.

Accordingly, in the 'Demographic' worksheet of the Output module, deriving the 'average accrued length of service' matrix involves several intermediate steps. The first step is to figure out the number of covered individuals who will eventually retire or are retired, i.e. the eventual retirees. These are derived backwards, starting with the oldest cohort. Next, PROST calculates what per cent of these eventual retirees have already retired at each point in time. This ratio is equal to 100per cent for the oldest cohort. Then a retirement pattern is derived, that describes what per cent of eventual retirees retire at each age. Finally, the average accrual of length of service per year can be derived from the retirement pattern and length of service at retirement. It is assumed for simplicity that covered individuals accrue their length of service linearly throughout their career, starting from the youngest working age and ending a year before retirement. The derivation is again done backwards, starting with the oldest cohort. The result of this derivation is the matrix of average accrued length of service, which implies that the total length of service accrued by cohort has to equal the total length of service claimed by the cohort at the time of the retirement.

$$LOS\_AV\ (a,t,g) = LOS\_R(a,t,g) * (a-a_{work}+1)$$

where:

LOS_AV (a,t,g) is the average accrued length of service,

LOS_R(a,t,g) is the length of service at retirement, and

- *The calculation of survivorship pension*

Benefits for survivors are calculated in a different way. Total pension payments for survivors in different age groups *TP_SUR(a, t, g)* are determined in PROST by weighting the indexed pension payments for the survivors in the previous year and a percentage of the pension payment for new old age pensioners. The weight of new average pension is calculated as the inverse of the average duration of survivorship benefit. This method is used to take account of both the stock as a percentage of old age pensions and flow of the survivor pensions from the previous year. Thereafter, the average replacement rate is calculated.

$$wt = (1 / D_s)$$
$$TP\_SUR(t) = (rsurold\%(t) * R\_OLD(t) * AW\_EC\_U(t) * wt * TSU(t))$$
$$+ (TP\_SUR(t-1) * INDEX\_P(t) * (1-wt))$$

$$R\_SUR\%(t) = TP\_SUR(t) / (TSU(t) * AW\_EC\_U(t))$$

The calculation of total payments to disabled *PAYM_D(t,g)* is identical to that of old age pensions. Total payments for survivors and orphans are derived from average replacement rates for these categories *R_SUR%(t)* and *r_orp%(t)*. This also allows to calculate total pension payments *PAYM_T(t)*:

$$PAYM\_S(t,g) = AW\_EC\_U(t,3) \cdot R\_SUR\%(t) \cdot TSU(t,g)$$
$$PAYM\_OR(t) = AW\_EC\_U(t,3) \cdot r\_orp\%(t) \cdot TOR(t,3)$$
$$PAYM\_T(t) = PAYM\_O(t,3) + PAYM\_D(t,3) +$$
$$PAYM\_S(t,3) + PAYM\_OR(t,3)$$

- *The modelling of the retirement age and its evolution over the projection period*

Retirement age increase is one of the pension reforms modelled in PROST15 in line with Malta's pension reform. Changes in the retirement age have an impact on other parameters modelled in PROST15, including: the number of new old age pensioners (*NP*), new disabled (*ND*), employed population (*EM*), contributors (*NC*), existing pensioners (*EP*), existing disabled (*ED*), average years of service at retirement (*los_rt*) and others.

PROST15 deals with this modelling by primarily calculating how many people of those who would have retired under the initial retirement age law will now be denied that possibility and what their average length of service is:

$$\left[\begin{array}{l} DENIED(a,t,g) = NP_{old}(a,t,g) + DENIED(a-1,t-1,g) \cdot [1 - m\%(a-1,t-1,g)] \\ LOS\_D(\mathrm{a,t,g}) = \dfrac{\left(\begin{array}{l} los\_rt(a,t,g) \cdot NP_{old}(a,t,g) + \\ [LOS\_D(a-1,t-1,g)+1] \cdot shift\_contr\% \cdot \\ DENIED(a-1,t-1) \cdot [1 - m\%(a-1,t-1,g)] \end{array} \right)}{DENIED(a,t,g)} \\ \qquad\qquad if\ ret\_age(t_{base\_year},g) \le a < ret\_age(t,g) \end{array} \right],$$

$$DENIED(a,t,g) = 0, \qquad if\ \mathrm{a} = ret\_age(t,g)$$

Subsequently, PROST15 will figure out what will those who were denied retirement be doing that year: become employed, will continue contributing to the pension system, will claim temporary disability or retire early (probably taking a reduced pension). Relevant matrixes will be adjusted by PROST to reflect these possibilities, using parameters specified by the user.

$$EM_{new}(a,t,g) = EM_{old}(a,t,g) + DENIED(a,t,g) \cdot shift\_empl\%$$

$$NC_{new}(a,t,g) = NC_{old}(a,t,g) + DENIED(a,t,g) \cdot shift\_contr\%$$

$$GC_{new}(a,t,g) = NC_{new}(a-1,t-1,g) \cdot m\%(a-1,t-1,g)$$

$$EP_{new}(a,t,g) = EP_{old}(a,t,g) - DENIED(a,t,g) \cdot [1 - shift\_ret\%]$$

$$NP_{new}(a,t,g) = \begin{pmatrix} EP_{new}(a,t,g) - EP_{new}(a-1,t-1,g) \cdot [1-m\%(a-1,t-1,g)] \cdot \\ m\_m\_o\%(t-1,g) \end{pmatrix}$$

$$DP_{new}(a,t,g) = EP_{new}(a-1,t-1,g) \cdot m\%(a-1,t-1,g) \cdot m\_m\_o\%(t-1,g)$$

$$ED_{new}(a,t,g) = ED_{old}(a,t,g) + DENIED(a,t,g) \cdot shift\_dis\%$$

$$ND_{new}(a,t,g) = \begin{pmatrix} ED_{new}(a,t,g) - ED_{new}(a-1,t-1,g) \cdot [1-m\%(a-1,t-1,g)] \cdot \\ m\_m\_d\%(t-1,g) \end{pmatrix}$$

As a final step, PROST adjusts the average length of service at retirement:

$$los\_rt(a,t,g) = \frac{\begin{pmatrix} los\_rt(a,t,g) \cdot NP_{old}(a,t,g) + LOS\_D(a-1,t-1,g) \cdot \\ shift\_contr\% \cdot DENIED(a-1,t-1) \cdot [1-m\%(a-1,t-1,g)] \end{pmatrix}}{NP_{new}(a,t,g)},$$

$$if\ a = ret\_age(t,g)$$

where:

Ret_age(t,g)	Statutory retirement age
Shift_empl%	Shift to employment when ret. Age is increased
shift_contr%	Shift to contributors when ret. Age is increased
shift_ret%	Shift to early retirement when ret. Age is increased
shift_dis%	Shift to disability when ret. Age is increased
Los_rt(a, t, g)	Length of service at retirement
EM(a,t,g)	Employed
NC(a,t,g)	Nominal contributors
CD(a,t,g)	Contributors that died
EP(a,t,g)	Existing pensioners

NP(a,t,g)	New pensioners
OD(a,t,g)	Dead pensioners
ED(a,t,g)	Existing disabled
ND(a,t,g)	Newly disabled

- *Projecting the number of Contributors*

The projection of contributors in PROST takes into consideration information by single year of age and gender regarding the income distribution stemming from administrative data, initial wage in terms of the minimum wage and aggregate information regarding participation rates, labour market position and productivity in terms of the minimum wage worker, amongst other variables. In our case, contributors are modelled as a percentage of the stock of employment, therefore trends in employment are directly reflected in the number of contributors.

PROST has only two restrictions on the contributor data. First, numbers of contributors cannot exceed population numbers for each of the cohorts. Secondly, it is assumed that every contributor eventually retires or dies. Since the oldest person that can retire is aged a_{max}, there can be no contributors older than age a_{max-1}. Therefore, the contributor numbers are simply set to be 0 for the oldest cohort. Nominal contributors account for all those to whom pension rights are accruing that particular year. Not all of those people actually do contribute to the system. Some may be exempt and thus, to get the number of effective contributors PROST uses the following formula:

$$EC(a,t,g) = NC(a,t,g) * [1 - ee\%(a,t,g)]$$

where:

EC is the effective contributors

NC is the nominal contributors in the base year

ee% is the exemption rate

a is an index for age

t is an index for year

g is an index for gender

- *Pension payments for existing old age pensioner*

In order to derive the finances of the pension system, the demographic structure of the pension system is combined with financial assumptions from the input sheets 'General' and 'Pension'. Primarily, PROST constructs a likely current picture of wage distribution of existing contributors given the marginal distributions and respective profile from the PROST input files. It is assumed that the per cent of age and gender specific contributor population in each income group remains stable with time. However, the income brackets applied to each of these contributor groups will be allowed to change independently.

The income distribution of old age pensioners is created in a similar way to the income distribution of contributors. PROST starts by creating 3-dimensional income distribution matrix of existing old age pensioners *DISTR_P%(a,1,g)*. Accordingly, after removing all possible data inconsistencies, minimum pension *MIN_PEN(t)* and maximum pension *MAX_PEN(t)* are calculated to be:

MIN_PEN(1) = bracket_p(1)

MAX_PEN(1) = bracket_p(imax)

*MIN_PEN(t>1) = (Min_PEN(t-1) * [1+infl%(t-1) * p_min_i%(t)] * [1+WG_N%(t-1)*

* p_min_w%(t)])

*MAX_PEN(t>1) = (MAX_PEN(t-1) * [1+infl%(t-1) * p_max_i%(t)] **

*[1+WG_N%(t-1) * p_max_w%(t)])*

where:

bracket_p(i) are the pension brackets from pension income distribution

p_min_i%(t) is the indexation of minimum pension to inflation

p_min_w%(t) is the indexation of minimum pension to nominal wage growth

p_max_i%(t) is the indexation of maximum pension to inflation

p_max_w%(t) is the indexation of maximum pension to nominal wage growth

WG_N%(t) is the nominal insured wage growth of effective contributors

I is the index for the wage/pension income level

Then, the average old age pension paid to existing old age pensioners in the base year is:

$$STREAM\_O(a,t=1,g,i=aver,1) = \left(\begin{array}{c} bracket\_p(1) \cdot DISTR\_P\%(a,1,g) + \\ \sum_{i>1} \left(\dfrac{bracket\_p(i) + bracket\_p(i-1)}{2} \cdot DISTR\_P\%(a,ig,) \right) \end{array} \right)$$

where *DISTR_P%(a,1,g)* is the pension distribution by income group.

- *Replacement Rate for Survivors*

Total pension payments for survivors is obtained by weighting the indexed pension payments made to survivors in the previous year and a percentage of the pension payments made to new old age pensioners. The weight of the new average pensions (*wt*) is the inverse of the average duration of survivorship benefit (*Ds*).

$$TP\_SUR(t) = (r\_surold\%(t) * R\_OLD(t) * AW\_EC\_U(t) * wt * TSU(t))$$
$$+ (TP\_SUR(t-1) * INDEX\_P(t) * (1-wt))$$

where:

r_surold%(t) is the replacement rate of survivors as a percentage of the replacement rate of old age pensioners

R_OLD(t) is replacement rate of old age pensioners in terms of the economy wide unconstrained wage

AW_EC_U(t) is unconstrained average wage

TSU(t) is the total number of survivors

INDEX_P(t) is the pension indexation coefficient.

Then the average replacement rate for survivors is:

$$R\_SUR(t) = TP\_SUR(t)\big/\big(TSU(t) * AW\_EC\_U(t)\big)$$

ANNEX 1
Methodological annex

Economy-wide average wage at retirement

Table A1
Economy-wide Average Wage at Retirement (1,000 EUR)

	2022	2030	2040	2050	2060	2070
Economy-wide average gross wage at retirement	22.9	31.4	44.8	61.4	82.7	110.6
Economy-wide average gross wage	26.7	36.8	53.5	75.2	104.6	144.6

Source: European Commission, EPC

It is to be noted that in the baseline questionnaire figures for the 2022-2070 period reflect the Average Wage of Contributors as projected by the model, in line with productivity assumptions.

Pensioners vs pensions

The total number of pensioners presented for the pension projection exercise is the aggregation of five categories of pensioners - old age, survivors, invalids, top-ups, treasury pensions and the non-contributory old-age pension. The model used in the projection – World Bank's PROST - reserves a different modelling treatment for these different categories of pensions, detail about which is provided in Part 4 of the Fiche. For aggregation purposes, the prevalence criteria were used. Hence the pensioner is attributed to the scheme from which s/he is receiving the highest pension.

Pension taxation

No data is provided for pension taxation.

Disability pensioners

The Maltese Government introduced changes to the regime regulating the award of the invalidity pensions and the review procedure. The new regime was implemented over the course of 2007 after the necessary legislative and organisational changes were instituted.

These measures introduced a new medical review process for this benefit and amongst the measures involved one finds:

i)   Change the application format – to include more medical data and further responsibility on the part of the claimant to prove his case. No invalidity pension is issued for life and each case is subject to regular reviews. All cases are reviewed every three to four years – where updated medical evidence is requested from the beneficiary.

ii) Change the current medical panel system – under the new system, the Department of Social Security will be recruiting medical practitioners through an Expression of Interest to act as a Medical Review Team. The Team's main function is to advise the Director (Social Security) on the medical aspects of Invalidity claims.

iii) Establish specific medical criteria for the award of benefits – this has been achieved by establishing "Impairment Tables" that provide the basic guidelines under which that Medical Review Team would decide on work- related impairment for Invalidity pension.

iv) Establish an independent systems audit – Establish a medical audit for benefit claims awarded and rejected on medical grounds, in order to establish whether such benefits have been awarded correctly.

Changes were also made to minimum period of sickness prior to payment of invalidity pension benefit which is now set at three months. However, this waiting period does not apply in the case of sudden severe or terminally ill persons.

Table A2 shows the disability rates by age groups.

Table A2
Disability Rates by Age Groups (%)

	2022	2030	2040	2050	2060	2070
Age group -54	0.2	0.3	0.4	0.4	0.3	0.3
Age group 55-59	2.9	2.8	2.8	2.9	2.9	2.9
Age group 60-64	2.6	2.7	2.7	2.8	2.6	2.7
Age group 65-69	0.1	0.1	0.1	0.1	0.0	0.0
Age group 70-74	0.1	0.1	0.1	0.1	0.0	0.0
Age group 75+	0.2	0.2	0.1	0.1	0.1	0.0

Survivors' pensions

In the pension expenditure projections for the baseline scenario, survivors' pension contributes positively to overall increase in expenditure as result of the ageing process as well as its indexation that is similar to old-age pensions.

The number of male survivors is negligible over the whole period.

Benefits for survivors are calculated in a different way. Total pension payments for survivors in different age groups $TP\_SUR(a, t, g)$ are determined in PROST by weighting the indexed pension payments for the survivors in the previous year and a percentage of the pension payment for new old age pensioners. The weight of new average pension is calculated as the inverse of the average duration of survivorship benefit. This method is used to take account of both the stock as a percentage of old age pensions and the flow of the survivor pensions from the previous year. Thereafter, the average replacement

rate is calculated. More details on the calculation of survivorship pension explained in Part 4 of the Fiche.

Non-earnings-related minimum pension

Non-contributory age (minimum) pensions are fully indexed with COLA.

Alternative pension spending disaggregation

Table A3 presents the factors behind the change in public pension expenditures between 2022 and 2070 for pensions and pensioners.

Table A3
Factors behind the change in public pension expenditure between 2022 and 2070 (pps of GDP) - Pensions

	2022-30	2030-40	2040-50	2050-60	2060-70	2022-70
Public pensions to GDP	-0.7	-0.2	1.1	2.4	1.8	4.4
Dependency ratio effect	0.1	-0.1	1.1	2.7	2.1	5.9
Coverage ratio effect*	-0.3	0.1	-0.1	-0.2	-0.0	-0.5
Coverage ratio old-age	-0.1	-0.1	-0.1	0.1	0.2	-0.1
Coverage ratio early-age	-1.4	-0.1	0.1	0.7	0.4	-0.3
Cohort effect	0.1	1.3	-0.1	-2.5	-2.1	-3.2
Benefit ratio effect	-0.3	-0.2	0.1	-0.0	-0.3	-0.7
Labour market effect	-0.1	-0.0	0.0	-0.0	-0.0	-0.1
Employment ratio effect	-0.2	-0.0	0.1	0.0	-0.0	-0.1
Labour intensity effect	-0.0	0.0	0.0	0.0	0.0	0.0
Career shift effect	0.0	-0.0	-0.0	-0.1	0.0	-0.0
Residual	-0.0	0.0	0.0	-0.0	-0.0	-0.1

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

Source: European Commission, EPC

ANNEX II

Migration

An important component in the population assumptions underlying the projections presented in this fiche is net migration. As a matter of fact, net migration throughout the projection period averages at 6,947 per year starting at 10,222 in 2023 and decreasing to 3,992 by 2070. These annual flows will have a cumulative impact such that projected migrant population is estimated to reach 49.1 per cent of total population[14].

	2023	2030	2040	2050	2060	2070
Net migration	10,222.0	9,419.0	7,530.0	6,030.0	5,084.0	3,992.0

Source: Europop 2023

On average, 81 per cent are of working age, so essentially, these migrants will yield demographic dividends throughout the early years of the projection. However, by using the total Europop population assumptions in the model implicitly assumes that all migrants that are projected to enter into Malta actually settle and retire in Malta. This is unrealistic, especially in light of the fact that local studies established that foreign workers only tend to stay in Malta for a temporary period with the average length of stay being 3.5 years, and only 30.0 per cent of the migrants remaining in Malta for a period exceeding 6 years.[15] This contrasts with the international experience, since while the OECD reports that between 20 and 50 per cent of the migrants return to their country of origin or relocate elsewhere withing five years, in the case of Malta, 50.0 per cent of foreign workers leave the country within two years.

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[14] This estimate was deciphered using calculations based on the deviation from the baseline population projections and Eurostat's "No Migration" population projections.

[15] Central Bank of Malta (2019), "*The Length of Stay of Foreign Workers*" in Malta Quarterly Review 2019:2, pp. 35-42

This phenomenon of temporary settlement can also be observed from the flows of emigration and immigration in recent years. As can be seen from the below table, whilst immigration is increasing substantially year-on-year (excluding for the COVID years), the significant outflows observed every year indicate that rather than settling here permanently, migrants tend to leave after a period of time.

This limitation has important implications in the accuracy of pension expenditure projections. Accounting for this high migrant turnover in the population assumptions would yield more realistic pension expenditure results.

	2017	2018	2019	2020	2021
Immigration	21,676	26,444	28,341	13,885	18,148
Emigration	7,020	9,324	7,998	12,679	13,509

ANNEX III
Description of contributory and non-contributory benefits

Contributory Schemes

Old age pensions – earning related

Two-Thirds Pension is a pension related to earnings, payable to persons who have retired after January 1979. This scheme provides for a pension equivalent to two-thirds of the insured person's pensionable income. Maximum and minimum rates are applicable.

National Minimum Pension / Increased National Minimum Pension is payable to a person who is not in receipt of a Service Pension from an employer. The rates applicable are four-fifths of the National Minimum Wage in the case of a married man maintaining his wife and two-thirds of the National Minimum Wage in the case of any other person.

Decreased National Minimum Pension is payable to a person who receives a Service Pension and a Retirement Pension or Increased Retirement Pension. If both pensions are less than the National Minimum Pension, such a person will be entitled to a National Minimum Pension reduced by the same Service Pension.

Survivors – earnings related

Early Survivors' Pension is payable to a widow/er whose husband/wife would have been entitled to a pension had he/she reached retiring age at the time of his/her death.

Widows' Pension/National Minimum Widows Pension/Pensions of Widows with Children is payable to widows, irrespective of age, who are not gainfully occupied, who are occupied but earning less than the national minimum wage, or who are carrying out

gainful activities but have the care and custody of children under 16 years of age. Rates may vary according to conditions outlined in the Social Security Act (Social Security Act, Part IV, and subsequent amendments). Any reference to a widow also means a widower.

Other pensions falling within this category in ESSPROS included

Other pensions

Invalidity Pension is payable to persons deemed permanently incapable for suitable full-time or regular part-time employment. There are various rates according to different conditions.

Treasury Pension is payable to (a) all government employees who started service with government before 15th January 1979 (closed system); (b) police, AFM personnel, Correctional Facilities officials and members of the Civil Protection; (c) widows of public officers who held a pensionable post and who contributed to the widows' pension scheme; and (d) members of Parliament, members of the judiciary and the Attorney General.

Non-Contributory Schemes

Old Age Pension is payable to citizens of Malta over 60 years of age, provided that their income does not exceed an established level.