

LONG-TERM PENSION PROJECTIONS FOR MALTA:

2016-2070



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Views expressed in this report do not represent the views of the Economic Policy Department or the Ministry for Finance. Any errors and omissions are the authors' own.

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Abbreviations and Acronyms

AWG	Ageing Working Group
CBR	Crude Birth Rate
CDR	Crude Death Rate
CNMR	Crude Net-Migration Rate
COLA	Cost of Living Adjustment
CPRC	Crude Population Rate of Change
CSM	Cohort Simulation Model
DG ECFIN	Directorate-General for Economic and Financial Affairs
ECOFIN	Economic and Financial Affairs Council
EPD	Economic Policy Department
EPC	Economic Policy Committee
ESSPROS	European System of integrated Social Protection Statistics
EU	European Union
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
IRD	Inland Revenue Department
MFCS	Ministry for the Family, Children's Rights and Social Solidarity
MFIN	Ministry for Finance
NSO	National Statistics Office
OGWG	Output Gap Working Group
PAYG	Pay As You Go
p.p.	percentage point
PROST	Pension Reform Options Simulation Toolkit
TFP	Total Factor Productivity

Executive Summary

The EPD within MFIN has over the past years developed expertise in the field of pension projections. These projections, prepared also through collaboration with the World Bank, served to inform discussions on the likely evolution of the pension system in light of demographic developments as part of national reviews (2000, 2005, 2010 and 2015) as well as the Ageing Report of the EPC (2006, 2009, 2012 and 2015). The projections presented in this report cover the period 2016 to 2070. Besides extending the period of projection by 10 years, these projections differ from previous projections (Ageing Report 2015) mainly because the new projections take into account the new demographic and macroeconomic assumptions adopted for the Ageing Report of 2018.

The public pension projections feed into the European Semester with the scope of identifying policy challenges, as well as in the assessment of the sustainability of public finances carried out by Commission Services as part of its ongoing fiscal surveillance.

The projections are based on commonly agreed assumptions and methodologies across all Member States, as agreed by the EPC. On basis of the demographic projections produced by Eurostat, the European Commission (DG ECFIN) prepared the macroeconomic assumptions for subsequent discussion and adoption by the EPC.

The model used in projecting pension expenditure was the World Bank's PROST 15, being the same model used in the projection of pension expenditure by Malta in previous rounds of projections. Staff from the EPD within the MFIN were trained and licensed to use PROST 15 in order to model the development of the current pension system and analyse various options for pension reform.

The pension projections baseline was prepared by the World Bank with the assistance of expertise from the EPD and the

MFCS. The results obtained were subject to a process of internal review by pension experts within Government. The pension projections presented in this report have been subject to a peer review in the EPC Ageing Working Group before being endorsed by the same Group. The DG-ECFIN provided some of the indicators used in the report.

Long-term pension projections are not forecasts. Projecting the demographic and economic developments over the next half decade is subject to a significant element of uncertainty and the further away from the starting point, the higher the degree of uncertainty. As a consequence, the baseline projection is complemented by sensitivity tests to illustrate the extent to which the public pension expenditure projections are sensitive to changes in key assumptions. These projections are made under a "no policy change" assumption.

The 2018 long-term budgetary projection exercise

Following the mandate given by the ECOFIN Council to the EPC to produce a new set of long-term budgetary projections by 2018, population and macroeconomic

projections were provided by Eurostat and by the Commission services (DG ECFIN), respectively. In light of this mandate, the EPC together with the Commission services (DG ECFIN) agreed on a work programme in order to organise the budgetary projections and reach agreement on its assumptions and methodologies. In accordance with its normal practice, the EPC mandated a working group, - the AWG - to take forward the work required for this purpose.

Main Results

Malta is growing old and will continue to age in the coming decades

The demographic old-age dependency ratio is expected to continue rising at a fast pace in the coming decades

This report presents in detail the latest public pensions projections for Malta completed by the EPD during the last quarter of 2017. The first two Chapters describe the underlying assumptions: the population projection and the macroeconomic assumptions used. The third Chapter gives an overview of the main parametric features of the public pension system in Malta. Chapter 4 presents the public pension expenditure projections.

The baby boom generation (people born between 1946 and 1964) currently accounts for 25.9 per cent of the total Maltese population. The share of the elderly population (aged 65 and more) in total population has grown substantially in the past decades in comparison to the other age groups. Persons aged 65 or older accounted for 3.0 per cent of total population in 1980; this ratio increased to 19.1 per cent by 2016; and in 2070 it is projected to reach 30.6 per cent of total population.

The old-age dependency ratio is set to continue rising from 28.6 per cent in 2016 to 55.9 per cent by 2070, an increase of 27.3 p.p. In other words, while in 2016 there were around 4 individuals of working age for every person of age 65 or more, by 2070 this ratio will decrease to around 2 individuals of working-age for every person who reach the pension age. Higher dependency ratios imply an increased burden on those of working age to provide for government expenditure related to pensions, health and long-term care. While currently the Maltese population is younger than the average for EU-28, this is expected to be reversed by 2070 due to faster ageing dynamics.

Changes in the age-structure of the Maltese population reflect higher life expectancy for

men (+6.8 years) and women (+6.3 years) across all ages, a rise in the total fertility rate (from 1.2 per cent to 1.8 per cent) as well as positive strong net-migration inflows.

Stronger overall participation rates in the labour market, particularly for female and older workers because of labour market reforms and implemented pension reforms

The total participation rate in the labour market for persons aged 15-64 years is expected to rise from 69.2 per cent in 2016 to 79.5 per cent by 2070. The participation rate of males is higher than that of females throughout the projection period. However, for females, total participation rate is projected to increase by much more, implying a convergence in participation rates between males and females. This primarily reflects the steady increase in the female participation rate and the stronger retention rate in the labour market as observed over the past decade. The legislated parametric changes in the pension system are yet another driver explaining the increase in the total participation rate, particularly for older persons. Similar trends are observed for the employment rates.

Still, given the projected evolution of the total employment rate, total labour supply is projected to reach a peak in 2043 with 246,461 persons and decline thereafter to 230,144 persons by 2070. The corresponding fall in labour supply reflects a shrinking working age population, such that labour growth turns negative in the last decade of the projection period.

Potential GDP is expected to continue growing, albeit at a slower rate over the long-term

The potential GDP growth is set to average 5.1 per cent between 2016 and 2020 and decrease (year-on-year) to an average of 2.2 per cent between 2020 and 2060 before slowing to 1.4 per cent over the last decade of the projection. These developments reflect changes in the determinants of economic growth that are expected to alter significantly. Employment will make a positive contribution to growth up to 2050, but will turn negative thereafter, while labour productivity is expected to be a dominant

An ageing population puts upward pressure on public pension expenditure over the long-term

source of growth throughout the 2016 to 2070 period.

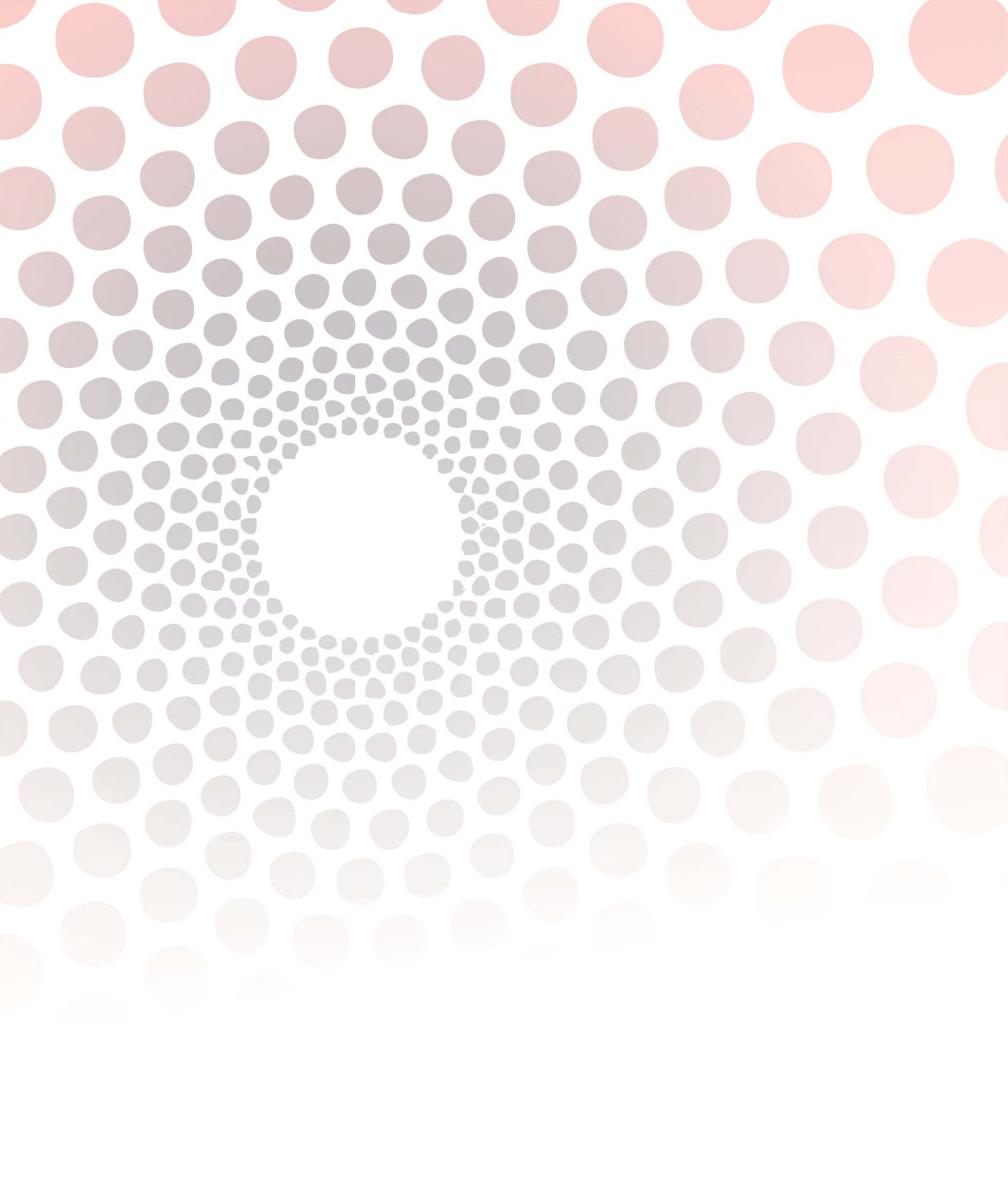
The long-term projections show that in the baseline scenario public pension expenditure is projected first to decline by 1.0 p.p. of GDP over the period 2016-2032, then it increases by 3.4 p.p. of GDP during the 2033-2060 period, while over the last remaining years expenditure goes up by an additional 0.4 p.p. of GDP. Over the whole projection period, the increase amounts to 2.9 p.p. of GDP. The increase reflects both faster ageing which puts an upward pressure on public spending as well as the macroeconomic assumptions.

Compared with the projections in the 2015 Ageing Report, public pensions' expenditure according to the baseline scenario is expected to be lower by 2.5 p.p. of GDP against a projected expenditure of 12.7 per cent by 2060 in the 2015 Ageing Report. Meanwhile, expenditure is projected to rise less rapidly by 0.9 p.p. of GDP, i.e. by 2.5 p.p. of GDP over the entire projection horizon between 2016 and 2060. Such revisions reflect a lower starting position and the new set of adopted assumptions.

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CHAPTER 1

DEMOGRAPHIC UNDERLYING ASSUMPTIONS

1. Demographic Underlying Assumptions

1.1 Introduction

The long-term pension projections are prepared on the basis of the 2015-based population projections provided by Eurostat. The principal demographic drivers are: (i) the fertility rate, (ii) life expectancy and (iii) the level of net migration and are projected for the period 2015-2080. The underlying methodology is based on a 'partial convergence' approach, meaning that the key demographic determinants are assumed to converge over the very long-term to the best performers in the EU. Furthermore, it is assumed that both fertility and mortality rates tend to converge to that of the 'forerunners' in the EU.¹ What follows is the main discussion of the projected population as well as the main demographic determinants.

1.2 Future of Demographic Ageing

The population projections indicate that the total population in Malta by 2070 will be both larger and older. Total population is expected to rise from 434,406 in 2016 to 521,154 in

2067 and to slightly decline to 520,864 by 2070, as shown in Table 1.1 and Chart 1.1. The share of the very young people (aged 0-14 years) in total population is expected to be on an upward trajectory till 2030, drop again to 14.2 by 2050, but is expected to increase thereafter. The working-age population

Table 1.1: Total population, by age

Age	2016	2020	2030	2040	2050	2060	2070
0-14	61,895	65,734	74,277	72,563	72,772	76,400	75,841
15-64	289,589	291,978	295,265	306,833	302,150	288,283	285,506
65+	82,922	94,830	119,090	126,525	138,159	154,531	159,517
Total	434,406	452,542	488,632	505,921	513,081	519,214	520,864
Percentage Distribution, %							
0-14	14.2	14.5	15.2	14.3	14.2	14.7	14.6
15-64	66.7	64.5	60.4	60.6	58.9	55.5	54.8
65+	19.1	21.0	24.4	25.0	26.9	29.8	30.6

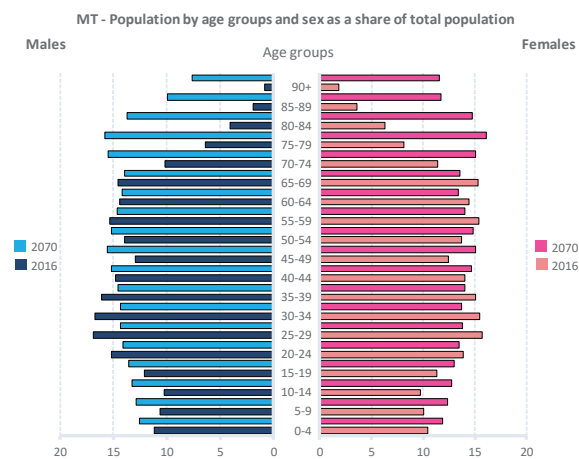
Source: Eurostat

(aged 15-64 years) is set to gradually increase to around 307,051 individuals in 2042 and then trend downwards in the second half of the projection horizon. This age group is the most significant from an economic perspective since it reflects the share of population that will bear the financial burden of the elderly population. This will start to fall from a share of 66.7 per cent in 2016 to 60.4 per cent by 2030, reaching 54.8 per cent in 2070. By contrast, the share of the elderly population (aged 65 and more) in total population will increase steeply from 19.1 per cent in 2016 to 30.6 per cent by 2070. Furthermore, the old-old age group (aged 75

and more) itself is growing. While in 2016 this age group accounted for approximately 7.5 per cent, it is projected to represent a share of around 19.4 per cent of total population by 2070. This age-cohort is also important from a public policy perspective since persons in this age group are less likely to be economically active and more likely to enter into a state of dependency.

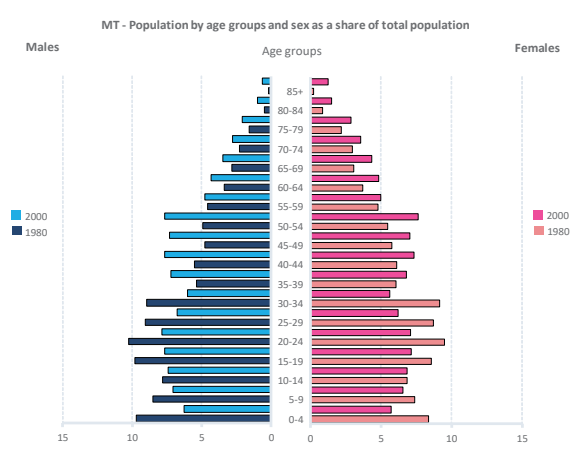
The demographic transition and the consequent increasing share of the elderly, is demonstrated in Chart 1.2. The population pyramid corresponds to 1980 and 2000 in order to illustrate the shift in the age distribution of the population. The old-age dependency ratio increased from 12.5 in 1980 to 17.9 in 2000.

Chart 1.1: Age pyramid comparison 2016 vs 2070



Source: Eurostat

Chart 1.2: Age pyramid comparison 1980 vs 2000



Source: Eurostat

Table 1.2 shows the dependency ratios relating to the number of individuals, the youth groups and the elderly, compared to the number of people of working-age (15 to 64). The youth dependency is expected to rise from 21.4 per cent in 2016 to 26.6 per cent by 2070. The old-age dependency ratio is also expected to increase but more persistently, from 28.6 per cent in 2016 to 55.9 per cent by 2070, an increase of 27.3 p.p. Therefore, by 2070 the total dependency ratio will amount to 82.4 per cent. As a result of these demographic developments, the support ratio declines steadily over the projections period, reaching 1.8 by 2070. This indicates that while in 2016 there were around 4 individuals of working age for every person that reached pension age, by 2070 this ratio will decrease to around 2 individuals of working age for every person that reached pension age.

Looking at the EU-28 average dependency ratio, the youth dependency ratio is expected to rise from 23.8 per cent in 2016 to 26.8 per cent by 2070. The old-age dependency ratio is also set to increase from 29.3 per cent in 2016 to 51.2 per cent by 2070, an increase of 21.9 p.p. Therefore, by 2070 the total dependency ratio is expected to rise to 78.0 per cent. By 2070, compared to EU-28, Malta

Table 1.2: Demographic Indicators

	2016	2020	2030	2040	2050	2060	2070
Malta							
Youth dependency ratio	21.4	22.5	25.2	23.6	24.1	26.5	26.6
Old-age dependency ratio	28.6	32.5	40.3	41.2	45.7	53.6	55.9
Total dependency ratio	50.0	55.0	65.5	64.9	69.8	80.1	82.4
Support Ratio	3.5	3.1	2.5	2.4	2.2	1.9	1.8
EU-28							
Youth dependency ratio	23.8	24.1	24.4	25.2	26.2	26.6	26.8
Old-age dependency ratio	29.3	31.7	39.1	46.4	50.3	51.6	51.2
Total dependency ratio	53.2	55.8	63.5	71.6	76.5	78.2	78.0
Support Ratio	3.4	3.2	2.6	2.2	2.0	1.9	2.0

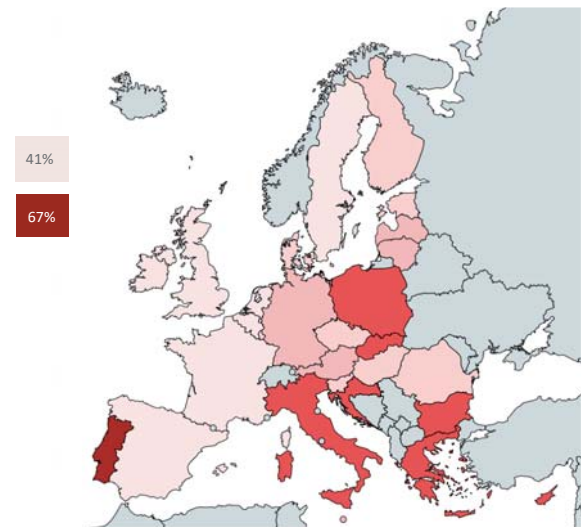
Source: Eurostat

has a higher dependency ratio of 4.4 p.p. This higher ratio is mainly because of the old-age dependency ratio, which is 4.7 p.p. higher than that of the EU-28, even though Malta is starting from a lower position. Looking at the support ratio, the average for EU-28 is starting from a lower level than Malta, nevertheless it shows the same pattern of decline from around 3.4 in 2016 to 2.0 by 2070 (Chart 1.3).

1.2.1 Births

The 2015-based population projections assume a process of partial convergence in the fertility rates across Member States to that of the forerunners. The total fertility rate for Malta is projected to rise from 1.4 in 2016 to 1.8 by 2070. It is still expected, however, to remain below the natural replacement rate of 2.1 over the entire projection horizon. For EU-28, total fertility rate is expected to increase from 1.6 in 2016 to 1.8 by 2070.

Total live births in Malta are expected to increase from 4,325 births in 2016 to 4,825 births by 2023. From 2013 till 2036, total live births are expected to decline to 4,466 and increase back to 4,960 by 2055. However, from 2055 onward it is expected to decline once again to 4,815 births by 2070, as

Chart 1.3: Old-age dependency ratio, 2070

Source: Eurostat

indicated in Table 1.3. This volatility in the amounts of births is attributed to changes in the population of child-bearing age.

1.2.2 Mortality

Over the projection period, life expectancy at birth for men is projected to rise by around 7 years over the projection horizon to reach 86.8 years in 2070. Meanwhile,

Table 1.3: Main demographic determinants evolution

	2016	2020	2030	2040	2050	2060	2070
Malta							
(I) Total Population	434,406	452,542	488,632	505,921	513,081	519,214	520,864
(II) Live Birth	4,258	4,745	4,614	4,538	4,908	4,900	4,815
(III) Total Deaths	3,231	3,672	4,689	5,595	5,745	5,665	6,045
(IV) Net-Migration	3,478	3,214	2,641	1,992	1,402	1,258	1,015
Population growth rate	1.2	1.0	0.6	3.5	1.4	0.1	-0.0
Fertility Rate	1.4	1.5	1.6	1.7	1.7	1.7	1.8
Men - Life expectancy at birth	80.0	80.5	82.0	83.4	84.7	85.8	86.8
Men - Life expectancy at 65	19.3	19.6	20.6	21.5	22.3	23.1	23.9
Women - Life expectancy at birth	84.3	84.8	86.1	87.4	88.5	89.6	90.6
Women - Life expectancy at 65	22.2	22.5	23.5	24.4	25.3	26.1	26.9
Crude Population Change (II)+(III)+(IV)	10.4	9.5	5.3	1.9	1.1	1.0	-0.4
Crude Birth Rate (II)*1000/(I)	9.8	10.5	9.4	9.0	9.6	9.4	9.2
Crude Death Rate (III)*1000/(I)	-7.4	-8.1	-9.6	-11.1	-11.2	-10.9	-11.6
Crude Net-Migration Rate (IV)*1000/(I)	8.0	7.1	5.4	3.9	2.7	2.4	1.9
EU-28							
Population Change	3.0	2.1	1.2	0.5	-0.5	-1.0	-0.5
Crude Birth Rate	10.0	10.0	9.6	9.7	9.7	9.7	9.9
Crude Death Rate	-9.9	-10.1	-10.7	-11.4	-12.1	-12.4	-12.0
Crude Net-Migration Rate	2.9	2.2	2.2	2.2	2.0	1.7	1.6

Source: Eurostat

the life expectancy at birth for women is projected to increase from 84.3 years in 2016 to 90.6 years by 2070, an increase of 6.3 years over the whole period. The projected gains in life expectancy results is reflecting lower mortality rates across all age brackets. Meanwhile, life expectancy at 65 for males is projected to increase by 4.6 years between 2016 and 2070, which is the same as the projected increase for women (Table 1.3). These results indicate that while females will continue to live longer than males, an element of partial convergence in life expectancy between the sexes is expected to materialise over the projection period.

Total deaths are expected to increase from 3,231 to 5,769 persons by 2047 and decline to 5,657 persons by 2058 and increase back

again to 6,045 persons by 2070 (Table 1.3). The increase in total deaths reflects the growth in the population which counter-acts the consistent decline in mortality rate over the projection horizon.

1.2.3 Net-Migration

From a statistical perspective, changes in migration tend to be volatile, especially in small states like Malta, and subsequently difficult to predict. Based on the assumptions adopted by Eurostat, annual net-migration inflows are projected to decline from 3,478 in 2016 to 1,015 by 2070. As indicated in Table 1.3, there is a downward trend indicating the decline in the total net migration. In 2053, net migration is expected to increase slightly from 1,385 persons in 2052 to 1,418 in 2054, and it will continue to fall

thereafter. Cumulatively, net migration inflows during the 2016 to 2070 period is expected to account for 21.2 per cent of the total population in Malta by the end of the projection period.

1.2.4 Crude Demographic Changes

In order to derive the driving components of the total population change, adjusted for the country size, we use CPRC which is the ratio of the population change during the year to the population at the end of the year. The value is expressed per 1,000 persons. CPRC is the summation of the CBR, CDR and CNMR. The first two components capture the crude natural change in the population per 1,000 persons while the latter driver is an exogenous factor capturing net-migration per 1,000 persons. The derived indicators are produced in Table 1.3.

CBR, which is defined as the total live births in a year per 1,000 persons, is expected to decline from 9.8 in 2016 to 9.2 births by 2070. CDR, which indicates the number of deaths per 1,000 persons, is projected to rise from 7.4 deaths in 2016 to 11.6 by 2070. The reason for this increase is mainly due to the expected rise in the share of elderly persons in the population - who are endowed with lower survival rates - thus countering the effect of increases in life expectancy at birth. The developments in both CBR and CDR imply that the natural rate of population will start to decline by 2030, meaning that the Maltese population starts depopulation in a context of no net-migration flows.

CNMR presents the difference between the number of immigrants and emigrants per 1,000 persons. The rate for Malta shows a decline over the projection period as indicated in Table 1.3 from 8.0 in 2016 to 1.9 by 2070. This implies that the projected positive net-migration flow postpones by 37 years the year at which total population starts to decrease.

Meanwhile, the CNMR for EU-28 is expected to decline from 2.9 in 2016 to 1.6 by 2070.

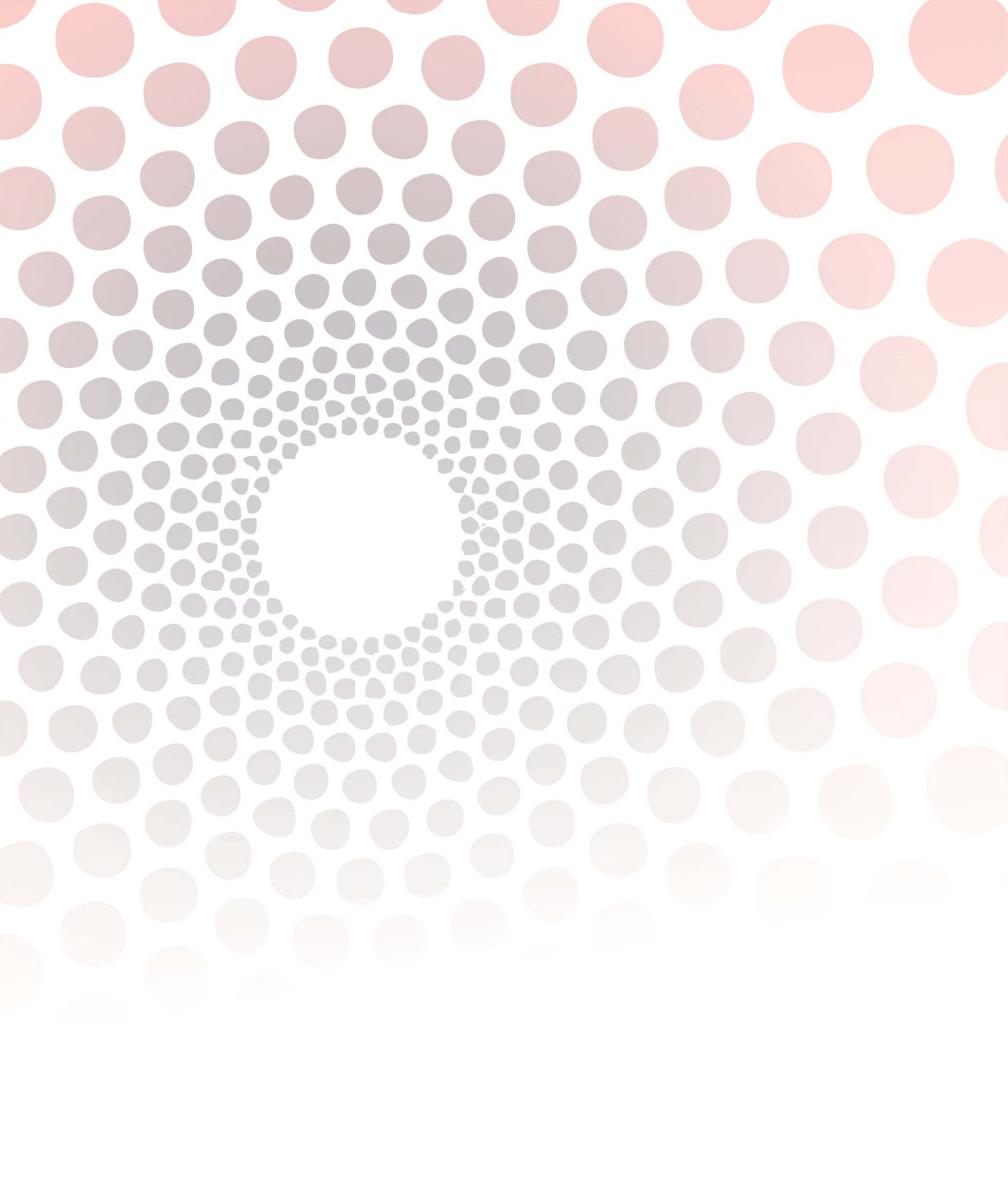
CBR is also projected to decline from 10.0 in 2016 to 9.9 by 2070, while CDR is expected to increase from 9.9 in 2016 to 11.9 by 2070 (Table 1.3); implying that the natural change in population turns negative by 2019.

CPRC of Malta is relatively higher than that of EU-28 over the entire projection period because of better performance in the natural rate change and stronger positive CNMR. While both CNMR of EU-28 and Malta are expected to decline, so does the gap between them which closes from 5.1 in 2016 to 0.4 by 2070. Furthermore, by 2070, Malta's CPRC is close to that of EU-28, implying convergence of demographic determinants between EU-28 countries and Malta.

The results demonstrate that Malta's population dynamics are highly affected by CNMR, meaning that in a context of positive net-migration, depopulation will start 37 years later in 2067. Meanwhile, the change in population is also expected to turn negative later by 26 years if net-migration is included. This demonstrates that on average, positive net-migration is a key driver in slowing down the demographic transition. Such factor is larger in Malta once the population size is factored in.

Footnote:

¹ A detailed overview of the methodology used and the corresponding assumptions is found in *The 2018 Ageing Report: Underlying Assumptions and Projection Methodologies* authored by the European Commission.



CHAPTER 2

MACROECONOMIC UNDERLYING ASSUMPTIONS

2. Macroeconomic Underlying Assumptions

2.1 Introduction

The described demographic trends in the previous chapter have macroeconomic implications both in terms of the size of the labour force as well as on the level of the GDP. A larger proportion of elderly persons necessitates a larger share of budgetary resources to be used to support the older population. This Chapter first delves into the labour force projections and then on the consequent GDP underpinning the pension projections presented in this report.

2.2 Labour Force Projections

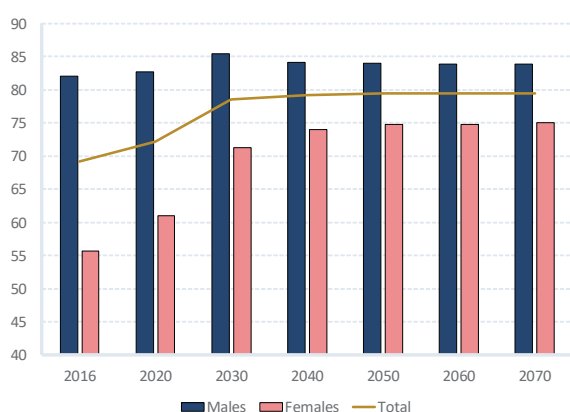
2.2.1 Participation Rate

In 2016, the total participation rate for the 15-64 age cohort stood at 69.2 per cent. As illustrated in Chart 2.1, the participation rate is expected to continue rising and reach 79.0 per cent by 2033, and remains relatively stable thereafter, at 79.5 per cent by 2070. The participation rate of males is higher than that of females throughout the projection period. However, by 2070 it is

projected that the participation rate gap will narrow from 26.5 p.p. in 2016 to 8.8 p.p. by end of the period. This primarily reflects the steady increase in the female participation rate and the stronger retention rate in the labour market as have been observed in the past decade. Another driver causing the total participation rate to increase, particularly for older persons, is the legislated parametric changes in the pension system, as outlined in the next chapter.

The methodology utilised to project the participation rates by age and gender is the CSM discussed in Appendix A.1.

Chart 2.1: Participation rate, 15-64



Source: Commission Services

2.2.2 Employment and Unemployment Projections

The total employment rate is projected to increase from 69.1 per cent in 2016 to 79.5 per cent in 2070. Again, this evolution primarily reflects improvements in the employment of females (17.6 p.p.) and older workers (37.3 p.p.).

As shown in Table 2.1, the employment rate for youth (15-24) is projected to increase from 47.0 per cent in 2016 to 48.1 per cent by 2020 and will decrease to 43.5 per cent by 2070 because of delayed entrance in the labour market. The total employment rate is also negatively affected by the trajectory for prime-age (25-54) male workers, such that it is expected to experience a moderate decline from 92.7 per cent to 91.7 per cent

over the whole period. By contrast, the rates for prime-age (25-54) and older (55-64) female workers are both expected to increase significantly by 17.1 and 37.3 p.p. respectively. These developments result in an increase in the total employment rate from 79.3 per cent in 2016 to 87.1 per cent by 2070 for prime-age workers and an increase of 23.7 p.p. in the participation rate for older workers, from the present rate of 44.3 per cent. The employment rates for 65+ years old workers remain considerably low. Yet, the female rate for this age cohort is expected to record increases, attaining an employment rate of 4.4 per cent in 2070. By contrast, the male employment rate for 65+ age group is expected to decline gradually by 1.7 p.p. by end of the projection period. This implies

that total employment rate for the oldest cohort will decrease from 6.4 per cent in 2016 to 2.9 per cent by 2025 and increase again to 7.1 per cent by 2070.

As a result of the expected impact of pension reforms aimed at lengthening careers, the share of older workers (55-64) in employment (20-64) is projected to rise from 14.1 per cent in 2016 to 18.3 per cent in 2070. The increase in the share of older workers reflects the need to stay longer in employment in order to fulfil the qualifying conditions for a full pension entitlement in light of delayed entrance in the labour market and possibly interrupted working careers in the case of females.

Table 2.1: Employment, unemployment, and labour supply projections

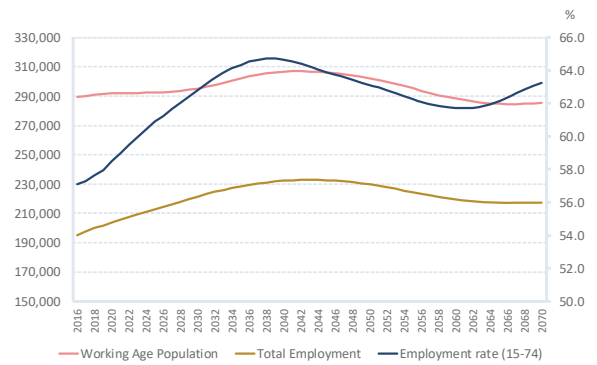
	2016	2020	2030	2040	2050	2060	2070
Employment Rates - Males							
15-24 years	49.4	50.8	45.9	45.7	46.8	45.8	45.9
25-54 years	92.7	92.5	91.6	91.5	91.7	91.8	91.7
55-64 years	62.3	59.0	71.8	72.1	72.0	70.9	72.1
65+ years	11.5	9.6	8.4	10.2	10.0	9.9	9.8
15-74 years	68.9	68.0	69.3	69.3	67.2	65.7	67.1
Employment Rates - Females							
15-24 years	44.3	45.1	40.6	40.8	41.8	40.9	41.0
25-54 years	65.1	71.8	79.3	82.1	82.1	82.0	82.2
55-64 years	26.4	27.1	47.3	59.0	63.2	62.2	63.7
65+ years	1.7	2.7	2.0	3.8	4.3	4.4	4.4
15-74 years	45.0	48.6	56.1	59.8	58.9	57.6	59.3
Total Employment- 15-74 years							
Males	119,241	120,443	124,623	127,310	124,950	119,104	117,411
Females	75,623	83,406	96,833	104,890	104,818	100,366	100,039
Unemployment Rates- 15-74 years							
Males	4.1	4.5	5.4	5.5	5.5	5.5	5.5
Females	4.4	4.6	5.7	5.6	5.5	5.5	5.5
Total Unemployment - 15-74 years							
Males	5,046	5,643	7,154	7,390	7,296	6,910	6,837
Females	3,449	4,030	5,831	6,191	6,103	5,863	5,858
Labour Supply - Total							
Males	124,287	126,086	131,777	134,700	132,246	126,014	124,247
Females	79,073	87,436	102,664	111,082	110,921	106,230	105,897
15-74 years	203,360	213,522	234,441	245,781	243,167	232,244	230,144
55-64 years	27,123	26,270	33,455	44,140	49,130	41,245	39,378
65+ years	2,622	2,423	2,052	2,638	3,241	3,476	2,790

Source: Commission Services

The unemployment rate for both the males and females is expected to approximately increase by 1 p.p. as indicated in Table 2.1. The general increase in the unemployment rate reflects the adopted methodology of convergence to the structural unemployment rate estimates (NAWRU), which are based on the methodology developed by the EPC OGWG. This is explained in more detail in Appendix A.2.

Turning to the headcount figures, the total number of unemployed persons is also expected to increase over the projected period, from 8,495 persons in 2016 to 12,695 persons by 2070, capturing both larger population and higher unemployment rates. However, the total unemployment is expected to peak in 2043 reaching 13,602 individuals. Additionally, total employed persons are expected to reach 217,450 by 2070. The peak year is in 2043 standing at 232,859 individuals. The share of employment is generally lower for women (38.8 per cent in 2016), but it is expected to catch-up

Chart 2.2: Working-age population and employment

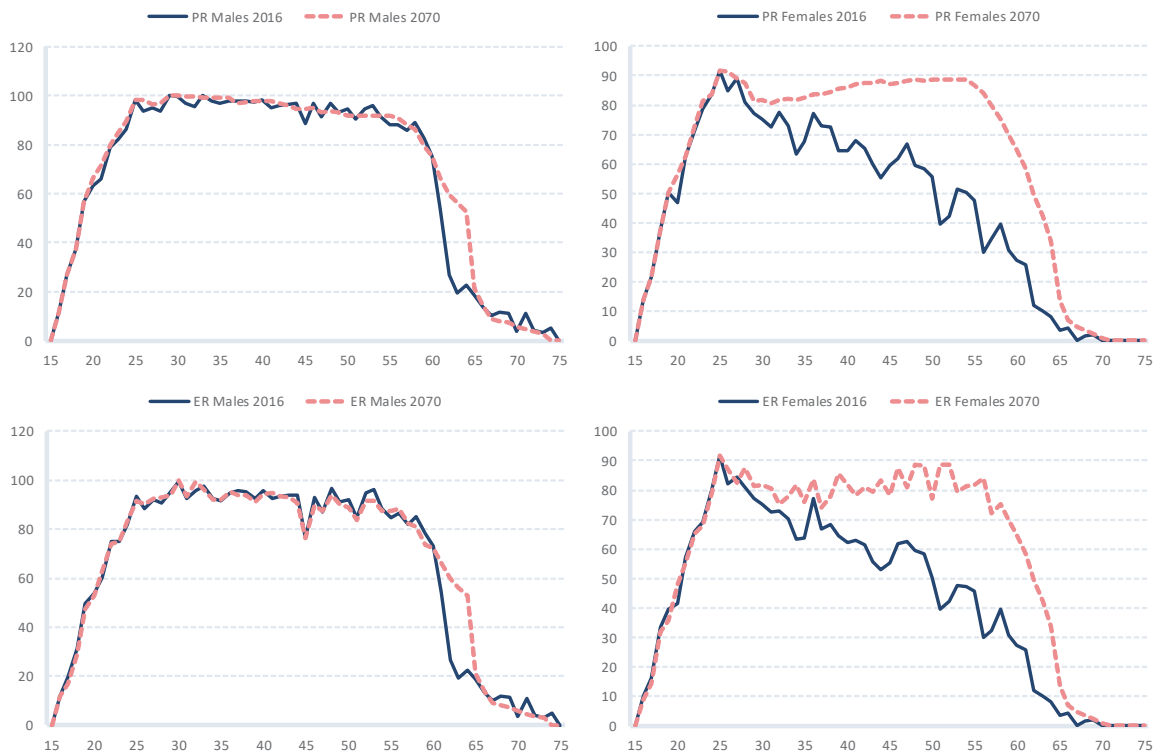


Source: Commission Services

considerably during the projected interval (46.0 per cent in 2070).

As illustrated in Chart 2.2, the projected increase in the employment rates of women

Chart 2.3: Age Profile of participation and employment rates by gender in 2016 and 2070



Source: Commission Services

Table 2.2: Contribution to overall change in participation rates, 2016-2070

		Malta	EU28	
Participation rates in 2070		85.0	80.7	
Total change in participation rates (%)		12.2	3.2	
Contribution of group specific changes in participation rates	Men & Women	Total (20-64)	12.0	3.6
		Young (20-24)	0.3	0.1
		Prime age (25-54)	6.2	0.9
		Older (55-64)	5.5	2.6
	Men	Total (20-64)	1.4	0.6
		Young (20-24)	0.2	0.1
		Prime age (25-54)	0.1	-0.3
		Older (55-64)	1.2	0.8
	Women	Total (20-64)	10.5	2.9
		Young (20-24)	0.1	0.1
		Prime age (25-54)	6.2	1.1
		Older (55-64)	4.3	1.8
	Demographic effect	Total (20-64)	0.3	-0.5
		Young (20-24)	-0.2	0.6
Prime age (25-54)		0.8	-1.9	
Older (55-64)		-0.3	0.7	
Men		-0.2	0.9	
Women		0.1	-0.7	
Interaction effect		-0.1	0.1	

Source: Commission Services

and older workers would temporarily cushion the effect of ageing on the labour force count. Additionally, Malta's projected working-age population reaches its peak in 2042 at 307,051 individuals and falls to 285,506 by 2070, a decline of 7.0 per cent. Meanwhile, total employment reaches its peak in 2044 at 232,859, an increase of about 19.5 per cent over 2016. Therefore, following the peak in 2042 and 2044, both the working age population and total employment experience declines thereafter. As from 2044, there is no counter balancing factor to demographic ageing and thus, both the size of the working age population and the number of people employed are on a downward trajectory, leading to a shrinking working age population.

Chart 2.3 presents the participation and employment rate by gender and age profile for the year 2016 and 2070. Other things being equal and given the age profile of participation rates, the increasing share of older workers in the labour force puts downward pressure on the total participation rate. However, the combined effects of the projected impact of pension reforms and the catching up of women's participation rate offset the demographic effect. In particular, the expected shift for the male's participation and employment rate is due to the change in legislative pension reform, particularly the increase in pension age. While the expected shift in the female's participation and employment rate is driven by both the increase in retirement age and stronger attachment of women to the labour market.

The following Table 2.2 applies a shift-share analysis to changes in the total participation rate over the period 2016 to 2070, specifically in the age and gender dimension. The participation rate is split in three components: (i) a participation rate effect, (ii) a population/demographic effect, and (iii) an interaction/residual effect.

The participation rate effect, indicates changes in participation rates by age or gender cohorts. This effect is positive for both Malta and the EU, mainly showing the trend increase in the participation rates of women and older workers. The results also indicate that the projected rise in the participation rate of women and older workers is a major driving force of change in the aggregated participation rate, both for Malta and the EU. The total change in the participation rates of Malta quantifies to 12.2 per cent while that of the EU-28 amounts to 3.2 per cent. The female's contribution is 10.5 per cent for Malta and 2.9 per cent for EU-28 while the male's contribution is equivalent to 1.4 per cent for Malta and 0.6 per cent for EU-28. The demographic effect, which captures the changing structure of the working-age population, has a positive effect for Malta of 0.3 per cent but negative for the EU-28 of -0.5 per cent, being mainly driven by projected developments in the prime-age population (25-54).

2.2.3 Economic Dependency Ratio

The economic old age dependency ratio, defined as the ratio between the inactive elderly (65+) and number of employed (20-64), is an important indicator that assesses the impact of ageing on budgetary expenditure mainly on the component of pensions. Such ratio defines the share of the population who are likely to be dependent on the support of others for their daily living to the persons of working age. It is projected to rise significantly from 43.1 per cent in 2016 to 73.7 per cent in 2070. The same pattern is expected to occur for EU-28 from 42.2 per cent in 2016 to 64.8 per cent by 2070. Malta's ratio is expected to increase by a higher percentage than that of the EU with a difference of 8.9 p.p. and is indicative of the magnitude of the economic challenges associated to ageing faced by Malta. (Table 2.3).

The total economic dependency ratio, calculated as the total inactive population (<15 and 65+) as a ratio to total employment, gives a measure of the average number of individuals that each employed 'supports', being relevant when considering prospects for potential GDP per capita growth. Malta's ratio is expected to increase from 123.0 in 2016 to 136.9 by 2070. Its evolution is relatively faster compared to EU-28. These developments reflect the strong impact of the changes in life expectancy and fertility rates.

Table 2.3: Contribution to overall change in participation rates, 2016-2070					
	2016	2030	2070	CH 2016-2030	CH 2030-2070
Economic Old Age Dependency Ratio					
Malta	43.1	54.2	73.7	11.1	19.5
EU28	42.2	51.7	64.8	9.6	13.0
Total Economic Dependency Ratio					
Malta	123.0	117.8	136.9	-5.2	19.2
EU28	118.5	122.4	135.4	4.0	13.0

Source: Commission Services

2.2.4 Labour Supply

As a result of these developments, it is interesting to note that the labour supply aged 15-74 is expected to reach a peak in 2043 with 246,461 persons and decline to 230,144 persons by 2070. As presented in Table 2.1, the labour supply of the older people, aged 55-64 years, is expected to reach a peak in 2049 with 49,161 individuals. Subsequently, it is projected to decline until reaching 39,378 persons in 2070. The labour supply of the age group 65+ is expected to increase from 2,622 persons in 2016 to 3,556 by 2057, and decline thereafter, to 2,790 by 2070.

2.2.5 Labour Market Entry and Exit Age and Duration

The indicators on the labour market entry age, exit age and expected duration of life spent at retirement by gender are produced in Table 2.4. The average effective exit age for men is expected to increase from 62.5 years in 2017 to 64.0 years in 2070, while that for women is expected to increase from 61.5 years in 2017 to 62.6 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 2070, lengthening of the contributory

period by 2034, and the incentives to defer retirement should result in more people with full contribution postponing retirement by 1 to 4 years.

2.3 Projected GDP Growth Rates

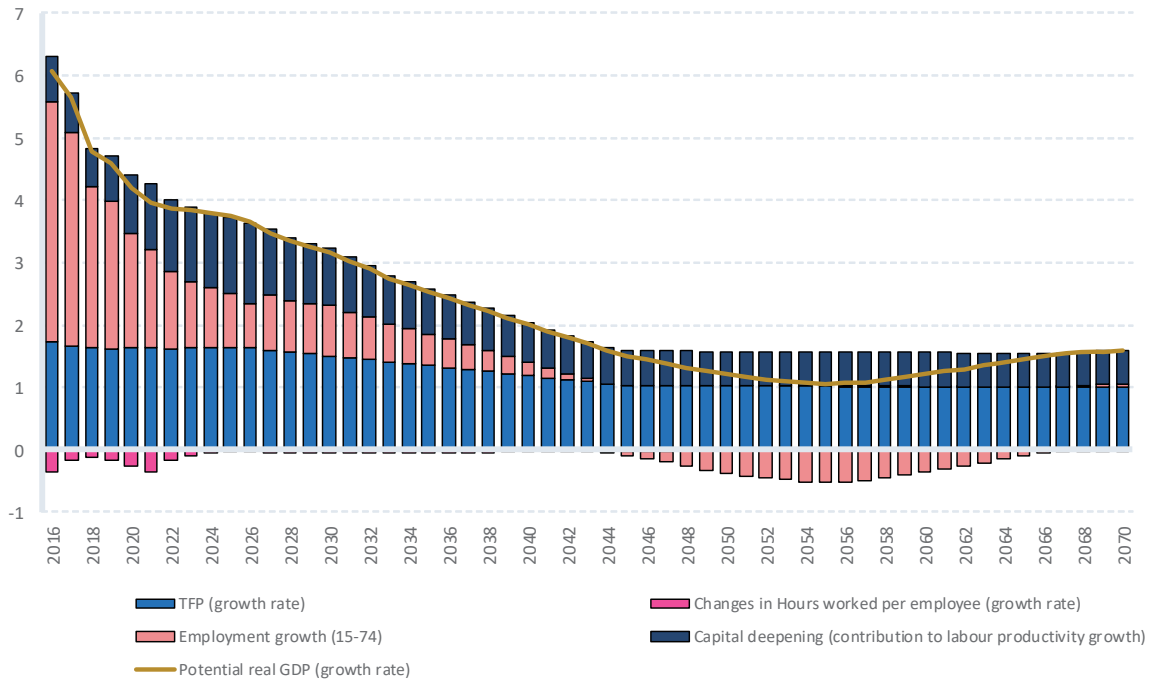
The annual average GDP growth rate for Malta is projected to decline from 5.1 per cent in the period 2016 to 2020 to 3.6 per cent in the period 2020 to 2030, to 2.0 per cent between 2031 and 2050 and to 1.3 per cent in the period 2051 to 2070. These developments reflect changes in the composition of economic growth over the projection period. The contribution of **labour input** to GDP growth reflects both developments in employment growth as well as changes in hours worked per employee. **Employment** will make a positive contribution to growth up to 2043, is set to be negative between 2044 and 2066 and turn positive thereafter. Over the entire projection period **changes in hours worked per employee** have a minor impact on GDP growth. **Labour productivity** is expected to remain the dominant source of growth and is by far the most important driver of GDP growth over the long-term. Labour

Table 2.4: Labour market entry age, exit age and expected duration of life spent at retirement by gender

	2017	2020	2030	2040	2050	2060	2070
Labour Market Projections - Males							
Average effective exit age	62.5	62.1	64.0	64.0	64.0	64.0	64.0
Contributory period	40.0	40.5	41.3	41.4	41.4	41.5	41.4
Duration of retirement	21.8	22.1	21.4	22.3	23.2	24.0	24.8
Duration of retirement/contributory period	0.5	0.5	0.5	0.5	0.6	0.6	0.6
Percentage of adult life spent at retirement	32.9	33.4	31.8	32.7	33.5	34.3	35.0
Early/late exit	2.9	1.3	0.8	0.9	0.8	0.7	0.9
Labour Market Projections - Females							
Average effective exit age	61.5	61.5	62.6	62.6	62.6	62.6	62.6
Contributory period	27.1	28.0	30.3	31.8	33.3	34.8	36.2
Duration of retirement	25.8	25.2	25.3	26.2	27.1	28.0	28.8
Duration of retirement/contributory period	1.0	0.9	0.8	0.8	0.8	0.8	0.8
Percentage of adult life spent at retirement	37.3	36.7	36.2	37.0	37.8	38.5	39.2
Early/late exit	3.4	1.2	2.4	1.9	1.8	1.4	2.1

Source: Commission Services

Chart 2.4: Potential GDP growth and its contribution



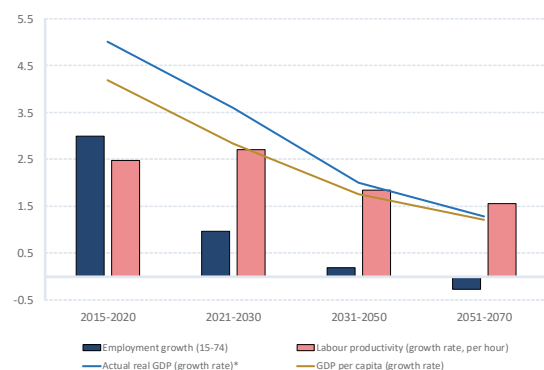
Source: Commission Services

productivity projections are based both on **TFP** and **capital deepening** (capital stock per worker). TFP is expected to decline over the projected period from 1.7 per cent in 2016 to 1.0 per cent by 2070, based on the technical assumption that all Member States will converge to 1 per cent by 2070 at the latest.¹ The contribution of capital deepening to labour productivity is equal to 0.5 per cent over the whole period but starts from a higher level from 1.0 per cent on average between 2016 and 2026. As a result of these developments, nominal GDP is expected to increase from €9.9 billion in 2016 to reach €92.8 billion by 2070.

The impact of ageing population on economic growth can be analysed by distinguishing between GDP growth rates and GDP per capita growth rates. The effects of an ageing population on living standards can be more closely observed by looking at growth rates in terms of GDP per capita, since it depends on the change in the age structure of total population (the share of working age population), while potential growth also depends upon the change in the total population size. Given the effects of ageing

on the ratio of active to inactive people, GDP per capita growth rates are projected to fall at a slower pace than the projected fall in GDP growth rate. This suggests that living standards should hold up better against the headline GDP growth rate. The trajectory path of GDP per capita reflects

Chart 2.5: Projected GDP growth rates and the determinants (employment and productivity)



Source: Commission Services

the changing structure of the population, whereas potential growth depends not only on the share of the working-age population but also on the change in the population size. In addition to the overall decline in living standard growth, a shift could occur in the relative income positions of different age groups.

Footnote:

¹ TFP captures all factors apart from labour and capital which are relevant for the transformation of all inputs in the production process to outputs. This includes, amongst others, technology, human capital, market structures and the quality of institutions. TFP growth also known as the Solow residual, has to be estimated from within the same growth accounting framework. It is obtained as a residual representing the increase in output which is not explained by changes in labour or capital inputs.

Appendix

A.1 Main features of the Cohort Stimulation Model (CSM) and main assumptions of the 2018 projections

The CSM was developed by the European Commission (DG ECFIN), to project the participation rates by gender and single age. The methodology is based on the calculation of the average probability of labour force entry and exit observed over the last 10 years. Then the average entry and exit rates are applied to project the future participation rates as older generations are progressively replaced by younger ones. Member States that have a legislated pension reform, average exit rates are changed to account their projected impact, based on the reasoned judgement of the EPC and Commissions Services. If not, both average entry and exit rates are kept constant during the projection period, indicating a ‘no policy change’ assumption.

The logic for using the CSM is to indicate the substantial changes in labour market behaviour in recent years across different cohort and gender groups. The model is utilised to project participation rates, as in 2006, 2009, 2012 and 2015 long-term projection exercises. This methodology is particularly relevant to take into account the significant rise in the labour force participation of women over recent years, as younger women, with a much stronger attachment to the labour force, slowly substitute older women with weaker participation rates. Additionally, the cohort methodology also accommodates for the small decline in the participation rates of men over recent generations, an opposite trend to what is observed for women.

The projection for 2018 is based using the Eurostat demographic projections of 2015 prepared by EUROSTAT together with National Statistical Institutes. The major driving force of labour force projections are the population projections. As stated elsewhere, the labour force projections are generated by the European Commission and subsequently endorsed by the EPC Ageing Working Group.

The assumptions on which the projections are based are:

1. The base year for labour market projections is 2016, the first year of projections being 2017 and the projection period is extended to 2070.
2. The calculation of the average entry and exit age is based on a ten-year average (2007 to 2016), using participation rates by single age and gender from the harmonized EU Labour Force Surveys.
3. Labour market participation rates are estimated by single age and gender, using average entry and exit rates in the labour force over the period 2007 to 2016.
4. In order to avoid that any increase in education enrolment rates feed into future declines of participation rates for prime age worker, a corrective mechanism for young cohort (15-29) is applied. This implies that participation rates at each single year of age between age 15 and 19 remain constant at the base year. Participation rates of ages 20 and 29 are allowed to rise if this is the result of the CSM, if not, the rates are kept constant at the base year.
5. Pension reforms were taken into consideration through their estimated impact on the labour market exit rates of older workers (aged 51-74). This is a subjective approach, utilising the probabilistic nature of the CSM. Specifically, exit rates of older workers

(51-74) estimated separately for both males and females, are adjusted in order to account for the future expected effects of enacted pension reforms. The calculation of the 'adjustment' takes into consideration country-specific information about the relationship between retirement behaviour and the parameters of the pension system together with cross-country evidence of the impact of changes in the implicit tax rate on continuing work and retirement decisions. This framework is able to include a broad typology of measures including, increases in the statutory retirement age or in the state pension age, the convergence of women's lower statutory retirement age to that of men, the linking of the statutory retirement age to changes in life expectancy, the tightening of conditions for early retirement, and changes in incentives affecting the retirement decision. Furthermore, policy changes can be incorporated as one-off measure of be phased in progressively within a specified period.

hours worked change due to 'compositional effects' that mostly reflect the projected increase in labour force participation of women, for which the incidence of part-time is higher than for men.

(Source: The 2018 Ageing Report: Underlying Assumptions & Projection Methodologies)

Steps to project the labour force/supply

First, the participation rates by single age and gender are projected up to 2070 using the CSM. The aggregate values for participation rates are a weighted average of the participation rates by single age and gender utilising population shares as weights.

Secondly, the labour force for each single age and gender combination is estimated by multiplying the age/gender labour force participation rate by the corresponding population projections. The age aggregates are usually grouped: 15-64; 20-64; 25-54; 55-64; 20-71; 20-74.

Additional assumption on labour inputs

To project GDP growth, the production function methodology is applied, using total hours worked as labour input variable. The split between full and part time work, and the corresponding weekly hours work, is fixed at the average values for the last available year (2016), during the entire projection period. Even though they are frozen per age group over the projection period, the total

A.2 Assumptions on structural unemployment

The structural unemployment rate estimates (NAWRU) are based on the methodology developed by the OGWG attached to the EPC. As a general rule, actual unemployment rates are assumed to converge to NAWRU rates in 5 years, correlating to the closure of the output gap. The NAWRU rates are expected to gradually converge to the minimum of country specific anchors or the median of national anchors, whichever rate is the lowest.

Anchor values are country specific values of the NAWRU which are estimates on the basis of the coefficient of panel estimation model whereby the short-term NAWRU for EU old Member States is regressed on a set of structural variables, consisting of: unemployment benefit replacement rates, active labour market policies, an index of the employment protection legislation and the tax wedge, together with a set of cyclical variables, including: TFP, construction index and real interest rate. In order to develop the country specific anchors, it is assumed that the non-structural variables are set at their average values.

The capping of country-specific NAWRU values to the weighted median is done to avoid extrapolating into the far future very high unemployment rate values. This cap on unemployment rates is a vital assumption for some countries which currently record high levels. Higher long-term unemployment than assumed would lead to lower potential output growth. The capping of unemployment rates causes higher employment, employment growth and GDP growth and presumes the implementation of future policy measures in the labour market.

The model calculates the age specific unemployment rates by gender for each projection year, in order to avoid changes in total/average unemployment rates as a result of the interaction between cohort-specific structural unemployment rates and the structure of the labour force. This implies that the unemployment rate structure by age and gender, observed in the base year 2016 is kept constant throughout the projection period, thus age/gender estimates are adjusted proportionally in order to satisfy a given total unemployment rate target.

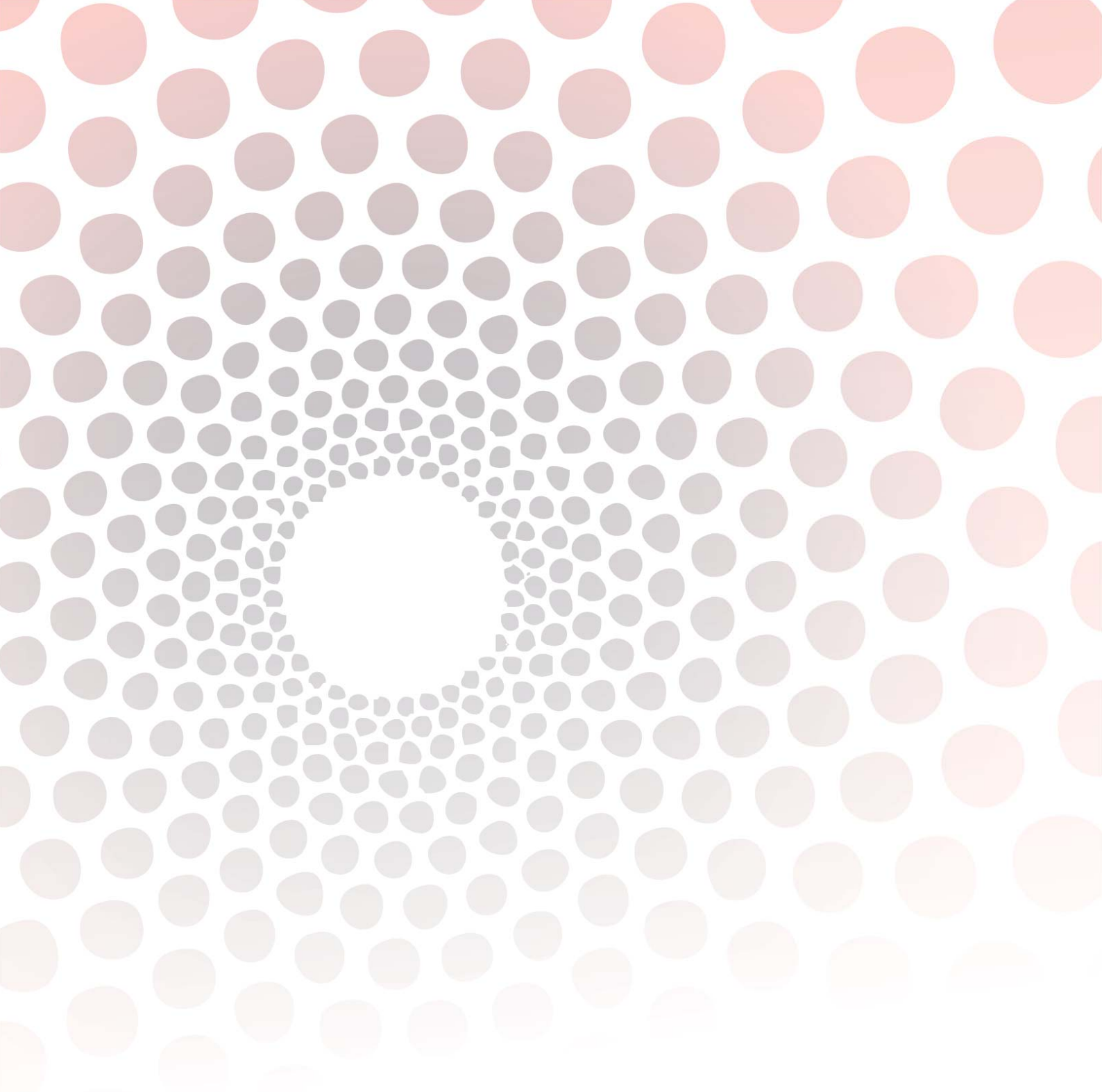
The table below presents the unemployment rate assumptions for Malta and the EU-28. The Malta’s unemployment rate is assumed to increase by 1.4 p.p. while the rate for the EU is expected to decline by 2.2 p.p.

(Source: The 2018 Ageing Report: Underlying Assumptions & Projection Methodologies)

Table A.1: Unemployment rate assumptions (age 15-64, in percentage)

	2016	2026	2050	2070
MT	4.2	5.6	5.6	5.6
EU-28	8.7	7.6	6.5	6.5

Source: Commission Services, EPC



CHAPTER 3
OVERVIEW OF THE PENSION SYSTEM

3. Overview of the Pension System

3.1 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.

Within the Contributory 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 leading almost to universal coverage for labour market participants.

Contributions are payable by all gainfully occupied persons between the age of 16 and their pension age.¹ 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 10.0 per cent of the basic salary of the employee; with the contribution capped to the Maximum Pensionable Income. The rate of Class Two contributions is equally shared by the State

and self-occupied persons, whereby the self-occupied pays 15.0 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:

- Persons in receipt of full-time education or training;
- Non-gainfully occupied married persons;
- 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.

3.2 Overview of Key Pension Parameters

3.2.1 Old-Age Pension – earnings related

The projections consider the legislated pension reforms, including measures to be phased in gradually. What follows is an outline of the main pension parameters 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 3.1 summarises the qualifying conditions for retiring, showing the statutory retirement age, earliest

Table 3.1: Qualifying conditions for retirement

		2016	2020	2030	2040	2050	2060	2070
Qualifying condition for retiring with a full pension	Minimum requirements							
	Contributory period - men	35	35	40	41	41	41	41
	Retirement age - men	61	61	61	61	61	61	61
	Contributory period - women	35	35	40	41	41	41	41
	Retirement age - women	61	61	61	61	61	61	61
	Statutory retirement age - men	62	63	65	65	65	65	65
	Statutory retirement age - women	62	63	65	65	65	65	65
	Early retirement age - men	61	61	61	61	61	61	61
	Early retirement age - women	61	61	61	61	61	61	61
Qualifying condition for retirement WITHOUT a full pension	Penalty in case of earliest retirement age	:	:	:	:	:	:	:
	Bonus in case of late retirement*	:	:	:	:	:	:	:
	Minimum contributory period - men	35	35	40	41	41	41	41
	Minimum contributory period - women	35	35	40	41	41	41	41
	Minimum residence period - men	0	0	0	0	0	0	0
	Minimum residence period - women	0	0	0	0	0	0	0

* bonus in case of late retirement possible if person meets full qualifying conditions

retirement age and the contributory period for full pension eligibility.

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 fewer new pensioners, lengthier years of service, and consequently raising the effective exit age.

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:

1. 1,820 (or 35 years) paid or credited contributions in the case of a person born between 1st January 1952 and 31st December 1961;
2. 2,080 (or 40 years) paid or credited contributions in the case of a person born between 1st January 1962 and 31st December 1968;
3. 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 contribution;
 - 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.

Pensionable income

In case of employees:²

- 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;
- 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;
- 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;
- 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:

- 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;
- 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;
- 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;
- 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 1st 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 COLA granted with respect to those years.³

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 31st December 1961, whose retirement occurs on or after the 1st 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:

1. for a person born on or before the 31st December 1951, the resultant pensionable income including any such cost of living increase shall not exceed the sum of €17,470.30;
2. 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;
3. in the case of a person born on or after the 1st January 1962 whose retirement occurs on or after the 1st January 2007, the resultant pensionable income shall not exceed:
 - a) €16,207.78 increased by such sum that the Government awards for the cost of living, in respect of the years 2007 to 2010;
 - b) €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;
 - c) €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 1st 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 on or after 1st January 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.

Pension formula

The pension formula for the two thirds pension is as follows:

$$\text{Contribution Average} * \frac{2}{3} * \text{Pensionable Income} - \text{Service Pension}$$

where the Contribution Average was 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}):

$$\text{Contribution Average} = \frac{(\text{Avg_Cont}_{10} + \text{Avg_Cont}_{25})}{2}$$

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.

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:

- 40 years in the case of a person born between the 1st January 1962 and the 31st December 1968, or
- 41 years in the case of a person born on or after the 1st January 1969

The Guaranteed National Minimum Pension

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:

- in the case of a married person whose spouse is not in receipt of a social security pension, four-fifths, and
- 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 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 €140.0 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.

Crediting of contributions

Crediting of contributions is allowed during certain contingencies, mainly:

- A widow, where such widow is not gainfully occupied for any period during which she does not remarry.
- 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.
- 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.

- 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 1st 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 outlined in Table 3.2. 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 also outlined in Table 3.2. These measures were implemented to strengthen adequacy of contributory pensions.

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 70.0 per cent of the increase in the national average wage and 30.0 per cent of the inflation rate as published by NSO.

Incentivise later retirement

In addition, Government introduced an incentive mechanism (LN289/16) intended to incentivise later retirement and lengthening working lives. The scheme is open to workers in the private sector, who would have paid

Table 3.2: Crediting of contributions		
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		
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).

35 years of social security contributions and are eligible to retire at 61 years of age. Those who continue working until 62 years will receive an increase of 5.0 per cent in their pension. The scale increases every year, whereby, a person who works until 63 years would receive an increase of 10.5 per cent. If a person defers retirement by 4 years and 5 years, to retire at 64 and 65, would receive an increase of 16.5 per cent and 23.0 per cent, respectively. In addition, another amendment was affected to Article 64A whereby persons born on or after 1st 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.

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.

3.2.2 Disability Pension

The Invalidity Pension may be awarded to a person who is certified as being incapable for suitable full-time or part-time employment due to a serious disease or bodily or mental impairment, subject to the relative social security contribution conditions under the Social Security Act.

A person who is under retirement age, may be eligible for an Invalidity Pension if the following criteria are fulfilled:

- applicant has been continuously in full-time or regular part-time employment or self-occupation or registering for work under Part 1 for a period of not less than 12 months prior to the date of application;
- applicant has been certified incapable for suitable regular full-time or part-time employment by a Medical Panel appointed by law;
- the incapacity mentioned above is considered by the Medical Panel as prohibiting an individual from suitable full-time or regular part-time employment or self-occupation for not more than 3 years and not less than 1 year.

The contributing contributions for a Disability Pension prior to reaching pension age are that the person has paid not less than 250 contributions and paid or credited at least an average of 20 social security contributions per year from the age 19 or 18 as the case may be (or 1964/65) till the date of the claim.

Regulating the award of the invalidity pensions

The Maltese Government also introduced changes to 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. In this regard, a number of measures were introduced to the medical review process for this benefit.

The application form was changed in order 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.

In addition, there was a change in the current medical panel system - under the new system, the Department of Social Security recruited medical practitioners through an Expression of Interest to act as a Medical Review Team. The Team's main function was to advise the Director (Social Security) on the medical aspects of Invalidity claims.

Specific medical criteria for the award of benefits were also established. 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. Moreover, a medical audit was established 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 was set at six months. However, this waiting period does not apply in the case of sudden severe or terminally-ill persons.

3.2.3 Survivors' Pension

A widow/er, who is under retiring age, may be eligible to Survivor's Pension, if the spouse, upon his/her death, has satisfied the following contribution conditions:

- paid a minimum of 156 contributions;
- has been in employment or self-occupation for not less than 10 years;
- satisfies the relevant contribution conditions.

Survivor's Pension is awarded to those persons whose spouse was or would have been entitled to a Two-Thirds Pension, if it is to his/her advantage in lieu of any other pension payable. Furthermore, the full rate of a Survivor's Pension shall be five-sixths of the Two-Thirds Pension of the deceased spouse. If they are entitled to a contributory pension in their own right, survivors are now entitled to the highest full pension, whether it is their own pension or the pension of their deceased spouse.

3.2.4 Old-Age Pension non-earnings related

A person who attains the age of 60 years, who is a citizen of Malta, and whose weekly means do not exceed the highest rate of Age Pension for a household is entitled to an Age Pension. Claimants of Age Pension do not have enough paid or credited social security contributions to be eligible for a contributory pension.

3.2.5 Other Pensions

Top-Up Pensions

The 'top-up' pension covers benefits currently payable to persons in receipt of service pensions which includes former servicemen in receipt of overseas pensions.

The Social Security Act defines 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 his 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. 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 that is equivalent to the difference between the two-thirds of pensionable income and the service pension.

Widow's Pension is awarded to those persons whose spouse was already in receipt of a Retirement Pension.

Other pensions included under this category are Invalidity and Increased Invalidity Pensions. The Invalidity Pension is awarded to persons deemed permanently incapable for suitable full-time or regular part-time employment. There are various rates according to different conditions. Meanwhile, the same criteria for the latter type of pension apply, however with the additional condition, that if the Service Pension and the rate of Invalidity Pension applicable in his/her case together do not exceed two-thirds of the pensionable income, such a person shall be entitled to an Increased Invalidity Pension.

Service Pensions (Treasury Pensions)

The Treasury Pension is an occupation pension and it has been closed to new Government employees since 1979. Those who qualify for a Treasury Pension are:

- all Government employees who started service with Government before 15th January 1979 (closed system);
- Police, AFM personnel, Correctional Facilities officials and members of the Civil Protection;
- Widows of public officers who held a pensionable post and who contributed to the widows pension scheme; and
- 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 service pension as per (b)-(d) is still an

open system and the number of beneficiaries are rather small.

3.2.6 Statutory Bonus

A person who, on any day between January and June or between July and December is entitled to receive a pension is be entitled to receive a bonus. Such bonus shall consist of a sum of €135.10 paid every six months in June and December of each year.

In addition, the pensioner is also entitled to receive an Additional Bonus every four weeks at the rate of €3.12 per week and the Cost of Living Bonus which is equivalent to one-third of the COLA as announced in the annual Budget speech.

3.2.7 Other Reforms

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

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. This last report was submitted in 2015 with the next report due in 2020.

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.

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. Administrative statistics of the IRD show that there are in all 11 qualifying registered schemes and the number of qualifying individuals stood at 1,430 (or 0.8 per cent of total employment) in 2016.

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.

Financial Literacy

The post consultation strategy on the National Strategy for Retirement Income and Financial Literacy is now completed. The strategy is now repositioned as Retirement and Financial Capability. This is a result of adding more focus on financial capability as an instrument of poverty prevention during lifecycles and retirement of vulnerable groups.

The strategy was launched on 25th January 2017. An implementation vehicle, known as the Retirement and Financial Capability Working Group, constituted of Government and private sector representatives, is set up and is chaired by the MFCS.

3.2.8 Ministerial Powers and Responsibilities

The Minister, 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 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.

3.2.9 Modelling Assumptions

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 model also assumes full wage indexation for non-contributory age (minimum) pensions. This contrasts the current legislation which increases the age pension with COLA.

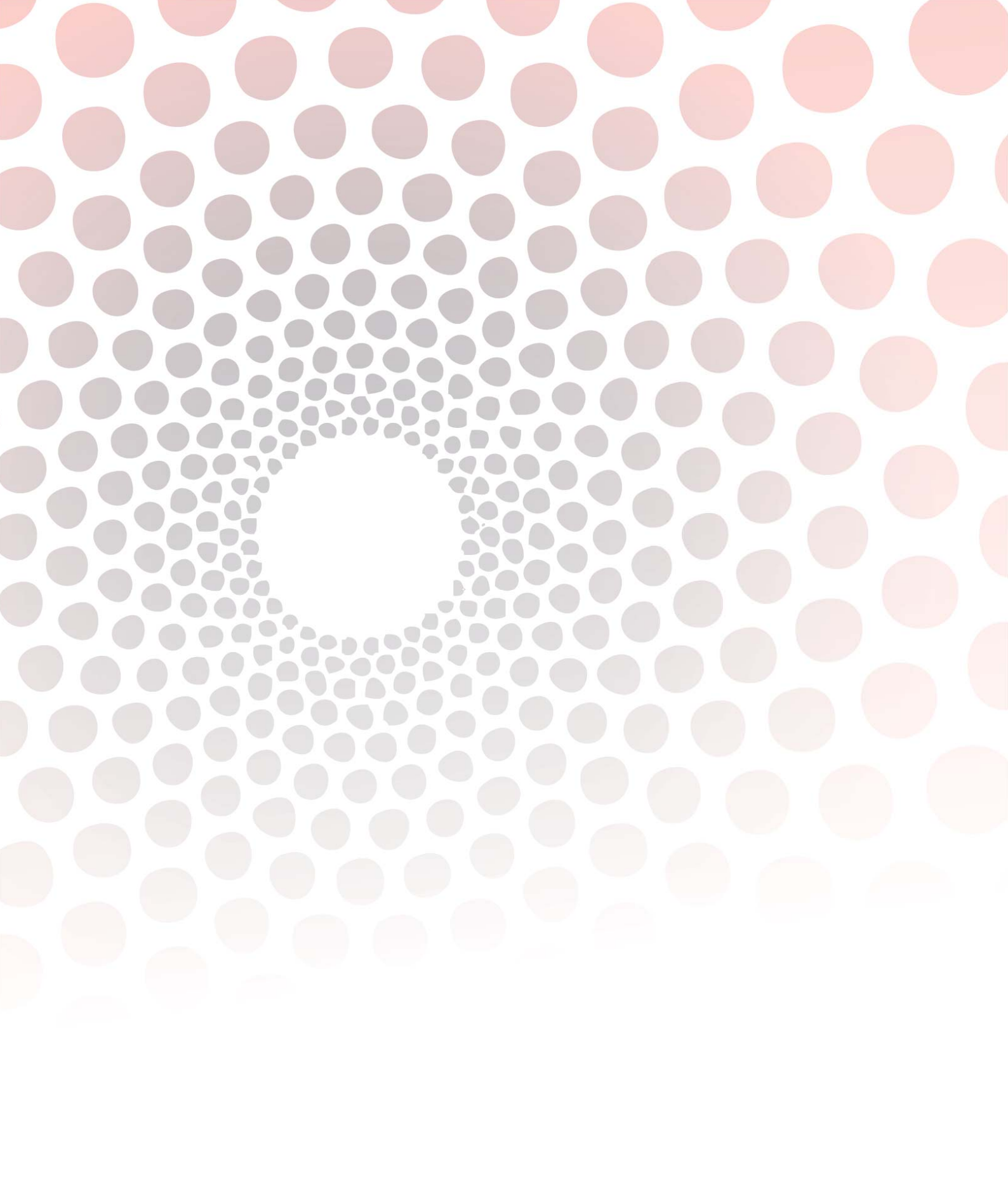
The projections exclude the impact of the linking of the contributory period to life expectancy as the AWG methodology is based on current legislation. The Maltese Government believes that the linking of the contributory period to life expectancy remains an important lynchpin in its strategy to ensure 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.

Footnotes:

¹ Contributions are also payable by pensioners in gainful employment that retired after the 5th 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.

² 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.

³ 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.



CHAPTER 4
PENSION PROJECTIONS RESULTS

4. Pension Projections Results

4.1 Introduction

The pension projection exercise covers contributory and non-contributory old-age pension paid under the social security scheme, which is closely aligned to the ESSPROS definition. The coverage of pension schemes includes also 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 rather minor role about pension provision for old-aged persons. The composition of pension expenditure is illustrated in Table 4.1.

4.2 Extent of the coverage of the pension schemes in the projections

Table 4.2 shows the difference in the definition of pension expenditure available in Eurostat versus the pension schemes taken into consideration under the AWG.

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 amounted to around 0.3 per cent of GDP in 2014. The AWG definition is covering 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 other cash benefits.

4.3 Public Pension Expenditure

Chart 4.1 shows the projected gross pension spending and contributions as a percentage of GDP. Over the projection period, pension expenditure is projected to decrease from 8.0 per cent of GDP in 2016 to 7.1 per cent in 2030, and increasing thereafter reaching 10.9 per cent in 2070.

The expected increase in pension expenditure over the entire period is primarily attributable to old-age pensions (earnings-related) that increases from 4.7 per cent of GDP in 2016 to 9.0 per cent in 2060. However, up to 2030, expenditure on old age pensions is expected to remain relatively muted due to higher pension age and indexation of

Table 4.1: Coverage of Pension Schemes

	Covered Pension Schemes
Old-Age (earnings related)	2/3 Retirement Pension (TTP); National Minimum Pension (NMP); Increased National Minimum Pension (INMP); Decreased National Minimum Pension (DNMP)
Disability (earnings related)	Decreased National Invalidity Pension (DNIP); National Minimum Invalidity Pension (NMIP)
Survivors (earnings related)	Early Survivors' Pension (ESRP); Survivors' Pension (SP); National Minimum Widows' Pension (NMWP)
Old- Age (non-contributory)	Age Pension (AP)
Other	Invalidity Pension (IP); Increased Invalidity Pension (IIP); Increased Retirement pension (IRP); Retirement Pension (RP); Widows Pension (WP); Service Pensions (Treasury Pension)

Table 4.2: Eurostat (ESSPROS) vs. Ageing Working Group definition of pension expenditure (% GDP)

	2007	2008	2009	2010	2011	2012	2013	2014
1 Eurostat total pension expenditure	8.6	8.7	9.2	9.4	9.1	9.2	8.8	8.3
2 Eurostat public pension expenditure	8.6	8.7	9.2	9.4	9.1	9.2	8.8	8.3
3 Public pension expenditure (AWG)	8.9	9.0	9.5	9.7	9.3	9.5	9.1	8.5
4 Difference (2) - (3)	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2
5 Expenditure categories not considered in the AWG definition, please specify:	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
5.1 Disability Pensions/Allowance	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
5.2 Orphans Allowance	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 Schemes	0.0	0.0	0.1	0.1	0.1	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

Source: Eurostat and EPC

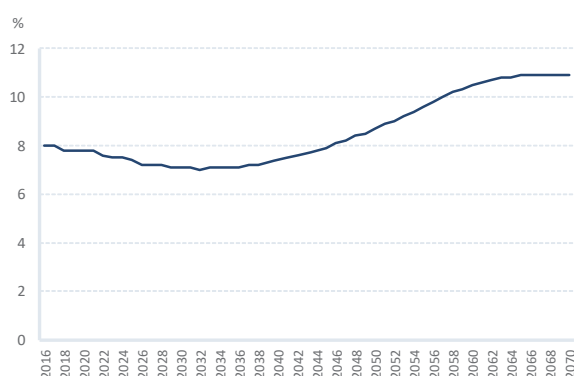
the maximum pensionable income with the COLA. Thereafter, the increase in old-age pension expenditure is driven by the ageing process, in reflection of the projected demographic developments. At the same time, one notes that the parametric changes introduced in the pension reform – more dynamic indexation 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 pension age, the increase in the contribution period for full pension eligibility, the changes to the benefit formula, and the incentives to

defer retirement contribute to lower the projected increase in pension expenditure. The incentives to defer retirement result in more people postponing retirement by 1 to 4 years. At the same time, the lengthening of the contributory period translates into a lower accrual rate because of longer length of service required to qualify for the full pension benefit rate. The effect of extending child credits and introduction of human capital credits on expenditure over the projection period is quite limited, albeit translating into 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. This is reflected in an average pension growth that exceeds growth in the average wage. Towards the outer years of the projection period, the transition is more or less complete with the result that the average pension increases at a rate that is slower than average wages since indexation of pension is less than 100 per cent of wage growth.

Expenditure on **disability pensions and old-age (non-contributory) pensions** is projected to stay relatively constant at 0.2 per cent and 0.3 per cent of GDP, respectively, while expenditure on **survivors' pensions** is projected to decrease from 1.4

Chart 4.1: Projected gross public pension spending (% of GDP)



Source: EPD Calculations

Table 4.3: Projected gross public pension spending by scheme (% of GDP)

Pension scheme	2016	2020	2030	2040	2050	2060	2070	Peak year*
Total public pensions	8.0	7.8	7.1	7.3	8.7	10.5	10.9	2067
<i>of which</i>								
Old age and early pensions:	5.0	5.1	5.0	5.6	7.0	8.8	9.3	2069
<i>Earnings related</i>	4.5	4.6	4.6	5.2	6.6	8.4	8.9	2069
<i>Minimum pensions (non-contributory)</i>	0.2	0.3	0.3	0.3	0.3	0.3	0.3	2065
Disability pensions	0.2	0.2	0.2	0.2	0.2	0.2	0.2	2016
Survivor pensions	1.4	1.3	1.1	1.1	1.1	1.0	0.9	2016
Other pensions	1.5	1.3	0.7	0.5	0.4	0.4	0.4	2017

Source: EPD Calculations

per cent of GDP to 0.9 per cent of GDP by 2070. This decline reflects faster average economic growth, particularly in the first half of the projection period, which has an accumulative effect on the denominator of the ratio. Other factors at play include, the lengthening in life expectancy of males that result in postponing the age of survivorship for females as well as the fact that more females will be entitled to a pension in their own right in reflection of their increasing attachment to the labour market.

Expenditure on **other pensions** is projected to decrease from 1.5 per cent of GDP to 0.4 per cent of GDP over the whole period. The top-up expenditure category is projected to decrease in importance over time in line with the life expectancy of the recipients of this pension. Similarly, the Treasury Pension is projected to decrease in importance over time given that it has been closed to new Government employees since 1979. In the base year, service pension expenditure stands at 1.0 per cent of GDP. For the reasons mentioned above, expenditure will decline to 0.4 per cent of GDP by 2070, reflecting the phasing out of the system for public servants with the only open element of the scheme mainly relating to uniformed officers as explained in Section 3.2.5.

4.4 Description of main driving forces and their implications

A deeper insight into the drivers of these results may be obtained by looking at the results of the decomposition of pension expenditure between 2013 and 2070 into the dependency ratio, coverage ratio, the benefit ratio, employment rate and labour intensity. The decomposition formula, as shown below, is used.

The **dependency ratio** effect quantifies the impact of changes in the composition of the population on pension expenditure to GDP. An increase in the dependency ratio implies a higher pension expenditure to GDP due to the ageing effect.

Coverage is defined as the number of pensioners of all ages to the population over 65 years. The coverage ratio effect therefore captures the effect on pension expenditure brought about by a change in the insured to inactive persons' ratio, including changes in the eligibility conditions and the pension age. As the **coverage ratio** increases, the pension expenditure to GDP ratio increases as well.

The **benefit ratio** indicates the relative value of the average pension (public pension

$$\frac{\text{Pension Exp}}{\text{GDP}} = \frac{\text{Dependency Ratio}}{\frac{\text{Pop 65+}}{\text{Pop 20-64}}} \times \frac{\text{Coverage Ratio}}{\frac{\text{No of pensions}}{\text{Pop65+}}} \times \frac{\text{Benefit Ratio}}{\frac{\text{GDP}}{\text{Hours Worked 20-74} / \text{Avg Pensions}}} \times \frac{\text{Labour Market Intensity}}{\frac{\text{Pop20-64}}{\text{Hours Worked 20-74}}}$$

$$\frac{\text{Labour Market Intensity}}{\frac{\text{Pop20-64}}{\text{Hours Worked 20-74}}} = \frac{1/\text{Employment Ratio}}{\frac{\text{Pop 20-64}}{\text{Working People 20-64}}} \times \frac{1/\text{Labour Intensity}}{\frac{\text{Working People 20-64}}{\text{Hours Worked 20-64}}} \times \frac{1/\text{Career Shift}}{\frac{\text{Hours Worked 20-64}}{\text{Hours Worked 20-74}}}$$

spending per pensioner) with respect to the average wage. This effect reflects the legal framework of the country inter alia indexation of pensions in payment and valorisation of past pensionable earnings and contributions paid, the way accrual rates are determined and increases in age for full pension entitlement are design features that impact the generosity of current and future pensions.

The **labour market intensity** effect captures the effects of labour market behaviour on pension expenditure, which can be further decomposed in employment rate, labour intensity and career prolongation effects.

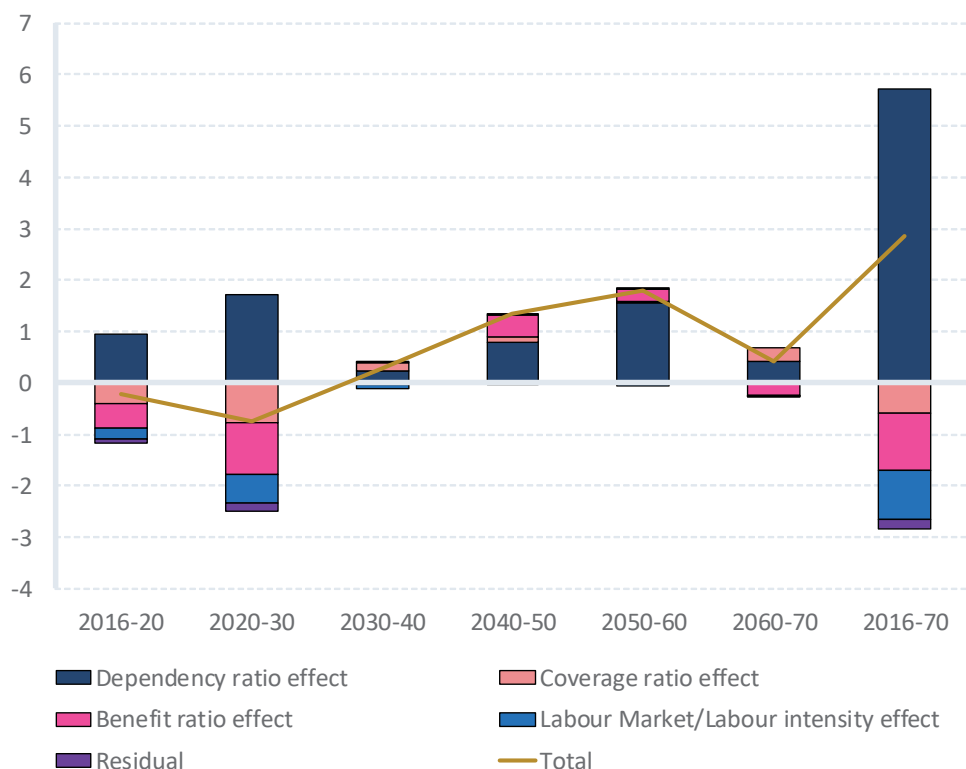
The **employment rate** effect is defined as the ratio of population aged 20-64 to the number of working people aged 20-64. In the PAYG system, a higher employment helps sustaining the pension system by a larger contribution base, at least in the short-term. Hence, as the employment rate increases, the ratio of pension expenditure to GDP falls.

The **labour intensity** effect is defined as the ratio of the working population aged 20-64 to the hours worked of the population aged 20-64. As labour intensity increases, pension spending to GDP ratio moves in the same direction.

The **career prolongation** effect is defined as the ratio of hours worked by the population aged 20-64 to the hours worked by the population aged 20-74. A decrease in this ratio captures prolongation of working life above the age of 65, reflecting reforms that incentivise retainment in the labour market. An increase in hours worked by persons aged more than 65, therefore, helps to reduce pension expenditure to GDP ratio.

Chart 4.2 shows the developments in these factors behind the change in public pension expenditures during the projection period. Over the period 2013 to 2070, pension expenditure as a percentage of GDP increases by 2.9 p.p. of GDP. Taking into consideration the entire projection

Chart 4.2: Factors behind the change in public pension expenditures between 2016 and 2070 using pension data (in percentage points of GDP) - pensions



Source: EPD Calculations

	2016	2020	2030	2040	2050	2060	2070
Public scheme (BR) (in %)	49.0	48.0	39.0	38.0	39.0	40.0	39.0
Public scheme (RR) (in %)	:	48.0	46.0	45.0	45.0	45.0	45.0
Coverage	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Public scheme old-age earnings related (BR) (in %)	43.0	43.0	39.0	39.0	41.0	41.0	41.0
Public scheme old-age earnings related (RR) (in %)	:	51.0	50.0	49.0	48.0	48.0	47.0
Coverage	67.3	68.0	69.1	70.5	74.2	78.3	80.1

Source: Commission Services, EPC, EPD Calculations

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 intensity effect.

Table 4.4 shows the replacement rate at retirement, the benefit ratio and the coverage of the public pension scheme in Malta. The public scheme benefit ratio is expected to reach 47.6 per cent by 2020 and decrease to 37.7 per cent by 2040 and reach 39.3 per cent by 2070. Similarly, the replacement rate at retirement is expected to decline by 2.1 p.p. between 2020 and 2070, to reach 45.5 per cent by 2070. The modest decline in the replacement rate at retirement reflects the parametric reforms as well as the indexation effect. Meanwhile, the total coverage for old-age earnings is projected to increase consistently from 67.3 per cent in 2016 to 80.1 per cent in 2070.

Table 4.5 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 89,000 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 194,865 in 2016 to around 232,201 in 2040. 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 system dependency ratio is projected to increase from 44.0 per cent in 2016 to 80.3 per cent in 2070.

Table 4.6a shows the ratio of the pensioners to the inactive population, while Table 4.6b shows the ratio of the pensioners to total population by age category. Tables 4.7a and 4.7b show the same ratio but for females. The decline in the coverage ratio for the 60+ age group in 2020 reflects increases in the pension age. The pensioners to inactive population ratio increase mainly due to more females receiving an old age pension, reflecting substantial declines in the inactive population as well as increases in the load. This reflects the higher employment rates,

	2016	2020	2030	2040	2050	2060	2070
Number of pensioners (thousand) (I)	85.7	95.7	114.7	131.0	148.2	166.6	174.7
Employment (thousand) (II)	194.9	203.8	221.5	232.2	229.8	219.5	217.4
Pension System Dependency Ratio (SDR) (I)/(II)	44.0	47.0	51.8	56.4	64.5	75.9	80.3
Number of people aged 65+ (thousand) (III)	84.5	96.3	119.7	127.1	138.8	155.2	159.3
Working age population 15 - 64 (thousand) (IV)	289.9	292.1	295.9	306.9	301.6	287.8	285.7
Old-age Dependency Ratio (ODR) (III)/(IV)	29.1	33.0	40.4	41.4	46.0	53.9	55.8
System efficiency (SDR/ODR)	1.5	1.4	1.3	1.4	1.4	1.4	1.4

Source: Commission Services, EPC

Table 4.6a: Pensioners (public scheme) to inactive population ratio by age group (%)

	2016	2020	2030	2040	2050	2060	2070
Age group -54	2.4	2.9	3.9	5.1	5.2	4.8	5.1
Age group 55-59	22.1	23.0	29.4	38.3	46.9	49.9	45.0
Age group 60-64	70.4	61.4	60.1	69.8	74.6	76.9	76.9
Age group 65-69	73.2	78.5	84.4	91.0	96.4	101.3	104.5
Age group 70-74	76.9	73.8	80.9	85.4	89.6	93.4	96.9
Age group 75+	89.1	88.7	87.1	91.9	95.8	97.7	100.8

Table 4.6b: Pensioners (public schemes) to total population ratio by age group (%)

	2016	2020	2030	2040	2050	2060	2070
Age group -54	1.0	1.1	1.5	1.9	1.9	1.9	2.0
Age group 55-59	8.5	8.3	7.7	7.4	7.9	8.4	7.5
Age group 60-64	50.3	45.4	31.3	32.2	32.7	34.0	33.6
Age group 65-69	67.7	72.8	78.7	83.3	87.9	92.2	95.2
Age group 70-74	74.8	72.0	80.3	83.9	88.0	91.6	95.2
Age group 75+	89.1	88.7	87.1	91.9	95.8	97.7	100.8

Source: Commission Services

Table 4.7a: Female pensioners (public scheme) to inactive population ratio by age group (%)

	2016	2020	2030	2040	2050	2060	2070
Age group -54	1.8	2.1	2.5	2.9	2.9	2.7	2.9
Age group 55-59	12.4	13.3	18.4	26.5	31.1	30.8	28.0
Age group 60-64	45.7	41.6	37.9	48.3	55.0	58.8	58.9
Age group 65-69	53.1	61.6	72.3	83.6	94.2	104.1	110.7
Age group 70-74	59.5	60.8	73.5	80.6	88.4	95.9	103.4
Age group 75+	82.3	82.6	85.6	94.6	101.4	105.2	111.1

Table 4.7b: Female pensioners (public scheme) to total population ratio by age group (%)

	2016	2020	2030	2040	2050	2060	2070
Age group -54	0.9	0.9	1.1	1.2	1.2	1.1	1.2
Age group 55-59	7.9	7.7	7.2	6.8	6.5	6.4	5.8
Age group 60-64	38.1	35.7	24.8	26.4	27.6	29.7	29.4
Age group 65-69	51.9	59.4	70.3	79.5	88.7	97.8	104.0
Age group 70-74	59.5	60.6	73.4	80.5	88.2	95.8	103.2
Age group 75+	82.3	82.6	85.6	94.6	101.4	105.2	111.1

Source: Commission Services

Table 4.8a: Projected and disaggregated new public pension expenditure (old-age and early earnings-related pensions)							
New pension	2016	2020	2030	2040	2050	2060	2070
I Projected new pension expenditure (millions EUR)	:	36.9	53.1	97.1	160.9	232.1	278.6
II. Average contributory period	:	35.5	36.5	36.9	37.3	37.9	38.6
III. Monthly average pensionable earnings	:	1.3	2.3	3.4	4.7	6.5	9.0
IV. Average accrual rates (%)	:	2.0	1.7	1.7	1.7	1.7	1.7
V. Sustainability/Adjustment factor	:	:	:	:	:	:	:
VI. Number of new pensions ('000)	:	3.7	3.4	4.3	5.0	5.2	4.4
VII Average number of months paid the first year	:	12.0	12.0	12.0	12.0	12.0	12.0
Monthly average pensionable earnings / Monthly economy-wide average wage	:	0.7	0.8	0.8	0.8	0.8	0.7

Table 4.8b: Disaggregated new public pension expenditure (old-age and early earnings-related pensions) - MEN							
New pension	2016	2020	2030	2040	2050	2060	2070
I Projected new pension expenditure (millions EUR)	:	28.7	38.7	67.0	103.8	137.7	158.3
II. Average contributory period	:	40.5	41.3	41.4	41.4	41.5	41.4
III. Monthly average pensionable earnings	:	1.4	2.5	3.6	5.1	7.0	9.7
IV. Average accrual rates (%)	:	1.9	1.7	1.6	1.6	1.6	1.6
V. Sustainability/Adjustment factor	:	:	:	:	:	:	:
VI. Number of new pensions ('000)	:	2.2	1.9	2.3	2.5	2.4	2.0
VII Average number of months paid the first year	:	12.0	12.0	12.0	12.0	12.0	12.0
Monthly average pensionable earnings / Monthly economy-wide average wage	:	0.8	0.9	0.9	0.8	0.8	0.8

Table 4.8c: Disaggregated new public pension expenditure (old-age and early earnings-related pensions) - WOMEN							
New pension	2016	2020	2030	2040	2050	2060	2070
I Projected new pension expenditure (millions EUR)	:	11.8	19.2	38.9	72.3	117.4	148.3
II. Average contributory period	:	28.0	30.3	31.8	33.3	34.8	36.2
III. Monthly average pensionable earnings	:	1.2	2.1	3.1	4.3	6.0	8.4
IV. Average accrual rates (%)	:	2.0	1.7	1.7	1.7	1.7	1.7
V. Sustainability/Adjustment factor	:	:	:	:	:	:	:
VI. Number of new pensions ('000)	:	1.5	1.5	2.0	2.5	2.8	2.4
VII Average number of months paid the first year	:	12.0	12.0	12.0	12.0	12.0	12.0
Monthly average pensionable earnings / Monthly economy-wide average wage	:	0.7	0.7	0.7	0.7	0.7	0.7

Sources: Commission Services

particularly for females. Indeed, the ratio for both genders tend to converge.

Tables 4.8 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. The number of new pensioners is projected to increase from around 3,700 in 2020 to around 4,400 in 2070. The total average contributory period is expected increase from 35.5 years in 2020 to 38.6 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. The total new pension expenditure in 2016, 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 used in calculating new pensions is pensionable income and not average pensionable wage at retirement.

Table 4.9: Overview of the sensitivity tests

Population			Labour force		Productivity		Policy-change scenario
High life expectancy	Lower/higher net migration	Lower fertility	Higher/lower employment rate	Higher employment rate older workers	Higher/lower TFP growth	TFP risk scenario	Linking retirement age (policy scenario)
Increase of life expectancy at birth of about two years by 2070 compared with the baseline projection	33% less/more net migration compared with the baseline over the entire projection horizon.	20% lower fertility compared with the baseline over the entire projection horizon.	Employment rate 2 p.p. higher/lower compared with the baseline projection for the age-group 20-64.	Employment rate of older workers (55-74) 10 p.p. higher compared with the baseline projection.	TFP growth is assumed to converge by 2045 to a growth rate which is 0.4 percentage points higher/lower than in the baseline scenario (0.6% and 1.4% respectively). As for the baseline scenario, a period of fast convergence for 'followers' is assumed (i.e. rising by up to 0.6+0.5 and 1.4+0.5, respectively).	TFP growth assumed to converge to 0.8% (instead of 1%). As for the baseline scenario, a period of fast convergence for 'followers' is assumed (i.e. rising by up to 0.8+0.5).	Retirement ages shifted year-over-year in line with change in life expectancy at current retirement ages (in the Cohort Simulation Model).
			The increase/decrease is introduced linearly over the period 2018-2030 and remains 2 p.p. higher/lower thereafter.	The increase is introduced linearly over the period 2018-2030 and remains 10 p.p. higher thereafter.		Convergence to the target rate in 2045 from the latest out-turn year, i.e. 2016.	
			The higher/lower employment rate is assumed to be achieved by lowering/increasing the rate of structural unemployment (the NAWRU).	The higher employment rate of this group of workers is assumed to be achieved through a reduction of the inactive population.	The increase/decrease is introduced linearly during the period 2026-2045.		

Source: European Commission, EPC

Table 4.10: Public and total pension expenditure under different scenarios (p.p. deviation from the baseline)

Public Pension Expenditure	2016	2020	2030	2040	2050	2060	2070
Baseline	8.0	7.8	7.1	7.3	8.7	10.5	10.9
Higher life expectancy (2 extra years)	-0.0	-0.1	-0.0	0.0	0.1	0.3	0.5
Higher Total Factor Productivity Growth (+0.4 pp.)	0.0	0.0	0.1	-0.1	-0.3	-0.6	-0.7
Lower Total Factor Productivity Growth (-0.4 pp.)	0.0	-0.0	0.0	0.1	0.4	0.7	0.9
Higher emp. rate (+2 pp.)	0.0	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3
Lower emp. rate (-2 pp.)	0.0	-0.0	0.1	0.0	-0.0	-0.1	-0.0
Higher emp. of older workers (+10 pp.)	0.0	-0.1	-0.4	-0.5	-0.6	-0.7	-0.6
Higher migration (+33%)	0.0	-0.2	-0.3	-0.5	-0.8	-0.9	-0.8
Lower migration (-33%)	-0.0	0.1	0.2	0.3	0.5	0.7	0.7
Lower fertility	-0.0	-0.0	-0.0	0.2	0.5	1.1	1.8
Risk scenario	0.0	-0.0	0.1	0.2	0.3	0.4	0.5
Policy scenario: linking retirement age to increases in life expectancy	0.0	-0.1	-0.1	-0.4	-0.8	-1.2	-1.2

Source: EPD Calculations

4.5 Sensitivity Scenarios

The pension expenditure projections under the baseline scenario provide an illustration of how population ageing can influence economic and budgetary developments over the long-term. Given that the baseline scenario is surrounded with a significant element of uncertainty, it is necessary to carry out a number of sensitivity tests in order to quantify the responsiveness of projection results to changes in key underlying assumptions.

The sensitivity scenarios illustrate the evolution in pension expenditure in response to shocks to the baseline demographic, economic and policy assumptions. Results are subsequently assessed against the baseline scenario in order to have a clear picture of the driving factors of the pension projections and risks to future development.

The following sensitivity frameworks were formulated; being population, labour force and productivity. In addition to seven sensitivity scenarios, a policy change scenario has also been considered, namely linking retirement ages with increases in life expectancy. A detailed description of the sensitivity tests results is provided in Table 4.10.

4.5.1 Population Scenarios

High life expectancy

This scenario models an increase in life expectancy at birth, with the demographic effects being realised in the outer years. As a result, expenditure in 2070 is 0.5 p.p. higher than in the baseline. This increase reflects the fact that as people live longer, they are expected to receive pension benefits for a longer time span, resulting in a higher outlay on public pensions. However, this effect is partially offset by positive effects on the labour force and GDP, which dampens the increase of the public pension expenditure ratio (denominator effect).

Higher/lower net migration

In the lower net migration scenario, public expenditure to GDP is expected to be higher than in the baseline scenario. Lower net migration results in a smaller labour force and hence GDP over the projection period, as migrants are mostly assumed to be active

in the labour market. The estimated impact would reach around +0.7 p.p. of GDP by 2070.

In the higher net migration scenario, expenditure on public pensions in 2070 is projected to decrease by -0.8 p.p. of GDP over the baseline scenario. This decrease reflects the outcome of more contributors, thus reflecting a higher expenditure outlay being outweighed by the higher GDP levels due to a stronger labour input relative to the baseline scenario.

Lower fertility

This test assumes lower fertility rate over the entire projection horizon. Expenditure on public pensions is expected to be 1.8 p.p. higher compared to the baseline scenario until 2070 as this results in a smaller labour force and hence lower GDP over the end of the projection period.

4.5.2 Labour Force Scenarios

Higher/lower employment rate

The scenarios modelling lower employment rate results in comparable results to the baseline scenario as there are both declines in pensions and GDP and lower coverage. On the other hand, the higher employment rate scenario result in a decrease in pension expenditure in 2070 of 0.3 p.p. This result is the net-effect of higher pension expenditure in line with the increase in the number of contributors and a higher GDP. This means that the increase in the latter results in a marginal decline in pension expenditure relative to the baseline case.

Higher employment rate of older workers

In this scenario, two counter-acting effects are at play. On the one hand, higher employment of older workers leads to a higher GDP growth, a lower number of pensioners and a reduction in the average number of pension drawing years, containing the rise in gross public pension expenditure. However, on the other hand, employees will also be able to accrue additional pension rights, which will have an upward impact on gross public pension expenditure. The result indicates that the former effect dominates.

Indeed, pension expenditure to GDP ratio would decrease by 0.6 p.p. of GDP in 2070.

4.5.3 Productivity Scenarios

Higher/lower total factor productivity

In this case, higher labour productivity growth leads to a faster GDP and labour income growth than pension growth (and thus to a fall in the benefit ratio). The increased gap between average pensions and average wages results in a decrease of public pension expenditure as a share of GDP. In addition, the impact of higher labour productivity is further intensified because of indexation rules that are only partially connected to nominal wage growth. Consequently, by end of the projection period, pension expenditure to GDP falls by 0.7 p.p. of GDP.

On the contrary, the lower total factor productivity scenario results in slower economic growth. Yet, the decreased labour productivity also leads to slower wage growth and, as a result, slower pension growth. In the lower total factor productivity test, public expenditure on pensions in 2070 is projected to record an increase of 0.9 p.p. over the baseline case because the denominator effect outweighs the latter effect.

Lower TFP (risk scenario)

The TFP risk scenario essentially shows that GDP growth could be much lower in the event that future TFP growth rates developed less dynamically than in the baseline scenario. In this scenario, pension expenditure in 2070 is projected to be 0.5 p.p. higher than under the baseline scenario. This is because of slower GDP growth which outweighs other drivers as discussed in the low TFP scenario.

4.5.4 Policy-Risk Scenario

Increasing retirement ages in line with gains in life expectancy not only allows for a substantial reduction in gross public pension expenditure due to longer working careers and by lowering the number of pensioners (and thus the coverage ratio) but also in higher GDP levels. Indeed, the ratio of public pension expenditure to GDP in this risk scenario is projected to be 1.2 p.p. lower than under the baseline case until 2070. Importantly, this scenario also allows for accruing higher pension entitlements since longer careers are often associated with higher pension entitlements.

Table 4.11: Overall change in public pension expenditure to GDP under the 2006, 2009, 2012 and 2015 projection exercises

	Public pensions to GDP	Dependency ratio	Coverage ratio	Employment effect	Benefit ratio	Labour intensity	Residual (incl. Interaction effect)
2006 *	-0.48	7.29	-1.01	-1.19	-4.97	:	-0.60
2009 **	6.18	11.32	-3.15	-0.66	-0.54	:	-0.78
2012 ***	5.51	11.35	-2.57	-1.52	-1.05	0.07	-0.78
2015****	3.35	7.57	-1.99	-1.51	-0.45	0.09	-0.36
2018*****	2.86	5.71	-0.60	-1.09	-1.10	0.11	-0.17

* 2004-2050; ** 2007-2060; *** 2010-2060; **** 2013-2060; *****2016-2070

Source: Commission Services

4.6 Description of the changes in comparison with previous Ageing Reports

Table 4.11 compares the decomposition of the main drivers in the pension expenditure ratio over the period 2013 to 2070 with previous projections.

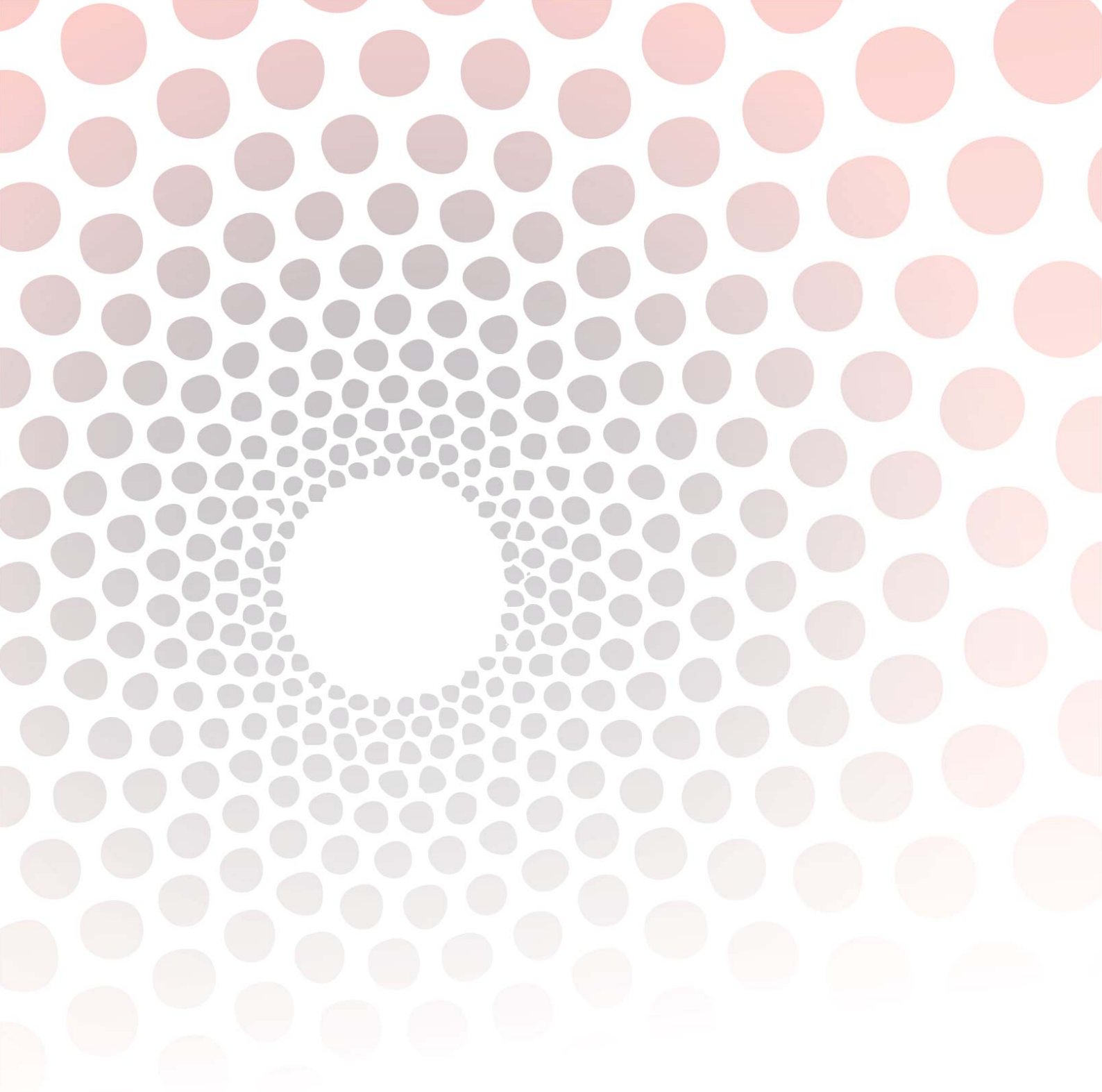
The **benefit ratio** had a strong negative effect on expenditure in the 2006 projection, where this effect has remained negative but it has declined in its impact particularly in 2009 and 2015. This development reflects the impact of the expenditure-increasing aspect of the 2006 reform. In addition, 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. Importantly, the modelling assumptions are identical to AR2015, but more positive macro assumptions accentuate this effect.

The **dependency ratio** has a lower impact on pension expenditure in the 2017 exercise in comparison to the 2009 and 2012 exercise, which may be attributable to the difference in demographic assumptions.

The **employment effect** has a smaller impact to that of the 2012 and 2015 projections and higher than under the 2009 exercise.

The contribution of the **coverage ratio** is less strong in 2018 relative to the 2009, 2012 and 2015 scenarios, a development that is likely to reflect the adopted macroeconomic assumptions and the impact of the pensions reform which is expected to lower the number of pensioners particularly because of the increase in pension age.

Labour intensity had a low positive impact of around 0.11 p.p. in public pension expenditure to GDP which is slightly higher than under the 2015 scenario.



CONCLUSION

Conclusion

Main Results

The new projections show that the expected increase in public pension spending over the period from 2016 to 2070 is expected to increase from 8.0 per cent to 10.9 per cent. Increases in expenditure are largely projected to materialise after 2040. When compared with the projections in the 2015 Ageing Report, public pensions expenditure is now expected to be lower by -2.2 p.p. of GDP by 2060 (10.5 per cent) because of a lower starting position due to higher GDP level and stronger economic growth. Meanwhile, expenditure is projected to rise by 2.5 p.p., which is less rapid over the entire projection horizon between 2016 and 2060, by -0.9 p.p. of GDP. This also reflects the new set of adopted assumptions, which inter alia reflect higher labour force participation.

Important Considerations for Policy Formulations

An ageing population raises important challenges for societies and economies. Concern is how living standards will be affected as a shrinking number of workers have to provide for the consumption needs of a growing number of elderly dependents. Other concerns relate to fiscal sustainability and adequacy of pensions. The issue of sustainability reflects a number of factors including demography, employment, and economic growth.

Due to the expected dynamics of life expectancy, the structure of the Maltese population is supposed to dramatically change in the coming decades, with the share of the elderly expected to increase further. The share of the population aged 65 and over as a percentage of the population aged 15-64, known as the old-age dependency ratio, is expected to increase to 55.9 per cent in 2070, which presently is 27.3 per cent. This means that in 2070 for every two middle-aged persons there is an elderly person.

Looking at demographic figures only falls short of the true economic realities. A crucial factor of sustainability is the number of contributors to finance the current pension system, which in turn depends on the employment rate, defined as the ratio of employed population to population of the working-age. Simply put, the higher the

employment rate, the smaller the economic dependency ratio.

From a relatively low starting point, Malta's employment rate has registered increasing rates recently, fast converging to the employment for the EU28. In this regard, Government's policy efforts are targeted to raise the employment rate, both by supporting the shift from the unemployed population to the employed but equally important to support the inactive to become part of the labour supply.

Strengthening labour market performance and addressing skill mismatches is one of the key policy priorities for Government. The Government is addressing the particular challenges faced by working and studying parents by providing free childcare facilities, opening schools earlier, providing after-school care services, and extending the tax deduction for parents sending their children to private childcare centres. Also, the Government put in place a number of successful initiatives including: the Employment Aid Programme, educational and vocational training programmes, the Youth Guarantee Programme, apprenticeship programmes for students, the National Literacy Strategy, and promotion of flexible working arrangements. These contributed to a significant growth in the participation of women and youth in the labour market

Comparison of the employment rates by gender indicates that females in Malta still have a lower employment rate when compared to males. The female employment rate, however, has improved considerably and has contributed positively towards total employment growth trends. Increasing the labour market participation of older people is also a crucial component of Government's policy response. The employment rate for the cohort 50+ has been increasing. Nonetheless, it remains below the EU-28 average, mainly reflecting low labour market participation amongst older females, attributed to traditional ties.

Going forward, the total and older employment rate is expected to improve as a result of legislated increases in statutory retirement age and the improvement registered in female employment in the 40+ age cohort. In addition, the fact that the female retirement age will increase at par with that of males, more females will remain in the labour market.

In addition to improvements in the employment rate, improvements in hourly labour productivity can be sought by continuing to increase the level of education attainment of the Maltese labour force and attracting further higher value-added FDI. In particular, the role of education stands out considering that labour productivity is the dominant source of growth and remains the almost entire driver of GDP growth over the long-term. The relatively low the share of persons with tertiary education attainment as well as the relatively high proportion of early school leavers, underpin the potential for long-term growth. Indeed, the initiated vocational training and lifelong learning programs are a step forward in order to enable the Maltese economy climb the value-added ladder and contribute to facilitate the adjustment process associated with ageing.

Higher employment rate, relative to the baseline scenario, supports potential output growth, which raises the productive capacity in Malta. In turn, this implies that pressures of public pension expenditure as a percentage of GDP ease in the future because higher levels of labour input can sustain higher levels of output.

For the sustainability of pensions it is important to focus not only on parametric

changes, such as further increases in statutory retirement age, but also on labour market developments. What matters ultimately is whether the economy can still deliver an acceptable economic growth and maintain a buoyant labour market; thus supporting pension systems. Raising employment levels and improving employment opportunities, particularly for young, women and older persons, is key in view of the predicted increase in the old-age dependency ratio. Policies aimed to improve labour productivity are also crucial in light of the projected demographic transition which results in lower population growth but also alters the population structure with a decline in the proportion of young people to retired workers. Higher levels of investment in physical and human capital, together with efforts to strengthen innovation and R&D activities, could yield substantial productivity gains over the long-term.