

By the end of 2015, Malta's pension entitlements amounted to €24.4 billion, equivalent to 256.6 per cent of GDP.

## Pension Entitlements: 2015

### Introduction

Following the new requirements established in both the European System of Accounts (ESA 2010)<sup>1</sup> and System of National Accounts (SNA 2008), it has become compulsory for EU Member States to record their total pension entitlements accrued by members of employment-related pension schemes or social security pension schemes. Data was compiled and transmitted to Eurostat in a new supplementary table on pension schemes, known as Table 29 (reproduced in Tables 2 and 3 in this news release), with the inaugural transmission of 2015 data accomplished in December 2017.

### Accrued-to-date pension entitlements

Accrued-to-date pension entitlements (ADLs) represent the current value of pensions to be paid out in future periods on the basis of rights accumulated by each contributor during his or her working life. These entitlements provide two different perspectives, as the (i) households (creditors) entitlements are equivalent to the (ii) pension providers (debtors) liabilities.

It needs to be highlighted that ADLs are not to be used as an indicator of fiscal sustainability as only entitlements up to the reference year are considered, implying a limited time horizon. Furthermore, all present or future assets of the pension systems, which are a crucial element one needs to take into consideration when assessing the long-term sustainability of any pension system, are being disregarded in the study.

### Model

In 2015, the National Statistics Office (NSO) embarked on a project in collaboration with the Research Centre for Generational Contracts (RCG) at Freiburg University to compile a suitable model able to estimate Malta's pension entitlements for its two pension systems; (i) the Social Security Pension system and (ii) the Treasury Pension system.

Anonymised data was collected for each of the reference years from 2012 to 2015 and inputted into the ADLs model. Data used included current pensioners' micro data, reflecting each individual's pension intake categorised by type of pension payment (Old Age, Survivors or Disability), and contributions micro data, where for each individual the number of contributions paid were categorised by class (1 to 3). Credited contributions given to each eligible person along with data on person's wage history (from 1982 onwards, when available) were also covered in the contributions database.

The model takes a forward-looking approach to estimating pension entitlements, making use of each current contributor's historical data to project her/his future entitlements. No projection is required for current pensioners as they have already accrued their full pension rights.

### General assumptions

The present value of these future pension rights are determined by applying a real discount rate of 3.0 per cent to the model, one of a set of standard assumptions established in the *Eurostat/ECB Technical Compilation Guide for Pension Data in National Accounts*<sup>2</sup> and which all countries applied in their calculations to ensure comparable results.

<sup>1</sup> EU Regulation 549 of 2013 of the European Parliament and of the Council of 21 May 2013.

<sup>2</sup> [https://www.ecb.europa.eu/pub/pdf/other/techn\\_comp\\_gd\\_pens\\_dt\\_nat\\_accts\\_201201en.pdf](https://www.ecb.europa.eu/pub/pdf/other/techn_comp_gd_pens_dt_nat_accts_201201en.pdf)

Furthermore, the Projected Benefit Obligation (PBO) approach, taking into consideration future wage increases when applying wage indexation rules to pension payment increases, is the selected estimation technique. Other standard assumptions were: for demography the use of the EUROPOP life expectancy assumptions and for wage growth the use of the labour productivity growth forecasts from the 2015 Ageing Working Group assumptions<sup>3</sup>.

## Results

By the end of 2015, total pension entitlements for Malta amounted to €24.4 billion (256.6 per cent of GDP). The majority of these entitlements were accumulated by members of the Social Security Pension System, with €22.4 billion or 91.7 per cent of the total entitlements covering social security pensions (Table 1).

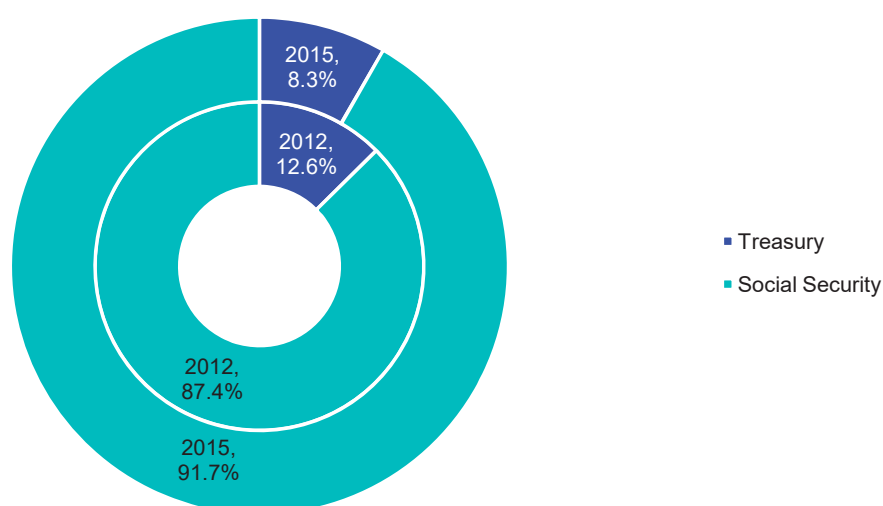
**Table 1. Total Pension Entitlements**

Description		2012	2013	2014	2015	2015/2012
						Change
Social Security	€ million	17,755	19,409	20,904	22,400	4,645
	% of GDP <sup>1</sup>	247.8	254.0	247.3	235.4	-
Treasury	€ million	2,559	2,657	2,785	2,023	-536
	% of GDP	35.7	34.8	32.9	21.3	-
Total	€ million	<b>20,314</b>	<b>22,066</b>	<b>23,689</b>	<b>24,422</b>	<b>4,109</b>
	% of GDP	<b>283.5</b>	<b>288.7</b>	<b>280.2</b>	<b>256.6</b>	-

<sup>1</sup>GDP used was obtained from the NSO News Release 038/2018.

Between 2012 and 2015, Social Security Pension entitlements rose by €4.6 billion mainly reflecting the growing trend in employment. On the other hand, Treasury entitlements dropped by €0.5 billion to only reflect 8.3 per cent of the total pension entitlements by the end of 2015 (Chart 1). The decline is due to the Treasury pension being replaced by the Two-Thirds pension in 1979 and hence closed to any new Government employees. Furthermore, in recent years an increasing number of employees eligible to receive a Treasury pension are reaching retirement age and hence they achieved their maximum entitlements. Such entitlements will decrease in the future as pensions are paid to the retirees.

**Chart 1. Pension entitlements (2012 and 2015) categorised by scheme and as a percentage of total entitlements**



<sup>3</sup> 2015 Ageing Report: [http://ec.europa.eu/economy\\_finance/publications/european\\_economy/2015/ee3\\_en.htm](http://ec.europa.eu/economy_finance/publications/european_economy/2015/ee3_en.htm)

## Supplementary Table 29

In 2015 social contributions under the Social Security Pension system totalled €1.6 billion, reflecting an increase of more than €0.3 billion from 2012. Total pension payments amounted to €0.7 billion by the end of 2015 (Table 2), more than three quarters of which was used to cover Old Age type pensions (Chart 2).

During the four-year period Treasury entitlements dropped by €0.5 billion, from €2.6 billion in 2012 to €2.0 billion in 2015, following a decline in contributors to the Treasury system registered between 2014 and 2015. Pension payments for the year 2015 totalled €0.1 billion (Table 3), almost all of which was used to cover Old Age type pensions (Chart 3).

**Table 2. Social Security Pension Entitlements Supplementary Table (2012-2015)**

Description	2012	2013	2014	2015
	€ million			
<i>Opening Balance Sheet</i>				
1 Pension entitlements <sup>1</sup>	15,977	17,755	19,409	20,904
<i>Changes in pension entitlements due to transactions</i>				
2 Increase in pension entitlements due to social contributions (=2.1+...+2.4-2.5)	1,213	1,325	1,439	1,550
2.1 Employer actual social contributions	190	202	217	234
2.2 Employer imputed social contributions	-	-	-	-
2.3 Household actual social contributions	225	235	251	270
2.4 Household social contribution supplements	799	888	970	1,045
2.5 Less pension scheme charges	0	0	0	0
3 Other (actuarial) increase of pension entitlements	-196	1,177	271	2,167
4 Reduction in pension entitlements due to payment of social benefits	579	609	630	654
5 Change in pension entitlements due to social contributions and pension benefits (=2+3-4)	438	1,893	1,079	3,062
6 Transfers of entitlements between schemes	0	0	0	0
7 Change in pension entitlements due to other transactions	0	0	0	0
<i>Change in pension entitlements due to other economic flows</i>				
8 Changes in entitlements due to revaluations	0	0	0	0
9 Change in entitlements due to other changes in volume	1,339	-238	416	-1,567
<i>Closing Balance Sheet</i>				
10 Pension entitlements (=1+5+6+7+8+9)	17,755	19,409	20,904	22,400

<sup>1</sup>Equal to the closing stock for the previous year.

**Chart 2. Social security pension payments by type of pension (2015)**

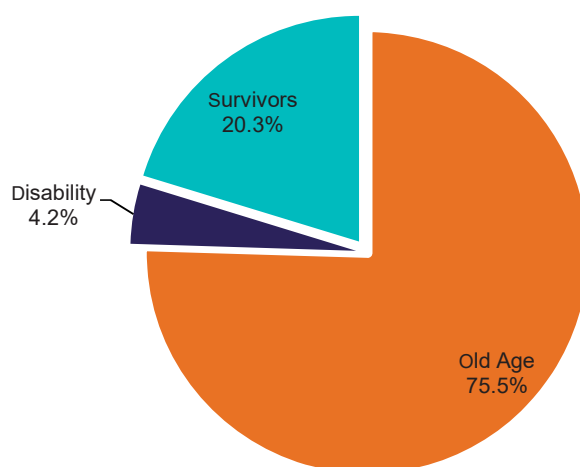
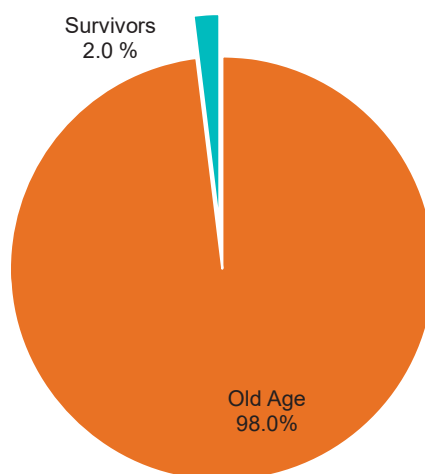


Table 3. Treasury Pension Entitlements Supplementary Table (2012-2015)

Description	2012	2013	2014	2015
	€ million			
<i>Opening Balance Sheet</i>				
1 Pension entitlements <sup>1</sup>	2,087	2,559	2,657	2,785
<i>Changes in pension entitlements due to transactions</i>				
2 Increase in pension entitlements due to social contributions (=2.1+...+2.4-2.5)	390	211	147	-545
2.1 Employer actual social contributions	0	0	0	0
2.2 Employer imputed social contributions	286	83	14	-685
2.3 Household actual social contributions	0	0	0	0
2.4 Household social contribution supplements	104	128	133	139
2.5 Less pension scheme charges	0	0	0	0
3 Other (actuarial) increase of pension entitlements	-	-	-	-
4 Reduction in pension entitlements due to payment of social benefits	90	87	92	92
5 Change in pension entitlements due to social contributions and pension benefits (=2+3-4)	300	123	55	-637
6 Transfers of entitlements between schemes	0	0	0	0
7 Change in pension entitlements due to other transactions	0	0	0	0
<i>Change in pension entitlements due to other economic flows</i>				
8 Changes in entitlements due to revaluations	0	0	0	0
9 Change in entitlements due to other changes in volume	172	-25	73	-125
<i>Closing Balance Sheet</i>				
10 Pension entitlements (=1+5+6+7+8+9)	2,559	2,657	2,785	2,023

<sup>1</sup>Equal to the closing stock for the previous year.

Chart 3. Treasury pension payments by type of pension (2015)



## Sensitivity Analysis

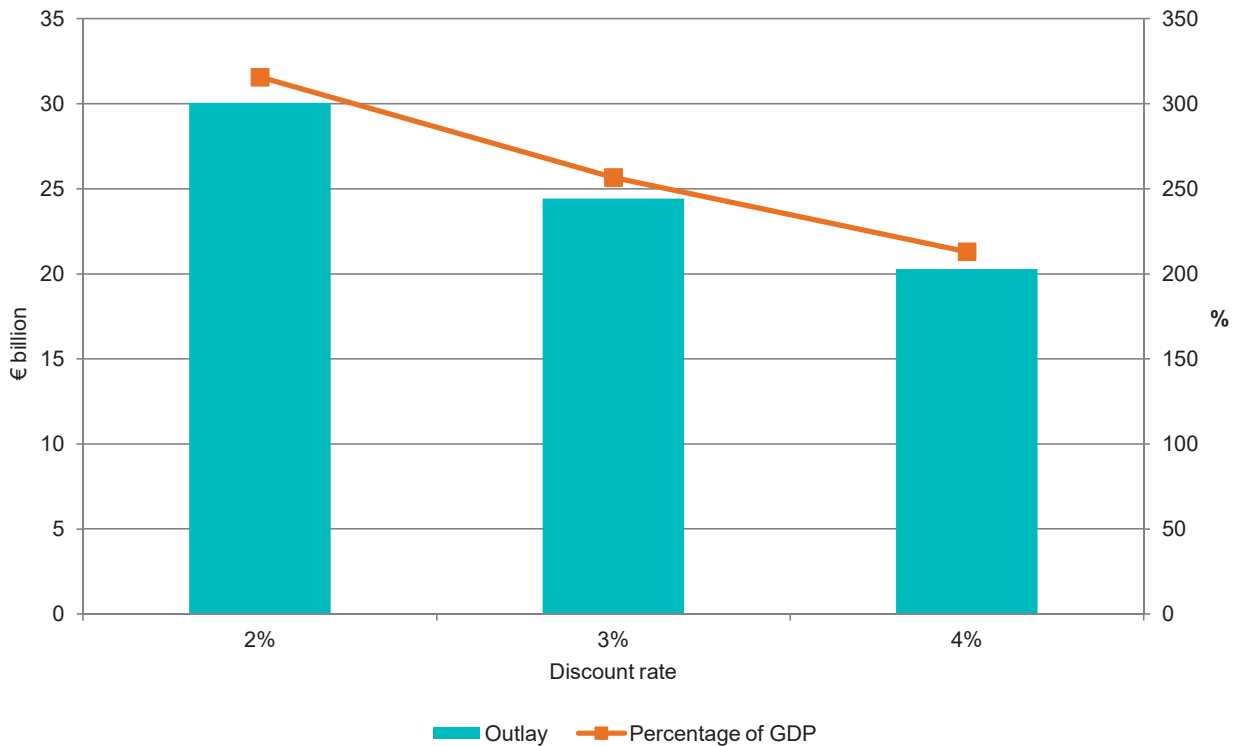
In addition to the standard discount rate of 3.0 per cent, different discount rates were also applied to the ADLs model to test its robustness. Entitlements were re-calculated using discount rates of 2.0 per cent and 4.0 per cent, with results showing that a higher discount rate leads to a lower present value of pension entitlements implying that the two variables are inversely correlated. In fact, 2015 pension obligations amounted to €20.3 billion when a discount rate of 4.0 per cent was used; €4.1 billion lower than the original entitlements computed using the standard 3.0 per cent discount rate. The opposite was true when a 2.0 per cent rate was applied with pension entitlements rising to €30.0 billion by the end of 2015 (Table 4).

**Table 4. Sensitivity Analysis: Discount Rate ( $\pm 1\%$ )**

Description			2012	2013	2014	2015
Discount rate (%)	2.0	€ million	25,302	27,363	29,382	30,040
		% of GDP <sup>1</sup>	353.1	358.0	347.5	315.6
	3.0	€ million	20,314	22,066	23,689	24,422
		% of GDP	283.5	288.7	280.2	256.6
	4.0	€ million	16,667	18,177	19,511	20,274
		% of GDP	232.6	237.8	230.8	213.0

<sup>1</sup>GDP used was obtained from the NSO News Release 038/2018.

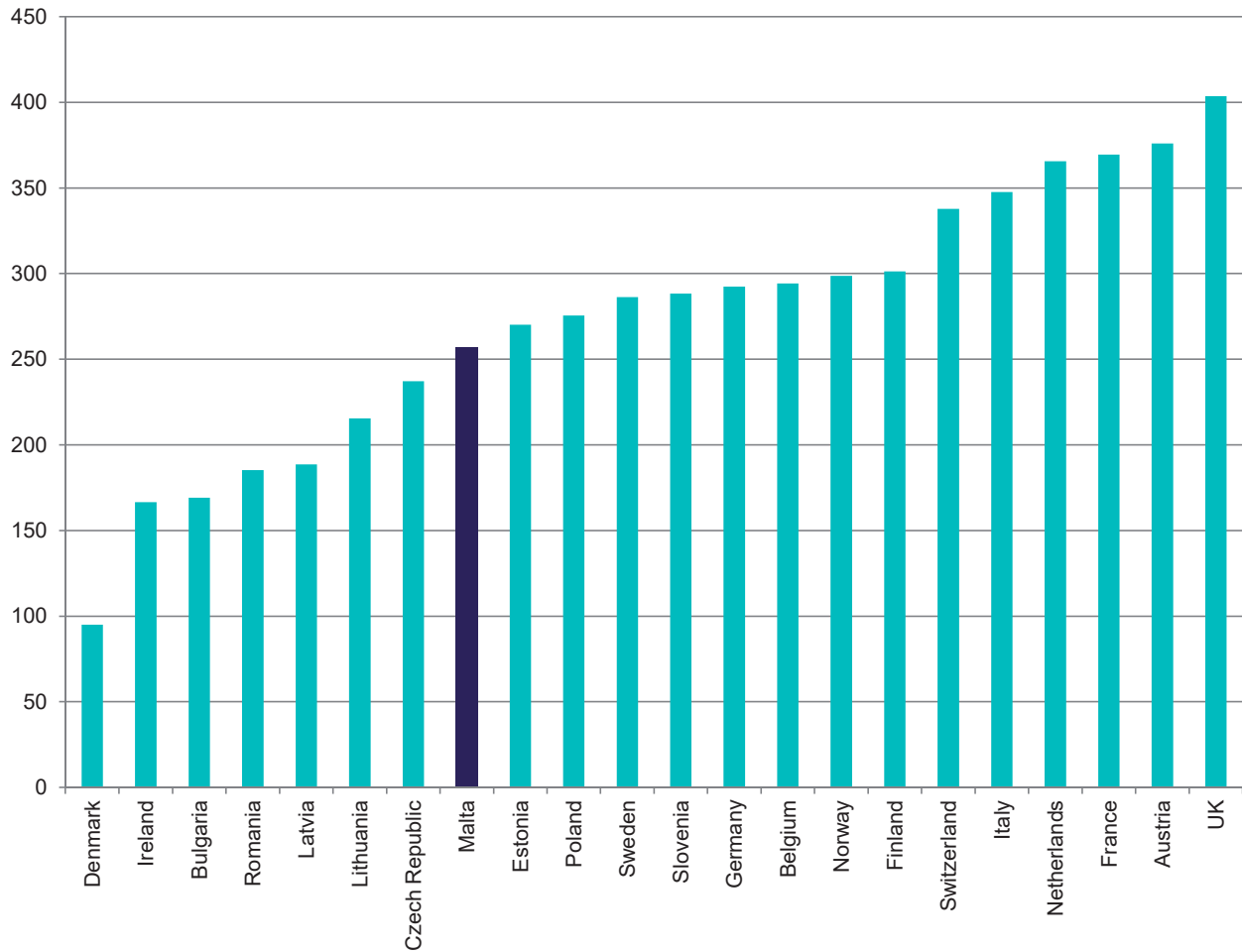
**Chart 4. Pension entitlements by discount rate (2015)**



## International Comparison

Malta's pension entitlements amounted to 256.6 per cent of GDP in 2015, ranking it in the 15<sup>th</sup> place among the 22 European countries (20 EU Member States, Norway and Switzerland) that have currently published the data. The United Kingdom recorded the largest ratio of entitlements-to-GDP with 403.5 per cent followed by Austria (376.0 per cent) and France (369.5 per cent). At the other end of the spectrum, Denmark registered the lowest share with their obligations amounting to 95.0 per cent of their GDP by the end of 2015 (Chart 5).

Chart 5. Pension entitlements by country as a percentage of GDP (2015)



Country publications can be found through the following link: <http://ec.europa.eu/eurostat/web/pensions/other-information>.

## Methodological Notes

1. The rows of the supplementary table (Table 29) are defined as follows:

1. The opening stock of pension entitlements (equal to the closing stock of the previous year).
- 2.2 Balancing item for defined benefit pension schemes, recording any changes in entitlements not included in any other rows of Table 29.
- 2.3 Actual social contributions made by employees during the reference year.
- 2.4 Relates to the property income earned, or imputed on the schemes. This is equivalent to the unwinding of the discount rate, equal to the nominal discount rate for the base year multiplied with the pension entitlements recorded at the beginning of the year.
3. The imputed transactions of social security pension schemes. This row is used as a balancing item for social security pension schemes. Therefore, figures may be either positive or negative, with a positive value implying that the discount rate is lower than the scheme's annual rate of return.
4. Pension payments made during the year.
5. Changes in pension entitlements due to contributions and pension benefits.
6. Amount of entitlements transacted from one pension fund to another.
7. Changes in entitlements due to any pension reforms introduced during the year.
8. Changes in entitlements due to changes made to the key model assumptions, such as the discount rate, wage rate and inflation rate.
9. Other changes to the volume of assets that are not classified under row 8.
10. Total pension entitlements recorded at the end of the year.

2. **Glossary:**

- 2.1. **Accrued-to-date pension entitlements (ADLs)** amount to the present value of pensions to be paid in future periods to members of a pension system as based on their accrued rights.
- 2.2. In **Defined Benefit (DB) pension schemes** a formula is used to determine the amount of pension benefits to be paid to each individual, normally taking into consideration years of service, the person's salary over a certain period of time, the age at retirement and the pension indexation rules.
- 2.3. **Disability Pensions** are benefits paid to persons below the legal/standard retirement age suffering from a disability which prevents them from working or earning above a certain minimum level as legislated.
- 2.4. The **Discount Rate** represents an interest rate used to convert a future sum of money to its present value.
- 2.5. The **Gross Domestic Product (GDP)** is the total value of all goods and services produced, deducting the value of any goods and services used in their production within a certain period in a country.
- 2.6. The **Inflation Rate** is the rate at which the general level of prices for goods and services is increasing during a particular reference period.
- 2.7. **Old Age Pensions** are benefits paid to persons who have retired from gainful employment at the legal/standard retirement age, in return for years of service and/or social insurance payments.
- 2.8. **Pension Indexation** refers to the method used to update pensions on an annual basis. In Malta's case, pensions are updated by a sum equivalent to 70 per cent growth in average national wage and 30 per cent of the inflation rate.
- 2.9. The **Present Value** represents the current worth of a future sum of money.
- 2.10. The **Projected Benefit Obligations (PBO)** approach takes into consideration future wage increases, obtained either through promotions or a general increase in wages, when estimating the ADLs of a pension system.
- 2.11. **Survivors Pensions** are paid to the close relatives (wife or children) of a deceased person who would have been eligible to receive an old age pension upon reaching retirement age.

3. The System for the Administration of Social Benefits (SABS), held by the Ministry for Family, Children's Rights and Social Solidarity, was used to obtain both the pensioners micro data for the Social Security pension scheme and also the contributors' micro data.
4. The Treasury pensioners' micro data was obtained from the Treasury Department.
5. Figures may not add up due to rounding.
6. References to this news release are to be cited appropriately.
7. A detailed news release calendar is available on:  
[https://nso.gov.mt/en/News\\_Releases/Release\\_Calendar/Pages/News-Release-Calendar.aspx](https://nso.gov.mt/en/News_Releases/Release_Calendar/Pages/News-Release-Calendar.aspx)
8. Further details on Malta's pension system are available on:  
[https://europa.eu/epc/sites/epc/files/docs/pages/malta - country fiche on pensions.pdf](https://europa.eu/epc/sites/epc/files/docs/pages/malta_-_country_fiche_on_pensions.pdf)