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### Article Pension data in European national accounts: ESA 2010 Table 29

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# Pension data in European national accounts: ESA 2010 Table 29

**Abstract**: The need for statistics on pensions is increasing as populations age and the choice of available pension schemes widens in many European Union (EU) Member States. As a response to this need, statistical authorities in the EU have been compiling a snapshot of future pensions (accrued entitlements) of households in pension schemes in Table 29 of the European System of National and Regional Accounts (ESA 2010). Information is compiled for both private and public schemes, including pay-as-you-go, defined benefit and social security pension schemes, for which figures are published in Eurostat's reference database and also nationally. Individual retirement schemes, not related to occupation, are excluded from the table.

Pension figures crucially rely on a number of assumptions about the future, including the discount rate and life expectancies. Table 29 data transmission includes a sensitivity analysis to variations in the discount rate: this analysis provides information on how pension entitlements in defined benefit schemes would change in the case of a +/–1 percentage point change in the discount rate.

The communication strategy for Table 29 data is considered to be crucial. Being calculated in terms of accrued-to-date liabilities, these statistics do not tell us anything about the sustainability of pension schemes themselves and conceptually should not be linked to government (Maastricht) debt. By contrast, enhanced pension reporting through Table 29 makes possible a comprehensive overview of households' pension entitlements, which comprise an important part of households' wealth and are therefore relevant for an analysis of households' consumption and saving behaviour.

#### JEL codes: E21, G51, J11, M41

**Keywords**: national accounts, pensions, social insurance, household wealth, demographic trends, actuarial methods

## **1. Introduction**

There is high public and policy interest in how people are providing for their future retirement, and the impact that this has on their current consumption and saving behaviour. As populations age in the European Union (EU) (<sup>2</sup>) and the choice of available pension schemes widens, the availability of statistics on pensions becomes increasingly important.

A broad range of statistics on pensions already existed before the implementation of Table 29 of the European System of National and Regional Accounts (ESA) 2010, for example as part of those for social protection (<sup>3</sup>). However, these statistics are based on flows during the year — contributions and benefits pid — and not on a forward-looking basis concerning pensions that will be paid in the future. EU Member States have been filling this gap by compiling a snapshot for future pensions (accrued entitlements) of households in pension schemes. A first compilation of pensions data took place in 2018 with reference to year 2015, and a second exercise is expected to take place by the end of 2020.

One of the improvements introduced in ESA 2010 (Eurostat (2013)) (<sup>4</sup>) was enhanced statistical reporting on pensions and Table 29 of the ESA 2010 transmission programme (Eurostat (2014)) reflects this improvement.

Table 29 provides information on both private and public pension schemes, including social security pension schemes, which operate on a collective model, in other words they are for a group of households (not individual's private pensions) and are contributory. Pensions paid irrespective of contributory history are termed 'social assistance' and are not included in Table 29 ( $^{5}$ ).

These statistics rest upon a number of assumptions about the future, for example how to value them in today's money (discounting) and how long people will live (life expectancy), and thus need to be treated carefully as model-based estimates. In particular, changing the assumed discount rate may have large effects on the estimated accrued entitlements in defined benefit schemes. Based on 2015 Table 29 data, a 1 percentage point decrease in the discount rate makes pension entitlements increase by a rate between 14 % and 28 % across EU Member States — as compared with the base case. Equally, a 1 percentage point increase in the discount rate makes them decrease by a rate between 11 % and 20 %.

<sup>(2)</sup> In the EU-27, persons aged 65 years or over had a 20.3 % share of the total population in 2019, showing an increase of 2.9 percentage points compared with 2009. This share also increased in the United Kingdom, EFTA and EU candidate countries during the same period https://ec.europa.eu/eurostat/statistics-explained/index.php/ Population\_structure\_and\_ageing#The\_share\_of\_elderly\_people\_continues\_to\_increase.

<sup>(3)</sup> See http://ec.europa.eu/eurostat/web/social-protection/overview.

<sup>(\*)</sup> The European System of National and Regional Accounts (ESA 2010) is the European statistical standard for compiling national accounts. The structure of ESA 2010 is consistent with the worldwide guidelines on national accounting set out in the System of National Accounts (SNA 2008; European Commission, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, World Bank, 2009).

<sup>(&</sup>lt;sup>5</sup>) Social assistance is not part of social insurance. Social assistance benefits are payable independently of participation in a social insurance scheme, i.e. without qualifying contributions having been made to a social insurance scheme (Eurostat, 2013, § 17.04).

Pension entitlements are reported in Table 29 in terms of accrued-to-date liabilities (ADL), and therefore these statistics do not tell us anything about the sustainability of pension schemes themselves and conceptually should not be linked to government (Maastricht) debt. Nevertheless, enhanced pensions reporting in national accounts, following the implementation of ESA 2010, can serve several purposes.

It provides a comprehensive overview of households' pension entitlements, which comprise an important part of households' wealth and are therefore relevant for an analysis of households' consumption and saving behaviour. It reflects the impact of social insurance systems — by different types of pension schemes — to ensure income at retirement; social insurance systems cover employment-related and social security schemes. Moreover, reporting enhances international comparability of data on households' pension entitlements across countries by applying harmonised assumptions for the recording of unfunded government pension schemes.

The statistical and policy debate in the EU concerning national accounts in general and gross domestic product (GDP) more specifically has focused since (at least) a decade on the necessity to go 'beyond GDP' — due to a concentration on the production side — and focus more on the 'household perspective' (among other issues). Several dedicated working groups in the EU context (under different formal agreements) were established during this period. Most of them in their conclusions/recommendations pointed out that households' entitlements related to unfunded pension schemes — pay-as-you-go defined benefit and social security pension schemes — were not recorded in the system of national accounts before the implementation of ESA 2010, although they represented significant assets for households. Table 29 therefore makes it possible to add relevant information to the measurement of the total financial wealth of households. Given its precise coverage it is, of course, not the full picture.

The aim of this article is to present the statistical recording of pensions in the EU through ESA 2010 Table 29 and to discuss its features, including elements of novelty, data, methodological issues, possible use for policy analysis and the way forward.

# 2. Recording pension schemes in EU national accounts

### 2.1 The content of Table 29

ESA 2010 Table 29 includes information on social security pension schemes and employmentrelated pension schemes; it excludes individual pension schemes as well as non-contributory social security schemes (which are not considered as social security schemes in national accounts terms, but as social assistance and are therefore outside the scope of Table 29). Information on social security pension scheme assets of households were collected for the first time in the context of national accounts, as shown in Table 1 below.

#### Table 1: Pension schemes included in Table 29

1st pillar Social security pension schemes	2nd pillar Employment-related pension schemes		
Not recorded as assets of households before	Pension entitlements (AF.63)		
the implementation of ESA 2010 Table 29 [not in the core national accounts].	Definition: pension entitlements comprise financial claims that current employees and former employees hold against either:		
	(a) their employers;		
	(b) a scheme designated by the employer to pay pensions as part of a compensation agreement between the employer and the employee; or		
	(c) an insurer.		

#### Source: Eurostat (2013)

In other words, Table 29 covers social insurance schemes where participants *are obliged*, or *encouraged*, by their employers or by general government, to take out insurance against certain eventualities or circumstances that may adversely affect their welfare or that of their dependants. In such schemes social contributions are paid by employees or others, or by employers on behalf of their employees, in order to secure entitlement to social insurance benefits, in the current or subsequent periods, for the employees or other contributors, their dependants or survivors (Eurostat (2013) § 4.88).

In particular, two types of social insurance may be identified: The first pillar consists of social security schemes covering the entire community, or large sections of the community, that are imposed, controlled and financed by government units. Pensions payable under such schemes may or may not be related to levels of salary of the beneficiary or history of employment. Non-pension benefits are less frequently linked to salary levels. The second pillar consists of other employment-related pension schemes. *Such schemes derive from an employer-employee relationship in the provision of pension and possibly other entitlements that are part of the conditions of employment and where responsibility for the provision of benefits does not devolve to general government under social security provisions* (Eurostat (2013) § 4.89).

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It is worth mentioning that schemes organised by government units for their own employees are classified as other employment-related schemes (since there is an employment relationship) and not as social security schemes; however, in many EU Member States civil servants are members of the general social security scheme (<sup>6</sup>) and treated accordingly in Table 29.

Statistical reporting on pensions can be presented in many ways, depending on the purpose of the analysis. Data on pensions in national accounts present an 'accounting' perspective. They show social insurance pension entitlements accrued by the end of a reporting period by the current workforce and retired persons broken down by:

- type of pension scheme defined contribution schemes and defined benefit schemes;
- institutional sector and type of pension manager private sector and government;
- type of recording pension schemes recorded in the national accounts framework (all funded and private unfunded employment-related schemes) and pay-as-you-go schemes of general government (social security schemes and unfunded schemes for general government employees).

Table 29 is therefore organised as shown in the following tables.

Recording	Core national accounts					Not in the core national accounts		Total pension	Counterparts: entitlements of		
Pension manager	Non-general government General government			ıt							
									schemes	resident households	non-resident households
	Defined	Defined benefit schemes		Defined	Defined benefit schemes f government employ		for general yees	Social			
	contribution schemes	and other non-defined contribution schemes	Total	contribution schemes	Classified in financial corporations	Classified in general government	Classified in general government	pension schemes			
Column	A	В	С	D	E	F	G	н	I	J	К

#### Table 2: Table 29 columns

Accounting information are reported for each column, including stocks and flows leading to changes in entitlements.

<sup>(9)</sup> In many European countries national accounts stocks information on schemes organised by government units for their own employees was also missing before the implementation of ESA 2010 Table 29, either because it is an employment-related scheme based on a pay-as-you-go approach, or forms part of a social security scheme.

1Pension entitlements2Increase in pension entitlements due to social contributions2.1Employer actual social contributions2.2Employer imputed social contributions (Defined benefit schemes only)2.3Household actual social contributions2.4Household social contribution supplements2.5Pension scheme service charges3Other (actuarial) change of pension entitlements in social security pension schemes4Reduction in pension entitlements due to payment of pension benefits5Changes in pension entitlements due to social contributions and pension benefits6Transfers of pension entitlements between schemes7Change in entitlements due to negotiated changes in scheme structure8Changes in entitlements due to evaluations9Changes in entitlements due to other changes in volume10Pension entitlements	Table 3	Table 29 rows
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<ul> <li>7 Change in entitlements due to negotiated changes in scheme structure</li> <li>8 Changes in entitlements due to revaluations</li> <li>9 Changes in entitlements due to other changes in volume</li> <li>10 Pension entitlements</li> </ul>	6	Transfers of pension entitlements between schemes
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9     Changes in entitlements due to other changes in volume       10     Pension entitlements	8	Changes in entitlements due to revaluations
10 Pension entitlements	9	Changes in entitlements due to other changes in volume
	10	Pension entitlements

### 2.2 Accrued-to-date liabilities

Table 29 reports on accrued-to-date pension entitlements (of pension beneficiaries) or liabilities (of pension providers) in social insurance and this concept of recording is not suitable for inferring the sustainability of pension schemes. A sustainability analysis of pension schemes requires different, more forward-looking calculation approaches, notably considering future flows of social contributions.

In particular, in the literature on pension liabilities (Franco (1995)), three main concepts of pension obligations can be identified:

- accrued-to-date liabilities (ADL) pension entitlements contain the present value of
  pensions to be paid in the future on the basis of accrued rights. Accrued pension rights
  arise from already paid social contributions by current and past workers and normally
  depend on factors such as salary and length of employment service.
- current workers' and pensioners' liabilities (CWL) allowance is made for the pension scheme to continue until the last current contributor dies. This concept covers ADL and the present value of pension entitlements that will be accrued by current contributors due to their future contributions. However, new entrants are excluded.
- open-system liabilities (OSL) this liability concept also includes the present value of
  pensions of new workers entering the respective pension scheme. It is assumed that the
  pension scheme will be continued under current rules for a relatively long time horizon. The
  present value of OSL may be compiled over an infinite time horizon. For practical reasons,
  however, a limited perspective is typically chosen.

ADL figures therefore include future pensions of people already retired and future pensions of people working at present, corresponding to accrued rights, but exclude future pensions of people working at present corresponding to rights to be accrued over the rest of their career and future pensions of people not yet working/born.

In order to compile appropriate indicators for the sustainability of pension schemes, it is necessary to have information on future pensions and contributions based on an open system. In contrast, ADL figures should be simply interpreted as the amount of resources that would have to be set aside today in order to finance all pension rights which have been earned up to a given year (which is sometimes referred to as a 'scheme closure' scenario) (<sup>7</sup>).

Furthermore, the figures reported in Table 29 should not be considered part of government debt, as they are not of the same nature as debt instruments such as debt securities and loans (the level of pension entitlements may change due to assumptions and to government reforms).

### 2.3 Actuarial assumptions

Pension entitlements are recorded as positions in national accounts representing future payments of pension benefits. Moreover, the changes in positions between two points in time are also registered; these changes cover transactions, revaluations and other changes in the volume of assets.

Positions in pension entitlements are derived by applying actuarial estimation methods which are based on the net present value concept. Such actuarial estimation methods are used for all pension schemes. For pension schemes managed by non-government units, position data on pension entitlements are usually available based on business accounting and/or supervisory data sources. For defined benefit schemes for general government employees and for social security pension schemes, such data are not available and need to be compiled based on data taken from government finances and information on the number of people in each scheme. For such estimations various assumptions have to be made.

First, a suitable discount rate has to be chosen since pension entitlements are calculated in present value terms — in other words they reflect the discounted sum of present and future flows compared with a certain base year. Another key assumption concerns future wage growth. Often, the development of future pension levels is highly dependent on wage assumptions, for example via pension indexation. Further, demographic assumptions play a significant role in estimating pension entitlements. Finally, some other assumptions such as assumed inflation and (un)employment rates are also relevant to derive ESA 2010 Table 29 figures.

<sup>(?)</sup> It is useful to note that a large (small) amount of ADL does not necessarily imply unsustainable (sustainable) pension schemes. In addition, where a country's ADL appears low in comparison to other countries, this may reflect a younger population structure. In this case, the ADL may experience stronger growth than countries with a more mature (elderly) population structure, as demographic developments take effect.

#### 2.3.1 DEMOGRAPHIC ASSUMPTIONS

There are three principal indicators that are considered relevant in relation to demographic assumptions from population projections (<sup>8</sup>): life expectancy, the fertility rate and migration.

Assumed future life expectancy plays a crucial role. It determines the expected number of years the pension annuity is to be paid out. Consequently, pension entitlements may vary considerably if different life expectancies are applied. Life expectancies are calculated based on mortality tables already established for the modelling of pension and life insurance schemes. In the case of social security pension schemes covering a large part of the population, demographic data provided by Eurostat ensure a comparable data set across EU Member States.

The modelling of some pension schemes may involve the use of other demographic assumptions such as future fertility rates. Assumptions on the total fertility rate may play a role in certain benefit formulas under specific pension schemes, where, for example, future pensions might be linked to demographic developments, which are partly determined by projected fertility rates (or the projected number of births).

Migration is another factor that might be relevant for the estimation of pension entitlements. In some countries, individual pension levels may differ if contributors migrate. Different pension rules may apply to pensioners who choose to emigrate. Also, migration may play a role in the pension benefit formula — for example if a sustainability factor is applied as in notional defined contribution schemes. Here, those working on modelling at a national level have to make assumptions about how migration will develop in the future.

#### 2.3.2 WAGE GROWTH

To estimate the pension entitlements of defined contribution schemes, no assumptions regarding wage growth are required. In such systems, pension entitlements depend solely on the financial assets accumulated through contributions, including the income from the investment of such assets.

By contrast, defined benefit schemes usually apply a formula to the member's salary (final salary, an average over a period of years, or lifetime earnings) to determine the level of the initial pension. Assumptions as to the future development of wages may have a significant impact on the level of pension entitlements when the approach recommended by IPSAS 39 is used (<sup>9</sup>). Generally, two factors lead to future wage growth: promotions/career progression and general wage growth in the economy.

There are two actuarial methods to measure the impact of wage increases: the 'accrued benefit obligation' (ABO) and the 'projected benefit obligation' (PBO). The former records only the benefits actually accrued to date, while the latter considers future promotions that a person is likely to receive and calculates the pensions-relevant salary accordingly. PBO is

<sup>(9)</sup> Detailed information on the methodology applied can be found at: https://ec.europa.eu/eurostat/web/population-demography-migration-projections/population-projections-data.

<sup>(9)</sup> The International Public Sector Accounting Standards (IPSAS 39) recommends accounting for any estimated future salary increases that affect the benefits payable to measure pension obligations of defined benefit plans; see: https://www. ipsasb.org/publications/ipsas-39-employee-benefits-2.

always higher than ABO until the moment of retirement when the ABO catches up with the PBO. The choice between the two concepts may have a significant impact on the level of pension entitlements.

The career path of individuals is usually relatively age-specific. The earnings profile of people living in EU Member States generally increases during the employment cycle. In the EU, younger cohorts (defined here as those aged less than 30 years) generally earned less than their older counterparts in the workforce. With increasing age, average earnings tended to rise and they reached a maximum close to the end of working life. To approximate future career paths, it is useful to take the earnings profile for the base year as the basis. It is assumed that the present age- and sex-specific earnings profile will remain constant over time.

#### Figure 1: Age- and sex-specific earnings profile, 2014

20 18 16 14 12 10 8 6 Δ 2 Male Female 0 Less than 30 From 30 to 39 From 40 to 49 From 50 to 59 60 years years years years years or over

(mean hourly wages in EUR)

Source: Eurostat (online data code: earn\_ses\_hourly)

Based on Eurostat information from the structure of earnings survey, it may be observed that a male individual aged less than 30 years in 2014 in the EU could expect, on average, to earn almost 70 % more by the end of his career. A female individual aged less than 30 years could expect to earn almost 50 % more by the end of her career.

Career progression might differ between members of government-managed pension schemes for its employees and members of social security pension schemes. This is mainly due to differences in promotions between the private sector and the public sector. Therefore, earnings' profiles should distinguish between private and public sector employees, if possible.

General wage growth in the economy also affects future pension levels. Since the development of future wages is uncertain, assumptions have to be made here as well. Generally, it is assumed that, over the long-term, wages will follow labour productivity growth per capita across the economy.

#### **2.3.3 THE DISCOUNT RATE**

The choice of the discount rate is one of the most crucial assumptions for estimating pension entitlements of general government employees and social security pension schemes, since its accumulated impact over many decades is quite high, as shown in the data published for Table 29.

**Figure 2:** Discount rate impact on pension entitlements of general government employees and social security pension schemes, 2015

(% change compared with the base case scenario)



Note: the base case is a real rate of 3 % (5 % nominal); the discount rates used for the first Table 29 data transmission (December 2017 for 2015 data) were based on the 2018 Ageing Report recommendations (European Commission (2017); European Commission (2018)).

Source: Eurostat (online data code: nasa\_10\_pens2)

Pension entitlements are compiled based on the net present value method, in other words they reflect the value of a future payment stream for a given base year. For valuing a future stream of payments the discount factor (*DF*) may be used. It is calculated via the following equation:

(1) 
$$DF_t = \frac{1}{(1+r)^{s-t}}$$

The discount rate r as part of the denominator determines the level of the *DF*. To calculate the present value in year t of a future pension benefit in year s this future payment needs to be multiplied by  $DF_t$ .

From the point of view of the creditor who earns the pension entitlements, the discount factor reflects the time value of money. It is the value of a future payment in terms of a present payment. Present payments are seen as worth more than future payments due to opportunity costs and possible risks associated with future payment streams. This means that the discount factor is generally smaller than one. From the debtor's point of view the discount rate is used to calculate the pension reserves to be set aside today to finance future pension obligations.

When coming to the choice of the discount rate for government-managed pension schemes, central government debt securities provide a suitable basis for *r*. Moreover, the choice of the discount rate should be based on the following criteria:

- in order to obtain a suitable proxy for a risk-free interest rate, it is advisable to base it not on central government debt securities of a single country but on a basket of central government debt securities of EU Member States;
- the maturity of these debt securities should be similar to that of pension entitlements, in other words at least 10 years, but preferably longer;
- in order to guarantee comparability across countries, the same discount rate should be applied to all EU Member States and all government-managed pension schemes (including social security pension schemes) at whatever level of government;
- a stable discount rate should be applied to avoid the noise resulting from frequent changes.

For the EU, in line with the above criteria, an Ageing Working Group (<sup>10</sup>) recommended setting the discount rate at 3 % in real terms and 5 % in nominal terms for the first Table 29 data transmission (December 2017 for 2015 data). It may be noted that this discount rate will only be revisited periodically, thereby ensuring a degree of stability that is appropriate for projections over many years.

<sup>(&</sup>lt;sup>10</sup>) The Economic Policy Committee's Working Group on Ageing Populations and Sustainability (AWG) is constituted to contribute to improving the quantitative assessment of the long-term sustainability of public finances and economic consequences of ageing populations in the EU Member States, so as to assist policy formation. It is responsible for the publication of the Ageing Report, where the 'European' discount rate for the calculation of pension entitlements is set.

Considering recent developments in sovereign bond markets across the EU and following the most recent recommendations of the Ageing Working Group, lower discount rates, of 2 % and 4 % respectively (in real and in nominal terms) have been fixed for the next Table 29 data transmission exercise (December 2020 for 2018 data); this will likely lead to higher values for pension entitlements and liabilities.

Based on both the sensitivity analysis and the illustration of recent developments in sovereign bond markets in the EU, the importance of a common and realistic discount rate is crystal clear.



Figure 3: Maastricht criterion interest rates, 1999-2019

Note: based on monthly data. Interest rates in real terms are derived from the nominal rates minus the harmonised index of consumer prices (2015 = 100).

Source: Eurostat (online data codes: irt\_lt\_mcby\_m, irt\_lt\_mcby\_m and prc\_hicp\_aind)

# 3. Pension data in ESA 2010

### 3.1. Table 29 results

Since each national pension system has its own history and its own uniqueness, figures published for Table 29 show heterogeneity in terms of both levels and the composition of accrued-to-date pension entitlements, where the levels refer to total pension entitlements relative to a country's GDP and the composition refers to the share of private pensions in total pension entitlements.

Figure 4: Composition of pension entitlements, 2015 (% of total)



Note: EU-27, excluding Greece and Luxembourg. EFTA: excluding Liechtenstein. Greece and Luxembourg: not available. *Source*: Eurostat (online data code: nasa\_10\_pens1)

There are 25 EU Member States plus the United Kingdom, Iceland, Norway and Switzerland that have published data on national pension entitlements according to the ESA 2010 transmission programme. Data for Table 29 below cannot be used to make inferences in relation to any structural trends concerning pension entitlements in these European countries. That said, there are a number of reflections that might be made when analysing the data shown.

Data are available from Table 29 on the composition of pension entitlements for 29 European countries. It is clear that private pension schemes are not so common in most of these European countries. They were not recorded in France, Hungary and Malta and their share of total pension entitlements did not exceed 10 % in a further 19 countries. It is interesting to observe that countries with significant private occupational pension schemes tended to be located in western European or Nordic countries, where a broad welfare system has also traditionally been present.

Moreover, it can be observed that funded general government pension schemes are relevant in roughly the same countries as those where private pension schemes represent a relatively high share of total pension entitlements.

On the contrary, general government social security schemes that are pay-as-you-go schemes and unfunded schemes for general government employees represent (almost) the totality of households' pension entitlements in most of the southern and eastern European countries.

For the sake of completeness, it should be also noted that in many of the countries that joined the EU in 2004 or more recently, occupational pension insurance schemes were established fairly recently and these do not yet cover full career entitlements, contrary to the situation in the other European countries studied.

Pension entitlements relative to GDP also show heterogeneous results across European countries. There were four countries where this ratio was above 350 %, with considerable heterogeneity even among this restricted group. In the United Kingdom and the Netherlands, a significant share of total pension entitlements was formed by private pension schemes and funded government schemes. By contrast, in Austria and France schemes not recorded in the core accounts amount to almost 100 % of total pension entitlements (100 % in France). Overall, 10 countries reported pension entitlements that were equivalent to more than 300 % of GDP, 14 had ratios between 200 % and 300 %, and five recorded ratios that were below 200 %.

Moreover, a specific consideration holds for the 13 Member States that joined the EU in 2004 or more recently, as compared with the other 16 European countries for which Table 29 information are available. These 'more recent' EU Member States had lower pension entitlements relative to GDP (247 %) than the average (323 %) for all 29 countries. Furthermore, these 13 Member States also had a different structure to the composition of pension entitlements, as columns G and H (see Table 2 above) represented 97.0 % of their total pension entitlements, compared with an average of 84.7 % for all 29 countries.



**Figure 5:** Pension entitlements relative to GDP, 2015 (%)

Note: Greece and Luxembourg, not available.

Source: Eurostat (online data codes: nasa\_10\_pens1 and nama\_10\_gdp)

Finally, it is important to give some background to explain the figures shown for Denmark. The very low share of pension entitlements expressed relative to GDP in Denmark (below 100 %) may be explained by the fact that, according to the ESA 2010 rules, most pension entitlements are not included in social insurance but in social assistance and, according to ESA 2010, should be excluded from Table 29. This concerns in particular, the so-called 'Danish universal flat-rate benefit' ('Folkepension' in Danish), which is financed by general taxation rather than social contributions; it is therefore independent of the employment status of beneficiaries and any employment-related social contributions.

#### **3.1.1 SENSITIVITY ANALYSIS**

Table 29 includes a sensitivity analysis to assess the impact of the discount rate on 2015 pension entitlements of general government employees and social security pension schemes. Published data confirm the importance of a common and realistic discount rate to allow for international comparability of statistics on pensions.

# Table 4: Sensitivity analysis of Table 29 pension entitlements, 2015(million EUR)

	Base case -1 percentage point	Base case	Base case +1 percentage point		
Belgium	1 345 507	1 123 394	955 829		
Bulgaria	81 692	71 861	63 853		
Czechia	469 711	390 371	330 385		
Denmark	:	:	:		
Germany	9 745 970	8 079 140	6 818 550		
Estonia	65 999	52 384	42 654		
Ireland	424 900	345 500	284 600		
Greece	:	:	:		
Spain	3 678 476	3 102 318	2 665 228		
France	9 804 000	8 108 000	6 837 000		
Croatia	123 763	105 688	91 495		
Italy	6 603 446	5 631 628	4 875 826		
Cyprus	47 911	40 044	34 004		
Latvia	51 504	43 403	37 196		
Lithuania	96 717	78 559	65 153		
Luxembourg	:	:	:		
Hungary	316 554	260 615	219 100		
Malta	30 549	24 841	20 625		
Netherlands	1 385 508	1 164 296	993 897		
Austria	1 499 284	1 255 532	1 069 407		
Poland	1 352 364	1 127 612	962 232		
Portugal	667 480	561 751	482 877		
Romania	347 470	286 358	240 827		
Slovenia	148 490	121 709	101 738		
Slovakia	312 275	248 052	201 679		
Finland	747 019	631 547	542 795		
Sweden	:	:	:		
United Kingdom	8 631 482	6 736 087	5 375 045		
Iceland	13 590	11 364	9 668		
Norway	1 029 533	850 838	716 662		
Switzerland	1 509 349	1 244 000	1 044 883		

Note: the base case is a real rate of 3 % (5 % nominal); the discount rates used for the first Table 29 data transmission (December 2017 for 2015 data) were based on the recommendations of the 2018 Ageing Report (European Commission (2017); European Commission (2018)).

Source: Eurostat (online data code: nasa\_10\_pens2)

The importance of a correct and clear communication strategy concerning data for Table 29 is apparent when looking at the sensitivity analysis results. On the one hand, these figures are necessary to complete the picture on household wealth; on the other hand, they crucially depend on the discount rate. In Section 2.2.3 the focus was on percentage changes as compared with a base case scenario (based on a fixed discount rate for 2015). Here the focus is on figures in euro terms (EUR), whereby a change of +/–1 percentage point in the discount rate can result in households' pension entitlements fluctuating by +/– billions of euro bearing in mind the inverse relationship between the discount rate and accrued-to-date pension entitlements.

### 3.2 Methodological issues

In contrast to social insurance benefits, social assistance benefits are payable without qualifying contributions having been made to a social insurance scheme. Usually all resident households are entitled to apply for social assistance but the conditions under which it is granted are often restrictive. Generally, benefits are means-tested, including an assessment of available income and property.

Sometimes it may not be feasible (or not sufficiently important) to separate elements of social assistance within pension schemes organised as social insurance. In these exceptional cases, social assistance benefits might be included in the data recorded by countries in the supplementary table, accompanied by suitable metadata for users.

# The distinction between social insurance and social assistance: an example

Under social insurance, participants are obliged, or encouraged, by their employers or general government, to take out insurance against certain eventualities or circumstances (Eurostat (2013) § 4.88). By contrast, social assistance benefits in cash are current transfers payable to households by government units or non-profit institutions serving households to meet the same needs as social insurance benefits but which are not made under a social insurance scheme requiring participation (Eurostat (2013) § 4.105).

In Country A the basic pension granted independently of contributions history is excluded from Table 29 — being classified as social assistance, whereas topping-up to the minimum pension has been retained, being based on specific conditions.

In Country B the social security pension consists of both a flat-rate part and a contributory part. The flat-rate part (the basic pension) is partially contributory in the sense that a certain amount is granted only if a contribution record of at least X years can be proved (independently of the amount of the contributions paid) and additional conditions (citizenship, for example) also need to be satisfied. In this case, the whole flat-rate part might be included in Table 29 since, as mentioned also in ESA 2010 § 17.122 in practice, it may not be feasible, or sufficiently important, to completely separate the non-pension social insurance elements. Elements of social assistance within pension schemes generally organised as social insurance may not be separable, and so occur in the supplementary table.

Individual insurance policies related to pensions are policies that beneficiaries take out in their own names without being members of a scheme organised collectively for groups of employees, as in the case of social insurance. They are based on contracts which are (generally) made with individuals and which are not organised collectively. These individual insurance policies are not part of social insurance, are not employment-related and therefore are not recorded in Table 29.

#### The boundaries of Table 29: an example

ESA 2010 clearly says that individual pension schemes are not part of social insurance and therefore should not be included in Table 29. It explains the background for their exclusion as follows: For a life insurance policy the benefits from the policy are treated as changes in wealth, recorded in the financial account. For a policy qualifying as social insurance, the benefits in the form of pensions are recorded as income in the secondary distribution of income account. The reason for the different treatment is that a policy other than social insurance is entered into entirely on the initiative of the policyholder. Policies that qualify as social insurance reflect the intervention of a third party, usually the government or the employer, to encourage or oblige the policyholder to make reserve for income in retirement (ESA 2010 § 16.68).

However, the practical classification of single schemes into one category or another may be difficult in some cases; the following example illustrates this.

Characteristics of an AAA pension plan: AAA plans offer more flexibility. They are known as 'contract-based DC plans' and operate on a different basis to occupational DC plans (OECD (2008)); In an AAA, the scheme is run by a pension provider that your employer chooses, but your pension is an individual contract between you and the provider (national source).

Characteristics of a BBB pension plan: Contributions are made by individuals, employers, or both. Employees who participate in a company pension plan may only make contributions to a BBB if company pension plan rules prohibit them from making additional voluntary contributions (OECD (2008)); employers that do not provide an occupational pension scheme for their employees are obliged to provide access to at least one BBB (national source).

AAA and BBB pension plans are similar for several reasons:

- in both cases, pensions are contracts between an individual and a provider;
- in both cases, the role of the employer is of a 'facilitator', setting a contact between the individual and the provider;
- both schemes seem to be 'portable' in other words from one job to another.

Still, they present some minor but crucial differences. Concerning portability, if a person changes jobs under an AAA scheme, his or her group personal pension is normally automatically converted into a personal pension and the worker continues paying into it independently. However, it is necessary to check if the new employer offers a pension scheme. A worker may be better off joining the new employer's scheme. Under a BBB scheme, if a worker's new job allows him or her to become a member of an occupational pension scheme, the worker may transfer their BBB into that scheme. Alternatively, if the new job is not pensionable or if the worker becomes self-employed, he/she can continue to contribute to his/her BBB scheme. Another difference is that AAA schemes are personal schemes but related to employment, while BBB schemes are more flexible and are available to everyone regardless of job or employment status. However, BBB schemes can also be seen as a supplement to occupational schemes, since an employer who offers an occupational pension

scheme that does not allow employees to make additional voluntary contributions must make a BBB scheme available, either as part of the existing occupational pension scheme (this requires an amendment to the rules of the scheme) or as a separate additional voluntary contributions scheme.

It is apparent that the two schemes presented above are very similar. However, due to their slight differences in terms of their relation to employment status, they are treated differently in Table 29: AAA is included and BBB is excluded.

Another interesting topic is that of 'fully portable' schemes where a worker who changes job can choose to bring his or her 'pot' into the next employer's scheme or put the money to another use. There are currently a few schemes designed in this way across Europe, and it is questionable whether or not they should be identified as pension schemes. If a worker moves his or her resources each time into a new employer's scheme, then at retirement there is a substantial resource to be used for retirement (thus the scheme could be considered a pension scheme). However, this may not be the case, in which case the scheme should rather be considered as a type of saving scheme. Only observation of the operation of the scheme in practice can determine if members actually use it as a pension scheme (or not).

### 3.3 The way forward

In 2011, Eurostat and the European Central Bank produced a first version of a *Technical Compilation Guide for Pension Data in National Accounts* (Eurostat and the European Central Bank (2011)), and this formed the background for the first compulsory transmission of data to Eurostat by EU Member States' statistical authorities for the years 2014 and 2015 and their subsequent publication. Throughout the work, a clear distinction has been made for users between statistical data and sustainability analyses.

One of the improvements introduced in ESA 2010 was enhanced statistical reporting on pensions, including accrued entitlements of households and Table 29 of the ESA 2010 transmission programme reflects this improvement.

Cooperation is established between Eurostat, the EU and EFTA Member States, and relevant bodies including the Economic Policy Committee's Working Group on Ageing Populations and Sustainability (AWG), the European Central Bank and the Actuarial Association of Europe. Annual meetings of the Pensions Expert Group are organised to discuss existing methodological and practical issues and provide the basis for Table 29 data transmissions.

An updated version of the technical compilation guide was released in September 2020, as the transmission of 2018 data for Table 29 was expected by the end of the year. This updated version incorporates a targeted revision of the 2011 guide, including an expanded section on the actuarial approach, updated economic and demographic assumptions for the actuarial calculations and new/augmented data sources.

Moreover, there is constant cooperation between Eurostat and the AWG, which plays an important role in the setting of common assumptions with statistical compilers. Given that the statistical timetable has been established to match the same frequency as the AWG's three yearly cycle (<sup>1</sup>) there are several areas where mutually beneficial cooperation can take place, including an assurance that common assumptions are used. There are important differences between statistical data on pensions and the sustainability analyses carried out by the AWG. It is therefore essential that users are fully aware of these differences when the respective information is published.

## 4. Conclusions

Table 29 provides a comprehensive overview of households' pension entitlements, an important part of households' wealth, and reflects the impact over time of social insurance systems to build entitlements to income during retirement.

Traditionally, official statistics use indicators such as GDP to describe economic developments. However, GDP on its own says nothing about how people are faring. In 2011, the European Statistical System Committee (ESSC) adopted a report on *Measuring Progress, Well-being and Sustainable Development*, identifying three key areas to 'change the paradigm', one of these being better and more complete information on households' income, consumption and wealth. Table 29 is therefore a fundamental tool to broaden the picture on households in the EU, and this paper guides the reader as to how Table 29 figures should be presented and interpreted.

It should be borne in mind that accrued-to-date pension entitlements in social insurance are not suitable as a measure for analysing the sustainability of pension schemes and should not be considered as part of government debt. Sustainability analysis of pension schemes requires different, more forward-looking calculation approaches, notably considering future flows of social contributions. This analysis is provided along with the Ageing Report published every three years by the European Commission — Directorate-General for Economic and Financial Affairs.

<sup>(&</sup>lt;sup>11</sup>) The Ageing Report, including economic and budgetary projections for the European Union Member States is published every three years.

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