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Columns G and H of the supplementary table on pension schemes in social insurance (Table 29)

First pillar pensions in Belgium

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Abstract - The supplementary table on pension schemes in social insurance, Table 29, is part of the Eurostat transmission program. The table reports the accrued-to-date pension entitlements/liabilities in social insurance. These entitlements represent accrued-to-date future pensions of current beneficiaries and future beneficiaries who already accumulated some career years. These entitlements do not represent public debt and are not an indicator of the financial sustainability of the pension system and are only appropriate for national accounts purposes. This report documents the methods, data sources and assumptions used in the compilation of columns G and H of the supplementary table. It draws heavily on the report on the last transmission of Table 29 data for the year 2018 (Desmet, Tarantchenko and Van den Bosch, 2021).

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Executive summary

The supplementary table 29 of the Eurostat transmission program covers the statutory pensions and occupational pension schemes in social insurance in Belgium. It includes employment-related pension entitlements outside general government (2nd pillar pensions) and accrued-to-date pension entitlements/liabilities (ADL) to unfunded government pension schemes and social security pensions (1st pillar pensions) in Belgium. The National Accounts Institute is responsible for delivering this table to Eurostat. It has entrusted the National Bank of Belgium (NBB) and the Federal Planning Bureau (FPB) with the compilation of the supplementary table.

Table 29 is described by ESA 2010, the European System of Accounts 2010, and has as goal to establish a complete and consistent coverage of pension entitlements in a country and to promote comparability across countries. Therefore, the table brings together information already shown in the standard or 'core' national accounts (columns A to F of Table 29) with information on unfunded pension system (the statutory pension schemes), which are not reported in the core accounts (columns G and H of Table 29). The contribution of the FPB to Table 29 consists in compilation of columns G and H. Those columns include accrued-to-date pension entitlements/liabilities in the statutory pension scheme, representing the present discounted value of accrued-to-date future pensions of current beneficiaries and future beneficiaries who already accumulated some career years at the moment of evaluation. Pension benefits include old-age and survivors' pensions. Excluded are the social assistance schemes (guaranteed income for elderly and the guaranteed minimum income in social assistance), disability benefits and unemployment benefits with company allowance for non-job seekers, as well as benefits from individual insurance policies. Entitlements to employment-related complementary pensions (2nd pillar pensions) are recorded in other columns of Table 29.

The report comments on the assumptions of the modelling and the estimation methodology of the values. The values that are presented in this report are those that are sent in the final transmission to Eurostat. The transmitted information includes Table 29, two alternative tables with a different discount rate and the fact sheets on the pension schemes as requested by Eurostat. This report represents an update of the report of the last submission of these Table 29 data, of January 2021 (Desmet, Tarantchenko and Van den Bosch, 2021).

The projection of the ADL is very sensitive to the assumed discount rate. In accordance with the guidelines issued by Eurostat (2020), the real interest rate is assumed to be fixed at 2% during the whole projection period.

Expressing the ADL of the unfunded defined benefit schemes of government employees and social security schemes in terms of GDP provides an intuitive idea of their total size. They represent 316% of GDP. In the previous report the ratio was 309%. The difference is explained by numerous factors: reforms enacted during the time range between the two reports; different demographic and macroeconomic assumptions underlying the projections; improvements of the model; shifts in the population observed in the base year or impact of the growth rate of GDP on the ratio.

When interpreting the values of Table 29, one should keep in mind that the pensions entitlements are presented as accrued-to-date liabilities. Accrued-to-date liabilities do not represent public debt and are not an indicator of the financial sustainability of the pension systems and are only appropriate for national accounts purposes. An assessment of the budgetary consequences of population ageing, including those for the Belgian pension system, can be found in the reports of the European Working Group on Ageing (Economic Policy Committee) and the Belgian Study Committee on Ageing.

Synthèse

Le tableau supplémentaire 29 du programme de transmission d'Eurostat couvre les régimes de pensions légales et de pensions complémentaires de l'assurance sociale en Belgique. Il inclut les droits à la pension acquis des régimes de pension complémentaires (second pilier de pension) ainsi que les droits acquis (ou les engagements) à la pension légale du régime du secteur public et ceux du régime général de sécurité sociale en Belgique (premier pilier de pension), tous deux organisés par répartition. L'Institut des Comptes Nationaux est responsable de la transmission du tableau à Eurostat. Il a confié à la Banque Nationale de Belgique (BNB) et au Bureau fédéral du Plan (BFP) le soin de l'élaboration du tableau supplémentaire.

Le tableau 29, défini dans le Système européen des comptes (SEC 2010), est destiné à donner un aperçu complet et cohérent des droits à la pension constitués dans un pays et à permettre la comparabilité entre les pays. Il rassemble dès lors des informations déjà enregistrées dans les comptes nationaux principaux (soit les colonnes A à F du tableau 29) et des informations sur les régimes de pension par répartition, qui ne sont pas repris dans les comptes principaux (colonnes G et H du tableau 29). La contribution du BFP au tableau 29 consiste en la compilation des colonnes G et H. Ces colonnes reprennent les engagements de pension des régimes de pensions légales définis comme la valeur présente actualisée des pensions futures des bénéficiaires actuels ainsi que des bénéficiaires futurs qui ont déjà accumulé des droits au moment de l'évaluation. Les pensions considérées ici sont les pensions de retraite et les pensions de survie. Sont exclus les régimes d'assistance sociale (garantie de revenus aux personnes âgées et revenus d'intégration), les allocations d'invalidité, les allocations de chômage avec complément d'entreprise pour les non-demandeurs d'emploi ainsi que les pensions individuelles constituées à titre privé. Les engagements de pension des régimes de pensions complémentaires (second pilier) sont repris dans les autres colonnes du tableau 29.

Ce rapport commente les hypothèses sous-jacentes à la modélisation et la méthodologie d'estimation détaillée des droits à la pension acquis. Les valeurs présentées dans ce rapport sont envoyées à Eurostat dans le cadre de la transmission finale des tableaux. Les informations transmises comprennent le tableau 29, deux tableaux alternatifs calculés sur la base d'un taux d'actualisation différent et les fact sheets sur les régimes de pension comme requis par Eurostat. Ce rapport représente une mise à jour du rapport de la dernière soumission des données du tableau 29 publié en janvier 2021 (Desmet, Tarantchenko et Van den Bosch, 2021).

La projection des droits à la pension acquis est très sensible à l'hypothèse sur le taux d'actualisation. Conformément aux lignes directrices préconisées par Eurostat (2020), le taux d'intérêt réel est fixé à 2% sur toute la période de projection.

Exprimer les droits à la pension acquis du régime du secteur public et du régime général de sécurité sociale en termes de PIB, donne une idée intuitive de leur ampleur. Ils représentent 316% du PIB. Dans le rapport précédent, le ratio était de 309%. La différence provient de plusieurs facteurs : les réformes mises en place entre les deux rapports ; l'évolution des hypothèses démographiques et

macroéconomiques qui sous-tendent les projections ; les améliorations apportées au modèle ; l'évolution de la structure de la population observée l'année de base et l'impact du taux de croissance du PIB sur ce ratio.

Pour interpréter les valeurs du tableau 29, il convient de garder en mémoire que les droits à la pension sont présentés comme un engagement existant à une date donnée. Les droits à la pension acquis à une date donnée ne représentent pas la dette publique et ne constituent pas un indicateur de la soutenabilité financière des systèmes de pension. Ils ne sont dès lors pertinents que pour la comptabilité nationale. L'European Working Group on Ageing (Economic Policy Committee) et le Comité belge d'étude sur le vieillissement évaluent les conséquences budgétaires du vieillissement, y inclus ceux relatifs au système de pension belge, dans leurs rapports respectifs.

Synthese

De aanvullende tabel 29 van het Eurostat transmissie programma heeft betrekking op de wettelijke en de aanvullende pensioenstelsels van de sociale verzekering in België. Deze omvat werkgerelateerde pensioenrechten buiten de overheid (2de pijlerpensioenen), evenals de tot heden opgebouwde pensioen-aanspraken op (c.q. verplichtingen inzake) overheidspensioenen en op pensioenen binnen de sociale zekerheid in België, die beide omslagstelsels zijn (1ste pijlerpensioenen). Het Instituut voor de Nationale Rekeningen is verantwoordelijk voor de overdracht van deze tabel aan Eurostat. Het heeft de taak om deze aanvullende tabel op te stellen toevertrouwd aan de Nationale Bank van België en het Federaal Planbureau.

Tabel 29 wordt beschreven in ESA 2010, het European System of Accounts 2010 en heeft als doel een compleet en consistent beeld te geven van de pensioenverplichtingen in een bepaald land en de verge-lijking tussen landen te bevorderen. Hiertoe combineert de tabel informatie die reeds in de standaard nationale rekeningen is opgenomen (kolommen A tot en met F van de tabel 29) en informatie over pen-sioenstelsels gebaseerd op omslagstelsel (wettelijke pensioenstelsels) die niet in deze standaard natio-nale rekeningen is opgenomen (kolommen G en H van de tabel). De bijdrage van het FPB aan Tabel 29 bestaat uit de opstelling van kolommen G en H. Deze kolommen omvatten gegevens over de huidige pensioenaanspraken (resp. pensioenverplichtingen) binnen de wettelijke pensioenen, dat wil zeggen de huidige contante waarde van de toekomstige pensioenen van huidige pensioentrekkers en de pensioen-aanspraken van toekomstige gepensioneerden, die op de referentiedatum al loopbaanjaren hebben op-gebouwd. De pensioenen omvatten ouderdoms- en overlevingspensioenen. Het bijstandsstelsel (inko-mensgarantie voor ouderen, leefloon), uitkeringen voor arbeidsongeschiktheid en werkloosheidsuitke-ringen met bedrijfstoeslag zijn uitgesloten, evenals individuele pensioenverzekeringen. Aanspraken op arbeidsgerelateerde aanvullende pensioenen (2e pijlerpensioenen) worden geregistreerd in andere ko-lommen van tabel 29.

Het rapport beschrijft de onderliggende assumpties van het model en de methodologie die gevolgd wordt bij het schatten van de verworven pensioenrechten. De bedragen die in dit rapport worden ge-presenteerd zijn de waarden die in de transmissie naar Eurostat worden verstuurd. De overgemaakte informatie bestaat uit de tabel 29, twee alternatieve tabellen met een verschillende verdisconteringsvoet en de fact sheets over de pensioenstelsels zoals gevraagd door Eurostat. Dit rapport vormt een actuali-sering van het vorige rapport over de transmissie van Tabel 29 in januari 2021 (Desmet, Tarantchenko en Van den Bosch, 2021).

De projectie van de verworven pensioenrechten is erg gevoelig voor de assumpties inzake de disconto-voet. In overeenstemming met de richtlijnen door Eurostat (2020) wordt verondersteld dat de reële in-terestvoet over de hele projectieperiode constant blijft op 2%.

Door de verworven rechten op overheidspensioenen en op pensioenen binnen de sociale zekerheid uit te drukken ten opzichte van het bbp, krijgen we een intuïtief idee van de omvang van deze verworven rechten. Deze bedragen 316% van het bbp. In het vorige rapport was deze ratio 309%. Het verschil wordt verklaard door verschillende factoren: hervormingen die werden doorgevoerd tijdens de periode tussen

de twee rapporten; verandering in demografische en macro-economische hypothesen die aan de basis liggen van de projecties; verbeteringen van het gebruikte model; verschuivingen in de bevolking die in het basisjaar werden waargenomen of de impact van het groeipercentage van het BBP op de ratio.

Bij het interpreteren van de bedragen in tabel 29 moet men steeds in gedachten houden dat de pensioenverplichtingen gepresenteerd worden als tot nu verworven rechten. De verworven pensioenverplichtingen zijn niet op te vatten als schulden van de overheid en ze zijn geen indicator van de budgettaire of financiële houdbaarheid van de pensioenstelsels; ze zijn alleen geschikt om gebruikt te worden in de nationale rekeningen. De European Working Group on Ageing (Economic Policy Committee) en de Belgische Studiecommissie voor de Vergrijzing evalueren de budgettaire gevolgen van de vergrijzing, inclusief die voor de pensioenstelsels, in hun respectievelijke rapporten.

1. Introduction

The supplementary table 29 on pension schemes in social insurance is part of the European System of National and Regional Accounts 2010 (ESA 2010) Transmission Program and is published by Eurostat. The idea behind the table is to establish complete and consistent coverage of pension entitlements in a country and to promote comparability across countries. Therefore, it brings together information already shown in the standard national accounts (columns A to F of Table 29) and information on unfunded pension system (the statutory pension scheme), which are not reported in the standard national accounts (columns G and H of Table 29).

For Belgium, the National Accounts Institute is responsible for delivering this table to Eurostat. It has entrusted the National Bank of Belgium (NBB) and the Federal Planning Bureau (FPB) with the compilation of the supplementary table. The contribution of the FPB to Table 29 consists in compilation of columns G and H. Those columns include accrued-to-date pension entitlements/liabilities (ADL) in social insurance. ADL represent the present discounted value of accrued-to-date future pensions of current beneficiaries and future beneficiaries who already accumulated career years up to the valuation date. These entitlements do not represent public debt and are not an indicator of the financial sustainability of the pension system and are only appropriate for national accounts purposes. ADL should only be interpreted as an asset of the households in national accounts' terminology. In other words, "*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*" (Eurostat, 2020). This 'closed group' approach thus excludes all future pensions of people not yet born and future immigrants, as well as the pension rights of the current population that are to be accumulated after the valuation date. Pension rights are calculated according to the legislation that will be in force in each future year, if this legislation is already enacted now, i.e. passed in the appropriate legislature. An example of this is the raising of the statutory retirement age to 66 in 2025 and 67 in 2030. The analysis in this report is different from the sustainability analysis which relies on a more forward-looking approach, usually including all future flows of pension benefits (open group approach). An assessment of the budgetary consequences of population ageing, including those for the pension system, can be found in the reports of the Working Group on Ageing Populations and Sustainability (AWG) of the Economic Policy Committee (EPC) of the EU Council and the Belgian Study Committee on Ageing.

This report is in fact an update of the report on the last transmission of Table 29 data from Belgium, which was submitted to Eurostat in January 2021 (Desmet, Tarantchenko and Van den Bosch, 2021). Rather than extensively referring to that earlier publication, we decided to copy substantial parts from it where appropriate, so that the current report can be read without going back to that earlier text.

The report is structured as follows. After the introduction, chapter 2 briefly presents the microsimulation model MIDAS used to estimate ADL. Chapter 3 discusses key assumptions required in the modelling of pension entitlements. The columns and rows of the supplementary table are described in chapter 4. The report concludes with a brief analysis of ADL expressed in terms of GDP, presented in chapter 5. The sensitivity analysis on the discount rate required by Eurostat is covered in the Annex 1. The fact sheets covering the pensions schemes in columns G and H are provided in Annexes 2 and 3 respectively.

2. Model and data

The computation of the entries for rows 1, 7 and 10 of columns G and H is done by means of the MIDAS model. MIDAS (an acronym standing for 'Microsimulation for the Development of Adequacy and Sustainability') is a dynamic population model with dynamic cross-sectional ageing. It is used by the Federal Planning Bureau in its adequacy assessment of pensions in Belgium.

MIDAS is a microsimulation model, meaning that it models on the level of individuals grouped in households rather than on aggregate data. It is also a dynamic population model with dynamic cross-sectional ageing. This means that it starts from a cross-sectional dataset representing a population of all ages at a certain point in time. The model then simulates the life spans of the individuals in the dataset, including household formation, labour market participation, earnings and other incomes, and retirement, over a specified number of future years. During their active years, the individuals build up pension rights, which result in a pension benefit when the individuals retire.

In this context, MIDAS is aligned with projections and assumptions from the semi-aggregate MALTESE model in its version set up in the framework of the AWG of the EPC. This implies that the distributions of the population by age and by labour market position as well as assumptions about the wage growth rate are consistent with the AWG.

In 2023, MIDAS has undergone a major overhaul. Among other improvements, the model now includes international migrations[1] as well as an alignment on national projections for the household's composition. This new version of MIDAS has been used for the first time in the 2023 report of the Belgian Study Committee on Ageing (High Council of Finance, 2023). A complete description of the new version of MIDAS is available in Dekkers, Desmet, Van den Bosch (2023).

MIDAS uses a representative sample from the Belgian population in 2011 based on administrative data. The sample is extracted from the Datawarehouse Labour Market and Social Security of the Crossroads Bank for Social Security. It contains a little more than 600 000 individuals, with retrospective data that is complete for wage earners, but only partial for civil servants and self-employed workers (missing data are imputed). The dataset is supplemented with information from the 2011 population census and a dataset containing fiscal information.

Using these data and assumptions and following the PBO approach (see below), MIDAS calculates for every current pensioner, the expected amounts of retirement and survival benefits in each future year. For every current contributor, the model also projects future wages, as well as future pensions for the completed careers that will be corrected pro rata to the career accumulated up the valuation date. Projected wages include both actual and imputed wages for periods of unemployment, sickness or disability.

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[1] For the purpose of this exercise, all migration movements were neutralised after the closing year 2021.

3. Assumptions

3.1. Base year

The supplementary table on pension schemes in social insurance is a mandatory table for all EU member states. It must be transmitted every three years, at base year plus 24 months. The first transmission was in 2017 and Table 29 was compiled with 2015 data. For the third (present) exercise, 2021 data must be transmitted by the end of 2023. Contributions, payments of benefits and transfers are those realised during the base year 2021. Changes in entitlements due to negotiated changes in scheme structures are included if they result from pension reforms enacted during 2021. The measures enacted after 2021 are excluded.

3.2. Types of benefits covered by the supplementary table

The focus of the supplementary table is on the old-age and early retirement pensions, as well as survivors' benefits. Therefore, the social assistance schemes (guaranteed income for elderly and guaranteed minimum income in social assistance), disability benefits[2] and unemployment benefits with company allowance for non-job seekers, as well as benefits from individual insurance policies are excluded. The concept of survivors' benefits usually includes widows' and orphans' benefits. However, orphans' benefits are not yet modelled in MIDAS and are hence not included in the supplementary table.

All pension entitlements reported in the table are expressed in gross (before tax and social contributions) terms.

3.3. Discount factor

The discount factor $\delta^{t,Y}$, used to calculate the present value in base year Y of a future benefit to be received in year t, is equal to

$$\delta^{t,Y} = \frac{1}{(1+r_t)^{t-Y}} \tag{1}$$

where r_t represents the interest rate (discount rate) in year t. As recommended by Eurostat (2020), the interest rate is aligned with the one adopted by the AWG in the 2024 Ageing Report. A fixed real discount rate of 2% is therefore used across the whole projection period.

The projection of the ADL is very sensitive to the assumed discount rate. For this reason, Eurostat has asked to carry out sensitivity analyses, in which the supplementary table is compiled with the long-term interest rates set at 1% and 3%, respectively.

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[2] The old-age pensions of civil servants granted because of physical inability are included in the supplementary table along with the old-age pensions of civil servants. Civil servants can retire due to physical inability well before the early or statutory retirement age. In that case, their pension benefits are computed based on the career prior to the date of retirement and are not revised at the statutory age.

3.4. Inflation

Future flows (benefits and wages) are projected in constant prices and are thus expressed in real terms. Therefore, inflation expectations are not considered.

3.5. Wage growth

We follow the recommendations by Eurostat (2020) and use the projected benefit obligations (PBO) approach to project future wages. According to this approach, all future incomes and their increases (general wage increase and/ or promotions) are taken into account in the pension computation. The present discounted value of future payments is then adjusted pro rata to the career accumulated up to 2021 (with respect to the career at the moment of person's retirement).[3] The PBO approach is regarded as a more prudent measure of what the eventual level of entitlement is likely to be (see section 2.2 and Box 4 of Eurostat (2020) for the arguments in favour of PBO). The PBO approach is applied to a closed group of individuals: only current pensioners and non-pensioners who have already contributed are considered. As recommended by Eurostat (2020), for the wage growth we use the latest AWG productivity projections assumptions, reflecting labour productivity growth (European Commission, 2024).

3.6. Demographic assumptions

Following Eurostat (2020) recommendations, we use the Eurostat's latest available population projections relying on the demographic assumptions of mortality, fertility and migration in the modelling of the pension scheme. In addition to population projections, MIDAS also uses households' projections categorized according to the LIPRO typology. These projections are not provided by Eurostat but are the output of the national households' projection model combined with the 2023 Eurostat's population projection.

3.7. Indexation and living standards adjustment of pension benefits

In Belgium, pensions are adjusted to living standards in real terms. Each year, as stipulated in the Generation Pact of 2005, a total budget for the adjustment of social benefits to living standards is determined following certain parameters. The precise allocation of this budget is a political decision, which varies each year. As future government measures remain unknown, we use for the pension projections the parameters used in the calculation of the budget. We assume an annual growth of 1.25% for wage ceilings and the minimum claim, 1% for lump-sum benefits, 0.5% for non-lump-sum benefits in the wage earners' and self-employed schemes. The civil servants' projected pensions are assumed to grow at the same pace as the real wages of working civil servants minus 0.4% (average historical difference between the wage growth rate and the welfare adaptation of civil servants' pension).

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[3] The second possible approach mentioned by Eurostat (2020) is accumulated benefit obligations (ABO). This approach only considers the present value of benefits earned to date. Thus, there are no projected wages and future benefits are computed only based on the career accrued to date. Eurostat recommends PBO approach as it is more suited for the exercise.

3.8. Minimum income provisions in pension schemes

In all pension schemes (wage earners, self-employed and civil servants), a minimum pension is guaranteed. Additionally, the wage earners' scheme has a system of minimum claims per working year. The minimum pension is granted pro rata of the completed career relative to the full career. Both kinds of minimum income provisions can only be accessed when a certain career duration can be proved (e.g. 2/3rd of a full career for the minimum pension in the wage-earner scheme). Following the PBO approach, the career of each person is projected up to the pensionable age. When computing the accrued rights pro rata of the career up to 2021, the minimum rights will also be accounted for pro rata of the career up to 2021.

3.9. Labour force participation and retirement rates

Labour force participation rates, as well as rates of disability and other types of inactivity, are derived from macro-economic projections produced in the framework of the AWG and broken down by age group and gender. People leaving the labour force who are eligible for early retirement, or when they reach the statutory retirement age, are assumed to retire.

4. Columns G and H of the supplementary table

Columns G and H of the supplementary table represent pension entitlements of pension schemes that are not recorded in the core national accounts, although a part of their transactions does appear in it. Column G covers government schemes for its own employees (i.e. covered by the state treasury). This means that this column includes information on the first pillar pension benefits of civil servants. Column H covers the social security pension schemes, i.e. the first pillar pension scheme for wage earners and self-employed. Some specific pension schemes for civil servants were originally set up by general government or regional authorities, but as today do no longer depend on general budget for their financing (Pool of parastatal organisations affiliated to the pension system of the Law of 28 April 1958, permanently appointed staff of the provincial and local administrations, public-interest institutions not affiliated to the Pool of parastatal organisations). Coherent with current practices in the national accounts, these pension schemes are reported under the social security schemes, column H.

As mentioned in sub-section 3.2, pension benefits in the supplementary table refer to old-age pension benefits and survivors' pension benefits. The fully compiled columns G and H of the supplementary table for 2021 are presented in Annex 1.

This section describes in detail the compilation of the rows for columns G and H.

4.1. Row 1 - Pension entitlements, opening balance sheet

Row 1 for both columns G and H is compiled using the accrued-to-date liabilities (ADL) simulated by microsimulation model MIDAS described in section 2. It represents the situation on 1st January 2021. Any policy reforms enacted during 2021, should not be included in this row. The effects of such reforms on the ADL should be reported in row 7.

As mentioned in sub-section 3.5, we use the PBO approach applied to the closed group of individuals (only current pensioners and non-pensioners with already accrued rights are considered) along with the pro rata method. The pro rata method allows to correct the present value of all future pension payments of current non-pensioners so that only the portion of benefits that has been accrued up to the valuation date (here the start of the base year 2021) is considered. This means that future pension benefits are computed using both accrued and future rights and then corrected by applying a pro rata basis factor. The latter is equal to the number of contributory years accumulated up to the valuation date (actual contributory period) divided by the number of contributory years at the moment of retirement (i.e. actual contributory period plus projected future contributory period).

Column G

Column G includes ADL of civil servants. As described earlier, a part of these ADL represents the actual value of the pension entitlements of civil servants whose pension scheme was once set up by general government or regional authorities, but as today do not longer depend on general budget for their financing (Pool of parastatal organisations affiliated to the pension system of the Law of 28 April 1958, permanently appointed staff of the provincial and local administrations, public-interest institutions not

affiliated to the Pool of parastatal organisations). The part of the ADL that belongs to these categories is estimated pro rata by means of the benefit payments that are reported in the national accounts. Based on this information, 28.09% of the computed ADL for civil servants are reported under column H as social security entitlements. The remaining 71.91%, which represent 294,885 million euro, are reported in column G.

Column H

Column H includes ADL for wage earners and self-employed, increased with the part of civil servants' ADL whose pension scheme does no longer depend on federal budget. This represents a total of 1,284,682 million euro.

4.2. Row 2 – Increases in pension entitlements due to social contributions

Row 2 includes employer's and household social security contributions, less the pension schemes service charges if these are deducted from the pension entitlements. It is given by

$$Row\ 2\ =\ R\ 2.1 + R\ 2.2 + R\ 2.3 + R\ 2.4 - R\ 2.5 \tag{2}$$

Rows 2.1 to 2.5 are explained below.

4.2.1. Row 2.1 – Employer actual social contributions

This row records the actual social contributions paid by employers.

Column G

In principle, there are no actual social contributions made by the government for its own employees. Public-interest institutions and provincial and local administrations that must pay a contribution to the general government to finance the pensions of their statutory personnel are reported under the social security schemes of column H. Row 2.1 of column G is filled in with 0.

Column H

The data on total employer's social contributions in social security schemes is reported in the national accounts. However, only part of these contributions is used to finance first pillar pensions. The remaining part goes to the other protection schemes (sickness and disability, unemployment, occupational illnesses, profession-linked accidents, birth and family allowances[4] and special social security scheme for seafarers). There is a global contribution rate for all protection schemes and no specific rate by scheme.

To identify the part of contributions allocated to the pension schemes, we proceed in two steps. First, the amount of employer's contributions paid for civil servants is separated from the amount paid for

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[4]　Since the 6th State Reform (enacted in 2012), family allowances are no longer financed by the global management (characterised by a single institution collecting and distributing social contributions) but are the responsibility of communities and regions.

wage earners. Contributions for civil servants are collected on behalf of workers whose pension scheme does no longer depend on the federal budget. Those contributions are used in their entirety to finance civil servants' pensions. In a second step, we estimate the part of contributions on behalf of wage earners that is used to finance public pensions.

The part of contributions paid for civil servants is obtained using the detailed national accounts.[5] 100 percent of these contributions are allocated to the pension scheme. The part of contributions for wage earners allocated to pensions is estimated using historical contribution rates. Since the introduction of the global management of the NSSO (National Social Security Office) in 1995, the contributions are no longer distributed between the protection schemes according to the separate contribution rates but based on their cash flow needs. By lack of information on the amount of these transfers to the pension schemes, we use historical breakdown by type of protection schemes that existed before 1995. The historical employer's contribution rate for pensions schemes was 8.86%. It is applied to the current base contribution rate to obtain the percentage of total contributions related to pensions.

The current employer's base contribution rate depends on the worker's sector (private or public). As there is no information on the proportion of each category, all workers are assumed to be working in the private sector. Neither the slightly different social security contributions of white-collar workers in the public sector nor the 108% rate applied to the gross salary of blue-collar workers have been considered. This might have a minor impact on the estimates.

In 2021, the employer's base contribution rate in the private sector was 19,88%.[6] Applying the historical contribution rate for pensions schemes to this global rate, we obtain 44.57%. Thus, we estimate that 44.57% of total employer's contributions reported in national accounts in 2021 (reduced by employer's contributions paid in civil servants' scheme) are related to pensions.

The final amount reported in row 2.1 (19,231.29 million euro) represents the sum of the employer's contributions paid for civil servants (collected in a pension system that no longer depends on the budget of the federal authorities) and the estimated part of the employer's social security contributions allocated to pensions schemes.

4.2.2. Row 2.2 - Employer imputed social contributions

Employer imputed social contributions for defined benefit scheme usually represent the balancing item, including all changes in pension benefits over the base year that are not covered by the other rows of the supplementary table. This includes 'experience effects' "*where the observed outcome of pension modelling assumptions (real wage growth rate, discount rate, etc.) differs from the levels assumed*".[7]

This sentence refers in a rather oblique way to the fact that, given the unfunded nature of the social insurance pensions schemes, and due to wage and income ceilings, minimum pension provisions and other pension regulations, future pension rights correspond only weakly to current contributions. Also,

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[5]   Personal communication, Van Cauter K., National Bank of Belgium, 9 November 2023.
[6]   Source: https://www.socialsecurity.be/employer/instructions/dmfa/fr/2021-1/instructions/socialsecuritycontributions/contributions.html , last consulted on 29 November 2023.
[7]   Eurostat (2020).

social security contribution rates are not set with a view to cover future pension expenditures (and there are no specific pension contributions). This implies that the sum of the opening balance and the identifiable contributions, minus paid benefits (and minus some minor items) is not necessarily equal to the closing balance. The entry in row 2.2 (for column G; and the corresponding entry in row 3 for column H), reflecting 'experience effect', makes sure that the amounts balance out in the appropriate way. It can be interpreted as the residual of the other rows in Table 29.

Column G

Given that Belgian public pension system is defined benefit, general government imputed social contributions represent the balancing item for Column G. Therefore, as a balancing item, row 2.2 is computed after all the other rows have been compiled. It is given by

$$Row\ 2.2 = R\ 10 - R\ 1 - R\ 2.1 - R\ 2.3 - R\ 2.4 + R\ 2.5 + R\ 4 - R\ 6 - R\ 7 - R\ 8 - R\ 9 \tag{3}$$

Row 2.2 is estimated to 7,947.7 million euro.

Column H

For social security schemes, row 2.2 is shaded black. Any 'experience effects' are recorded in row 3 and there are no entries in row 2.2.

4.2.3. Row 2.3 - Household actual social contributions

This row records the household actual social contributions.

Column G

In principle, civil servants do not pay social contributions to the public sector pension scheme. The contributions paid by civil servants whose pension system does no longer depend on federal or regional budgets (including the mandatory contributions for survivors' pensions – widow's and orphan's fund) are reported under the social security schemes, Column H. Therefore, row 2.3 of column G is filled in with 0.

Column H

As stated in Eurostat (2020), the actual social contributions paid by households are published in the national accounts. Since the introduction of overall financial management in the Belgian social security system in 1995, separate contributions no longer exist for each of the social risks. Therefore, what is found in the national accounts is the total amount of social contributions. Only part of these contributions is aimed at financing first pillar pensions. The other part covers sickness and invalidity, professional illnesses, profession-linked accidents, etc.

The 'households' actual social contributions' of the national accounts is subdivided in three socio-economic categories: wage earners (including active civil servants), self-employed and non employed persons (including retired civil servants paying contributions to widow's and orphan's fund). For each of

the three socio-economic categories in the national accounts, the pension contributions must be estimated based on the reported total social contributions. The estimates are done separately as the contribution rates in Belgium depend on the worker's socio-economic category.

To estimate the wage earners' social contributions, like in the case of employer's contributions, we must first deduce contributions made by active civil servants. All active civil servants contribute to the widow's and orphan's fund and those in a pension system that does no longer depend on the budget of the federal authorities, also contribute to first pillar pensions. Civil servants' contributions represent 1,754.6 million euro[8] and are destined in their entirety to the pension scheme. The remaining amount of wage earners' contributions should be split between the public pension scheme and other protection schemes. The proportion used to finance public pensions is determined based on the historical rate applied before the global management. Before 1995, the household contribution rate for pensions was 7.5%. In 2021, the global contribution rate for households was 13.07%. Therefore, we estimate that 57.38% of the total contributions reported in national accounts (less civil servants' part) goes to pensions schemes. This part represents 10,387.7 million euro.

Like those of wage earners, self-employed total contributions are reported in national accounts, but under the global management an unknown part of them is related to pensions. Based on the historical rate before 1995, we assume that 55.63% of these total contributions is used to finance pensions schemes.[9] The amount of household contributions paid by self-employed is estimated to 2,466.1 million euro.

The 'non employed persons' category covers several inactive states: pensioners (including those in civil servants' scheme paying contributions to widow's and orphan's fund), unemployed, etc. From those we must deduce the part that is paid by pensioners in the civil servants' scheme. This part represents 59.8 million euro and is used entirely to finance pensions. The remaining amount of non employed persons' contributions is split between pension schemes and other protection schemes. As there is no further information on the weight of each of the different inactive states, the pension contributions are estimated very roughly by using the proportion of pension contributions to the total social security contributions from wage earners. This proportion (57.38%) is applied on the social security contributions (less the part paid by pensioners in the civil servants' scheme), resulting in an estimated amount of 1,090.3 million euro paid to finance the social security pensions schemes.

The aggregate amount of the households' pension contributions paid by the three socio-economic categories (wage earners, self-employed and non employed persons) adds up to a total of 15,758.6 million euro.

4.2.4. Row 2.4 - Household social contribution supplements

Row 2.4 captures the property income earned or imputed in the scheme. In case of defined benefit pension schemes, the property income is equivalent to the interest rate (2%) times the pension entitlements at the opening of the balance sheet (i.e. pension entitlements from row 1):

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[8]   Personal communication, Van Cauter K., National Bank of Belgium, 9 November 2023.

[9]   SPF Sécurité sociale (2014).

$$Row\ 2.4 = (1 + \delta) \times R\,1 \tag{4}$$

The property income is estimated to 5,897.7 and 25,693.6 million euro for columns G and H respectively.

4.2.5. Row 2.5 – Pension scheme service charges

Row 2.5 covers the cost of running the pensions schemes. These costs consist of wages and social contributions, but also of normal operating costs such as overheads, rents for buildings and investment in furniture and ICT equipment. Federal Pensions Service (FPS), responsible for the payment of pensions, is a public service with the costs of running the pensions schemes financed by the overall budget of the federal state. No costs are charged to the pensions schemes members: they are not deducted from the social contributions, nor are they a charge on the pension entitlements. For this reason, row 2.5 is filled in with 0 for both columns.

4.3. Row 3 – Other (actuarial) change of pension entitlements in social security pension schemes

Row 3 includes other (actuarial) change of pension entitlements in social security pension schemes. More precisely, it represents cases "*where actual social contributions to the social security pension scheme are not actuarially based*"[10] and thus, reflect an imputed contribution of this scheme (outside of the employer's responsibility). In other words, row 3 represents the difference between the discount rate and the internal rate of return of the scheme (i.e. "*the discount rate that equalises the actual contributions paid and the discounted value of pension entitlements accrued through those contributions*")[11]. Row 3 also includes any 'experience effects' that were already mentioned in sub-section 4.2.2 for row 2.2. As explained there, this row can be regarded as a residual entry in the compilation of column H of Table 29.

Column G

This row is irrelevant to defined benefits schemes for general government employees. Any 'experience effects', where the obtained results of pension modelling assumptions (real wage growth rate, discount rate, etc.) differ from the levels assumed, are covered by row 2.2.

Column H

In practice, for column H, this row represents the balancing item for social security schemes and as such, is computed after all the other rows have been compiled. The computation equation is similar to row 2.2 for Column G:

$$Row\ 3 = R\,10 - R\,1 - R\,2.1 - R\,2.3 - R\,2.4 + R\,2.5 + R\,4 - R\,6 - R\,7 - R\,8 - R\,9 \tag{5}$$

The row is estimated for 2021 to -392.1 million euro.

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[10]   Eurostat (2020).
[11]   Eurostat (2020).

4.4. Row 4 – Reduction in pension entitlements due to payment of pension benefit

Row 4 contains information on the amount of pension benefits distributed during the base year. This means that row 4 settles some of the pension entitlements reported at the opening of the balance sheet (row 1). The information on pension benefits paid in 2021 can be found in the national accounts. This information is supplemented with the data on civil servants provided by the Federal Pensions Service (FPS).[12]

Column G

A total amount of 12,967.4 million euro was spent in 2021 on old-age and survivors' pensions in the public sector scheme. This amount does not include the benefit payments to the civil servants whose pension scheme does no longer rely on the budget of the general government for its financing. Those benefit payments are reported in column H.

Column H

A total amount of 40,058.2million euro was spent in 2021 on old-age and survivor's pensions in the social security schemes, including pensions paid to civil servants whose pension scheme does no longer rely on the budget of the general government for its financing.

4.5. Row 5 – Changes in pension entitlements due to social contributions and pension benefits

Row 5 represents the balance of changes in pension entitlements due to social contributions (+) and pension benefits (-). In practice, it is computed as follows:

$$Row\ 5 = R\,2 + R\,3 - R\,4 \tag{6}$$

Row 5 is estimated at 878 and 20,233.2 million euro for columns G and H respectively.

4.6. Row 6 – Transfers of pension entitlements between schemes

Most of the data on transfers of pension entitlements between schemes (from and into civil servants' and wage earners' schemes) comes from the Federal Pensions Service (FPS).[13] The remaining statistics (on transfers from and into the self-employed scheme) are obtained through the National Institute for the Social Security of the Self-employed (NISSE).[14]

Column G

The detailed categories of transfers from and into civil servants' scheme are illustrated in Table 1.

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[12] Personal communication, Wald J., Federal Pensions Service, 25 July 2023.
[13] Personal communication, Wald J., Federal Pensions Service, 25 July 2023.
[14] Personal communication, Geeraert M., National Institute for the Social Security of the Self-employed, 16 September 2023.

Table 1   Pension entitlements transferred from and into the civil servants' scheme (column G)

From the civil servants' scheme into		Into the civil servants' scheme from	
The wage earners social security scheme		The wage earners social security scheme	
The self-employed social security scheme	NA	The self-employed social security scheme	NA
European pension schemes		European pension schemes	NA

Note: NA stands for Not Applicable

The transfers of pension entitlements from the civil servants' scheme into the wage earners' scheme can arise in two cases: when the person's career as civil servant is too short to give right to pension benefits in the civil servants' scheme or when the person is dismissed as a result of a disciplinary sanction. In both cases the career years as civil servant will be recognised in the social security scheme and constitute rights for a wage earners' pension. This results in a transfer of pension entitlements from civil servants' scheme to wage earners' scheme.

It is possible for a non-statutorily appointed (= contractual) employee or a temporarily appointed civil servant to become a statutorily appointed civil servant. Under certain conditions, their past career as wage-earners can be taken into account for the computation of the civil servants' pension.[15] In this case, the pension rights are transferred from the social security scheme of wage earners towards the pension scheme of civil servants. A reform enacted in 2018[16] substantially reduced these transfers. According to the new law, only civil servants stationarily appointed before 1 December 2017 or teaching staff can still benefit from these transfers.

Another situation where pension rights can be transferred from the civil servants' pension scheme is when the person starts working for the European Community and his pension rights are recognised.

For the year 2021, the balance of these transfers from and into the civil servants' pension scheme is 66.2 million euro.

Column H

The possible transfers from and into the social security schemes are summarised in Table 2.

Table 2   Pension entitlements transferred from and into the social security schemes (column H)

From the social security scheme of		Into the social security scheme of	
wage earners into		wage earners from	
The pension scheme of civil servants		The pension scheme of civil servants	
European pension schemes		European pension schemes	NA
self-employed into		self-employed from	
The pension scheme of civil servants	NA	The pension scheme of civil servants	NA
European pension schemes		European pension schemes	NA

Note: NA stands for Not Applicable

As mentioned for column G, in some cases past career as wage earner can be transformed in working years in civil servants' scheme (contractual wage earner in the public service becoming statutory civil servant). In this case, the pension rights are transferred from the social security scheme towards the pension scheme of the civil servants. A similar transferring mechanism does not exist for the self-employed. Another situation in which pension rights can be transferred from the social security schemes

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[15]   Janvier, R., Janssens, J. (2014)
[16]   Law of 30 March 2018, effective as of May 2018.

(both wage earners and self-employed) is when a person starts working for the European Community and their pension rights are recognised.

We already mentioned (column G) that there is a flow of pension entitlements from civil servants' scheme into wage earners' scheme. These transfers thus appear in both columns G and H. For the year 2021, the final outcome of transfers from and into the social security schemes is estimated to -85.4 million euro.

4.7. Row 7 – Change in entitlements due to negotiated[17] changes in scheme structure

Row 7 reports changes in pension entitlements due to pension reforms that are formally enacted during the base year (2021). If formally enacted reforms have no impact on current pension entitlements, no estimate or amount should be recorded. Only reforms affecting the accrued-to-date rights of the existing pensions schemes' members are to be reported.

In practice, row 7 represents the difference in ADL at the closing of the balance sheet between the results of simulations including reforms enacted during 2021 (row 10) and the results of simulations without those reforms.

During this legislature, different reforms of the pension system have been decided. Some of them have been enacted in 2021 and their impacts should be estimated and presented in Row 7. Pension reforms enacted before[18] or after[19] 2021 are not taken into account in the estimation of the change in entitlements reported in Row 7.

In 2021, three reforms of the pension system have been enacted. The first one increases the earnings cap by 2.38% in 2021, 2022, 2023 and 2024 in the wage-earners' and the self-employed schemes[20]. The second and third reforms of 2021 are the removal of the correction coefficient in the self-employed scheme and the slight modification in the duration of the transition allowance in all the schemes. The transition allowance is a temporary allowance paid to the surviving spouse who does not meet the age conditions to be entitled to the survivor's pension. These second and third reforms could not be taken into account in the ADL estimation because their mechanisms are not covered by MIDAS. Row 7 therefore reports only the impact of the first reform that increases the earnings cap.

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[17]   For public pension schemes, this refers to changes approved by the parliament authorities (Eurostat, 2020).

[18]   In 2020, a 2.65% increase in the minimum pension in 2021, 2022, 2023 and 2024 in the wage-earners and the self-employed schemes has been enacted. Because it has been decided before the base year, this measure is included in ADL reported on Row 1 and Row 10.

[19]   In the summer 2023, a set of pension reforms has been decided: a) introduction of a pension bonus, b) additional working condition to access the minimum pension, c) limitation of the civil servants' pensions indexation (péréquation) and d) introduction of some exceptions to access the minimum pension (to protect women against the additional working condition in b)). These measures have been decided after the base year and are therefore not included in ADL reported on Row 1 and Row 10.

[20]   In its budgetary conclave of spring 2023, the government has decided to remove the fourth step of this increase. Since this change happened after the base year, it is disregarded in our estimations.

4.8. Row 8 – Changes in entitlements due to revaluations

Row 8 records changes in key model assumptions (discount rate, wage growth rate and inflation rate) affecting pension entitlements in the actuarial computations. These changes represent the difference between the opening of the current and closing of the previous year's balance sheets, all other assumptions (e.g. demographic) being kept unchanged. For this exercise, row 8 should represent the difference between the opening sheet in 2021 and the closing sheet in 2020. However, the last exercise was done for 2018, making the compilation of row 8 impossible with the currently available data. The row is left blank.

4.9. Row 9 – Changes in entitlements due to other changes in volume

Other changes in volume due to changes of non-key assumptions in the actuarial computations, such as changes in the demographic assumptions, are reported here. Like for row 8, these changes represent the difference between the opening of the current and closing of the previous year's balance sheets, all other assumptions (e.g. related to revaluations) being kept unchanged. The data on the supplementary table for the base year 2020 being unavailable, row 9 is left blank.

4.10. Row 10 – Pension entitlements, closing balance sheet

Row 10 represents ADL at the closing of the balance sheet (i.e. 31 December 2021). The compilation is done in the same way as for row 1 described in sub-section 4.1, but one year later and with simulations including the effects (if any) of the policy reforms enacted during 2021.

This row should be interpreted as the result of the rows of the column: the present value of pension entitlements at the beginning of the reporting period, increased by social contributions and financial return on the assets, decreased by pension settlements and if necessary corrected for model corrections or changes in assumptions:

$$Row\ 10 = R\ 1 + R\ 5 + R\ 6 + R\ 7 + R\ 8 + R\ 9 \tag{7}$$

Recall, though, that in the actual calculations the amounts in row 10 are provided by the model used to project pension entitlements. As explained above, the residual rows 2.2 (in column G) and 3 (in column H) are used to ensure that equation (7) is met.

At the closing of the balance sheet, the pension entitlements are estimated to 295,829.2 and 1,308,612.9 million euro for columns G and H respectively.

5. ADL in terms of GDP

ADL measure the amount of money required by the pension system to meet its commitments in the theoretical case of closing down the system. Such a scenario is in theory ruled out for public or government-sponsored unfunded pension schemes. Expressing the ADL of the unfunded defined benefit schemes of government employees and social security schemes in terms of GDP gives an indication of the number of years a country would have to use its GDP to meet its pension commitments if it was to dedicate the entire GDP to it. It provides an intuitive idea of the total size of the ADL.

Table 3   **ADL in terms of GDP in 2021**
Million euro and percentages

	Sensitivity 1: 1%	Base scenario	Sensitivity 2: 3%
ADL	1,963,321.6	1,604,442.1	1,337,987.2
GDP 2021	507,929.7	507,929.7	507,929.7
ADL/GDP	387%	316%	263%

With a fixed discount rate of 2%, the MIDAS model and its dataset, the assumptions made and the estimation procedures described in this report, the ADL/GDP ratio for 2021 is determined at 316%. The present value of the ADL of all first pillar pensions schemes in Belgium equals roughly 3 years and 2 months of the total Belgian production capacity in 2021. To illustrate the sensitivity of this ratio to the discount rate, two alternative ratios are computed, at fixed discount rates of 1% and 3%, respectively leading to ratios of 387% and 263%. The complete supplementary tables of these alternative scenarios can be found in Annex 1.

It is worth noting that Table 29 shows the pensions entitlements on an accrued-to-date basis. These are present values of the pension entitlements of the retired population and the part of pension entitlements that is already accrued by the future beneficiaries. As such, accrued-to-date liabilities do not represent public debt and are not an indicator of the financial sustainability of the pension system and are only appropriate for national accounts purposes. Accrued-to-date liabilities should only be interpreted as an asset of households in national accounts' terminology. An assessment of the budgetary consequences of population ageing, including those for the Belgian pension system, can be found in the reports of the AWG or the Study Committee on Ageing.

In the previous submission of the Table 29 data (Desmet, Tarantchenko and Van den Bosch, 2021), the ADL/GDP ratio in the base scenario for 2018 was estimated to 309%. Thus, 7 percentage points lower compared to this exercise. The difference is explained by numerous factors: reforms enacted during the time range between the two exercises; different demographic and macroeconomic assumptions underlying the projections; improvements of the model; shifts in the population observed in the base year or impact of the growth rate of GDP on the ratio.

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Annexes

Annex 1: Columns G and H of supplementary table 29 and sensitivity analysis

Table 4   **Columns G and H of supplementary table 29 for 2021 - Base scenario (discount rate 2%)**
Euro

Code	Row n°	Item	Defined benefit schemes for general government employees – Classified in general governments G	Social security pension schemes H
		Opening balance sheet		
XAF63LS	1	Pension entitlements	294,885,018,480	1,284,681,980,979
		Changes in pension entitlements due to transactions		
XD61p	2	Increase in pension entitlements due to social contributions	13,845,371,451	60,683,532,559
XD6111	2.1	Employer actual social contributions	0	19,231,291,549
XD6121	2.2	Employer imputed social contributions	7,947,671,082	███████████
XD6131	2.3	Household actual social contributions	0	15,758,601,390
XD6141	2.4	Household social contribution supplements	5,897,700,370	25,693,639,620
XD6151	2.5	Pension scheme service charges	0	0
XD619	3	Other (actuarial) change of pension entitlements in social security pension schemes	███████████	-392,101,037
XD62p	4	Reduction in pension entitlements due to payment of pension benefits	12,967,364,000	40,058,215,000
XD8	5	Changes in pension entitlements due to social contributions and pension benefits	878,007,451	20,233,216,522
XD81	6	Transfers of pension entitlements between schemes	66,200,000	-85,423,475
XD82	7	Change in entitlements due to negotiated changes in scheme structure	0	3,783,105,047
		Changes in pension entitlements due to other flows		
XK7	8	Changes in entitlements due to revaluations	0	0
XK5	9	Changes in entitlements due to other changes in volume	0	0
		Closing balance sheet		
XAF63LE	10	Pension entitlements	295,829,225,931	1,308,612,879,073

Table 5   Columns G and H of supplementary table 29 for 2021 - Sensitivity analysis 1 (discount rate 1%)
Euro

Code	Row n°	Item	Defined benefit schemes for general government employees – Classified in general governments	Social security pension schemes
			G	H
		Opening balance sheet		
XAF63LS	1	Pension entitlements	348,930,082,185	1,584,151,500,627
		Changes in pension entitlements due to transactions		
XD61p	2	Increase in pension entitlements due to social contributions	14,077,076,492	50,831,407,946
XD6111	2.1	Employer actual social contributions	0	19,231,291,549
XD6121	2.2	Employer imputed social contributions	10,587,775,670	■
XD6131	2.3	Household actual social contributions	0	15,758,601,390
XD6141	2.4	Household social contribution supplements	3,489,300,822	15,841,515,006
XD6151	2.5	Pension scheme service charges	0	0
XD619	3	Other (actuarial) change of pension entitlements in social security pension schemes	■	13,143,883,070
XD62p	4	Reduction in pension entitlements due to payment of pension benefits	12,967,364,000	40,058,215,000
XD8	5	Changes in pension entitlements due to social contributions and pension benefits	1,109,712,492	23,917,076,016
XD81	6	Transfers of pension entitlements between schemes	66,200,000	-85,423,475
XD82	7	Change in entitlements due to negotiated changes in scheme structure	0	5,232,444,000
		Changes in pension entitlements due to other flows		
XK7	8	Changes in entitlements due to revaluations	0	0
XK5	9	Changes in entitlements due to other changes in volume	0	0
		Closing balance sheet		
XAF63LE	10	Pension entitlements	350,105,994,677	1,613,215,597,167

Table 6   Columns G and H of supplementary table 29 for 2021 - Sensitivity analysis 2 (discount rate 3%)
Euro

Code	Row n°	Item	Defined benefit schemes for general government employees – Classified in general governments G	Social security pension schemes H
		Opening balance sheet		
XAF63LS	1	Pension entitlements	253,130,506,452	1,063,958,682,489
		Changes in pension entitlements due to transactions		
XD61p	2	Increase in pension entitlements due to social contributions	13,682,732,131	66,908,653,414
XD6111	2.1	Employer actual social contributions	0	19,231,291,549
XD6121	2.2	Employer imputed social contributions	6,088,816,937	■
XD6131	2.3	Household actual social contributions	0	15,758,601,390
XD6141	2.4	Household social contribution supplements	7,593,915,194	31,918,760,475
XD6151	2.5	Pension scheme service charges	0	0
XD619	3	Other (actuarial) change of pension entitlements in social security pension schemes	■	-9,438,180,027
XD62p	4	Reduction in pension entitlements due to payment of pension benefits	12,967,364,000	40,058,215,000
XD8	5	Changes in pension entitlements due to social contributions and pension benefits	715,368,131	17,412,258,387
XD81	6	Transfers of pension entitlements between schemes	66,200,000	-85,423,475
XD82	7	Change in entitlements due to negotiated changes in scheme structure	0	2,789,618,031
		Changes in pension entitlements due to other flows		
XK7	8	Changes in entitlements due to revaluations	0	0
XK5	9	Changes in entitlements due to other changes in volume	0	0
		Closing balance sheet		
XAF63LE	10	Pension entitlements	253,912,074,582	1,084,075,135,432

Annex 2: Pension fact sheet – column G

1. General description of the scheme and the computation model

  a. <u>Coverage of the scheme</u>

Column G covers the civil servants' pension scheme relying on the budget of the federal government. This scheme consists of the old-age pension (including old-age pensions of civil servants granted because of physical inability) and the survivor's pension. The pension expenditures for this scheme amount to 24.5% of total first pillar pension expenditures reported in national accounts for 2021.

Column G does not include the ADL of civil servants whose pension scheme does no longer depend on the budget of the federal government. These values are reported under the social security schemes, column H.

  b. <u>Institutional set-up</u>

Data source

The microsimulation model estimating accrued-to-date pension entitlements uses administrative data for 2011 provided by the Datawarehouse Labour Market and Social Protection of the Crossroads Bank for Social Security. It includes over 600,000 representative individuals, with retrospective data that is complete for wage earners though only partial for civil servants and self-employed workers. The dataset is supplemented with information from the 2011 population census and fiscal information.

Institution managing the calculations

The institution responsible for Table 29 is the National Accounts Institute of Belgium. It has entrusted the National Bank of Belgium and the Federal Planning Bureau with the compilation of the supplementary table. Columns G and H are a responsibility of the Federal Planning Bureau.

  c. <u>Major formulas: benefit formula; indexation of benefits</u>

Benefit formula

The retirement pension is calculated on the average wage of the last ten years of work (five years for people born before 1962) and is proportional to the career length, with the considered service years in the numerator and a *tantième* of 60 in the denominator. Some civil servants have a preferential denominator (55 in teaching and 48 years for magistrates and in academic services).

Civil servants can be granted a minimum pension, which is a fixed amount, provided they have at least 20 years of service. The pension benefit is also subject to a relative maximum of 75% of the reference wage and pensions are capped to an absolute maximum pension, which is a fixed amount.

Indexation of benefits

Civil servants' pensions are automatically adjusted to the health consumption price index and to the real wage increases of the active civil servants (the *péréquation*).

d. Type and structure of the computation model

MIDAS is a microsimulation model, meaning that the modelling is done on the level of individuals clustered in households rather than on aggregate data. It is also a dynamic population model with dynamic cross-sectional ageing. This means that it is based on a cross-sectional dataset representing a population of all ages at a certain point in time.

2. Assumptions and methodologies applied

a. Discount rate

A fixed discount rate of 2% in real terms is used.

b. Wage growth

Future wage growth is the same as in the 2024 Ageing Report. It is assumed to reach 1.5% in 2040 and then progressively decrease to its long-term value of 1.2% in 2070. After 2070, the long-term value remains constant.

c. Valuation method: ABO/PBO

PBO

3. Data used to run the model

a. Mortality tables

MIDAS uses EUROPOP2023 data in the projections for Table 29.

b. Entitlement statistics; other relevant statistics

The entitlement statistics for 2021 are taken from the national accounts (government accounts) and Federal Pensions Service. Other statistics, such as on social contributions and transfers between schemes, come from the national accounts, Federal Pensions Service and National Institute for the Social Security of the Self-employed.

4. Reforms incorporated in the model

None.

5. Specific assumptions

    a. <u>How are careers modelled?</u>

Future career evolution is projected by the microsimulation model MIDAS, using the projection of the aggregate numbers of civil servants by age and gender provided by the meso-economic model MALTESE (in its version set up in the framework of the Working Group on Ageing Populations and Sustainability), as well as behavioural equations for transitions between states.

    b. <u>How are survivors' pensions calculated?</u>

Deaths are simulated through MIDAS' demographic module. If an (ex-)civil servant dies, the surviving partner becomes eligible for a survivor's pension. If the surviving partner has reached a minimum age, she/he will receive the survivors' pension. If she/he is younger than this minimum age, she/he will not receive a survivor's pension but a transitional benefit. The age condition was 48 in 2021 and will gradually increase to 50 by 2025.

A divorced spouse can also be entitled to a survivor's pension under certain conditions. The minimum age condition plays a similar role in these situations. This age condition was also 48 in 2021 and will gradually increase to 50 in 2025.

    c. <u>How is the retirement age modelled over time?</u>

The statutory retirement age in Belgium is currently 65 (both men and women and all pension schemes). It will increase from 65 to 66 by 2025 and to 67 by 2030.

6. Links to (national) publications providing further information on the pension schemes

Information on the pension schemes for civil servants (French): https://www.sfpd.fgov.be/fr

7. Any other comments

It is possible for a civil servant to start working for a European institution and to have his pension rights accrued in the Belgian pension scheme recognised by the European institution or its pension fund. The corresponding amount of contributions will then be transferred from the Belgian pension scheme towards the European pension scheme. These transfers explain why row 6 does not balance for the total economy.

Annex 3: Pension fact sheet – column H

1. General description of the scheme and the calculation model

a. Coverage of the scheme

Column H covers the social security pension schemes for both wage earners and the self-employed. Both pension schemes consist of old-age pensions and survivors' pensions. The column also includes pension entitlements of the civil servants whose pension scheme does no longer depend on the budget of the federal government.

Of the total pension expenditures on first pillar pensions reported in the national accounts for 2021, 67.6% are allocated to the schemes for wage earners and civil servants whose pension scheme does no longer depend on the budget of the federal government and 7.9% to the scheme for self-employed.

b. Institutional set-up

Data source

The microsimulation model estimating accrued-to-date pension entitlements uses administrative data for 2011 provided by the Datawarehouse Labour Market and Social Protection of the Crossroads Bank for Social Security. It includes over 600 000 representative individuals, with retrospective data that is complete for wage earners though only partial for civil servants and self-employed workers. The dataset is supplemented with information from the 2011 population census and fiscal information.

Institution managing the calculations

The institution responsible for Table 29 is the National Accounts Institute of Belgium. It has entrusted the National Bank of Belgium and the Federal Planning Bureau with the compilation of the supplementary table. Columns G and H are a responsibility of the Federal Planning Bureau.

c. Major formulas: benefit formula; indexation of benefits

Benefit formula

- Wage earners

    The pension of wage earners is computed at 75% of the reference wage for the head of household with a dependent spouse and 60% in all other cases. The reference wage is calculated on the real or assimilated wages earned during the career up to a wage ceiling. These wages are adjusted to current prices. The sum of those adjusted wages over the career is multiplied by 1/45 (a full career is 45 years).

    A guaranteed minimum pension exists for the pensions accrued over a career which equals at least two thirds of a full career in the wage earners' scheme. A minimum right per working year also exists if some conditions are met. There is no explicit maximum pension amount, though the wage ceiling mentioned above imposes an implicit maximum.

- Self-employed

The pension of self-employed individuals is computed at 75% of the reference wage for the head of household with a dependent spouse and 60% in all other cases. The working years before 1984 are valued at a fixed income, while for the working years as from 1984 the pension rights are based on the business income used to compute social security contributions and income tax, up to an income ceiling. The income is adjusted to current prices.

A minimum pension can be granted when the person can prove at least two thirds of a full career as a self-employed individual and/or wage earner. There is no explicit maximum pension amount, though the income ceiling mentioned above imposes an implicit maximum.

Indexation of benefits

Pension benefits are automatically adjusted to the health consumption price index and partially adjusted to living standards according to the 'Generation Pact'.

d. Type and structure of the calculation model

MIDAS is a microsimulation model, meaning that the modelling is done on the level of individuals clustered in households rather than on aggregate data. It is also a dynamic population model with dynamic cross-sectional ageing. This means that it is based on a cross-sectional dataset representing a population of all ages at a certain point in time.

2. Assumptions and methodologies applied

a. Discount rate

A fixed discount rate of 2% in real terms is used.

b. Wage growth

Future wage growth for wage earners and self-employed is identical and the same as in the 2024 Ageing Report. It is assumed to reach 1.5% in 2040 and then progressively decrease to its long-term value of 1.2% in 2070. After 2070, the long-term value remains constant.

c. Valuation method: ABO/PBO

PBO

3. Data used to run the model

a. Mortality tables

MIDAS uses EUROPOP2023 data in the projections for Table 29.

b. Entitlements statistics; other relevant statistics

The entitlement statistics for 2021 are taken from the national accounts (government accounts) and Federal Pensions Service. Other statistics, such as on social contributions and transfers between schemes, come from the national accounts, Federal Pensions Service and National Institute for the Social Security of the Self-employed.

4. Reforms incorporated in the model

A reform enacted in 2021 aims to increase the earnings cap by 2.38% in 2021, 2022, 2023 and 2024 in the wage-earners' and the self-employed schemes. In its budgetary conclave of spring 2023, the government has decided to remove the fourth step of this increase. Since this change happened after the base year, it is disregarded in the estimation of the accrued-to-date pension entitlements.

5. Specific assumptions

a. How are careers modelled?

Future career evolution is projected by the microsimulation model MIDAS, using the projection of the aggregate numbers of wage earners and self-employed by age and gender provided by the meso-economic model MALTESE (in its version set up in the framework of the Working Group on Ageing Populations and Sustainability), as well as behavioural equations for transitions between states.

b. How are survivors' pensions calculated?

- Wage-earners

    After the death of the spouse who either earned a wage or received a replacement income (pension included) in the wage earners' scheme, the surviving spouse is entitled to a survivor's pension if some conditions are met. The most important is the minimum age. If the surviving partner has reached a minimum age, she/he will receive the survivor's pension. If she/he is younger than this minimum age, she/ he will not receive a survivor's pension but a transitional benefit. The age condition was 48 in 2021 and will be gradually increased to 50 by 2025.

    A survivor's pension represents 80% of the deceased person's retirement pension, computed at the family rate (which means 80% of 75%, equivalent to 60% of the reference wage), or, if she/he was still working, at 80% of the retirement pension she/he would have had if she/he had worked until the legal age of retirement.

- Self-employed

    After the death of the spouse who was self-employed, the surviving spouse is entitled to a survivor's pension if some conditions are met. The most important is the minimum age. If the surviving partner has reached a minimum age, she/he will receive a survivor's pension. If she/he is younger than this minimum age, she/he will not receive a survivor's pension but a transitional benefit. The age condition was 48 in 2021 and will be gradually increased to 50 by 2025.

The calculation takes into account the career of the deceased person and his/her business income.

c. <u>How is the retirement age modelled over time?</u>

The statutory retirement age in Belgium is currently 65 (both men and women and all pension schemes). It will increase from 65 to 66 by 2025 and further to 67 by 2030.

d. <u>Other specific features of the model</u>

6. Links to (national) publications providing further information on the pension schemes

Information on the pension schemes for wage earners (French): https://www.sfpd.fgov.be/fr

Information on the pension schemes for the self-employed (English): https://www.nisse.be/en

7. Any other comments

It is possible for a wage earner or self-employed to start working for a European institution and to have his pension rights accrued in the Belgian pension scheme recognised by the European institution or its pension fund. The corresponding amount of contributions will then be transferred from the Belgian pension scheme towards the European pension scheme. These transfers explain why row 6 does not balance for the total economy.

Federal Planning Bureau

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