



Red **PLAC**

NETWORK FOR PENSIONS IN
LATIN AMERICA AND THE CARIBBEAN

User's Manual

IDB PLAC NETWORK PENSION INDICATORS

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Introduction

The Labor Markets Division of the Inter-American Development Bank (IDB) supports countries in Latin America and the Caribbean to build stronger pension systems by seeking to increase their coverage (support in old age to the vast majority of the population), sufficiency (the pension amount allows for a dignified life in old age) and sustainability (pension benefits financed in the present and in the future). To advance these objectives, the IDB created in 2015 the Network for Pensions in Latin America and the Caribbean (PLAC Network). The PLAC Network is a regional public good that serves as a platform for dialogue and learning among pension institutions and experts. It is one of the mechanisms through which the IDB supports the efforts of countries in the region to improve the institutional and technical capacity of their pension entities.

In this context, we are pleased to present the PLAC Network's Pension Indicators, a database containing information related to the labor market and pension systems of the nineteen PLAC Network member countries about the environment, performance, sustainability, society's preparedness for aging and reform, and pension system design. These indicators were constructed with the objective of becoming an important tool for the improvement of the following aspects of pension systems: coverage, sufficiency of benefits, financial sustainability, equity and social solidarity, efficiency, and institutional capacity. An important characteristic is the comparability of these indicators since it permits the identification of areas of cooperation and knowledge exchange among countries.

This Manual accompanies the Pension Indicators database with the objective of supporting users in understanding the definitions of each indicator and locating sources of information. The elaboration of the Manual was led by Rodrigo Cerda, Carolina Cabrita Felix and Laura Karina Gutiérrez. We thank Mariano Bosch, Waldo Tapia, Manuel Garcia-Huitrón and Álvaro Altamirano for their comments and constant support to the project. Additionally, we thank Rita Hamden and Cristina Nakasone for their comments to this Manual. We also thank all PLAC Network member countries for their constant collaboration and suggestions for improving the Pension Indicators. We finally thank Solange Berstein, Nicholas Barr, Richard Jackson and Tapen Sinha for the early guidance and advices to this project. We hope you find this Manual useful!

PLAC Network Team

This Manual accompanies the PLAC Network Pension Indicators and is intended to help users of the indicators database to understand the definitions as well as the sources of information for each pension indicator.

The PLAC Network indicators are available for the nineteen member countries of the PLAC Network and are divided into five main categories: environment, performance, sustainability, society preparedness for aging and reform and pension system design. Each one of these categories are divided into a few subcategories as well.

In what follows, we describe the definition of the corresponding indicator as well as the source of data used.

This Manual has been prepared by Rodrigo Cerda, Carolina Cabrita Felix, and Laura Karina Gutiérrez for the use of the PLAC Network Pension Indicators.

Please direct **any comments or inquiries about this publication** to the PLAC Network team

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1 ▶ Environment

1.1 ▶ Demographics

Fertility rate: The average number of children of a woman in a hypothetical cohort of women who during their fertile life had their children according to the fertility rates by age of the study period and were not subjected to mortality risks from birth to the end of the fertile period (https://www.cepal.org/sites/default/files/def_ind.pdf). The data correspond to the projection for the 2015-2020 quinquennium. Data available at <https://www.cepal.org/es/temas/proyecciones-demograficas/estimaciones-proyecciones-poblacion-total-urbana-rural-economicamente-activa>. The payroll of each country must be downloaded. The data are in the “Indicators period” sheet.

Life expectancy at birth: The average length of life of individuals who make up a hypothetical cohort of births subjected at all ages to the mortality risks of the study period (CEPAL-CELADE database: https://www.cepal.org/sites/default/files/def_ind.pdf). The data correspond to the projection for the 2015-2020 quinquennium. Data available at <https://www.cepal.org/es/temas/proyecciones-demograficas/estimaciones-proyecciones-poblacion-total-urbana-rural-economicamente-activa>. The payroll of each country must be downloaded. The data are in the “indicators period” sheet.

Life expectancy at age 60: The average number of remaining years of life expected by a hypothetical cohort of individuals alive at age 60 who would be subject during the remaining of their lives to the mortality rates of a given period (Source: United Nations). The data correspond to the projection for the 2015-2020 quinquennium and are available at <https://population.un.org/wpp/Download/Standard/Mortality/in> downloadable files for life expectancy at age 60 (for men and women). The data are in the “Estimates” sheet for the 2010-2015 quinquennium.

Life expectancy at age 80: The average number of remaining years of life expected by a hypothetical cohort of individuals alive at age 80 who would be subject during the remaining of their lives to the mortality rates of a given period (Source: United Nations). The data correspond to the projection for the 2015-2020 quinquennium and are available at <https://population.un.org/wpp/Download/Standard/Mortality/in> downloadable files for Life expectancy at age 80 (for men and women). The data are in the “Estimates” sheet for the 2010-2015 quinquennium.

Percentage of women over 80 years old: The number of women whose age is 80 or more years out of the total number of people whose age is 80 years or older (https://www.cepal.org/sites/default/files/def_ind.pdf). The data correspond to the estimate for the year 2020. Data available at <https://www.cepal.org/es/temas/proyecciones-demograficas/estimaciones-proyecciones-poblacion-total-urbana-rural-economicamente-activa>. The payroll of each country must be downloaded. The data of the “Total Population” sheet are used.

Old-age dependency ratio: The ratio of individuals aged 60 or older to individuals aged 15 to 59. The data correspond to the estimate for the year 2020. Data available at <https://www.cepal.org/es/temas/proyec->



[ciones-demograficas/estimaciones-proyecciones-poblacion-total-urbana-rural-economicamente-activa](#).

The payroll of each country must be downloaded. The data are in the “*Estructura Envejecimiento*” sheet.

1.2 ► Economic Indicators

GDP per capita, US\$, PPP: GDP per capita calculated on the basis of purchasing power parity (PPP). **Source:** World Economic Outlook database, International Monetary Fund. Data available at <https://www.imf.org/external/pubs/ft/weo/2020/01/weodata/index.aspx>. Select Subject Descriptor: Gross domestic product per capita, constant prices. GDP is expressed in constant international dollars per person. Data are derived by dividing constant-price PPP GDP by total population.

GDP per capita, US\$: GDP per capita calculated on the basis of current dollars. Projection for 2020. **Source:** World Economic Outlook database, International Monetary Fund. Data available at <https://www.imf.org/external/pubs/ft/weo/2019/01/weodata/index.aspx>. Select Subject Descriptor: Gross domestic product per capita, current prices. GDP is expressed in current U.S. dollars per person. Data are derived by first converting GDP in a national currency to U.S. dollars and then dividing it by the total population.

GDP as a fraction of world GDP: Gross domestic product based on purchasing power parity (PPP). Projection for 2020. **Source:** World Economic Outlook database, International Monetary Fund. Data available at <https://www.imf.org/external/pubs/ft/weo/2019/01/weodata/index.aspx>. Select Subject Descriptor: Gross domestic product based on PPP share of world total. Expressed as the percent of world GDP in PPP dollars.

Real GDP growth rate: Annual average for 2020. **Source:** World Economic Outlook database, International Monetary Fund. Data available at <https://www.imf.org/external/pubs/ft/weo/2020/01/weodata/index.aspx>. Select Subject Descriptor: Gross domestic product, constant prices. Annual percentages of constant-price GDP are year-on-year changes; the base year is country-specific.

Inflation rate: Annual average for 2020. **Source:** World Economic Outlook database, International Monetary Fund. Data available at <https://www.imf.org/external/pubs/ft/weo/2020/01/weodata/index.aspx>. Select Subject Descriptor: Inflation, average consumer prices. Annual percentages of average consumer prices are year-on-year changes.

Gross national savings (% of GDP): Expressed as a ratio of gross national savings in current local currency and GDP in current local currency. Gross national savings are gross disposable income less final consumption expenditure after taking account of an adjustment for pension funds. For many countries, estimates of national savings are built from national accounts data on gross domestic investment and from data on net foreign investment based on the balance of payments. **Source:** World Economic Outlook database, International Monetary Fund. Data available at <https://www.imf.org/external/pubs/ft/weo/2019/01/weodata/index.aspx>. Select Subject Descriptor: Gross national savings.

Social protection public spending (% of GDP): Public expenditure on disbursements for services and transfers to individuals and families that cover sickness and disability benefits, old-age pensions, survivors’ pensions, benefits for families and children, unemployment benefits, and housing and social exclusion benefits.



Source: United Nations, Economic Commission for Latin America and the Caribbean (ECLAC), Database on Social Investment in Latin America and the Caribbean. Data for 2016 available at <http://observatoriosocial.cepal.org/inversion/en/indicator/expenditure-social-protection>.

1.3 ▶ Labour Market

Total labour force participation rate (female, male and total): The labour force comprises all persons of working age who furnish the supply of labour to produce goods and services during a specified time-reference period. It refers to the sum of all persons of working age who are employed and those who are unemployed. The series is part of the ILO estimates and is harmonized to account for differences in national data and scope of coverage, collection and tabulation methodologies as well as for other country-specific factors. Calculated for individuals aged 15+. **Source:** ILO statistical database available at <https://ilostat.ilo.org/topics/population-and-labour-force/>. Download *Labour force by sex and age - ILO modelled estimates, July 2019: Annual* and filter by country, year and age.

Youth – Labour force participation rate (female, male and total): The labour force comprises all persons of working age who furnish the supply of labour to produce goods and services during a specified time-reference period. It refers to the sum of all persons of working age who are employed and those who are unemployed. The series is part of the ILO estimates and is harmonized to account for differences in national data and scope of coverage, collection and tabulation methodologies as well as for other country-specific factors. Calculated for individuals aged 15 to 24 years old. **Source:** ILO statistical database available at <https://ilostat.ilo.org/topics/population-and-labour-force/>. Download *Labour force by sex and age - ILO modelled estimates, July 2019: Annual* and filter by country, year and age.

Prime age – Labour force participation rate (female, male and total): The labour force comprises all persons of working age who furnish the supply of labour to produce goods and services during a specified time-reference period. It refers to the sum of all persons of working age who are employed and those who are unemployed. The series is part of the ILO estimates and is harmonized to account for differences in national data and scope of coverage, collection and tabulation methodologies as well as for other country-specific factors. Calculated for people aged 25 to 54 years old. **Source:** ILO statistical database available at <https://ilostat.ilo.org/topics/population-and-labour-force/>. Download *Labour force by sex and age - ILO modelled estimates, July 2019: Annual* and filter by country, year and age.

Old age – Labour force participation rate (female, male and total): The labour force comprises all persons of working age who furnish the supply of labour to produce goods and services during a specified time-reference period. It refers to the sum of all persons of working age who are employed and those who are unemployed. The series is part of the ILO estimates and is harmonized to account for differences in national data and scope of coverage, collection and tabulation methodologies as well as for other country-specific factors. Calculated for individuals aged 65 or older. **Source:** ILO statistical database available at <https://ilostat.ilo.org/topics/population-and-labour-force/>. Download *Labour force by sex and age - ILO modelled estimates, July 2019: Annual* and filter by country, year and age.



Informal labour (female, male and total): Percentage that results from dividing the number of salaried workers without a contract by the total number of salaried workers (workers aged 15 to 64). **Source:** SIMS database data for the Bahamas, Chile, Colombia, the Dominican Republic, El Salvador, Guyana, Honduras, Mexico, Panama, Paraguay and Peru, which are available at <https://www.iadb.org/en/sector/social-investment/sims/home>. Go to the indicators section, select *Salaried workers without a contract (%)* and filter by country, gender and year. For Argentina, Brazil, Costa Rica and Uruguay, data are available for World Bank Development Indicators and are the ratio of informal workers (not paying taxes and not contributing to the social security system) to all workers in the non-agricultural sector. Such data are available at <http://datatopics.worldbank.org/world-development-indicators/>. Go to the Access Data section and select Bulks Download, where the latest data are available.

Self-employment (female, male and total): Percentage that results from dividing the number of self-employed workers by the total number of employed workers. Self-employed workers are those who work on their own (workers 15 to 64). **Source:** SIMS database available at <https://www.iadb.org/en/sector/social-investment/sims/home>. Go to the indicators section and filter by country, gender and year.

Notice period: Notice period at 2 years of tenure, in months. **Source:** International Labour Organization. Data for Argentina, Brazil, Chile, Honduras, Mexico and Peru available at <https://www.ilo.org/dyn/eplex/termmain.home>. Select on the left menu *Download EPLex onto a spreadsheet* and choose the indicator *Procedural requirements for individual dismissals – notice periods*. Data for the Bahamas, Barbados, Colombia, Costa Rica, the Dominican Republic, El Salvador, Jamaica, Panama, Paraguay and Uruguay on notice period at 4 years of tenure, in months, available at <http://www.oecd.org/employment/emp/oecd-idbdatabaseonsummaryindicatorsofemploymentprotectionlegislationepinlatinamericanadthecaribbean.htm>

Severance payment: Severance pay at 2 years of tenure, in months. **Source:** International Labour Organization. Data for Argentina, Brazil, Chile, Honduras and Peru available at <https://www.ilo.org/dyn/eplex/termmain.home>. Select on the left menu *Download EPLex onto a spreadsheet* and choose the indicator *Severance pay*. Data for the Bahamas, Barbados, Colombia, Costa Rica, the Dominican Republic, El Salvador, Jamaica, Mexico, Panama, Paraguay and Uruguay on severance pay at 4 years of tenure, in months, available at <http://www.oecd.org/employment/emp/oecd-idbdatabaseonsummaryindicatorsofemploymentprotectionlegislationepinlatinamericanadthecaribbean.htm>

Employment protection legislation index (EPLex): It corresponds to the ILO EPLex database, which provides information on the employment protection legislation and does not generally cover case law or collective agreements on the subject. The database deals only with employees in the private sector. All resulting indicators are distributed on a 0-1 scale. Lower values of EPLex indicators represent lower levels of de jure employment protection in a given country and a given year, while higher values of EPLex indicators represent higher levels of de jure employment protection. **Source:** International Labour Organization. Data for Argentina, Brazil, Chile, El Salvador, Honduras, Mexico, Panama and Peru available at <https://www.ilo.org/dyn/eplex/termmain.home>. Data for the year 2014 for the Bahamas, Barbados, Colombia, Costa Rica, the Dominican Republic, Jamaica, Paraguay and Uruguay. Protection of permanent workers against (individual) dismissal are available at <http://>



www.oecd.org/employment/emp/oecd-idbdatabaseonsummaryindicatorsofemploymentprotectionlegislationinlatinamericanadthecaribbean.htm

Small business employment (SMB): The share of the aggregate stock of permanent, full-time employment in small firms (fewer than 20 workers). The latest available data consider services and industry. **Source:** World-Bank Enterprise Surveys, available at <http://www.enterprisesurveys.org/employment-indicators>. Data are in the sheet by estimated size.

Workers under minimum wage: Percentage of employed workers with labour income less than or equal to the minimum wage in the main occupation. Latest year available. **Source:** SIMS database available at <https://www.iadb.org/en/sector/social-investment/sims/home>. Go to the indicators section, select *Employed workers with total labour income less than or equal to the minimum wage (%)* and filter by country and year.

Rural employment: Number of persons who are employed in the rural sector as a percentage of the total working-age population (15+). Data correspond to persons age 15+. The series is part of the ILO estimates and is harmonized to account for differences in national data and scope of coverage, collection and tabulation methodologies as well as for other country-specific factors. **Source:** International Labour Organization, ILO Data Explorer. Go to <https://ilostat.ilo.org/>, select bulkdownload in the section for data users and select the indicator *of employment-to-population ratio* by sex, age and rural / urban areas - ILO modelled estimates, Nov. 2019. Available at https://www.ilo.org/shinyapps/bulkexplorer27/?lang=en&segment=indicator&id=EMP_2WAP_SEX_AGE_GEO_RT_A.

1.4 ► Capital Market

Domestic credit to the private sector by banks (% of GDP): Financial resources provided to the private sector by depository corporations (except central banks) through loans, purchases of non-equity securities and trade credits and other accounts receivable, that establish a claim for repayment (World Bank definition). **Source:** World Bank Development Indicators, available at <http://datatopics.worldbank.org/world-development-indicators/>. Go to the Access Data section and select Bulks Download.

Financial system deposits (% of GDP): Demand, time and saving deposits in deposit money banks and other financial institutions as a share of GDP (World Bank definition). **Source:** Global Financial Development Database, October 2019, The World Bank. Select the indicator *Bank deposits to GDP (%)*. Available at <https://www.worldbank.org/en/publication/gfdr/data/global-financial-development-database>.

Insurance company assets (% of GDP): Ratio of assets of insurance companies to GDP. **Source:** Global Financial Development Database, October 2019, The World Bank. Available at <https://www.worldbank.org/en/publication/gfdr/data/global-financial-development-database>.

Pension fund assets (% of GDP): Ratio of assets of pension funds to GDP. A pension fund is any plan, fund or scheme that provides retirement income (World Bank definition). **Source:** Global Financial Development Database, October 2019, The World Bank. Available at <https://www.worldbank.org/en/publication/gfdr/data/global-financial-development-database>.



Stock market capitalization (% of GDP): Total value of all traded shares in a stock market exchange as a percentage of GDP (World Bank definition). **Source:** Global Financial Development Database, October 2019, The World Bank. Available at <https://www.worldbank.org/en/publication/gfdr/data/global-financial-development-database>.

Net public debt (% of GDP): General government gross debt minus financial assets corresponding to debt instruments. These financial assets are monetary gold and SDRs, currency and deposits, debt securities, loans, insurance, pensions, standardized guarantee schemes and other accounts receivable (IMF definition). **Source:** World Economic Outlook database, April 2019, International Monetary Fund. Data available at <https://www.imf.org/external/pubs/ft/weo/2019/01/weodata/index.aspx>. Select General government net debt as Percent of GDP.

Gross public debt (% of GDP): A measure of “all liabilities that require payment or payments of interest and principal by the public sector. According to the GFSM, 2001 system liabilities are debt, except for equity and investment fund shares and financial derivatives and employee stock options” (IMF definition). **Source:** World Economic Outlook database, April 2019, International Monetary Fund. Data available at <https://www.imf.org/external/pubs/ft/weo/2019/01/weodata/index.aspx>. Select *General government gross debt as Percent of GDP*.



2 ► Performance

2.1 ► Coverage

Total pension contributors rate (female, male and total): Percentage that results from dividing the economically active population that is contributing to the old-age pension scheme by the economically active population. Affiliates are used in the case that contributors are not available in the survey. Individuals aged 15 to 64 years old. Latest year available. **Source:** SIMS database available at <https://www.iadb.org/en/sector/social-investment/sims/home>. Go to the indicators section, select *Social Security, Contributors to social security and Total active workers contributing to social security (as a % of the economically active population)* and filter by country, gender and year.

Contributory pension recipient rate (female, male and total): Ratio of the total number of pension beneficiaries (contributory only) over the total population. Both the pension beneficiaries and the total population correspond to individuals aged 65 and older. Pension beneficiaries correspond to individuals who are receiving any type of contributory pension benefits (old age, disability, widows). Latest year available. **Source:** SIMS database available at <https://www.iadb.org/en/sector/social-investment/sims/home>. Go to the indicators section, select *Social Security, Pensioners and Population aged 65 and over who declare receiving contributory pension benefits (%)* and filter by country, gender and year.

Non-contributory pension recipient rate (female, male and total): Ratio of the total number of pension beneficiaries (non-contributory only) over the total population. Both the pension beneficiaries and the total population correspond to individuals aged 65 and older. Pension beneficiaries correspond to individuals who are receiving any type of non-contributory old-age pension benefits. Latest year available. **Source:** SIMS database available at <https://www.iadb.org/en/sector/social-investment/sims/home>. Go to the indicators section, select *Social Security, Pensioners and Population aged 65 and over who declare receiving a non-contributory benefit (%)* and filter by country, gender and year.

Total pension recipients rate (female, male and total): Ratio of the total number of pension beneficiaries over the total population. Both the pension beneficiaries and the total population correspond to individuals aged 65 or older. Pension beneficiaries correspond to individuals who are receiving any type of pension benefits (old age, disability, widows). Latest year available. **Source:** SIMS database available at <https://www.iadb.org/en/sector/social-investment/sims/home>. Go to the indicators section, select *Social Security, Pensioners and Population aged 65 and over who declare receiving a contributory or non-contributory benefit (%)* and filter by country, gender and year.

2.2 ► Density of contributions

Rate of contribution density (female, male and total): Ratio of total months contributed during an individual's working life to the total number of potential months of contributions (months after education completion).



Latest year available. **Source:** Administrative data or the Longitudinal Social Protection Survey (LSPS) (harmonized database for September 2017), available at <https://www.iadb.org/en/sector/social-investment/sims/home>. Go to the databases section and select *Longitudinal Social Protection Survey (LSPS)*.

2.3 ▶ Adequacy and redistribution

Replacement rate (female and male): A measure of an individual pension entitlement divided by net pre-retirement earnings, considering social security contributions paid by workers. That calculation corresponds to a simulation of a single working life, conditional on the current pension law. It might vary by income quintiles and by the density of contributions. The indicator is calculated as follows:

$$RR_t^i = \frac{p_t^i}{w_{t-1}^i(1 - \tau_{t-1}^c)d_{t-1}^c}$$

Where RR_t^i is the replacement rate, τ_t^c is the contribution rate, d_t^c is contribution density, w_t^i is the individual's salary and p_t^i is the promised pension benefit as defined in the pension law. The person's salary grows at an exogenous growth rate. **Source:** IADB calculations based on the parameters of the pension system.

Implicit rate of return (female and male): The interest rate that a worker would hypothetically have to earn on his/her contributions to pay for the benefits he/she will receive after retirement. This indicator is provided for different income quintiles and contribution densities. The implicit rate of return, r , corresponds to the following:

$$\sum_{t=18}^{R-1} \tau_t^c \frac{d_t^c w_t^i}{(1+r)^t} = \sum_{t=R}^T \frac{p_t^i}{(1+r)^t}$$

Where R is retirement age and T is the expected life span. In the above formulae, the sub-index t indicates the year during the individual's life cycle, while the i th supra-index corresponds to the income quintile. That indicator will vary by income quintile, the density of contribution and gender. **Source:** IADB calculation, using information on the parameters of the pension system.

Implicit subsidy at retirement age (female and male): The difference between the capitalized value of the contributions and the present value of retirement benefits for workers retiring today under current conditions, expressed in percentage points of the replacement rate. This indicator is provided for different income quintiles, contribution densities and genders. To calculate the implicit subsidy, we use the following formulae:

$$S_t^i = \sum_{t=R}^T \frac{p_t^i}{(1+r^m)^{(t-R-1)}} - \sum_{t=18}^{R-1} \tau_t^c d_t^c w_t^i (1+r^m)^{(t-18)}$$

Where the notation is similar to that above but p_t^i corresponds to the average effective interest rate of the pension fund. **Source:** IADB calculation, using information on the parameters of the pension system.



3 ▶ Sustainability

3.1 ▶ Fiscal Sustainability

Projected pay-as-you-go (PAYG) pension spending in 2030: This indicator should include total PAYG expenditures, including non-contributory programs, contributory PAYG programs and recognition bonds (e.g., transition costs associated with system switching from PAYG to fully funded capitalized systems), expected by 2030. It is presented as a fraction of base-year GDP. **Source:** Own estimations using actuarial projection models from IADB when available.

Projected PAYG pension spending in 2060: This indicator should include total PAYG expenditures, including non-contributory programs, contributory PAYG programs and recognition bonds (e.g., transition costs associated with system switching from PAYG to fully funded capitalized systems), by 2060. It is presented as a fraction of base-year GDP. **Source:** Own estimations using actuarial projection models from IADB when available.

Projected PAYG pension contributions in 2030: This indicator shows the projections of expected revenues in the pension system, conditional on the rates of contribution stated in the current pension law and the projected demographic path up to 2030. It is presented as a fraction of base-year GDP. **Source:** Own estimations using actuarial projection models from IADB when available.

Projected PAYG pension contributions in 2060: This indicator shows the projections of expected revenues in the pension system, dependent on the rates of contribution stated in the current pension law and the projected demographic path up to 2060. It is presented as a fraction of base-year GDP. **Source:** Own estimations using actuarial projection models from IADB when available.

Projected PAYG pension deficit in 2030: This indicator shows the expected difference by 2030 between the value of expected contributions and the value of expenditures in PAYG systems. **Source:** Own estimations using actuarial projection models from IADB when available.

Projected PAYG pension deficit in 2060: This indicator shows the expected difference by 2060 between the value of expected contributions and the value of expenditures in PAYG systems. **Source:** Own estimations using actuarial projection models from IADB when available.

Total old-age benefit spending in 2020: This indicator includes projections of total government old -age benefit expenditures, including pensions, health care, and long-term care as a share of GDP. **Source:** IMF Working Paper No. 17/94, Demographic Changes in Latin America: The Good, the Bad and..., April 2017, p. 13, available at <https://www.imf.org/en/Publications/WP/Issues/2017/04/13/Demographic-Changes-in-Latin-America-The-Good-the-Bad-and-44836>.

Total pension assets as a fraction of GDP: This indicator shows total current pension assets (in both mandatory and voluntary savings) as a fraction of GDP. **Source:** AIOS, Statistical Bulletin, June 2019, available at



<http://www.aiosfp.org/estadisticas/boletin-estadistico-aios/?lang=en#>. Information is in sheet 15: *Fondos administrados en relación al PIB (%)*.

3.2 ▶ Social sustainability

Projected Replacement Rate in 2030: Effective replacement rate for future years conditional on the current law benefits schedule, expected changes in life expectancy and expected growth in wage rates. The projected replacement rate in 2030 differs from the effective one in two aspects. First, this indicator delivers results for future years depending on how key assumptions evolve. Second, the key assumptions that differ vis-à-vis the current replacement rate are the growth rate of real wages and the rules for pension benefits—including demography (life expectancy)—that impact the amount to be withdrawn from the pension system.

This indicator shows projected effective replacement rates and is calculated as follows:

$$RR_t^i = \frac{p_t^i}{w_{t-1}^i (1 - \tau_{t-1}^c) d_{t-1}^c}$$

Although this replacement rate indicator is similar to the replacement rate described above, it differs in that it takes into account future demographic changes (for instance, in life expectancy), economic changes (for instance, in real wage growth), and changes in pension rules (for instance, parametric reforms that have already been enacted but have not yet been fully phased in). **Source:** Own calculations using IADB methodology to calculate replacement rates.

Projected Replacement Rate in 2060: Similar to the previous indicator, but in 2060.



4 ► Society preparedness for aging and reform dimension

4.1 ► Awareness

Statutory retirement age awareness (female and male): The fraction of individuals aged 15 to 59 years who indicate that they know the statutory retirement age. **Source:** Longitudinal Social Protection Survey (LSPS) database. Available at <https://www.iadb.org/en/sector/social-investment/sims/home>. Go to the databases section and select *Longitudinal Social Protection Survey (LSPS)*.

Contribution rate awareness (female and male): The fraction of individuals aged 15 to 59 years who indicate that they know the portion of their monthly earnings contributed for pensions. **Source:** LSPS database.

Pension formulae awareness (female and male): The fraction of individuals aged 15 to 59 years who indicate that they have knowledge about how their pensions are calculated. **Source:** LSPS database.

Awareness of fee charged by pension managers (female and male): The fraction of individuals aged 15 to 59 years who indicate that they have knowledge of the pension fee charged by fund managers. **Source:** LSPS database.

4.2 ► Preparedness

Poverty rate of elderly population (female, male and total): Fraction of the old with per capita income below the poverty line. We set the poverty line as half the median household income of the total population of those aged 60 or older. **Source:** Own calculations from the LSPS or household surveys.

Educational attainment of the elderly (female, male and total): Average years of education of individuals aged 60 or older. This indicator is important because educational attainment affects the potential labour income of the elderly. **Source:** World Bank database, Education Statistics, available at <http://datatopics.worldbank.org/education/>. Select the indicator *Projection: Mean years of schooling, Age 60+* and filter by country and age. Data for the year 2020 (latest available).

Co-residency: Fraction of the population aged 60 years or older living with their children. Co-residency is a measure of family ties and thus of family support for the elderly. **Source:** Own calculations from the LSPS or national household surveys.

Family size: We would like to approximate the average number of surviving children of the elderly, as this indicator provides an idea of how much family ties will change in the future. We use the global fertility rate for women from 35 years ago. The global fertility rate is the number of children that an average woman would have in a hypothetical cohort of women who during their fertile life had children according to the fertility



rates by age of the study period and were not exposed to mortality risks from birth to the end of the term of the fertile period (see <https://celade.cepal.org/redatam/PRYESP/SISPPI/Webhelp/fecundidad.htm>). **Source:** CEPAL-CELADE.

Financial wealth: Financial wealth corresponds to the value of assets and housing expressed as a ratio of the annual earnings of people aged 60 or older. **Source:** Own calculations from the LSPS or national household surveys.

Homeownership: Fraction of members of the population aged 60 or older who own their residence (no debt). **Source:** Own calculations from the LSPS or national household surveys.

Health care costs: Out-of-pocket health expenditure as a fraction of total income for the population aged 60 or older. **Source:** Own calculations using national expenditure surveys.



5 ▶ Pension design

5.1 ▶ Description

Non-contributory basic pension: Indicator function equals one if the government provides a non-contributory basic pension and equals zero otherwise. **Source:** Social Security Administration, *Social Security Programs Throughout the World: The Americas, 2015*, available at <https://www.ssa.gov/policy/docs/progdesc/ssptw/2014-2015/americas/index.html>

Beneficiaries of non-contributory basic pensions: These beneficiaries correspond to the targeted population in the non-contributory basic pension system. **Source:** Social Security Administration, *Social Security Programs Throughout the World: The Americas, 2015*, available at <https://www.ssa.gov/policy/docs/progdesc/ssptw/2014-2015/americas/index.html>

Mandatory defined-benefit system: Indicator function equals one if at least a part of the mandatory contributory pension system offers a defined benefit financed on a PAYG basis. **Source:** Social Security Administration, *Social Security Programs Throughout the World: The Americas, 2015*, available at <https://www.ssa.gov/policy/docs/progdesc/ssptw/2014-2015/americas/index.html>

Beneficiaries of mandatory defined-benefit system: These beneficiaries correspond to the targeted population in the compulsory PAYG system. **Source:** Social Security Administration, *Social Security Programs Throughout the World: The Americas, 2015*, available at <https://www.ssa.gov/policy/docs/progdesc/ssptw/2014-2015/americas/index.html>

Mandatory fully funded pension system: Indicator function equals one if at least a part of the mandatory contributory pension system is a fully funded system. **Source:** Social Security Administration, *Social Security Programs Throughout the World: The Americas, 2015*, available at <https://www.ssa.gov/policy/docs/progdesc/ssptw/2014-2015/americas/index.html>

Beneficiaries of mandatory fully funded pension system: These beneficiaries correspond to the targeted population in the mandatory fully funded system. **Source:** Social Security Administration, *Social Security Programs Throughout the World: The Americas, 2015*, available at <https://www.ssa.gov/policy/docs/progdesc/ssptw/2014-2015/americas/index.html>

Voluntary savings for retirement – additional contributions: Indicator function equals one if there exists the possibility of voluntary and additional contributions for a funded pension system and equals zero otherwise. **Source:** *Next Generation of Individual Account Pension Reforms in Latin America*, Social Security Bulletin, Vol. 71, No. 1, 2011, and FIAP annual reports.

Voluntary savings for retirement – separate account: Indicator function equals one if there exists a separate account for voluntary contributions. **Source:** *Next Generation of Individual Account Pension Reforms in Latin America*, Social Security Bulletin, Vol. 71, No. 1, 2011, and FIAP annual reports.



Voluntary savings for retirement – employer’s contribution: Indicator function equals one if an employer is allowed to make additional contributions to employees’ accounts. **Source:** *Next Generation of Individual Account Pension Reforms in Latin America*, Social Security Bulletin, Vol. 71, No. 1, 2011, and FIAP annual reports.

Voluntary savings for retirement – tax incentives: Indicator function equals one if there are tax incentives for additional contributions for a funded pension system. **Source:** *Next Generation of Individual Account Pension Reforms in Latin America*, Social Security Bulletin, Vol. 71, No. 1, 2011, and FIAP annual reports.

Special pension system: Indicator function equals one if at least one parallel government pension system for a particular group of individuals (the army, public employees or others) exists. **Source:** Social Security Administration, *Social Security Programs Throughout the World: The Americas, 2015*, available at <https://www.ssa.gov/policy/docs/progdesc/ssptw/2014-2015/americas/index.html>)

Beneficiaries of special pension systems: It corresponds to the targeted population(s) in the special pension system(s). **Source:** Social Security Administration, *Social Security Programs Throughout the World: The Americas, 2015*, available at <https://www.ssa.gov/policy/docs/progdesc/ssptw/2014-2015/americas/index.html>)

5.2 ▶ Parameters

Employee contribution rate: Fraction of the monthly payroll contributed to the pension system by the employees in the country’s main mandatory pension system. **Source:** Social Security Administration, *Social Security Programs Throughout the World: The Americas, 2015*, available at <https://www.ssa.gov/policy/docs/progdesc/ssptw/2014-2015/americas/index.html>)

Employer contribution rate: Fraction of the monthly payroll contributed to the country’s main mandatory pension system by the employers. **Source:** Social Security Administration (as above).

Government contribution rate: Fraction of the monthly payroll contributed to the country’s main mandatory pension system by the government, not including contributions of the government as an employer. **Source:** Social Security Administration (as above).

Self-employed contribution rate: The fraction of monthly earnings that the self-employed are required by law to contribute to the country’s main mandatory pension system. **Source:** Social Security Administration (as above).

Retirement age: The “normal retirement age” at which (i) an individual is required to retire and/or would be entitled to full benefits in a mandatory PAYG system or (ii) the retirement age at which an individual is allowed to retire and might withdraw account balances in a fully funded pension scheme. **Source:** Social Security Administration (as above).

Early retirement rule: Indicator function equals one if individuals could retire at an earlier age in mandatory systems and equals zero otherwise. **Source:** Social Security Administration (as above).

Wage ceilings on contributions: The salary cap used to calculate contributions to the pension scheme, measured as a multiple of the average earnings of the employees in each country. **Source:** The data on wage ceilings



are from the Social Security Administration (as above), while the data on average earnings of the employees are from the International Labour Organization (ILO).

Requirements for contribution years: Some countries require a minimum number of years of contributions for an individual to obtain benefits upon retiring under a mandatory pension system. This indicator provides that information. **Source:** Social Security Administration (as above).

Indexation rules for benefits: This indicator describes the indexation rules designed to offset the adverse effect of inflation on a pension's purchasing power. **Source:** Social Security Administration (as above).

Time-off compensation mechanism for women: Indicator function equals one if the pension system includes some mechanism for crediting or otherwise compensating women for time not spent contributing to the mandatory pension system because they have taken a temporary maternity leave. The indicator equals zero otherwise. **Source:** Information obtained from PLAC Network countries members' pension authorities.

Unisex mortality tables: Mortality tables are relevant to calculating pension benefits upon retirement, especially in defined-contribution systems that require annuitization or phased withdrawals. This indicator equals one if mortality tables vary between men and women to adjust for different life expectancy. The indicator is zero otherwise. **Source:** Information to be obtained from PLAC Network countries members' officers.

5.3 ▶ Pension Governance

Superintendence of pensions: Indicator function that equals one if there is superintendence that provides general supervision of the pension system. The indicator function is zero if there is no superintendence or other institution playing that role. **Source:** Social Security Administration (as above).

Private pension fund management companies: Indicator equals one if there are pension fund management companies that administer individual accounts and equal to zero otherwise. **Source:** AIOS bulletin.

Public pension fund manager: Indicator function equal to one if there is a public institution that administers pension funds and equal to zero otherwise. **Source:** Social Security Administration (as above).

5.4 ▶ Investment Policies, Fees and Industry Concentration

Multi-funds: Indicator function equal to one if individuals have the possibility to choose investment funds with varying risk profiles in investing their mandatory pension contributions and equal to zero otherwise. There is also a third NA (not applicable) value if a country with a mandatory funded DC system does not have multi-funds. **Source:** AIOS bulletin.

Equity: Fraction of a portfolio invested in local equities in a mandatory defined-contribution pension system. There is also a third NA (not applicable) value if a country has no mandatory funded DC system. **Source:** AIOS statistical bulletin.



Investment abroad: Fraction of a portfolio invested in foreign assets in a mandatory defined-contribution pension system. There is also a third NA (not applicable) value if a country has no mandatory funded DC system. **Source:** AIOS statistical bulletin.

Equity portfolio ceilings: This indicator contains portfolio ceilings on pension fund investment in equities. **Source:** OECD Annual Survey of Investment Regulation of Pension Funds, 2017 or latest available.

Real estate portfolio ceilings: This indicator contains portfolio ceilings on pension fund investment in real estate. **Source:** OECD Annual Survey of Investment Regulation of Pension Funds, 2017 or latest available.

Bonds portfolio ceilings: This indicator contains portfolio ceilings on pension fund investment in bonds. **Source:** OECD Annual Survey of Investment Regulation of Pension Funds, 2017 or latest available.

Restrictions on foreign investment: Quantitative restrictions on foreign investment, along with the geographical areas or markets such restrictions apply to. **Source:** OECD Annual Survey of Investment Regulation of Pension Funds, 2017 or latest available.

Fees for the management of pension funds: Net fees charged to participants in mandatory defined-contribution pension systems as a fraction of net contributions collected. There is also a third NA (not applicable) value if a country has no mandatory funded DC system. **Source:** AIOS statistical bulletin.

Profitability: Annualized real profitability of funds (net of inflation) during the last 12 months. **Source:** AIOS, Statistical Bulletin.

Number of fund managers: Total number of pension fund managers in operations. **Source:** AIOS, Statistical Bulletin.

Funds managed by 2 major administrators: Fraction of total funds managed by the two largest pension fund managers. **Source:** AIOS, Statistical Bulletin.

Accounts managed by 2 major administrators: Fraction of total accounts managed by the two largest pension fund managers. **Source:** AIOS, Statistical Bulletin.

5.5 ▶ Retirement Products

Lump sum retirement income: Indicator function equal to one if pensioners might receive any pension income as a lump sum. **Source:** Social Security Administration (as above).

Programmed withdrawals: Indicator function equal to one if pensioners could receive pension income through programmed withdrawals. **Source:** Social Security Administration (as above).

Annuities: Indicator function equal to one if pensioners could receive pension income through annuities. **Source:** Social Security Administration (as above).

