Toward an Inclusive, Equitable, and Sustainable National Pension System in Iraq

Prepared by staff of the International Monetary Fund (IMF),
the International Labour Organization (ILO) and the World Bank

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Contents

BOXES

FIGURES

TABLES

Glossary

GDP	Gross Domestic Product
ILO	International Labour Organization
IMF	International Monetary Fund
KRI	Kurdistan Region
MENA	Middle East and North Africa
MoF	Ministry of Finance
MoLSA	Ministry of Labor and Social Affairs
NBP	National Board of Pensions
SPF	State Pension Fund
SSN	Social Safety Net

Executive Summary

A comprehensive pension reform is urgently needed in Iraq. Iraq's current pension system is highly fragmented, inequitable, and inefficient. The pension coverage gap in old age is projected to rapidly widen, particularly for women outside the labor market and informally employed workers. Moreover, under current policies, the total fiscal cost of the public, private, and budget-financed pensions is expected to remain close to 4 percent of GDP annually for the next eight decades. Fiscal spending on pensions would continue to disproportionately benefit relatively better-off formal workers participating in public and private contributory schemes. Finally, the system creates an uneven playing field between the public and private sectors, contributing to the continued expansion of an already-outsized civil service and holding back much-needed economic diversification and private sector growth.

Based on collaboration between the IMF, International Labour Organization (ILO), and the World Bank, this paper has three main goals: (1) Assess the existing public and private pension system on the key dimensions of fiscal sustainability, labor market implications, coverage, and adequacy of benefits. (2) Propose a core set of parametric reforms to be applied across both the public and private sector pension systems, along with options for the institutional and administrative realignment of the respective schemes. (3) Provide a basis to engage key stakeholders on strategies to achieve a more inclusive system. Building on the reform proposals presented here, convergence on the specific reform options and parameters should result from further discussions and dialogue among all relevant stakeholders in Iraq.

The proposed reforms deliver on key interrelated objectives. The reforms would both substantially reduce the overall fiscal costs of the pension system and reallocate public funds to extending pension protection to the most vulnerable segments of the population. Implementing the proposed parametric reforms under either of the institutional realignment options is expected to reduce the fiscal cost to around 0.7 percent of GDP by 2075, thereafter reaching between 0.1 and 1 percent of GDP by 2100. This long-term cost would reach between 0.8 and 1.8 percent of GDP if a Pillar 0 pension is also introduced to cover those without income in old age. At the same time, the proposed reforms ensure that replacement ratios are more aligned between the public and private sectors, and across future cohorts of pensioners; that coverage of private sector workers is expanded; that incentives for contribution throughout working life are in place and the pension system fosters economic participation and formalization; that a system of regular pension indexation maintains benefit adequacy over time; and in the case of the Pillar 0 pension, that coverage is extended to those without pension income in old age.

Implementing a comprehensive pension reform should be seen as a gradual, multistage, and multi-year process owing to various political economy, capacity, and other constraints. To ease some of the political economy and capacity constraints, a gradual process with the appropriate sequencing of reforms will be key. A broadly consultative process will be required, ensuring that key stakeholders (including those representing the currently uncovered) are included to build consensus on the pension reform. Considering the complexity of the political economy of pension reforms, good communication to the public of the chosen reforms will be crucial.

1. Background and Motivation

A pension system is at the heart of social protection. By ensuring income security for older persons and other vulnerable groups, it prevents poverty, reduces inequality, and facilitates consumption smoothing. A pension system also affects the working population's labor market choices and has important fiscal implications. Iraq's current pension system is highly fragmented, inequitable, and inefficient. First, it fails to provide adequate income protection to most of Iraq's old-age population and other vulnerable groups, such as survivors and persons with disabilities. Second, the public sector pension is already putting substantial pressure on the budget and is potentially unsustainable given the projected acceleration of the total pension bill due to recent policy changes. Third, it sets an uneven playing field between the public and private sectors, contributing to the continued expansion of an already-outsized civil service and holding back much-needed economic diversification and private sector growth (Box 1). Thus, a comprehensive pension reform is urgently needed and would align with commitments made by the Government of Iraq through the ratification of ILO Convention No. 102 (Appendix 1).

Based on collaboration between the IMF, ILO,[1] and the World Bank,[2] this paper aims to (1) Provide an assessment of the existing public and private pension system across the four dimensions: fiscal sustainability, labor market implications, coverage, and adequacy of benefits. (2) Develop and propose options to adjust the pension system with a view to improve adequacy of benefits and expand coverage, enhance financial and fiscal sustainability, make the system viable across generations, reduce distortions in the labor market, and align the system with international social security standards and international best practices. (3) Provide a basis to engage key stakeholders—including workers, employers' organizations, and the civil society—on strategies to achieve a more inclusive system, importantly by including workers in the informal economy, female workers, workers with disabilities, and other disadvantaged groups. The reform proposals presented here provide one possible route to address the most critical shortcomings of the current fragmented system, in line with international standards and good practices. Convergence on the specific reform options and parameters should result from further discussions and dialogue among all relevant stakeholders in Iraq.

This paper is structured as follows. Section 2 presents an overview of Iraq's current pension system, after which Section 3 discusses the key challenges. Section 4 outlines the core principles underpinning the proposed reforms, which are laid out in Section 5. Section 6 presents the impact of the different reform options on key outcomes. Section 7 discusses options to further expand the coverage of Iraq's pension system to those who would remain uncovered. Section 8 outlines key considerations for the long-term financing of the reformed pension system. Section 9 concludes.

[1] The ILO actuarial model for Iraq, on which part of the results presented in this paper are based, was developed by the ILO in the context of the program "Social Protection for Iraq: Leveraging Effective Response and Accelerating Reform" funded by the European Union.

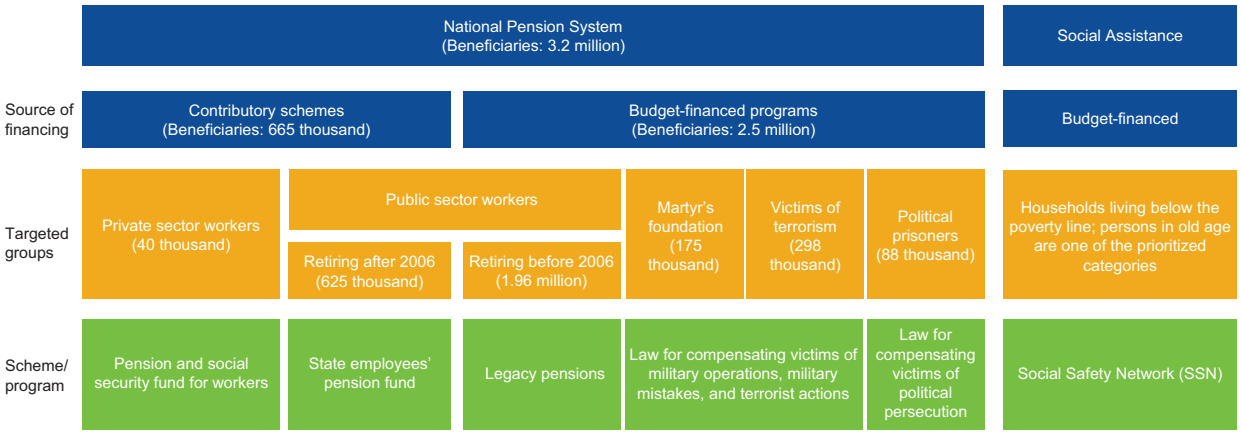
[2] In 2010, a World Bank–executed grant was launched for a Pension Reform Implementation Support Technical Assistance (PRISTA) in Iraq. The PRISTA approach was to provide comprehensive support to the NBP in implementing reforms in the pension system. Given the complex and challenging nature of these reforms, all aspects of the NBP focused toward achieving an effective organization capable of meeting these challenges: (1) Institutional Development, (2) Organizational Functions, and (3) Individual Capacity.

2. Overview of the Pension System in Iraq

Iraq's pension system represents a mosaic of fragmented schemes owing to the country's difficult political history (Figure 1).[3] A contributory pension scheme serves public sector employees and is characterized by high coverage among these workers and relatively generous rules and benefits. This includes public sector workers who retired before 2006 and their survivors,[4] whose pensions are funded from the government budget. Alongside, a contributory pension scheme exists for private sector workers, which was recently reformed through legislative changes in 2023, and is characterized by low coverage and benefits that are less generous than in the public sector. A third branch of the pension system comprises budget-financed pension schemes for beneficiaries of the contributory system before 2006, plus noncontributory benefits for families of martyrs, and victims of terrorism and political persecution. Even with a net that is spread wide, the majority of the old-age population does not receive individual pensions but instead depends on other parts of the household-based and poverty-targeted social safety net (SSN) program, personal savings, intrahousehold financing, and other informal support.

The SSN program provides some protection to households living below the poverty line who are not covered by the contributory pension system, including older persons. Approximately 225,000 older persons live in households that benefit from cash transfers through the national SSN program. This assistance does not constitute an individual entitlement as the program objective is to address household poverty, as opposed to individual life-cycle vulnerabilities. Other components of the budget-financed national social assistance systems—such as the quasi-universal food voucher–based Public Distribution Scheme—do not have a specific old-age protection objective.

Figure 1: Structure of Iraq's National Pension System and Other Social Support for Persons in Old Age



Source: Authors' illustration, using data from Iraqi authorities at the end of 2022.

Contributory Pension Scheme for Public Sector Employees

- In the wake of the 2003 war, the pension system for public sector employees was dismantled, and regular pension payouts were replaced with emergency flat payments financed by the government budget. In subsequent years, the pension system for the public sector was gradually restored with key changes taking place in 2006, 2009, 2014, and 2019–20.

[3] This paper refers to Iraq's Federal System to which the main high-level recommends apply; however, specific analysis of the Kurdistan Region (KRI) was not conducted. Throughout the paper, we loosely refer to Iraq's "pension system" when referring to the group of different pension schemes, without implying that it is a unified system.

[4] This year is used as a benchmark since the first post-war pension law was adopted in January 2006.

Box 1: Labor Market and Demographic Context

Iraq's labor market is characterized by low participation rates, high unemployment, and a relatively large share of public sector employment. The 2021 Labour Force Survey found the overall labor force participation rate to be under 40 percent, and that of women reaching only 11 percent. Unemployment reached almost 17 percent overall and 28 percent for women. Employment is heavily weighted toward the public sector, which accounts for 37 percent of all jobs. Employment in the informal economy is also high at 54 percent of total employment. A dominant role of the state in the economy, a high public sector wage premium, and generous pension benefits explain these distortions in the labor market and weak private sector job creation.

Significant demographic shifts are expected in the coming decades (see Appendix 2). Currently, 56 percent of Iraq's population are under the age of 25. With a gradual slowing of the population growth, the share of people over the age of 65 could quadruple from 3 percent currently to 12 percent by 2070. Taken together, the labor market and demographic trends imply that increasing numbers of workers in the informal sector, women, and the structurally unemployed could be exposed to income uncertainty in old age. Without significant reforms, the pension system and other parts of the social protection system may become unsustainable.

Source: IMF Iraq Article IV (2022), ILO Demographic Projections, LFS 2021

- The first post-2003 pension law was adopted in January 2006 and amended in December 2007, becoming known as the Unified Pension Law of 2007. The law split the pension system for public sector workers into two parts:
  - The so-called "legacy pensions," which represented payments to public sector employees, or their survivors, who retired before January 17, 2006.[5] These payments were paid out of the government budget and managed by the National Board of Pensions (NBP) that was formed under the Ministry of Finance (MoF); and
  - A new contributory, pay-as-you-go defined benefit pension scheme for civil servants, military and security personnel,[6] and employees of state-owned enterprises retiring after January 17, 2006. Administration of the new contributory system was entrusted to the newly created State Pension Fund (SPF), an administrative unit under the NBP.[7]
- The Unified Pension Law (Law 9/2014), which was adopted in February 2014, largely governs the current contributory pension scheme for public sector workers. The law left the institutional and financing arrangements of the pension system for public sector workers unchanged but updated pension parameters (rules and benefits), including an almost doubling of the minimum pension to ID 400,000 and introduction of pensions for retirees' survivors without a private source of income, profession, or position in the private sector. Pension contributions were increased to 10 percent for employees and 15 percent for the state.

[5] While these beneficiaries had contributed to the previous pension system, their contributions were not transferred to the State Pension Fund.

[6] In addition to participating in the main public sector pension scheme, uniformed personnel are also provided with some additional pension benefits. Due to insufficient information on parameters that are specific to the uniformed personnel and disaggregated data, in this analysis, uniformed personnel are grouped with public sector workers under the same set of rules and benefits for both contributory and budget-financed schemes.

[7] Contributions to the SPF were set at 7 percent of employees' earnings (sum of base salary and allowances), with the government contributing 12 percent of the same base. The mandatory retirement age was set at 63, with a vesting period of 15 years of service.

- The 2014 Unified Pension Law was amended in December 2019 after widespread social unrest during the preceding months. The amendments expanded eligibility and increased pension benefits while leaving the contribution rates unchanged. The mandatory retirement age was lowered from 63 to 60, and eligibility for early retirement was relaxed from 20 years of service and a minimum age of 50 years to 15 years of service and a minimum age of 45 years. The minimum pension benefit was raised from ID 400,000 to ID 500,000.[8]

Contributory Pension Scheme for Private Sector Employees

- In May 2023, the Council of Representatives in Federal Iraq adopted the new Social Security Law for Private Sector Workers, which aimed to expand legal coverage and the range of benefits. This law supersedes the Law of Pensions and Social Security No. 39 of 1971, amended by Law No. 89 of 1979. Pension benefits remain lower than in the public sector, largely because there are no additional allowances.

Box 2: Main Reforms Introduced under the 2023 Social Security Law for Private Sector Workers

The new law has brought about several reforms to the social security system including to the pension and survivor benefits. The legal coverage is expanded to include all workers, including informal workers and the self-employed on a voluntary basis. The new law introduces, for the first time, social insurance-based maternity and unemployment benefits. To qualify, workers must have six months and two years of contributions, respectively.

The law introduces several changes to the qualifying conditions and benefit calculation for the pension and survivor benefits. These include, among others, the following:

- The retirement age is increased from age 60 (55 for women) to 63 (58 for women), with contribution requirements set at 15 years.
- Minimum and maximum pensions are introduced for the first time, set at 100 percent of the monthly minimum wage and 80 percent of the reference salary, respectively. A contribution ceiling is also introduced, set at five times the minimum wage.
- The reference salary, formerly aligned with the public sector scheme at average wage during the last three years prior to retirement, is extended to five years.
- A mechanism for the periodical revision of pension amounts to keep pace with inflation, upon a proposal from the board and approval of the Minister of Labour.
- Pension shares for survivors are revised to align with those under the public sector scheme.

On the financing front, the new law introduces a government contribution for workers excluding those in the oil sector and migrant workers. The government contribution is set at 8 percent of covered earnings for registered formal workers and 15 percent of the income category chosen by the voluntarily insured for self-employed and informal workers.

[8] Minimum pensions and pension payouts are not automatically indexed to inflation but are adjusted on an ad hoc basis, with the most recent change to minimum pensions implemented in 2020.

- Private enterprises covered include those within and outside the oil sector, as well as mixed-sector enterprises (private companies with minority government ownership) and the cooperative sector. Compared to the previous law, the new law expands legal coverage to include all workers, with voluntary participation for the self-employed and those categorized as "informal."
- Effective coverage of the scheme is low, with regulatory hurdles and weak uptake. The private sector pension scheme effectively covers about 500,000 workers, who are currently registered with and contribute to the scheme.[9]

Budget-Financed Pension Schemes

- Three additional budget-financed schemes complete Iraq's national pension system. These were created in October 2009 through Law No. 20 titled "Compensating the Victims of Military Operations, Military Accidents and Terrorist Actions," which made victims of war, terrorist acts, and political persecution by the former regime eligible for various forms of compensation. Eligibility was made retroactive to March 2003 and includes the victims' families, notably parents, children, spouses, and siblings.
- The pension system for public sector workers and budget-financed pension schemes (legacy pensions and others) covers almost 3.1 million beneficiaries. Of these, 0.6 million are beneficiaries of the contributory SPF (405 thousand primary beneficiaries, 199 thousand dependents). Of the more than 2.5 million beneficiaries of the budget-financed pension system, 1.96 million are recipients of legacy pensions, that is, those who retired prior to the reform of 2006. Victims of terrorism, martyrs and their families, and the politically persecuted are covered under the remaining component of the budget-financed pension system. Overall, budget-financed pension payouts amounted to over 13 trillion ID (4.4 percent of GDP) in 2021.

[9] The new law extends legal coverage to all private sector workers, meaning that unlike under the previous law, all workers are eligible to participate in the private sector pension scheme. However, participation is voluntary for those in the informal economy and the self-employed, while it is mandatory for formal employees.

3. Challenges of the Existing Pension Architecture

Coverage Gaps

Low effective coverage characterizes the private sector scheme, driven by low mandatory legal coverage and weak uptake. Based on recent amendments, it is estimated that only about half (2.6 million) of individuals employed in the private sector are wage employees and legally covered on a mandatory basis. The rest are now eligible on a voluntary basis, including 1.9 million self-employed workers, 405,000 family workers, and 383,000 employers. The current number of active contributors of approximately 500,000 workers brings effective coverage of contributory pensions in the private sector to 9 percent of all working persons.[10] The covered workers in the private sector are comprised mainly of men, reflecting the gender gap in labor force participation and the high share of employed women working in the public sector. Among the subset of legally covered workers, low uptake can be explained by several factors, including lack of awareness of rights and obligations (among both workers and employers), complicated administrative procedures required for registration, mistrust of government institutions, and potential unaffordability of contributions (ILO 2021a). The capacity of the government to enforce compliance with the provisions of the law is also constrained due to the low number of labor inspectors employed by the Ministry of Labor and Social Affairs.

Public and private contributory pensions combined are estimated to cover 70 percent of men and 45 percent of women above 65 years of age in 2023.[11] Low rates of female labor force participation and high informality among working women are major factors of gender exclusion from the contributory schemes. The fast-unfolding demographic transition, leading to a significant increase in the number of older persons in the Iraqi population, will further rapidly erode pension coverage rates from contributory schemes among the older population, especially women.

Financial Sustainability

The financial sustainability of Iraq's current pension system is at risk due to a structural imbalance between the sources of financing and benefit entitlements, with additional fiscal pressures arising from budget-financed pensions in the short run, and the new government contribution to private sector pensions in the medium to long run. The structural imbalance is expected to lead to rapidly declining reserves of the SPF, given the higher benefit ratios of public sector pensions, including for survivors.[12] The reserves of the private sector scheme are also expected to have a downward trajectory driven by demographic changes. These trends along with the large budget-financed spending on legacy pensions, other budget-financed pensions, and newly introduced budget contributions to private sector pensions will draw significant fiscal resources for decades to come. These risks to the financial sustainability of the system raise concerns

[10] Throughout the preparation of the report, authorities communicated figures ranging between 300,000 and 500,000 active contributors to the private sector pension scheme. It was not possible to verify these figures, and the upper bound has been used for the purpose of the analysis. Adopting a more conservative assumption on the number of contributors wouldn't alter the substantive findings and policy implications presented in the paper.

[11] See Figure 13 for coverage rates and Appendix Figure 3.7 for the distribution of pensions in payments by gender.

[12] Survivors include the beneficiary's sons or brothers up to the age of 18 years (22 years if continuing with higher/secondary schooling, and 26 years if continuing with university education); daughters or sisters if unmarried and without a Shari'a provider; widows if remained unmarried; and husband or father if they have a complete and permanent disability (disability included being above the age of 63).

about whether intergenerational equity[13] can be achieved without relying on additional fiscal contributions to pensions in the future, which would in turn impact macroeconomic stability, or increasing contributions from workers and employers to economically unaffordable levels.

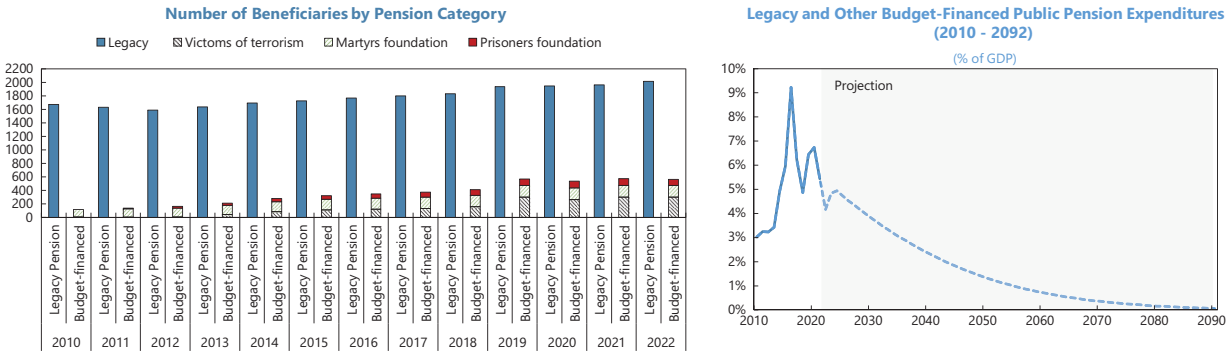
Budget-financed pension spending has increased in recent years due to newly identified eligible beneficiaries of the legacy pensions for public sector workers and because of rising numbers of beneficiaries of the other budget-financed pension categories (Figure 2).

- New primary beneficiaries of the legacy pensions, who were not originally identified as pre-2006 retirees due to weaknesses of the eligibility verification process, have been recognized in subsequent years and added to the system. In addition, benefits have been transferred to a wide range of dependents and survivors after the passing of the primary beneficiary. As a result, between 2010 and 2021, the number of legacy pension recipients increased from 1.7 million to almost 2 million, while the overall legacy pension spending exceeded 10 trillion ID (3 percent of GDP).

- The martyrs' fund expanded in size in the wake of the war with ISIS, with the number of primary beneficiaries rising from 139,469 in 2013 to 176,884 in 2021. Alongside, the number of beneficiaries categorized as victims of terrorism has more than doubled since 2016, reaching an estimated 298,460 in 2021. Similarly, the number of beneficiaries deemed as victims of political persecution has increased ninefold to 100,000 between 2011 and 2021. Liabilities under these three budget-financed schemes amounted to more than 3 trillion ID in 2021 (1 percent of GDP). While actual payment amounts varied over time reflecting periods when budgetary financing was insufficient to meet claims—leading to a buildup of arrears—total pension claims from the budget-financed schemes have continued to trend upward.

- Looking ahead, the fiscal costs of budget-financed pension schemes are expected to remain elevated due to extensive survivor benefits, which appear generous in international comparison, leading to a slow decay of the stock of pension liabilities.[14] While it is expected that very few new primary beneficiaries will be added to legacy pensions going forward, given the generous survivor benefits, budget payments are

Figure 2: Legacy Pensions and Other Budget-Financed Pensions: Number of Beneficiaries and Actual and Projected Fiscal Costs under the Baseline



Source: Staff calculations using data from authorities as at the end of 2022.

[13] See footnote 24 for elaboration.

[14] For example, eligibility for survivor benefits covers single/widowed/divorced daughters, parents, single sisters, etc. while in the rest of the world, only spouses and children are generally defined as eligible. The qualifying conditions for survivors do not include an age limit or, in the case of spouses, a minimum number of years a person needs to be married to the principal beneficiary, while other countries, on average, use less permissive criteria for such entitlements. Finally, survivors typically receive 100 percent of the deceased's entitlements, in line with various MENA countries, significantly higher than is the norm in other regions of the world where entitlements are capped at 50–70 percent.

expected to remain above 1 percent of GDP for the next 20 years, only completely unwinding in 60 years (Figure 2).[15] However, a potential worsening of the security situation could lead to a surge in the number of claimants under the schemes for martyrs and victims of terrorism. In total, the legacy and budget-financed pensions are projected to cost 4.9 percent of GDP in 2024, gradually declining to 1 percent of GDP in 30 years and completely unwinding over the following 30 years.

The financial sustainability of the contributory pension scheme for public sector workers was eroded by the 2019–20 amendments to the public sector pension law which expanded eligibility, lowered the retirement age—thus also reducing aggregate contributions—and increased pension benefits.

- In the past, helped by the rising government payroll, the SPF was able to mobilize sufficient revenues to cover its expenditures and build up a reserve fund, which exceeded ID 12 trillion at the end of 2018 (4.5 percent of GDP). Since 2006, owing to political economy factors and a social compact based on job creation by the government, the public sector payroll grew rapidly to reach 19.8 percent of GDP in 2020 (almost half of all current spending),[16] covering over 35 percent of the labor force. Despite the growth in public employment, demographic changes will result in a rapid fall in the support ratio—the ratio of contributors to pensioners—from 4.44 in 2022 to 2.01 in 2030, falling below 1 after 2060 (Appendix Table 3.2).

- The contributory pension system for public sector workers features larger payouts and shorter service duration requirements relative to international comparators (Figure 3). The average benefit ratio—average pension as a percentage of the average wage of contributors—has been already among the highest in the region and increased even further from 196 percent in 2013 to 253 percent in 2019, while the retirement age of 60 years is one of the lowest. In addition to the high benefit ratio, individual replacement rates are also high due to the use of only the last three-year average of an employee's salary for pension calculations, a high accrual rate, and the existence of numerous allowances that boost the overall payout.[17]

- These pension rules can lead to pension income oftentimes being higher than public sector workers' pre-retirement income. Baseline projections under current policies indicate that the average public sector replacement ratio for the bottom third of the monthly earnings distribution will peak at 170 percent in 2033 and remain above 150 percent for another three decades, and that for the top third will remain above 100 percent for the next 25 years (Figure 4).[18]

- These elements have contributed to the situation whereby expenditures (payments to beneficiaries) are now higher than revenues from contributors, with the gap widening since 2019. As a result, the SPF has been running deficits which reached ID 1.6 trillion (0.5 percent of GDP) in 2021. Baseline projections indicate that under current trends, SPF reserves could be depleted by the end of 2026, requiring budgetary financing of 1 percent of GDP in 2026, which would gradually rise to over 3 percent of GDP in the following

[15] Data were not available on the separation of current legacy pensions between primary pensioners and survivors; hence, it was assumed that they were all primary pensioners, which represents an overstatement of future expenditures. On the other hand, it was assumed that no new legacy pensioners would emerge in the future. These two effects may cancel each other to a certain extent. In addition, it is assumed that legacy pensions will be indexed annually in line with CPI. There is thus some flexibility for the government to control future costs through the ad hoc adjustment of these pensions.

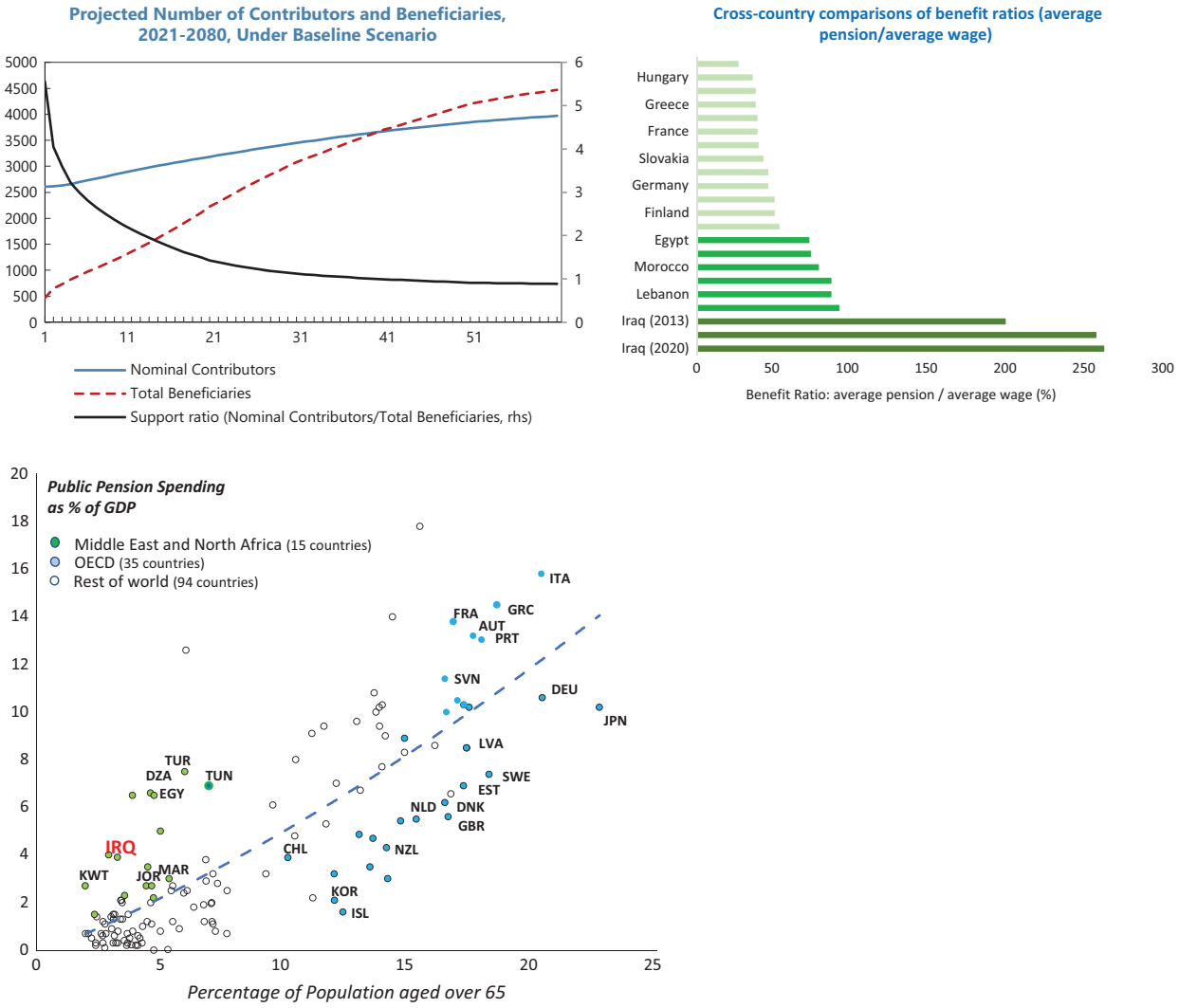
[16] Smoothening over the drop in the GDP denominator in 2020 and the atypical hiring freeze that affected the numerator in 2021, the three-year average wage bill during 2019–2021 was 16.2 percent of GDP.

[17] These allowances are regressive, benefiting high-income employees more in retirement relative to other employees. In the case of the education allowance, for example, an employee with a higher level of education would expect higher wages over the course of their career (and higher pensions), and would get an additional boost in pension payouts due to the education allowance.

[18] The replacement ratios for the middle salary band of public sector workers increase faster than the lower salary band over time due to the livelihood and degree allowances provided to many beneficiaries falling into this group. For the high-wage group, the limit on the maximum pension results in a flatter curve over time. Higher replacement ratios for low-income earners are driven by minimum pension entitlement, and this is very sensitive to the assumption on the future evolution of minimum pensions because a substantial number of public sector workers receive very low salaries.

four decades (Figure 5).[19] Iraq, like some other MENA countries,[20] has higher spending than other countries with similar shares of old-age populations (Figure 3, bottom panel). This is due to various factors, including the generosity of the public sector scheme, high numbers of survivors, and early retirement.

Figure 3: Projected Support Ratio of SPF and Cross-Country Comparison of Benefit Ratios and Public Pension Spending



Source: ILO actuarial and World Bank PROST models.

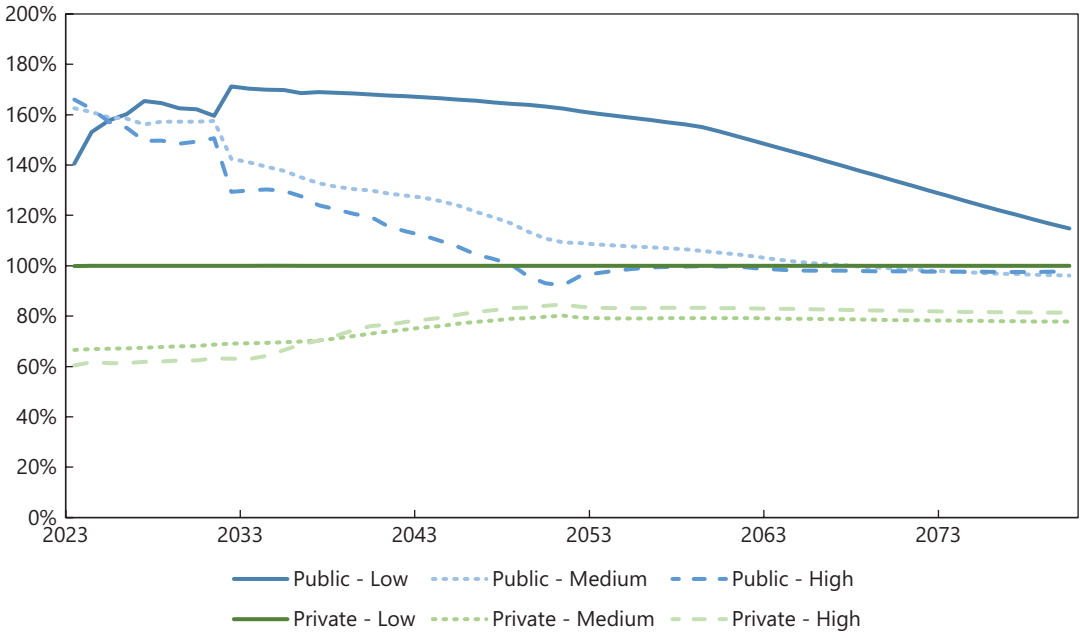
Source: European Commission data and World Bank pensions data.

Source: World Bank.

[19] The initial SPF reserve was established at 11.6 trillion at the end of 2021 based on the information received from the National Board of Pensions. Some receivables may not be included in that reserve amount, but any realistic readjustment of the initial reserve would not materially affect the main conclusions of the paper. After 2021, SPF balances were simulated using ILO actuarial and World Bank PROST models.

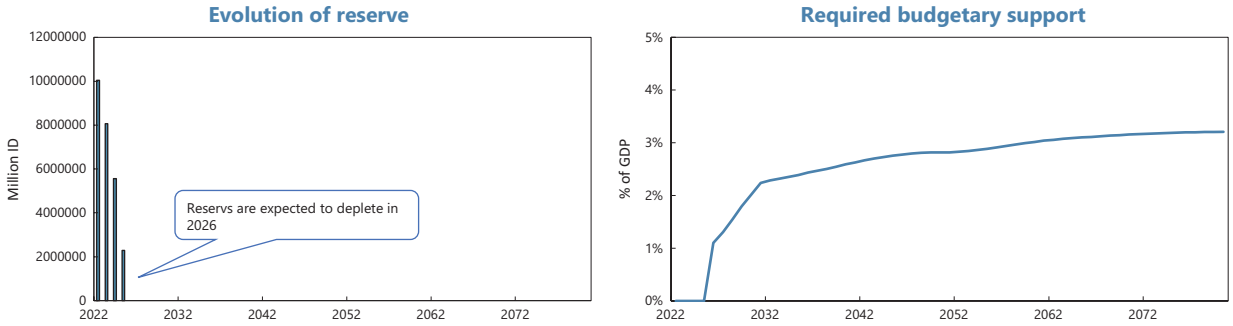
[20] One peculiarity of the MENA region that makes such systems costly is the generous survivorship pension programs. Most countries have higher marriage and fertility rates and lower divorce rates than most other regions worldwide. Labor force participation rates of prime-age women are only about one-third those of men. More than 20 percent of pension beneficiaries in the MENA region are survivors (for example, widows and orphans). Another peculiarity of the region is that early retirement is widespread; more than one-third of all pension program beneficiaries in the MENA region are younger than 50.

Figure 4: Baseline Projections of Benefit Ratios, Public and Private Sectors, 2023–80



Source: Authors' simulations based on ILO actuarial and World Bank PROST models. Note: The benefit ratio is defined as the ratio of the average pension of new old-age pensioners in a year to the average earnings of all active insured persons in the same year.

Figure 5: Baseline Projections of Public Sector Pension Scheme Reserves and Fiscal Costs, 2022–80



Source: Authors' simulations based on ILO actuarial and World Bank PROST models.

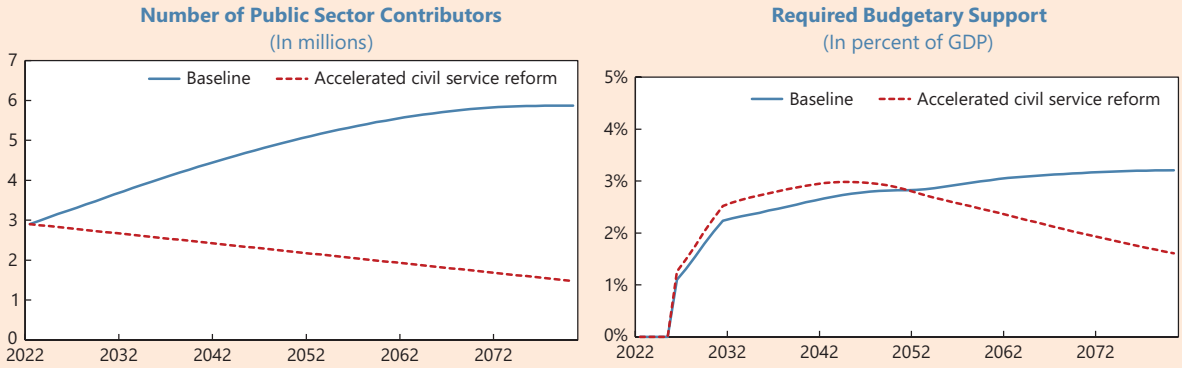
The contributory pension system for private sector workers, although significantly less generous than the public sector scheme, features large payouts for some groups of workers relative to international comparators, driven especially by the pension formula and entitlements to early retirement.

- The new private sector pension law is projected to bear a positive impact on the long-term financial sustainability of the system, by delaying the point of exhaustion of reserves beyond 2070 (Figure 6). This effect is, however, mostly caused by an increase in revenues—by committing government funding in the form of universal contribution subsidies for all private sector workers—as opposed to structural reforms of benefits and rules. Except for the increase in the normal retirement age, the new law does not address the main drivers of cost and inequity in the scheme design: generous early retirement options, benefit formula based on last five years average wage and a relatively high accrual rate, and an extensive definition of eligible survivors. Because of this, without this new source of government funding, the private sector pension system would face significant financial sustainability challenges already in the medium term (with a projected reserve exhaustion point in 2051).

Box 3: Sensitivity of Baseline Projections to Civil Service Reform

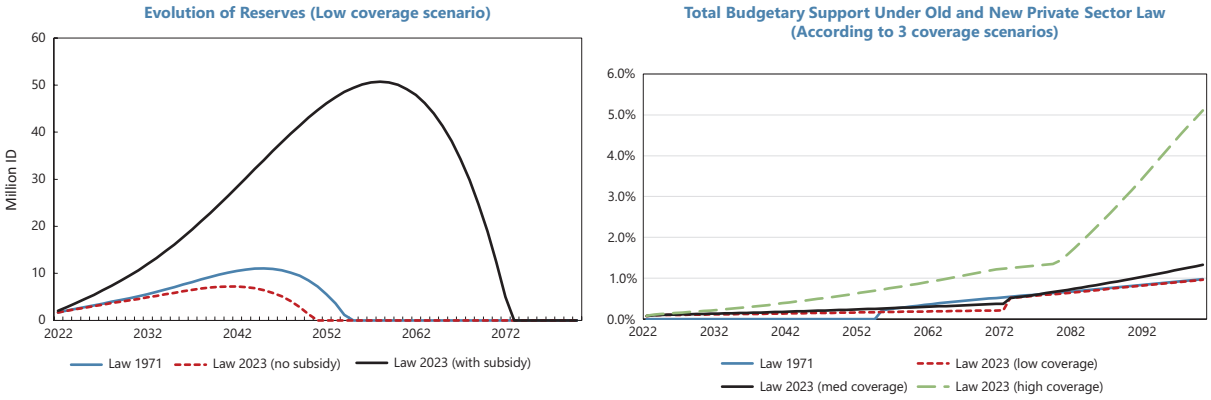
Financial sustainability of the SPF is also linked to the future path of government payroll, which should inform the calibration of future changes to the pension system. The baseline projection assumes that the percentage of new labor force entrants to the civil service each year decreases from 30 percent in 2022 to 15 percent by 2100. Although the overall payroll would continue to grow due to robust overall population growth, the SPF deficit is expected to widen to over 3 percent of GDP in the long run.

In the scenario of an accelerated wage bill reform and potential transition of public sector workers into the private sector—modeled as an attrition of the government workforce to almost half its current size by 2080—the SPF deficit is projected to widen and reach its peak at around 3 percent in the 2040s and then steadily decline to below 1.5 percent by the 2080s. Accelerated civil service reforms would result in fewer employees (contributors) early in the time horizon, leading to larger SPF deficits relative to the baseline. However, fewer public employees in the system would lower the future stock of pension liabilities due to fewer retirees, reducing the burden on the SPF and resulting in lower deficits after 2050 relative to baseline.



- The government's direct commitment to contribution subsidies, coupled with the implicit liability as guarantor of the social security system after the projected depletion of reserves, will result in the private sector scheme requiring a gradually rising budgetary support. Under different assumptions on coverage expansion, the fiscal cost is expected to reach between 1 percent and 5 percent of GDP in the long

Figure 6: Baseline Projections of Private Sector Scheme Reserves and Fiscal Costs, 2022–2100



Source: Authors' simulations based on ILO actuarial and World Bank PROST models.

term (Figure 6). The magnitude of the fiscal support required will critically depend on the coverage of the system—as the more the workers participating in the system, the larger the amount of government subsidies due.[21]

- As shown in Figure 4, baseline projections indicate that replacement ratios for retirees in the top third of the salary range are expected to increase from about 60 percent in 2022 to over 80 percent in 2045. Replacement ratios for retirees in the lowest third of the salary scale are expected to be stable at 100 percent (minimum pension is equal to 100 percent of the minimum wage).

Owing to the combination of explicit and implicit government financial liabilities on legacy pensions, and the public and private sector pension schemes, government spending on pensions is projected to increase to 6 percent of GDP and remain at around 4 percent of GDP for the projection period (70 years) (Figure 7). Furthermore, it is not realistic to finance the deficit by an increase in contributions since the contribution rates required by workers and employers to achieve financial sustainability of the current pension schemes would be economically unaffordable (Table 1).

Figure 7: Projections of Total Fiscal Costs of Pension Schemes under the Baseline, 2022-92

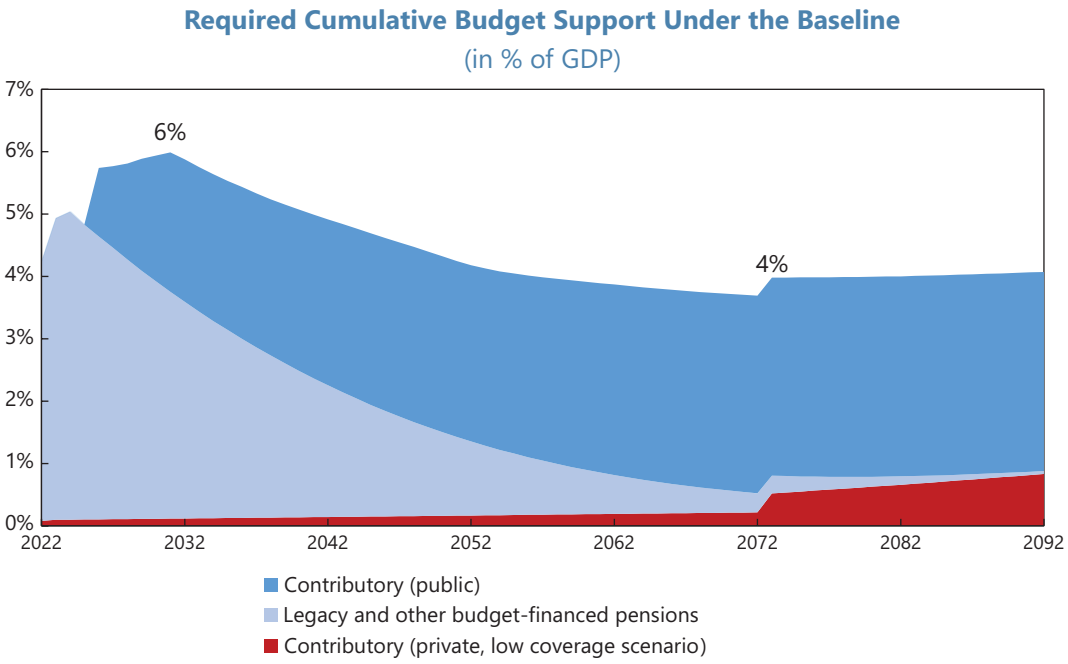


Table 1: Current and Long-Term Stable Contribution Rates: Public and Private Sectors

	Public Sector	Private Sector (2023 Law)
Current contribution rate	25.0%	13.0% (non-oil) 20.0% (oil)
Long-term stable contribution rate necessary to achieve long-term financial sustainability without additional fiscal expenditure	88.6%	35.9% (low coverage scenario)

[21] In Figure 6, we project three possible coverage scenarios (low, medium, and high) which are aligned with the future coverage assumptions that are further discussed in Section 7 (Table 6).

Pension Adequacy and Labor Market Implications

Pension benefits are not anchored in robust measures of adequacy[22] and are not adequately indexed to a measure of the cost of living. Minimum pension benefits in the public sector have been increased twice in an ad hoc fashion over the past two decades: first to ID 400,000 and then more recently, to ID 500,000 in 2014. Public sector pension benefits are not linked to an objective measure of the cost of living or the minimum wage. In the private sector, the new law introduces a generous minimum pension and links pension benefits to measures of inflation through automatic adjustments.

The contributory pension scheme for public sector employees provides greater benefits relative to the private sector, creating distortions across the two sectors that adversely affect labor mobility and private sector growth. Examples include lower retirement age before public pensions can be claimed, and a public pension livelihood and educational allowance. Lower benefits and tighter eligibility criteria for private sector pensions serve as incentives for workers to seek public sector jobs and create a lock-in effect, whereby workers stay in the public sector to accrue their prospective pension benefits. On the other hand, the relatively large minimum pension set in the private sector—equivalent to a flat 100 percent of the minimum wage—could generate perverse labor market incentives in relation to labor market participation, full salary declaration, and continued participaiton in the system after reaching the minimum eligibility period (15 years of contributions). Finally, the more generous entitlements that are still enjoyed in the public sector risk driving the private sector reform agenda in the direction of more unsustainable reforms.

Broader institutional fragmentation of the pension system results in fragmentation of the risk pool and administrative inefficiency, and hinders portability of pension benefits, with past attempts at unifying the legal framework proving unsuccessful. A recent attempt to unify the legal framework to align pension entitlements and schemes between public and private resulted in a Draft Retirement and Social Security Law for Workers, which was developed with actuarial and legal support from ILO during 2017–18. The ultimate objective of the Draft Law was to merge the two existing Iraqi social insurance schemes for public and private sector employees. Ultimately, the merger did not take place and the reforms brought about in the law applied only to the public sector scheme (as noted in Section 2). Due to the system's fragmentation, there are no streamlined mechanisms to cumulate eligibility requirements, entitlements, and benefits for workers with mixed careers in the private and public sectors, which could deter employees from actively moving between sectors.

[22] To properly assess the adequacy of pension benefits, it is also important to look at the taxation aspects. But pensions in Iraq are fully tax exempt, and retirees do not pay social security contributions. In many countries (mostly in OECD), pensioners commonly do not pay social security contributions either, and taxes are often reduced. In MENA countries, income through pensions is partially or fully tax exempt. In a few countries, retirees contribute social security for the health program. Further analysis that would consider reform options regarding these taxation, social security contributions, and other aspects of the income of retirees (adequacy) could be provided for Iraq, but it is not included in this report.

Table 2: Summary of the Current Pension Systems in Iraq, 2022

	Legacy Pensions	Martyrs, Victims of Terrorism and Political Prisoners Pensions	Public Pensions (SPF)	Private Pensions	Total
Key indicators					
Beneficiaries (million)	1.96	0.54	0.62	0.04	3.2
Active contributors (million)	n.a	n.a	3.0	0.5	3.5
Coverage (beneficiaries % of total population)	4.4%	1.2%	1.4%	0.1%	7.1%
Coverage (active contributors % of labor force)	n.a	n.a	29%	5%	34%
Spending (percent of GDP)	2.1%	0.3%	1.9%	0.2%	4.5%
Revenues (percent of GDP)	n.a	n.a	1.5%	-	n.a
Key scheme parameters					
Contributions rates	n.a	n.a	10 percent employee/ 15 percent employer	13 percent (non-oil), 5 for employee and 8 for employer/ 20 percent (oil), being employer rate 15 percent	n.a
Retirement age	n.a	n.a	Age 60 or 45 with 15 years contribution	Age 63 men and 58 women with 15 years contribution	n.a
Pensionable base	n.a	n.a	Average of last three years salary	Average of last five years salary	n.a.
Accrual rate	n.a	n.a	2.5	2.5	n.a.
Minimum pension (replacement rate)	n.a	n.a	140	100	n.a.

n.a.: not applicable

4. Principles of the Pension Reform

Reform of the pension system in Iraq will need to balance the following principles, in alignment with Convention No. 102 on Social Security (Minimum Standards), as ratified by Iraq in March 2023:[23]

- **Equity**. An equitable pension system aims to ensure that employees with similar age profiles and career trajectories receive similar pensions in real terms during retirement, including across generations.[24] It also means that contributors in one generation are not overburdened in support of other generations, the uncovered are not forced to support the covered, and the more generously covered are not supported by those with less adequate protection. It refers to the needed fairness among all participants and generations of the pension system, and of the society when distributing the effort to rebalance the scheme.

- **Adequacy.** Ensuring adequacy means that benefit amounts should ensure life in dignity, pension amounts should allow sufficient replacement of pre-retirement income beyond minimum adequacy thresholds, and adjustments should be built into the system so that pensions can keep up with the cost of living.

- **Reduce Labor Market Distortions**. The pension system should not overly benefit a small sub-set of workers, nor create distinctives in the labor market or low compliance due to, for example, increased labor taxes in the future (IMF 2022).

- **Financial and Fiscal Sustainability**. Maintaining financial balance in the contributory systems is essential to ensuring the system remains viable and acquired rights are upheld, without requiring unsustainable fiscal expenditures. Sustainability is key for intergenerational equity and ensuring that the burden on public finances remains manageable (ILO 2021b). A structurally financially imbalanced pension system is one that inevitably condemns future generations to very large reductions in benefit entitlements or one that generates fiscal costs to support pensions for future generations that are not sustainable in the long term. As an anchoring principle, fiscal sustainability is meant to ensure that the government maintains the capacity to finance pension spending without increasing fiscal deficits such that they undermine macroeconomic stability or crowd out other critical needs (IMF 2022).

- Finally ensuring **broad-based coverage** means that pension reform efforts should be aimed at extending protection to those currently excluded from the system through a combination of approaches as delivered through a multi-pillar approach (Box 4). We analyze in more detail the options of expanding coverage through contributory and noncontributory pillars in Section 7.

Consistent with these principles, over time, Iraq would benefit from aligning parameters across all pension schemes under a common set of rules that can deliver equitable, sustainable, and adequate benefits for all. Such an approach would minimize distortions to people's incentives to work and contribute, while encouraging labor mobility across sectors and private sector growth. A systemic change of this nature can be achieved through alternative pathways—which are described later in the paper—including the harmonization of key pension parameters or a more ambitious integration of different groups under one single scheme, for example starting with new entrants into the labor market.

[23] See Appendix Box 1.1 for a description of the ILO's Convention 102. See also World Bank (2017).

[24] The term intergenerational equity should not be interpreted in the strict sense of intergenerational accounting, but rather from the perspective of how to fairly distribute costs and adequacy of the pension benefits across generations. From this perspective, an important factor to consider is the proportion of the expected productivity growth (that is, real wage increase). Future generation of workers (and employers) are willing to give up for the sake of intergenerational solidarity, via future increase in contribution rates.

Whatever the approach, the reform should ensure that private sector workers and future generations' pension entitlements are not burdened—explicitly or implicitly—by the unfunded liabilities of the public sector scheme. Having in place clear and transparent financing mechanisms is key, but this has not always been the case in Iraq. Pension beneficiaries who retired before 2006 are receiving pension payments paid directly from the general budget (legacy pensions), while those retired or retiring since 2006 are paid by the pension system. However, many of the people retiring from the pension system have worked for many years (before and after 2006), but they have only contributed to the new system since 2006. In a clear and transparent financing mechanism, the pre-2006 accrued liabilities should have been financed through the general budget, but instead it now represents an extra ('unfair') burden on the pension fund. On the other hand, once SPF's reserves are depleted, the financing of the deficit through the general budget would also be an additional burden on the general budget. Therefore, in achieving progressive alignment of pension entitlements, it is important to ring-fence the unfunded liabilities accrued in the past as liabilities of the government. For this reason, full integration of public and private pension schemes and aggregation of their liabilities is not supported by this paper. At the same time, it is important to recognize the special retirement needs of specific groups in the population, such as the case of the uniformed personnel.

Sustainable reform pathways should also recognize the importance of preserving acquired rights, while maintaining sufficient levels of inter-generational equity across successive cohorts of pensioners. The rights to pension payments and entitlements acquired by currently insured members prior to the proposed reforms will require special protection. Reforms focused on adjusting pension entitlements for new entrants in the labor market and future career services can deliver results in a more gradual and politically sustainable manner, while recognizing the need to rebalance pension schemes to adapt to changing demographic and economic realities. These considerations suggest limited scope for reforming legacy schemes, except ensuring their adequacy, for example, by applying a uniform indexation rule across all pension schemes.

Social protection systems for persons in old age can be delivered though different pillars (Box 4). Tax-funded schemes, mandatory contributory pensions, and complementary voluntary private pensions all have a strong role to play in helping to achieve the different objectives of a pension system: tackling and preventing poverty in old age, reducing income vulnerability, and securing adequate retirement income in light of life cycle–related decreases in earnings capacity. Because no one pillar can bear the weight of delivering adequate income protection with broad coverage in a sustainable and efficient manner, the goal of a multi-pillar system is to combine contributory and noncontributory approaches to meet and balance the multiple objectives of a pension system in a sustainable manner and provide adequate coverage to all persons in old age.[25]

[25] It is important to recognize that pension system is part of broader social protection system. Mature social protection systems comprise typically different instruments to address household poverty (for example, through means tested social assistance) and individual life-cycle vulnerabilities (through a mix of contributory and budget-financed schemes). These different components respond to different objectives and should not be conceived as mutually exclusive. The focus of the paper is on old-age income protection through individual life cycle–based schemes.

Box 4: Multi-Pillar Approach to Pension Reform

Combining the approaches of the ILO and the World Bank, the multi-pillar approach to an equitable, adequate, and sustainable pension system relies on the following pillars:

- Pillar 0: This pillar aims to establish general social protection for older persons to reduce old-age poverty and is usually financed by the general budget. Fiscal sustainability considerations are particularly important to the design of this pillar, as are considerations around the extent of coverage of contributory program and of other components of the social protection system. Depending on fiscal constraints and political economy considerations, such a pillar can be represented by a universal non-contributory scheme, whereas in other contexts, benefit or means-tested approaches aimed at helping the most vulnerable may be more appropriate.
- Pillar 1: Following a typical design of a pension system, this social insurance pillar is mandatory, solidarity based, and collectively financed through employer and worker contributions, with the objective of maintaining the standard of living of retirees. In line with ILO Convention No. 102 minimum standards, it should provide at least 40 percent of pre-retirement insured income for 30 years of contributions, with adjusted minimum benefit for those who have contributed for at least 15 years.
- Pillar 2: This complementary publicly regulated defined-contribution or defined-benefits pillar is aimed at supplementing the pension benefits from the previous two pillars. It can take the form of individual privately managed savings, occupational schemes, or a public scheme.
- Pillar 3: A complementary voluntary personal savings pillar is comprised of a set of voluntary private pension schemes for additional savings from those with higher economic capacity, typically managed by private pension administrators under market-related investments and government regulation.

In addition to the components of the pension system discussed earlier, informal support such as intrahousehold sharing or family support, other formal social programs such as healthcare or housing schemes, and the use of other individual assets such as home ownership are critical to supplement pension income in retirement.

Overall, the approaches of the ILO and the World Bank propose that the first two pillars are necessary foundations for an equitable and adequate pension system, and Pillar 2 could be mandatory or voluntary. The last pillar usually acts as complementary sources of protection.

Sources: ILO (2018b) and World Bank (2008).

5. Proposed Reform Plan for the National Contributory Pension System

The overarching goal of pension reforms should be to bring all schemes under an equitable, sustainable, and adequate set of parameters, with similar rules and benefits across beneficiaries. This will entail (1) parametric reforms and (2) reorganization of different funds. With sufficient political support, parametric and institutional reforms related to the management of the different pension schemes can be implemented simultaneously. However, difficult political economy constraints would warrant that a more gradual path can be pursued, with different parts of the package implemented sequentially and parametric reforms applied first.

A Proposed Package of Parametric Reforms

The parametric changes recommended in this paper are motivated by several considerations. They aim to enhance inter- and intra-generational equity, reduce distortions in the labor market, make the national pension system viable, and stem deficits of the SPF before they become too difficult to finance, to significantly reduce the fiscal burden. The latter necessitates urgent action because a delay will increase fiscal costs of the SPF and require a greater level of tightening in the future. Further, the reforms seek to improve adequacy of benefits and coverage (see Section 7), prevent the accumulation of deficits in the private sector in the long term, target contribution subsidies to most vulnerable workers, and ensure alignment of pension parameters across sectors.

The proposed changes (Table 3) are based on international best practices and standards, and can be clustered in four categories:

- **Measures to strengthen the long-term fiscal sustainability and therefore intergenerational equity.** Given limited space to sustainably increase workers' and employers' contributions,[26] these reform options focus on the benefit side and include eliminating the regressive livelihood and education allowances in the public sector and reducing the accrual rate from 2.5 to 2 percent. They also include rationalizing the generous survivor benefits while keeping in line with international standards.[27] In addition, given the persistence of budget-financed pension schemes in Iraq over the longer term, it would be important to continue strengthening the verification process based on clear and transparent criteria to ensure that benefits are paid only to eligible individuals and to consider transitional rules for the indexation of legacy pension in payment to gradually align with new parameters.

- **Measures to enhance fairness within and across generations, and reduce labor market distortions.** Gradually extending the base used for pension calculations to reflect contributions across the entire career and anchoring the minimum pension entitlement to the number of years of contribution will reduce incentives to under-declare salaries and enhance fairness in pension entitlement determination regardless of salary trajectories. Increasing the retirement age to 65 for new entrants (with subsequent increases linked to life expectancy) will establish a closer link between periods of active contribution and receipt of pensions, taking into account ongoing and expected demographic transformations and ageing.[28] Applying actuarially fair factors for pension reductions in case of early retirement would incentivize labor market retention of the most productive workers.

[26] The contribution rates are assumed to remain unchanged, given concerns that it would be economically affordable to increase.

[27] Specifically, survivor entitlements could be limited to immediate family members and made time-bound instead of being lifelong, as is the case in most other countries.

[28] An alternative approach to raising the retirement age could be through phasing in a gradually higher retirement age for current and new contributors over a number of years, and once it reaches 65, linking it to life expectancy for all workers. In order not to affect workers close to retirement at the implementation of the reform, this could be applied to current younger contributors and new contributors.

- **Measures to improve adequacy and predictability of pension entitlements in the public sector.** Automatic cost-of-living adjustments based on consumer price index (CPI), linking minimum pension in the public sector to the minimum wage and establishing a mechanism to maintain such a ratio as a floor—for example, set at 60 percent of the minimum wage[29]—would provide better protection to the most vulnerable.[30] This would be an improvement over the current practice in the public sector of setting the minimum pension in nominal terms and providing ad hoc periodic cost-of-living adjustments. Further, in the public sector, the inclusion of a maximum contributions ceiling (five times the average wage) and a maximum benefits cap (including to the replacement rate at 80 percent) will allow Pillar 1 of the pension system to focus on core income replacement, eventually opening up space for the complementary pillars to provide additional income replacement.
- **Measures to improve efficiency of government contribution subsidies to target vulnerable workers in the private sector.** The mechanism of flat government contribution subsidies established in the new private sector law can be effective to enhance participation, especially for informal and self-employer workers, but also implies that the government will disproportionately support more high-income earners, including those formally employed. As part of the package of parametric reforms, it is proposed that a more balanced scheme will not require a government contribution subsidy for formal workers and that the subsidy will be targeted to the self-employed and other categories of informal workers to incentivize their participation in the contributory system and tapered as declared wages increase.

In all the scenarios proposed, the proposed parametric reforms should apply to new entrants and only partially apply to the future service of currently insured members. Additional guarantees of existing benefits should be put in place for currently insured members. To avoid unexpected changes to benefits for those already in service, in the proposed set of reform options, their retirement age is assumed to remain the same as in the old laws. In addition, the accrual rate is reduced to 2 percent only for future service and the minimum pension in the public sector is assumed to be frozen at ID 500,000 until caught up to by the new minimum pension level. The reference earnings used to calculate pension benefits are assumed to remain based on the final three years of salary for the years before the reform, and average salary for the years after the reform.

Table 3: Proposed Parametric Reforms of Contributory Pension Schemes

Pension Parameters	Current Laws	Reforms
Retirement Age	Public sector: 60. Private sector: 63M, 58F.	Increase to 65—for new entrants—and eventually link to life expectancy.
Rules for Early Retirement	Public sector: Disabled and women taking care of children can retire early without penalty. Private sector: Age 60/55 with 20 years of service; age 50 with 30/25 years of service; 15 years of service for selected categories.[1] No penalty is applied in any of the cases.	Apply actuarially fair factors for pension reduction in case of early retirement from age 60.

continued

[29] The minimum pension had been modeled to be benchmarked on the prevailing minimum wage at the time of retirement, and subsequently delinked from minimum wage evolution and indexed in line with price inflation. Consideration should be given on whether the minimum benefit threshold is expressed as a percentage of the minimum wage or expressed as a percentage of the average declared wage, The latter could have the benefit of more automatic adjustment of minimum pensions in line with wage inflation in the economy and independent of the political consideration revolving around the adjustment of minimum wage.

[30] The reform could benefit from the inclusion of an escape clause during highly inflationary environments. In this context, a cap on the inflation adjustment should be decided ex ante. In the event of a highly inflationary period, the clause could allow for the additional adjustment to occur at a later stage when the system regains sustainability.

Table 3: Proposed Parametric Reforms of Contributory Pension Schemes *(continued)*

Rules for Delayed Retirement	Public sector: Mandatory retirement at 60 (with some exceptions). Private sector: No rules.	Normal retirement at age 65—eventually linked to life expectancy.[2]
Post-retirement Indexation	Public sector: Not specified in law (ad hoc). Private sector: Annual adjustment based on inflation.	Automatic indexation to inflation, with the inclusion of a cap on the inflation adjustment.
Incremental Replacement Rate (Accrual Rate)	2.50%	2%
Maximum Pension	Public sector: none. Private sector: 80% of the reference salary.	80% of the reference salary.
Reference Earnings for Pension Calculation	Public sector: Last three years. Private sector: Last five years. Contribution ceiling set at five times the monthly minimum wage.	Entire revalorized[3] career average earnings (gradual transition). Contribution cap set at five times the average wage.
Minimum Pension	Public sector: ID 500,000. Private sector: 100% of the monthly minimum wage.	50% of minimum wage with 15 years of contribution, increasing to 80% of monthly minimum wage with 30 years of contribution.
Livelihood Allowance	Public sector: 1% of the pension per year of service. Private sector: None.	None.
Degree (Education-Related) Allowance	Public sector: Additional percentage of pension according to graduate level. Private sector: None.	None.
Survivor Benefits	80% for 1 eligible survivor. 90% for 2 eligible survivors. 100% for 3 or more survivors.	Spouse and children (Category A): 60% for one survivor, 70% for two, 80% for three or more. If no Category A dependents, then 10% goes to each Category B survivors (siblings, parents, etc.) up to a maximum of 20%.
Contribution Subsidies	Private sector: Flat subsidy of 8% of wages for formal workers and 15% of wages for self-employed and informal workers.	Private sector: No subsidy for formal workers. Targeted contribution subsidy of 9% of wages for self-employed and informal workers earning at the minimum wage.

continued

Table 3: Proposed Parametric Reforms of Contributory Pension Schemes *(continued)*

Contribution Rates	Public sector: 25%. Private sector: 13% (non-oil); 20% (oil).	Public sector: 25%. Private sector: 14% (non-oil); 19.1% (oil).
Other short-term benefits	Private sector: Unemployment, maternity, sickness, and employment injury.	Possible expansion: Transferability of maternity benefits to spouse and financial access to health care.

[1] A female who is married, widowed, or divorced and having custody of at least three children under the age of 15 may request a pension irrespective of her age after 15 years of service if she stops working.

[2] ILO convention 128 allows for a higher age of retirement than 65 provided that appropriate measures are in place to foster the employment of the aged population such as to prevent that a higher retirement age simply translates into additional years of unemployment. In this context, due consideration should be given also to increasing the mandatory retirement age beyond 65, without imposing retirement benefit penalties beyond normal retirement age.

[3] Reference earnings are revalorized in line with average declared wage inflation up to the time when pension start being paid.

Coupling Parametric Reforms with Institutional Reforms

Adopting parametric reforms of both schemes may not be entirely sufficient to ensure equalization of the pension system in the longer term. The divergence in parameters may occur over time due to various political pressures which could result in reemergence of the shortcomings of the current system. This risk could be addressed by combining the parametric reforms with changes aimed at reducing institutional fragmentation either through (A) Partial Integration or through (B) Harmonization (Table 4). Partial integration entails a unified administration of one pension scheme for participants in the private sector and new entrants in the public sector through a single fund (Figure 8, panel 1). Current public sector employees and pensioners will remain as a closed group, administered separately. Under the harmonization option, separate funds are maintained for public and private sectors (Figure 8, panel 2). Under both options A and B, a common set of parameters apply to all public and private sector participants, with a partial application of reforms to workers who are currently registered.

The two institutional reform options are associated with different sets of risks and advantages (Table 5). Partial integration offers greater potential for long-run fiscal sustainability and administrative efficiency, but potentially encounters higher institutional resistance. Under harmonization, a strong unified legislative framework is required to prevent the divergence in pension entitlements between the

Table 4: Description of Institutional Reform Options

Option A: Partial Integration **One Scheme, Unified Administration (for New Entrants)**	**Option B: Harmonization** **One Scheme, Separate Administrations**
Common parametric reforms apply to all participants in the public and private sector pension schemes. Partial application of reforms to currently insured workers.	Common parametric reforms apply to all participants in the public and private sector pension schemes. Partial application of reforms to currently insured workers.
Private sector workers and new entrants in the public sector are placed in a common fund under a unified administration, ensuring that private sector workers are protected from the accrued liabilities of current/former public sector workers. This satisfies the principle of fairness and equity across sectors.	Separate funds maintained for public and private, with unitary regulation to prevent divergence in parameters between the two schemes. In the absence of unitary regulation, risk of within-scheme rule changes across time will continue to remain high, leading to recreation of distortions across the public and private sectors.
Current public sector employees stay in SPF (closed) scheme until it is phased out. At that point, the system becomes fully integrated.	

Figure 8: Illustration of Partial Integration (Panel 1) and Harmonization (Panel 2)

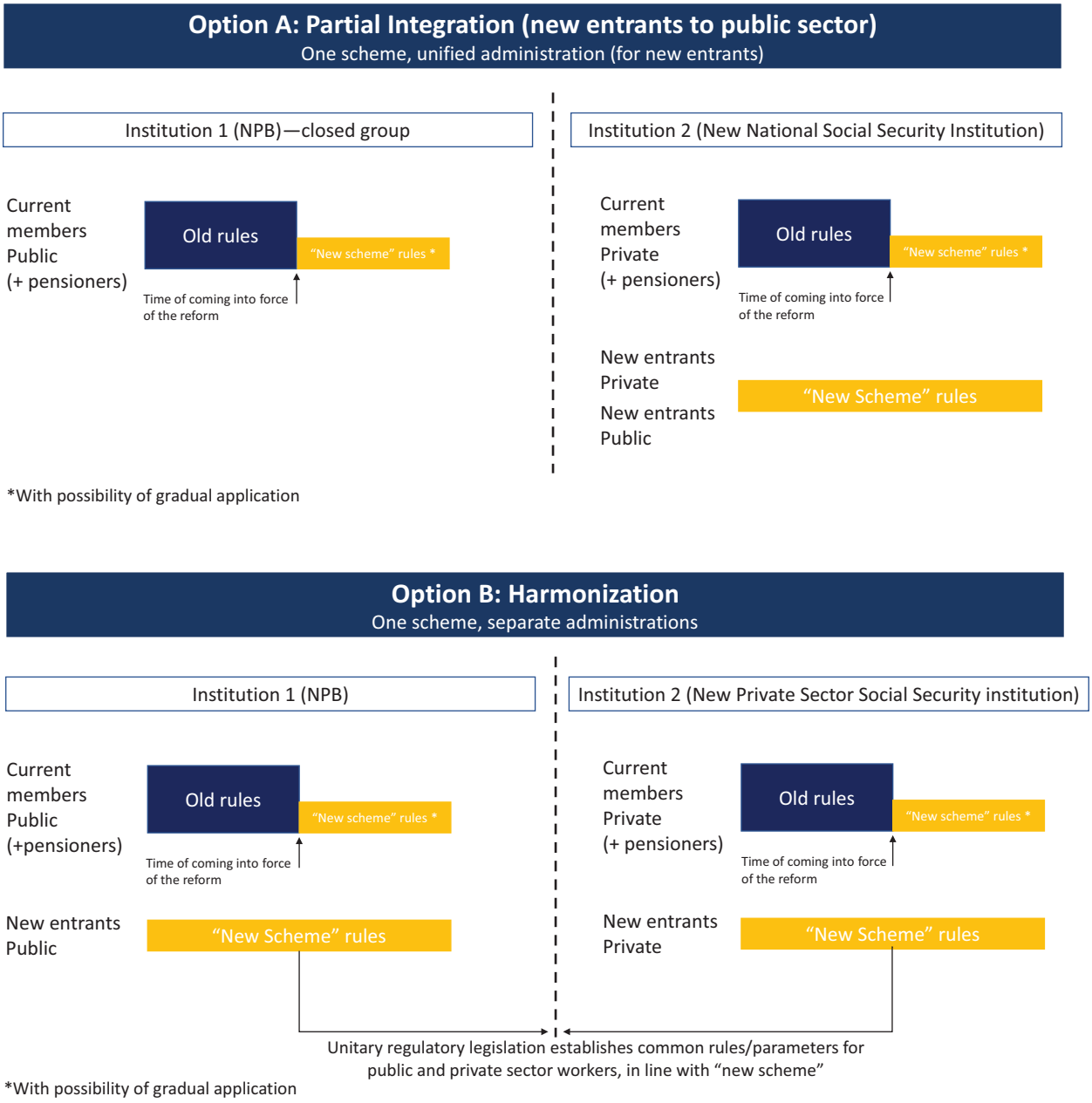


Table 5: Risks and Advantages of Institutional Reform Options

	Option A: Partial Integration	Option B: Harmonization
Risks	Closing SPF to new members implies larger fiscal deficit in the medium term, due to reduced flow of contributions. Larger burden on the general budget.	Risk of divergence in scheme entitlements between private and public sectors over time, unless binding unitary legislative framework.
	Break in inter-generational solidarity.	Reduced risk pooling and more limited solidarity in financing between public and private sector workers in the long run.
	More structural and disruptive institutional adjustments may encounter resistance.	Can become complex to accommodate workers with mixed private–public sector careers.
Advantages	Improved administrative efficiencies, streamlined administration, economies of scale in investment and management.	Can represent a more gradual evolution from current status quo.
	Single administration for workers with mixed private–public sector careers.	

Box 5: Pension Reforms in the MENA Region

Institutional pension reforms are increasingly being adopted by countries in the MENA region.

- JORDAN: Reforms in 1995 and 2003 put currently employed civil servants and military personnel in a closed group, with all new hires to be covered by the same scheme as the one covering private sector workers.
- EGYPT: A new law in 2020 aimed at consolidating the administration of two separate funds (for public and private sector employees) into a single fund, together with harmonization of eligibility and benefit parameters across the schemes.
- BAHRAIN: Separate pension funds for public and private sector workers have been merged. However, a royal decree that aims to unify the parameters and benefits across these schemes is yet to be implemented.
- SAUDI ARABIA: Reforms in 2021 started the process of merging two social insurance entities to ensure that public and private sector employees are covered by one insurance scheme. This merger is aimed to provide better administration processes, more digitalization, stronger governance, and better coordination with other government agencies; in addition to improved investment and risk management capability to achieve better financial performance.
- OMAN: Reforms adopted in July 2023 implement a major restructuring of the pension system. They entail the integration of 11 public and private sector pension funds into one single national scheme and the establishment of a universal government-financed social pension for all citizens. The new unified national pension scheme will cater for all workers regardless of sector (private, civil service, and uniformed) and adopt a common set of parameters (including a revision of normal and early retirement rate, full career average formula, conditional indexation of pension benefits, and a revised accrual rate). A top-up scheme will be put in place for certain categories of uniformed personnel. The contributory pension system is projected to be sustainable at current contribution rates for a period of 100 years. After past accrued liabilities are settled, the government will contribute to the pension system only through the universal old age and disability Pillar 0 pensions.

public and private sectors, and it may be more administratively complex to manage participants with a mixed private–public career. Under partial integration, the orientation toward a unified national system is more firmly set, but this option also has more profound impact on the current institutional arrangements and higher fiscal cost in the short term. The two institutional reforms options will also have very different governance and administrative implications, for example in relation to the composition and nature of the oversight boards, the organizational structure, and the modalities for administrative integration. While it is outside the scope of the paper to engage with these matters, it is important to note that these two options are not necessarily mutually exclusive as harmonization can be considered as the first step toward partial integration.

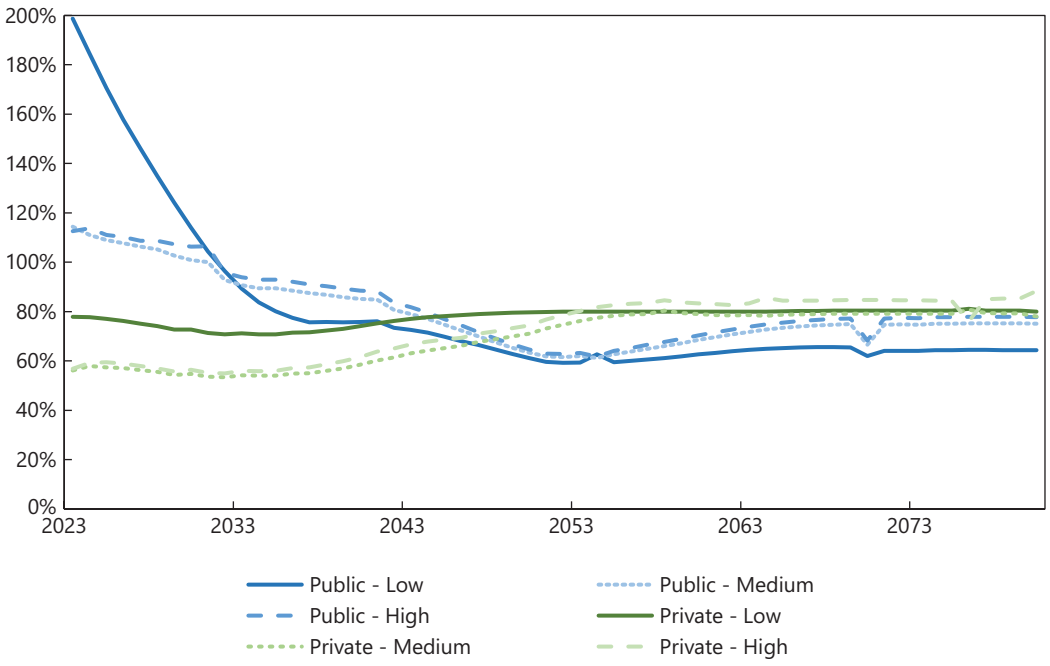
Several countries in the Middle East and North Africa region have recently implemented major pension system reforms, and these have involved the harmonization or integration of public and private pension schemes (Box 5). For example, Oman, Saudi Arabia, and Egypt have recently adopted reforms aimed at consolidating the administration of, or integrating, the public and private pension schemes, along with a common set of pension benefits across the two sectors of employment.

6. Assessing the Impact of the Proposed Reforms

Impact on Adequacy and Equity

The parametric reforms will help align replacement ratios with international benchmarks and improve equity between public and private sectors and across generations.[31] Although the proposed parametric reforms would bring the replacement ratios in retirement down, they would remain well above the ILO's Convention 102 minimum standards (Figure 9).[32] The effects of such reforms should also be considered in conjunction with proposals around a Pillar 0 pension, outlined later in Section 7. The private sector replacement ratios would gradually become more aligned across the income distribution and slightly exceed those in the public sector in about two decades, reflecting faster private sector wage growth. The closer alignment of the public and private sector benefits ensures that workers in similar cohorts are treated equitably in that they receive similar benefits in retirement across the two sectors. Streamlined benefits will be more sustainable and equitable for future generations. Finally, the adoption of a career-average approach will establish a stronger correspondence between contributions made throughout working life and benefits enjoyed at retirement.

Figure 9: Reform Projections of Benefit Ratios: Public and Private Sectors, 2023–80



Source: Authors' simulations based on ILO actuarial and World Bank PROST models.

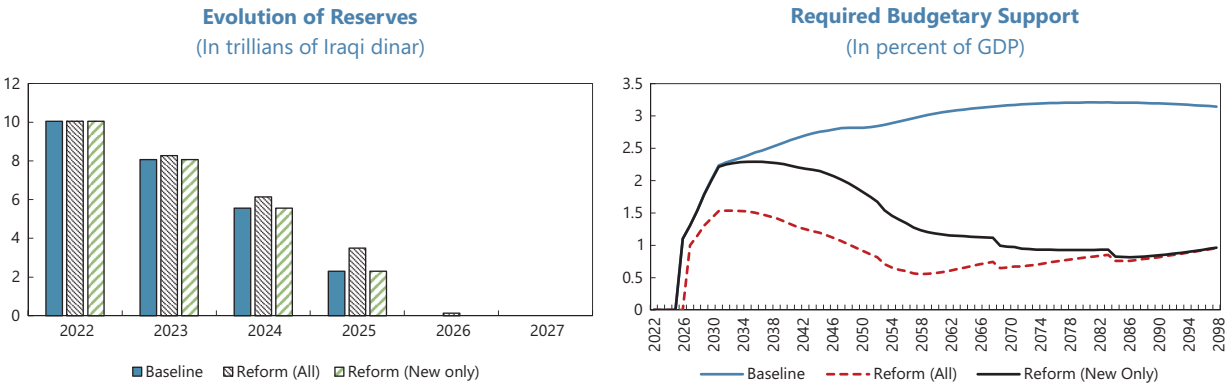
[31] In the different graphs presented in the paper, the replacement ratio is defined as the average pension of new pensioners in a year, divided by the average earnings of all current contributors in the same year.

[32] The replacement ratio is defined here as the ratio of the average pension of new old-age pensioners in a year to the average earnings of all active insured persons in that same year. This explains why, in the longer term, the replacement ratio of low-wage earners is lower than for the other groups. In addition, the lower projected replacement ratios observed in the public sector (compared to the private sector) result from a higher average age at entry into the scheme (for public sector members), leading to lower accumulated service at retirement age and lower average pensions as the percentage of salary.

Impact on Financial and Fiscal Sustainability

For the public sector's SPF, the parametric reforms can slow the decline in its reserves in the near term and reduce the burden on the government budget in the medium to long term (Figure 10). The assumed gradual implementation of the proposed reforms—applied either to only new recruits or to new entrants plus future service of current employees—means that although the near-term exhaustion of SPF reserves might be delayed only by a year or two, the main financial sustainability gains will accrue in the medium to long term.[33] Under the proposed parametric reforms, the SPF would require substantially lower budgetary support in the next two decades relative to the baseline. For example, applying the parametric reforms to all employees in the public sector would contain the required budgetary support at between 1 and 1.5 percent of GDP annually for the next two decades. In the long term, the required budgetary support stabilizes at about 1 percent of GDP.[34]

Figure 10: Projected SPF Reserves and Required Budgetary Support under Parametric Reforms (Public Pension)



Note: 'All' implies that the parametric reforms are applied to all new members and to the future services of current employees. 'New Only' implies that the parametric reforms are only applied to new members.

Implementation of the institutional reforms alongside the parametric reforms would affect the long-term financial sustainability outlook:

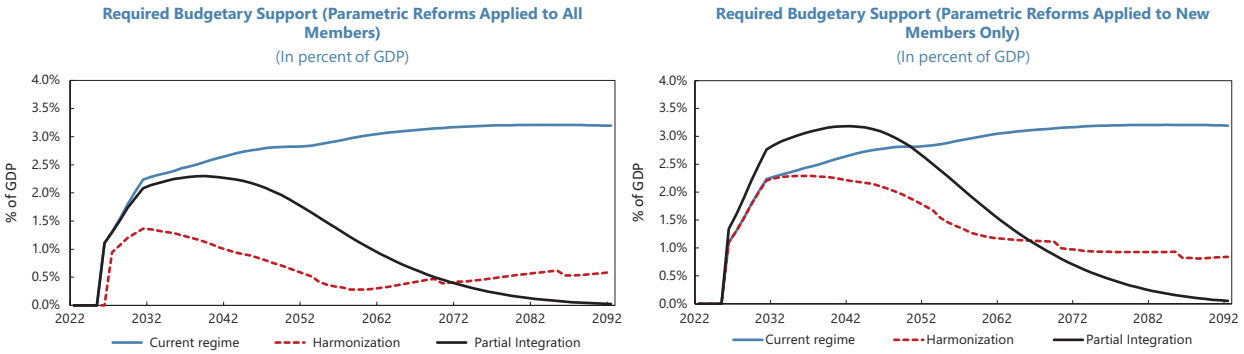
- **Partial integration** of the public and private systems may require higher (relative to the baseline) budgetary support in the initial two decades if the parametric reforms are only applied to new entrants into the civil service. This is because the currently insured members remain in a closed group and therefore would continue to require higher budgetary support when SPF reserves are exhausted, projected to peak at 3.2 percent of GDP in 2040 (Figure 11). However, in less than four decades, once the closed SPF group is phased out, the budgetary support required under this reform option would begin to fall, reaching very low levels of close to 0 percent of GDP by 2080, without any increase in contribution rate. By contrast, if the parametric reforms were applied to both existing employees' future service and new entrants, the required budgetary support would peak at over 2 percent of GDP in the next decade, thereafter monotonically declining to near zero.

- **Harmonization**, on the other hand, would require less support from the budget in the initial decades compared to partial integration. As the SPF would remain an open scheme, the continued flow of contributions from new public sector employees would help improve the financial position in the short term. On the other hand, continued separation of the public and private schemes implies more limited risk pooling, and additional financing would be needed for the public pension scheme to remain sustainable. The budgetary support is expected to remain at about 0.6 percent of GDP in the long run if the parametric reforms are applied to all members and at about 1 percent if applied only to new members.

[33] As discussed earlier, this assumption recognizes acquired rights and takes into consideration potential political economy constraints.

[34] A positive cost remains even in long term because of the assumption that the current very low contributory salaries in the public sector will keep, in the future, the same relationship with the minimum pension.

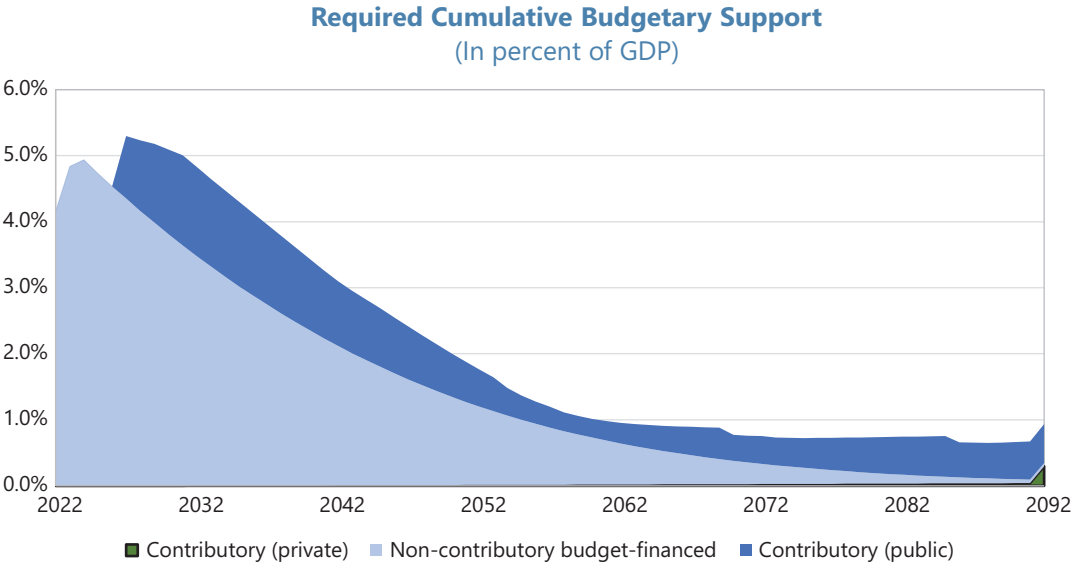
Figure 11: Reform Projections of Required Budgetary Support under Parametric and Institutional Reforms (Public Pensions)



The reserve path of private sector pensions is expected to be preserved under these reform options until the 2090s. Under harmonization, private sector reserves are expected to be exhausted in 2092, after which a small amount of budgetary financing will be required of less than 0.5 percent of GDP. With the partial integration of the private sector and new members of the public sector pension scheme, reserves will be further preserved to 2096.[35] In both scenarios, the adoption of a more targeted approach for contribution subsidies, now focusing on vulnerable categories of workers, reduces the fiscal cost of subsidies throughout the period to less than 0.1 percent of GDP.

In summary, implementation of the proposed parametric reforms for all members along with the harmonization of the administration of the pension funds will reduce the cumulative required budget support for all pensions relative to the current trajectory. Under these reform options, the cumulative budget support will peak at 4 percent of GDP in 2027 (5 percent under the baseline), thereafter declining and stabilizing at 1 percent of GDP annually in the long run (4 percent under the baseline) (Figure 12).

Figure 12: Projected Cumulative Budget Support under Harmonization

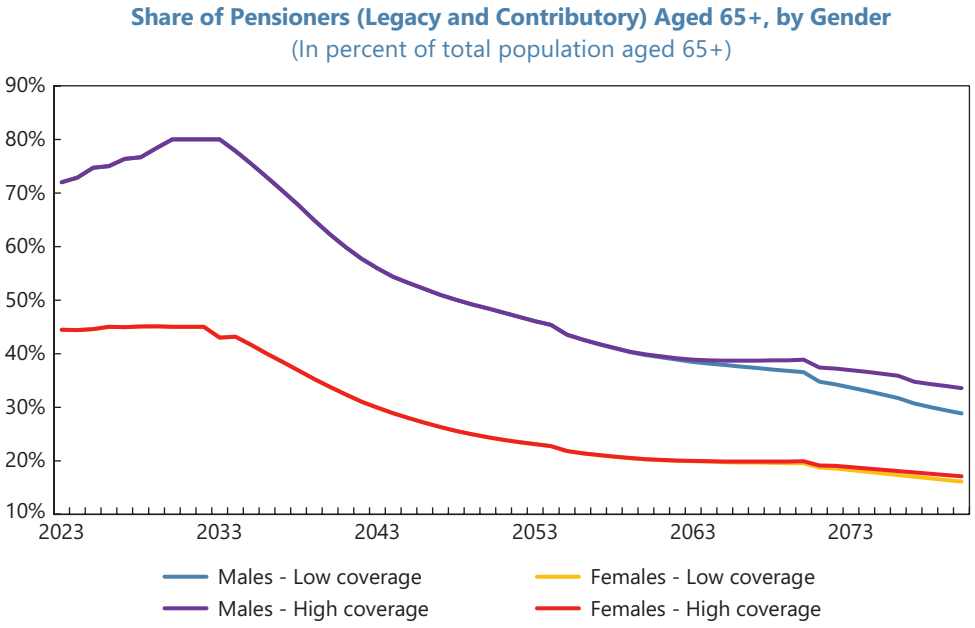


[35] But budgetary support thereafter is expected to be about 1.3 percent of GDP in the very long run, covering both private sector and the newly insured public sector workers after the reforms.

7. Closing the Coverage Gap

As the earlier discussion highlights, there are significant gaps in coverage of income support to persons in old age. Due to the anticipated labor market and demographic structure of Iraq, it is projected that the contributory pension system will cater for an increasingly smaller share of older persons (Figure 13). Of particular concern is the fact that contributory pension coverage for women is not projected to exceed 50 percent in the medium term, while in the long term, only 2 in 10 older women (3 in 10 older men) will qualify for a work-related pension. Even ambitious targets with expanded participation in the contributory system (see Table 6) can only materialize into effective pension coverage gains in the long term.[36] This signals the need to adopt complementary approaches to fill the coverage gap, by activating the different components of a multi-pillar pension system to ensure income security for a larger share of the older population.

Figure 13: Projected Coverage Ratios of the Population Aged 65+ by Gender, 2023–80



Income security for people in old age is a key dimension of the human right to social security, as recognized in the Universal Declaration on Human Rights of 1948 and in ILO Convention No. 102 on Social Security (Minimum Standards) of 1952,[37] which was recently ratified by the Government of Iraq (see Appendix Box 1.1). Through these instruments, Iraq has committed to guaranteeing—through progressive realization—access to income support for all people facing social risks, including old age. This section outlines options to achieve pension coverage expansion as part of the comprehensive pension reform plans, and highlights possible approaches and their associated costs.

[36] Over the next 60 years, despite the projected increase of the labour force and social security coverage, the population of the country aged 65 and over will increase at a faster rate than the population eligible for a pension. Even if labour force participation rates are projected to increase over time, it takes several decades before a new entrant to the labour force eventually receives a pension. Because of that delay, the pension coverage cannot catch up with the increase of the elderly population.

[37] Along with Convention No. 128 on Old-Age, Invalidity and Survivors Benefits of 1967 and its accompanying Recommendation No. 131, and Recommendation No. 202 on Social Protection Floors of 2012.

There are two complementary strategies to filling the coverage gap in Iraq: (1) expanding coverage of currently unregistered private sector workers through contributory schemes and (2) establishing a noncontributory pension scheme to address the remaining coverage gap. At least these two complementary strategies are needed to tackle the challenges of low social protection coverage among workers in the informal economy (ILO 2021b; World Bank 2019). International experience shows that the possibility of expanding coverage, hence reducing informality, is limited (Palacios and Robalino 2020). However, some countries have had success in extending the coverage of contributory social insurance programs through the simplification of rules, procedures, and packages, notably, for small contributors.[38] Typically, countries worldwide have introduced pension schemes for special groups of workers, such as the self-employed or rural workers. However, the prospects for significantly increasing social insurance coverage through current contributory programs are still limited. At the same time, cost considerations might limit the coverage of the noncontributory pension scheme. In some countries, individuals in the middle and upper segments of the income distribution in the informal economy can be reached through a tailored version of contributory schemes originally designed for the formal sector.[39]

Expanding Effective Coverage of the Contributory Scheme in the Private Sector

The first option is to expand the mandatory scope of legal coverage of the private social security scheme. There are various reasons for which most workers are not covered by social security, and a multi-pronged approach to coverage expansion is therefore required. The first reason workers may not be covered by social security is that many—self-employed and workers in the informal economy—were only recently granted legal coverage under the new Social Security Law and only on a *voluntary* basis.[40] Gradual extension of the scope of *mandatory* coverage to workers in all forms of employment should be considered, together with special arrangements to adopt more flexible contribution requirements (periodicity, method of calculation) in line with the new flexibility granted by the new law. For informally employed workers, employers should be progressively committed to paying contributions in all sectors and in all cases where a dependent employment relation is in place, such as the case of seasonal, casual, temporary, or part-time workers.

Extending effective coverage of the pension system should acknowledge that even when all workers are covered under the law, they may face a range of barriers to accessing social security in practice.

- Firstly, workers and employers may not be aware of their rights and obligations under existing legislation, may not trust the social security system to administer entitlements, or may not be fully aware of the purpose or benefits of social security coverage. Awareness-raising campaigns are important to address this barrier, while increasing accountability and transparency in the administration of social security would also contribute to strengthening trust in the social security system. The introduction of the short-term benefits (unemployment and maternity) under the new law may also strengthen incentives for workers to register, as such entitlements are more noticeably accessible in the short to medium term.

[38] For an overview, see ILO (2021).

[39] In some countries, those who have the potential to save for retirement but lack the access to suitable financial instruments would also benefit from innovative contributory schemes or savings instruments designed to unlock that potential. However, these might not currently be adequate for Iraq.

[40] The private sector Social Security Law now extends legal coverage to all workers, with voluntary participation for "all individuals not involved in formal work."

- Secondly, informal workers (and their employers where relevant) may not have the economic capacity to meet their social security contribution obligations.[41] The new law introduces a subsidy for self-employed and informal workers, at 15 percent of wages. In turn, self-employed and informal workers' contributions are set based on specific income categories that will be determined by the Minister. Considerations around better targeting the level of the subsidy should also be made, considering that self-employed and informally employed persons may not all face financial barriers to coverage. A tiered contribution rate mechanism whereby rates increase with contributors' earnings or firm size, or a flat rate for low-income contributors can be adopted instead. The cost of an initial simplified proposal is presented in the following summary table. In addition to enhancing incentives to registration, strengthening enforcement capacity is also important to strengthen compliance with the legislation.

Other complementary voluntary savings-based approaches can also recognize the irregular and unpredictable nature of informal income and are applicable to workers who have some capacity to save in addition to their participation in the solidarity-based pillar, while also bearing in mind institutional capacity of the financial sector to regulate and supervise. Those who do not have capacity are better served by noncontributory income support programs, discussed in the following.

To make contributory systems more attractive, they should also include protection against short-term risks such as unemployment, maternity, employment injury, and sickness. The new Social Security Law for private sector makes important steps in this direction, as it replaces existing labor law entitlements (that are already financed by individual employers) with more efficient, solidarity-based, and less distortionary social insurance schemes. Contributory schemes should also be tailored to the specific needs and preferences of informal workers, given their heterogeneity, offering them more flexible and accessible means to contribute and save for their future retirement.

Special measure will have to be put in place to increase the participation of women in the contributory pension system and ensure pension adequacy among insured women. These can comprise the adoption of flexible mechanisms to allow participation of workers on part-time, home-based or other diverse contracting arrangements; the recognition of non-gendered pension contribution credits for periods of maternity and other caring responsibilities; the transferability of maternity benefits to the spouse; and the provision of complementary benefits that can incentivize female labor market participation, such as insurance-linked financial support for childcare access recently experimented in Jordan.

Table 6. Scenarios for Private Sector Coverage Expansion (Percent of Each Category)

Employment Category	Present Coverage Ratio (Low-Coverage Scenario)	Projected Coverage Rate (in 100 Years)	
		Medium-Coverage Scenario	High-Coverage Scenario[1]
Salaried workers	18.1	30.0	70.0
Self-employed	0.0	11.5	38.0
Family workers	0.0	0.0	32.0
Employers	0.0	0.0	40.0
Total	**9.3**	**19.4**	**54.2**

[1] In the high-coverage scenarios, it is assumed that the coverage rates indicated in the table are going to be attained after 50 years and maintained thereafter for the projection period.

[41] It is estimated that 40 percent of all employees in Iraq are on low pay, calculated as two-thirds of the median hourly earnings of employees at main job; see Government of Iraq (2021), Iraq Labour Force Survey (2021).

Assuming all legal and administrative measures outlined earlier are implemented along with measures to make the participation of all categories of workers more attractive, this paper projects a contributory coverage of 54 percent of the private sector in the long run (Table 6). In the medium scenario of a modest increase of coverage among salaried workers, limited success in attracting self-employed persons into the systems, and no progress on including other informal workers and employers, coverage is expected to reach only 19 percent.

Establishing a Government-Financed Scheme to Fill the Remaining Coverage Gap

Expansion efforts of the contributory system alone will not deliver income protection to all persons in old age, even in the long term. While coverage extension efforts progress, there are unmet needs for income support among the current cohort of old-age persons in Iraq and those retiring in the short to medium term, for whom coverage extension will likely not lead to actual entitlement to contributory pensions. Further, social security coverage expansion is only relevant to those who are in work, whereas in Iraq, the majority of the working-age population, particularly women, are currently not in the labor force and therefore are not—legally or otherwise—covered by contributory pension schemes. Demographic change will lead to a rapid increase in the number of older persons who are not covered by contributory pension schemes, even under optimistic scenarios with the expansion of legal and effective coverage through the new Social Security Law (Figure 13).

A key decision for Iraq's government is therefore whether and how to complement the contributory pension system and the existing social assistance programs, with a scheme aimed at filling the remaining coverage gap in old age. Most countries in the world that have achieved significant gains in old-age income protection have done so through the combination of contributory and noncontributory (or tax-financed) means- or pension-tested pension schemes.[42] Importantly, the introduction of noncontributory schemes has globally enabled the extension of coverage to women in particular, whose labor-force participation rate and entitlement to contributory schemes often lag behind those of men, an issue of particular relevance to the context of Iraq. At the same time, broad-based social protection coverage of old-age persons entails fiscal costs, and therefore, its feasibility will depend on the government's ability to afford to fit such plans into its broader socioeconomic priorities, which include post-war reconstruction and general poverty reduction, without jeopardizing macroeconomic stability (see Section 8).

There are several ways in which a Pillar 0 noncontributory pension can be designed, and three options are outlined as follows for illustrative purposes. To be effective, the noncontributory pension should follow several core principles underpinning the International Social Security Standards, including Convention No. 102. Firstly, the value of the noncontributory pension should "be sufficient to maintain the family of the beneficiary in health and decency," and across all options outlined in the following, the value of the transfer is proposed to be set as a flat rate. It would also be essential for regular (ideally automatic) adjustments of the pension level to ensure that it keeps up with changes in the cost of living. A second principle relates to the predictability of the payments, by which is meant that payments should be made regularly to enable recipient households to effectively budget and plan.

While noncontributory pensions are individual entitlements, distinct from the SSN program where entitlements are at the household level, the interaction between the two benefits needs to be considered. The following options propose that the pension could be complementary to the SSN program as an individual entitlement for persons in old age. The value of the noncontributory pension received by an

[42] For example, in 2015, some 72 countries had only contributory pension schemes and 12 had only noncontributory schemes (2 of which implemented means-tested schemes). A total of 102 countries had both contributory and noncontributory schemes in place, of which 88 countries opted for noncontributory means-tested or pensions-tested schemes. The remaining 14 out of the 102 countries had both contributory and noncontributory universal schemes (ILO 2018a).

individual could, however, be taken into account in the calculation of their households' income level for the purposes of assessing eligibility to the SSN program or household members in receipt of a social pension could be excluded from the determination of the household size as used to calculate the value of the SSN program transfer. In the case of old-age persons in receipt of a public and private sector contributory pension, considerations could be made for reductions (or nonreceipt) in the social pensions, or on the other hand, reductions in their respective accrual rates and potentially a related reduction in contribution rates. This would ensure that the social pensions and contributory scheme are well integrated, in that the Pillar 0 design recognizes income already received through other pension pillars.

The three options are outlined as follows, with their comparative advantages and disadvantages listed in Table 7.

- **Universal noncontributory pension**: All individuals above a specified age would be entitled to receive the pension, regardless of their income level, receipt of any other form of income support by the individual or household, or any other criteria.
- **Pension-tested noncontributory pension**: The noncontributory pension would be paid to all persons in old age, except for those in receipt of a contributory pension for public and private sector workers. The pension test would apply to both public sector and private sector contributory schemes once the adoption of the alignment in parameters that is recommended in previous sections of this paper is completed.
- **Pension- and affluence-tested noncontributory pension**: A threshold would be set to identify high-income or affluent individuals, who would be excluded from the noncontributory scheme, along with those excluded under the pension test. Thus, a broader range of income or assets would be used as the basis to identify eligible individuals (for example, in addition to receipt of any other form of income support, such as a pension). The adoption of an affluence test approach should aim at covering the "missing middle" of the distribution and avoid exclusion errors that are generally associated with targeting only the poor or extreme poor.

Table 7: Advantages and Disadvantages of Noncontributory Pension Options

Option	Comparative Advantages	Comparative Disadvantages
▪ **Universal**	▪ Administratively simple with lower administrative costs. ▪ Ensures by design all older persons are covered. No exclusion errors. ▪ Builds social contract based on citizenship rights to social protection. ▪ A significant extension of access to benefit can enhance sustainability of the overall pension reforms from a political economy perspective.	▪ Higher fiscal cost than targeted program given larger coverage. However, could be associated with reduced accrual rate (hence reduce cost) for the contributory pillar.[1] ▪ Inclusion errors, if the policy intention is to have a targeted program (as the benefit would be payable to all, regardless of other income sources). ▪ Expectations of automatic assistance in old age may reduce incentives to participate in contributory pension schemes, depending on benefit amounts.

continued

Table 7: Advantages and Disadvantages of Noncontributory Pension Options *(continued)*

▪ **Pension tested**	▪ Lower fiscal cost than a universal approach. ▪ Low administrative costs if contributory and noncontributory information systems are linked.	▪ Potential disincentive to formalize and make social security contributions, depending on scheme design and benefit amounts.[2] ▪ Determines eligibility based on only one source of income (pensions). ▪ Potential negative incentives to formalization and contribution (for example, reduce incentives to participate in contributory pension schemes), depending on benefit amounts.
▪ **Pension and affluence tested**	▪ Lower fiscal cost than a universal or pension-tested approach. ▪ Strengthened focus on vulnerability while reaching the "missing middle." ▪ Accounts for differences in sources of incomes/assets to determine eligibility.	▪ Highly administratively complex, likely infeasible in Iraqi context in short to medium term until interoperability and availability of administrative data across institutions are built. ▪ Exclusion errors due to targeting inefficiencies (for example, targeted individuals are missed by targeting design or implementation). ▪ Potential negative incentives to formalization and contribution (for example, reduce incentives to participate in contributory pension schemes), depending on benefit amounts.

[1] By adjusting accrual rates of contributory pensions downwards to reflect the individual's receipt of a non-contributory pension. The savings would translate into a lower contribution, which in the case of public-sector pensions will also partially offset the burden on general budget (see costing simulation in Table 8 below).

[2] Depending on the difference in value between the minimum contributory pension and noncontributory benefit, workers may face a reduced incentive to register and contribute, but instead choose to remain outside of the scope of coverage of the contributory system to access the noncontributory pension. Considerations should thus be made as to how to avoid such perverse incentives, such as by introducing a mechanism to taper away the noncontributory pension in a more gradual manner.

Table 8 presents an illustrative costing for each of the three options presented earlier. All options are simulated for two scenarios of projected future social security coverage, namely low- and high-coverage scenarios. The benefit amount is set at 40 percent of the minimum wage (140,000 ID initially), in line with minimum adequacy requirements set in the ILO's Convention No. 102 and adjusted over time in line with CPI increases.

The immediate costs of closing the coverage gap through a government funded Pillar 0 pension range from 0.71 percent of GDP under the universal approach to 0.44 percent of GDP under the pension- and affluence-tested approach (Table 8). The pension-tested approach lies in between, at 0.58 percent of GDP. Given that there is a gradual increase in coverage under both the low- and high-coverage scenarios, in the long term, the universal approach under the high-coverage option will reach a fiscal cost of 1.17 percent of GDP. However, there could be an offsetting 0.26 percent of GDP fiscal savings from reduced pension payments, if those are adjusted because of the receipt of the universal pension, leaving the cost at 0.91 percent of GDP. The pension-tested and pension- and affluence-tested non-contributory pensions are expected to reach a long-term upper bound cost of 0.86 percent and 0.65 percent of GDP, respectively. The short-term fiscal impact of a Pillar 0 pension could be further reduced by approximately 40 percent (for all scenarios) by adopting a gradual implementation approach with pension eligibility starting at the age of 70 and more gradually aligning to the normal retirement age.

Table 8. Cost of Different Scenarios of Noncontributory Schemes (Percent of GDP)

	2024		2075	
	Low SS Coverage	**High SS Coverage**	**Low SS Coverage**	**High SS Coverage**
Universal				
From age 65 (70)[1] in 2024, following NRA of contributory scheme	0.71 (0.43)	0.71 (0.43)	1.17	1.17
Minus: fiscal savings from lower pension accrual rate (1.5% instead of 2.0% for future service), considering only public sector	0.00	0.00	−0.26	−0.26
Pension-tested[2]				
From age 65 (70) in 2024, following NRA of contributory scheme	0.58 (0.35)	0.58 (0.35)	0.86	0.81
Pension- and affluence tested[3]				
From age 65 (70) in 2024, following NRA of contributory scheme	0.44 (0.26)	0.44 (0.26)	0.65	0.61

Notes: Benefit amount: 40 percent of minimum wage.

[1] From age 70 in 2024, decreasing to NRA of contributory scheme in 2036, thereafter following NRA.

[2] Tested against pensions received from both public and private sector schemes.

[3] Assume that affluence testing would remove 25 percent of the remaining caseload after the application of the pension test (corresponding to elimination of the highest quintile of households with a member aged 65+ neither receiving SSN benefit nor pension, based on the 2012 Household Socioeconomic Survey).

8. Financing and Fiscal Considerations

Under the baseline scenario without any policy changes, the pension system represents a significant fiscal burden to Iraq in the short, medium, and long terms. With the combination of explicit and implicit government financial liabilities on legacy pensions, the public sector pension scheme, and the new private sector scheme, government total spending on pension is projected to increase to 5 percent of GDP and remain stably around 4 percent of GDP for the projection period (100 years).

Restoring the financial sustainability of the national pension system is especially critical, given competing demands on fiscal resources in the coming years. Iraq requires significant investments in diversifying away from oil and for private sector development, to avoid the risk of long-term external sector (that has strong links with the fiscal account) shocks in a scenario where oil prices drop secularly over the long term (IMF 2023). There is also an urgent need to invest in making the country resilient to climate shocks and to mitigate climate change through policy actions such as increased gas flaring. The expected acceleration of the global energy transition in the coming years could severely undermine Iraq's public finances whose revenues mostly (over 90 percent) owe to oil exports. At the same time, the significant expansion of the authorities' expenditures in recent years in such areas as the public wage bill, subsidies, food ration cards, and public investments implies significant commitments and, therefore, fiscal vulnerabilities.

Against this background, the feasibility of broadening social protection for old-age persons not covered by the existing pension schemes is inextricably linked to the government's broader fiscal reform plans and their ability to create the required fiscal space. To inform this discourse, this paper outlines both the possible fiscal gains of reforms to the contributory system and ways in which broad-based coverage for old-age persons could be achieved and how much it would cost.

Options to enhance revenue streams of the pension schemes through raising contribution rates or investments are limited; hence, adopting the parametric reforms advanced in this paper appears unavoidable. The contributory pension system receives revenues from two sources: (1) employer–employee contributions and (2) returns on invested reserves. Contribution rates are already significant in the public sector (10 percent for employees, 15 percent for employers). Increasing the employee share of contribution rates might run into political economy constraints. Increasing the employer share will only reallocate expenditure from pensions to wages in the budget. Further, the required aggregate long-term rates to balance the SPF are estimated to be exorbitantly high and not feasible.[43] Protection of SPF reserves from market volatility implies the need for low-risk investments which, in turn, will limit potential returns on invested reserves. Therefore, the focus of reforms should be on making the rules around eligibility and benefits equitable and adequate, which simultaneously ensures the sustainability of the system. For the private sector scheme, where the contribution rate for the pension is 13 percent (5 percent for employees, 8 percent for employers),[44] given the already low uptake and lower income levels, increasing contribution rates will further disincentivize private sector workers and employers to register.

The proposed reform package will significantly improve the financial sustainability of the national pension system (Table 9). Reforms applied to all workers in a consistent manner will significantly reduce the fiscal burden, gradually approaching balance in the long run and hence ensuring the pension system can remain sustainable for future generations, without drawing fiscal resources away from other key priorities.[45]

[43] Required contribution rates: 48.4 percent for the next 10 years, 64.3 percent for the next 20 years, and 78.9 percent for the next 30 years.

[44] This rises to 20 percent for oil companies, where the employer share increases to 15 percent.

[45] While we do not quantify the savings from the assumed labor market reform, over time, fiscal savings should also arise from a slowdown in the growth of the public sector wage bill.

Table 9: Summary of Required Government Fiscal Expenditure on the Pension System under Current Policies and the Reform Options (Percent of GDP)

	Baseline (No Reform)				Reform under Harmonization				Reform under Partial Integration			
	2024	2050	2075	2100	2024	2050	2075	2100	2024	2050	2075	2100
Legacy pensions	2.47	0.67	0.13	0.01	2.47	0.67	0.13	0.01	2.47	0.67	0.13	0.01
Pensions to martyrs, prisoners, and victims of terrorism	1.03	0.28	0.04	0.00	1.03	0.28	0.04	0.00	1.03	0.28	0.04	0.00
Contributory pensions (public and private)	0.10	2.98	3.74	4.11	0.00	0.68	0.48	1.05	0.00	0.02	0.03	0.05
Of which: subsidy for private sector workers[1]	*0.10*	*0.16*	*0.22*	*0.27*	*0.00*	*0.02*	*0.03*	*0.05*	*0.00*	*0.02*	*0.03*	*0.05*
Additional cost associated with closed scheme for existing public sector workers[2]	-	-	-	-	-	-	-	-	0.00	2.82	0.51	0.00
Government-funded Pillar 0 pension[3]	-	-	-	-	0.58	0.80	0.86	0.76	0.58	0.80	0.86	0.76
Total	**3.60**	**3.93**	**3.91**	**4.12**	**4.08**	**2.43**	**1.51**	**1.82**	**4.08**	**4.59**	**1.57**	**0.82**

[1] The current 2023 new law includes a subsidy for private sector wage workers and self-employed. The reform scenarios include a subsidy for low-earning self-employed only (based on earnings equal to minimum wage).

[2] Suppose no modification to acquired rights of existing public sector workers.

[3] Pension-tested benefit paid from age 65 in 2024, thereafter following NRA (67.5 in 2050, 70 in 2075, and 72.5 in 2100).

The total required budgetary support for the legacy pensions and contributory pension system (public and private) is expected to peak at 4 percent in 2024 and to stabilize at 1.8 percent of GDP in the long run, under harmonization. Under partial integration, the total required budgetary support is expected to peak at 4.6 percent of GDP in 2050, thereafter stabilizing at about 0.8 percent in the long run.

Using a portion of the fiscal gains of the proposed contributory reforms, it would be possible for the government to finance a universal, benefit-tested, or affluence-tested Pillar 0 pension scheme. Such a scheme will provide coverage to the majority of older persons—in particular older women—who will continue to be excluded from contributory pension schemes for several decades. The feasibility of expanding coverage through a Pillar 0 pension is inextricably linked with stakeholders' commitment to adopting the parametric reforms proposed in this paper together with broader fiscal reform plans that can help create the required fiscal space. Approximately a quarter of the cost of a government-funded, pension-tested Pillar 0 pension could be met from better targeting the newly introduced government pension contribution for formal sector workers in the private sector.

9. Conclusion

While the 2023 Social Security Law for Private Sector Workers takes steps to improve comprehensiveness, coverage, and the alignment of some of the pension rules and benefits with the public sector, further reforms to both schemes are critical. This paper proposes a core set of parametric reforms to be applied across both the public and private sector pension systems, along with options for the institutional and administrative realignment of the respective schemes. The paper also provides options for expanding coverage of old-age income protection through contributory and noncontributory schemes. Implemented together, these measures ensure that the system is more equitable and adequate within and across generations, reduce labor market distortions, and expand coverage, while importantly supporting the long-run financial sustainability of the pension system.

Under current policies, the total fiscal cost of the public, private, and budget-financed pensions is expected to remain close to 4 percent of GDP annually for the next eight decades. Fiscal spending on pensions would continue to disproportionately benefit relatively better-off formal workers participating in public and private contributory schemes. Conversely, the pension coverage gap in old age is projected to rapidly widen, particularly for women outside the labor market and informally employed workers.

The proposed reforms would both substantially reduce the overall fiscal costs of the pension system and reallocate public funds to extending pension protection to the most vulnerable segments of the population. While the short-term reduction in fiscal costs of the reform scenarios is limited by the size of the legacy pension payouts, as these unwind, the reforms yield significant fiscal savings. Implementing the proposed parametric reforms under either harmonization or partial integration is expected to reduce the fiscal cost to around 0.7 percent of GDP by 2075, thereafter reaching between 0.1 and 1 percent of GDP by 2100. This long-term cost would reach between 0.8 and 1.8 percent of GDP if a Pillar 0 pension is also introduced.

The proposed reforms deliver on key interrelated objectives. At the same time, they ensure that replacement ratios are more aligned between the public and private sectors, and across future cohorts of pensioners; that a system of regular pension indexation maintains benefit adequacy over time; that coverage of private sector workers is expanded; that incentives for contribution throughout working life are in place and the pension system fosters economic participation and formalization; and in the case of the Pillar 0 pension, that those without pension income in old age are also covered.

Through a consultative process within government, workers' and employers' organizations, and with key stakeholders in Iraq, the different elements of this reform proposal can be adapted based on an assessment of what is technically sensible and politically acceptable. The reform proposal presented here provides one possible route to address the most critical shortcomings of the current fragmented system. Convergence on the specific parameters should result from discussions and dialogue among all relevant stakeholders. These modifications would need to ensure that the core objectives of equity, adequacy, coverage, and sustainability are adequately met, while also helping to ease the potential political economy constraints to move the reform forward.

Implementing a comprehensive pension reform should be seen as a gradual, multistage, and multiyear process owing to various political economy, capacity, and other constraints. While the need for pension reform has been recognized by the Government of Iraq, it has been held back by political economy constraints. However, after overcoming the political stalemate in 2022, the government now has space to rekindle the reform momentum. A broadly consultative process will be required, ensuring that key stakeholders (including those representing the currently uncovered) are included to build consensus on the pension reform. To ease some of the political economy and capacity constraints, a gradual process with the

appropriate sequencing of reforms will be key. In this context, the authorities could consider prioritizing the rationalization of the parameters of the pension scheme for public sector workers to ensure its financial and fiscal sustainability and equalizing pension system parameters across public and private sectors to promote labor mobility across sectors.

A holistic approach to the pension reforms should combine efforts at enhancing equity, adequacy, and sustainability of the contributory system, with efforts to extend protection to those who remain excluded, especially women. This approach can broaden political support for the whole reform package and is in line with recent commitments taken by the Government of Iraq through the ratification of ILO Convention No. 102. The inclusion of a government-financed Pillar 0 pension is therefore to be considered in the context of broader social protection reforms and the need for national stakeholders to determine the best allocation of government resources across different pillars and components of the social protection system (contributory, tax-financed other social protection instruments), to maximize protection for the most vulnerable.

Long-term structural challenges facing the pension system Iraq, especially in light of the ongoing demographic transition, calls for a fundamental rethinking of the role of public spending on pensions. General budget resources could be better spent on the extension of adequate pension coverage to the increasing share of uncovered (particularly informal workers and women outside the labor force), as opposed to implicit or explicit subsidies to formal workers, which are problematic from both a fiscal efficiency and an equity perspective. This can be achieved through a better allocation of public spending between the contributory and noncontributory pillars of the pension system.

The formalization of the informal economy will also go further in ensuring broad-based coverage of the working population in old age. Under both the baseline and reform scenarios, we assume that there will be a gradual slowdown in growth and eventual reduction in the size of public sector employment as the private sector grows, along with gradually rising participation rates of women. Supporting these developments will be important for ensuring that the system remains structurally balanced (that there are a sufficient number of contributors) and that more people are covered by employment-based pensions in retirement. Special measures should also be considered to ensure that the contributory system can incentivize female formal labor participation, such as in the form of non-gendered pension credits for periods of family care responsibilities, the transferability of maternity benefits to the spouse, and the inclusion of complementary benefits such as financial access to childcare.

Considering the complexity of the political economy of pension reform, good communication to the public of the chosen reforms will be key. Sequencing the proposed sensitive measures and packaging them with compensatory and more popular types of measures would increase the chance of success. The narrative built so far on the argument that the growth in financing needs will put pressure on public budget, and therefore workers will have to extend their working careers and pensions will be lower, has generated strong resistance at the level of public opinion. In essence, the fiscal angle is a legitimate concern for the government, but it has generally proven ineffective in persuading broad sectors of the political-social spectrum, including various policy decision makers. Framing reform efforts from the dual perspective of broadening access to adequate pensions for the excluded majority and facilitating labor market mobility will be key to garner support through extended social dialogue.

Pensions are part of a larger contract than just old-age income, which places the proposed reforms here in a broader context of a changing demographic and labor market context in Iraq. Expanding the pension policy framework to one of support for old age could be important to achieve a more fluid dialogue on the pension reform. For instance, some countries are already working on active ageing policies, efforts to engage older adults in more economic activities, volunteer activities, and education opportunities. Many older adults in Iraq are already relatively active in the labor force (informally), largely driven by

economic need. However, their productive potential is off the policy radar, which could represent a missed opportunity. Furthermore, it is also important that the pension reform is supported by the government's broader reforms to promote private sector employment growth and formalization. For this, the social insurance system should also take on a stronger role in addressing short-term risks associated with key work and life transition (for example, unemployment, maternity, employment injury, and financial health protection), an agenda on which significant steps were taken through recent legislative reforms that can significantly enhance the attractiveness and relevance of contributory system, especially for most vulnerable workers.

Finally, further consideration needs to be given to the distributional implication of the proposed pension reforms, in the context of the broader social protection system of Iraq. A full modeling of the welfare impacts of the different scenarios, capturing contributory and noncontributory aspects covered in the paper, should be undertaken using the most recent survey data on living conditions. This would inform fine-tuning of the policy options and further dialogue among key stakeholders.

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Appendix 1: ILO Convention No. 102

These principles are codified in international social security standards and expressed in ILO C102 which was recently ratified by the Government of Iraq.[46]

Appendix Box 1.1: What Is the ILO Convention 102 on Social Security (Minimum Standards) and What Are the Implications of Ratification?

Social security is a human right, as recognized in the Universal Declaration on Human Rights, and Convention 102 outlines provisions and minimum standards for the establishment and governance of comprehensive social security systems, defining minimum benchmarks for adequate protection across the course of an individual's life, as well as principles of governance and financing.

In particular, the Convention outlines the minimum standards for each of the nine branches of social security (namely, medical care, family benefit, maternity benefit, sickness benefit, unemployment benefit, employment injury benefit, old-age benefit, invalidity benefit, and survivors' benefit). For each branch (protecting against a specific social risk or "contingency"), minimum standards are set in relation to the following:

- A minimum percentage of the population protected in case of occurrence of one of the contingencies;
- A minimum level of benefits to be provided in case of occurrence of one of the contingencies, which can be attained as a result of the combination of contributory and noncontributory social security pillars; and
- Conditions for and the periods of entitlement to the prescribed benefits.

These minimum standards should be reached by the application of key principles anchored in the Convention, irrespective of the type of scheme established. These include the following:

- The general responsibility of the State for the due provision of the benefits and the proper administration of the institutions and services concerned in securing the provision of the benefit.
- The collective financing of social security schemes.
- Solidarity in financing. Workers should not bear more than 50 percent of the costs of each scheme, exception made to employment injury, where the employers cover the whole cost.
- The adequacy and predictability of benefits, including the minimum guaranteed levels and benefit adjustments in line with changes in living costs.
- The participation of the persons protected in the management of social security schemes.
- The right of appeal in case of refusal of the benefit or complaint as to its quality or quantity.

[46] Several countries in the region are moving toward integrating their public and private pension systems (or harmonizing parameters across the two), such as Jordan, Egypt, Bahrain, Saudi Arabia, and Oman.

Appendix Box 1.1: What Is the ILO Convention 102 on Social Security (Minimum Standards) and What Are the Implications of Ratification? *(continued)*

- Equality of treatment for nonnational residents.
- Flexibility in gradually attaining the objectives of the Convention based on the notion that each country should have the discretion to determine how best to ensure its income security, thereby reflecting in its choices its social and cultural values, history, institutions, and level of economic development.

The process of ratifying an ILO Convention commits respective governments to amend or reform legislation and regulations to bring this more closely in line with the standards outlined in the Convention and make efforts to achieve the objectives of the Convention in a nationally defined manner. A Convention enters into application 12 months after ratification, and ratifying governments then regularly report on progress in this respect to the ILO's Committee of Experts on the Application of Conventions and Recommendations and the International Labour Conference's Tripartite Committee on the Application of Conventions and Recommendations. Worker and employer organizations are also invited to send observations to these bodies to complement government reporting.

Appendix 2: Projected Demographics and Macroeconomic Environment in Iraq

General demographic projections

Population projections are based on UN World Population Prospects, the 2019 Revision.

Fertility

The total fertility rate is estimated at 3.45 children per woman in 2020. It is assumed that it will gradually decrease to 1.95 in 2095 and stay constant thereafter.

Mortality

Life expectancy at birth is projected as follows:

- In 2020: 68.8 years for males, 72.7 years for females
- In 2050: 73.9 years for males, 77.3 years for females
- In 2080: 77.3 years for males, 80.4 years for females

Migration

Migration is projected as follows for specified periods:

- 2020–24: 19,636 per year
- 2025–29: –12,475 per year
- 2030–34: –10,000 per year
- 2035: –6,000 per year

Appendix Table 2.1 presents a summary of the main demographic variables, and a population projection for the period of 2020–2100.

Appendix Table 2.1: Projection of Demographic Variables

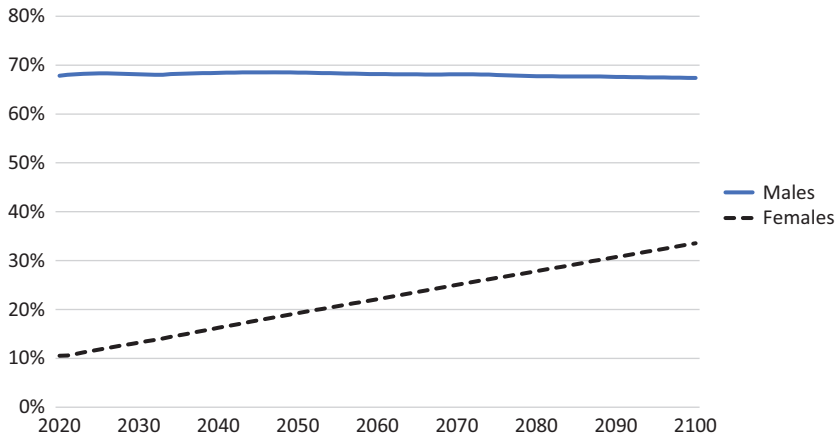
	2020	2030	2040	2050	2060	2070	2080	2090	2100
Population									
Total	40 224 773	50 127 952	60 661 266	71 157 105	81 121 600	90 141 816	97 744 473	103 711 033	107 932 703
Males	20 357 699	25 416 286	30 796 341	36 147 099	41 224 458	45 812 631	49 659 547	52 657 087	54 733 952
Females	19 867 074	24 711 666	29 864 925	35 010 006	39 897 143	44 329 185	48 084 927	51 053 946	53 198 751
Growth rates									
Total	2.3%	2.1%	1.8%	1.5%	1.2%	0.9%	0.7%	0.5%	0.3%
Males	2.3%	2.1%	1.8%	1.5%	1.2%	0.9%	0.7%	0.5%	0.3%
Females	2.3%	2.1%	1.8%	1.5%	1.2%	0.9%	0.7%	0.5%	0.3%
Average age									
Total	24.2	26.2	28.2	30.2	32.2	34.0	35.8	37.5	39.1
Males	23.7	25.7	27.7	29.7	31.7	33.5	35.2	36.9	38.4
Females	24.7	26.6	28.7	30.7	32.7	34.6	36.4	38.2	39.8
Total fertility rate	3.42	3.17	2.86	2.62	2.43	2.27	2.13	2.01	1.95
Life expectancy at birth									
Males	68.8	70.7	72.3	73.9	75.3	76.3	77.3	78.2	79.0
Females	72.7	74.3	75.9	77.3	78.4	79.4	80.4	81.4	82.4
Population change	913 510	1 026 374	1 066 370	1 028 902	963 960	843 517	688 828	518 540	347 501
Births per year	1 082 974	1 262 376	1 360 674	1 413 172	1 458 925	1 464 337	1 438 292	1 395 568	1 345 083
Deaths per year	189 100	223 527	288 304	378 270	488 965	614 819	743 464	871 028	991 582
Net migration per year	19636	–12475	–6000	–6000	–6000	–6000	–6000	–6000	–6000

Labor Force Projections

Labor force projections are based on the preliminary results of the Labour Force Survey (LFS) 2021. Appendix Table 2.2 presents a projection of the different labor force components.

According to the 2021 LFS, the labor force participation rates are 68.0 percent for males and 10.6 percent for females. Unemployment is high at 16.5 percent (14.7 percent for males and 28.2 percent for females). The low labor force participation of women in Iraq may be the outcome of several factors including barriers to entry like educational attainment, presence of young children and the limited availability of childcare services, age at marriage, and social norms determining the role of women in the public domain. It is considered that some of those barriers can be lifted in the future. For labor force projections, it is assumed that age-specific labor force participation rates of women will gradually increase over time to reach 50 percent of those of men in 2100, as illustrated by Appendix Figure 2.1.

Appendix Figure 2.1: Projected Labor Force Participation Rates, by Gender (2020–2100)



It is estimated that 54.8 percent of total employment in Iraq is in the informal sector. This is an important impediment to the participation of private sector workers to contributory (social security) pension schemes.

Macroeconomic framework

For the period from 2022 to 2028, the economic variables (GDP growth, inflation, GDP deflator) are projected according to the IMF economic forecasts. For subsequent years, it is assumed that:

- The global real GDP growth is constant over time at 2.2 percent.
- The non-oil real GDP growth after 2028 is projected by considering that the economy of Iraq will gradually transition from an oil to a non-oil economy. It is assumed that non-oil real GDP growth (at 3.5 percent in 2029) gradually merges into the global real GDP growth of 2.2 percent in 2100.
- Productivity growth is calculated based on the non-oil GDP growth rate divided by total employment (according to the labor force projections described previously).
- The nominal wage increase is then calculated as (CPI increase + productivity growth), with a minimum set equal to the CPI increase (if productivity is negative). This results in a real wage increase at 0.4 percent in 2029, gradually increasing to 1.7 percent in 2100.

Appendix Table 2.2: Labor Force Projections

	2021	2022	2023	2024	2025	2026	2027
	3	4	5	6	7	8	9
Population, in thousands	**41 181**	**42 138**	**43 104**	**44 081**	**45 032**	**45 990**	**46 955**
Male	20 846	21 334	21 827	22 325	22 812	23 301	23 794
Female	20 336	20 804	21 277	21 755	22 221	22 689	23 161
Population (15-69), in thousands	**25 022**	**25 738**	**26 479**	**27 242**	**27 996**	**28 769**	**29 562**
Male	12 604	12 973	13 355	13 748	14 137	14 537	14 947
Female	12 418	12 765	13 124	13 494	13 858	14 232	14 615
Labour force (15-69), in thousands	**9 885**	**10 232**	**10 583**	**10 941**	**11 293**	**11 651**	**12 015**
Male	8 573	8 841	9 112	9 388	9 656	9 929	10 204
Female	1 313	1 391	1 471	1 554	1 637	1 722	1 810
Labour force participation rate	**39.5%**	**39.8%**	**40.0%**	**40.2%**	**40.3%**	**40.5%**	**40.6%**
Male	68.0%	68.1%	68.2%	68.3%	68.3%	68.3%	68.3%
Female	10.6%	10.9%	11.2%	11.5%	11.8%	12.1%	12.4%
Employed (15-69), in thousands	**8 255**	**8 548**	**8 846**	**9 149**	**9 446**	**9 749**	**10 055**
Male	7 312	7 547	7 786	8 027	8 263	8 501	8 742
Female	942	1 000	1 060	1 121	1 184	1 247	1 313
Employed Total, in thousands	**8 255**	**8 548**	**8 846**	**9 149**	**9 446**	**9 749**	**10 055**
Male	7 312	7 547	7 786	8 027	8 263	8 501	8 742
Female	942	1 000	1 060	1 121	1 184	1 247	1 313
Growth rate of employed population	**3.3%**	**3.6%**	**3.5%**	**3.4%**	**3.3%**	**3.2%**	**3.1%**
Male	3.3%	3.2%	3.2%	3.1%	2.9%	2.9%	2.8%
Female	3.4%	6.2%	6.0%	5.8%	5.5%	5.4%	5.3%
Unemployed (15-69), in thousands	**1 631**	**1 684**	**1 738**	**1 793**	**1 847**	**1 902**	**1 959**
Male	1 260	1 293	1 327	1 361	1 393	1 427	1 462
Female	370	391	411	432	453	475	497
Unemployment rate	**16.5%**	**16.5%**	**16.4%**	**16.4%**	**16.4%**	**16.3%**	**16.3%**
Male	14.7%	14.6%	14.6%	14.5%	14.4%	14.4%	14.3%
Female	28.2%	28.1%	27.9%	27.8%	27.7%	27.6%	27.5%

	2030	2040	2050	2060	2070	2080	2090	2100
	12	22	32	42	52	62	72	82
	49 889	**60 042**	**70 129**	**79 226**	**87 550**	**94 359**	**99 376**	**102 847**
	25 294	30 478	35 618	40 248	44 477	47 915	50 425	52 121
	24 596	29 564	34 511	38 978	43 073	46 444	48 951	50 726
	32 035	**39 806**	**47 295**	**54 480**	**60 406**	**65 140**	**68 470**	**70 440**
	16 224	20 241	24 103	27 818	30 909	33 380	35 134	36 174
	15 811	19 565	23 192	26 661	29 497	31 760	33 336	34 266
	13 142	**17 028**	**20 972**	**24 859**	**28 445**	**31 457**	**33 993**	**35 872**
	11 051	13 849	16 506	18 964	21 053	22 615	23 751	24 375
	2 090	3 179	4 466	5 895	7 391	8 842	10 241	11 497
	41.0%	**42.8%**	**44.3%**	**45.6%**	**47.1%**	**48.3%**	**49.6%**	**50.9%**
	68.1%	68.4%	68.5%	68.2%	68.1%	67.7%	67.6%	67.4%
	13.2%	16.3%	19.3%	22.1%	25.1%	27.8%	30.7%	33.6%
	11 002	**14 287**	**17 654**	**20 935**	**23 987**	**26 579**	**28 707**	**30 331**
	9 480	11 945	14 312	16 487	18 362	19 782	20 802	21 398
	1 522	2 342	3 341	4 448	5 625	6 797	7 905	8 933
	11 002	**14 287**	**17 654**	**20 935**	**23 987**	**26 579**	**28 707**	**30 331**
	9 480	11 945	14 312	16 487	18 362	19 782	20 802	21 398
	1 522	2 342	3 341	4 448	5 625	6 797	7 905	8 933
	3.0%	**2.4%**	**1.9%**	**1.6%**	**1.2%**	**0.9%**	**0.7%**	**0.4%**
	2.7%	2.1%	1.6%	1.3%	0.9%	0.6%	0.4%	0.2%
	4.9%	4.1%	3.3%	2.6%	2.1%	1.7%	1.4%	1.1%
	2 139	**2 742**	**3 319**	**3 924**	**4 457**	**4 878**	**5 285**	**5 541**
	1 571	1 904	2 194	2 477	2 692	2 832	2 949	2 977
	569	838	1 124	1 447	1 766	2 046	2 337	2 564
	16.3%	**16.1%**	**15.8%**	**15.8%**	**15.7%**	**15.5%**	**15.5%**	**15.4%**
	14.2%	13.7%	13.3%	13.1%	12.8%	12.5%	12.4%	12.2%
	27.2%	26.3%	25.2%	24.5%	23.9%	23.1%	22.8%	22.3%

Appendix Table 2.3: Projections of Macroeconomic Variables

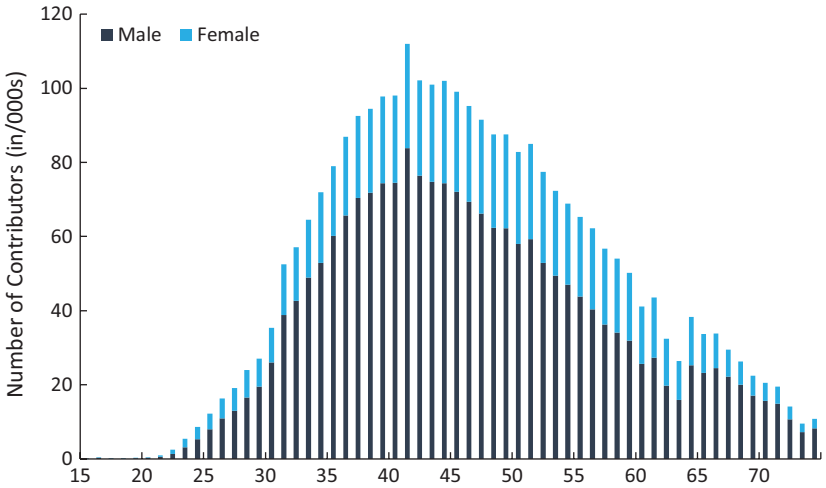
	2021	2022	2023	2024	2025	2026	2027
	7	8	9	10	11	12	13
GDP at Currents Prices (in billions)	299 450	392 028	352 555	361 174	375 836	392 350	409 414
Growth rate of Nominal GDP in percent	48.5%	30.9%	–10.1%	2.4%	4.1%	4.4%	4.3%
GDP at Constant 2021 Prices (in billions)	299 450	323 816	335 702	346 198	355 340	363 989	371 937
Growth rate of real GDP in percent	7.7%	8.1%	3.7%	3.1%	2.6%	2.4%	2.2%
Non-oil GDP at Constant 2021 Prices (in billions)	163 766	169 021	173 754	181 024	187 980	194 755	201 643
Growth rate of real non-oil GDP in percent	21.1%	3.2%	2.8%	4.2%	3.8%	3.6%	3.5%
GDP deflator	100.0	121.1	105.0	104.3	105.8	107.8	110.1
Growth rate of GDP deflator	37.9%	21.1%	–13.3%	–0.7%	1.4%	1.9%	2.1%
Consumer Price Index	100.0	105.0	112.0	113.8	116.3	119.0	121.5
Growth rate of CPI	6.0%	5.0%	6.6%	1.6%	2.2%	2.3%	2.1%
Population, in thousands	**41 181**	**42 138**	**43 104**	**44 081**	**45 032**	**45 990**	**46 955**
Growth rate of total population	2.3%	2.3%	2.3%	2.3%	2.2%	2.1%	2.1%
Labour Force, in thousands	**9 885**	**10 232**	**10 583**	**10 941**	**11 293**	**11 651**	**12 015**
Growth rate of total labour force	3.2%	3.5%	3.4%	3.4%	3.2%	3.2%	3.1%
Employed population, in thousands	**8 255**	**8 548**	**8 846**	**9 149**	**9 446**	**9 749**	**10 055**
Growth rate of total employed population	3.3%	3.6%	3.5%	3.4%	3.3%	3.2%	3.1%
Productivity per worker (non-oil)	19 839	19 774	19 643	19 787	19 900	19 978	20 053
Productivity growth rate in percent		–0.3%	–0.7%	0.7%	0.6%	0.4%	0.4%
Nominal wage growth (ILO approach)		5.0%	6.6%	2.4%	2.8%	2.7%	2.5%
Rate of return of the fund (nominal)		3.0%	3.0%	3.0%	3.0%	3.0%	3.0%

Source: IMF staff Projections.

	2028	2029	2030	2040	2050	2060	2070	2080	2090	2100
	14	15	16	26	36	46	56	66	76	86
	427 834	445 937	464 806	703 489	1 064 737	1 611 489	2 439 004	3 691 456	5 587 054	8 456 060
	4.5%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%
	380 074	388 389	396 885	492 775	611 831	759 653	943 189	1 171 068	1 454 004	1 805 298
	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
	208 731	216 030	223 544	311 602	426 662	573 853	758 117	983 731	1 253 740	1 569 333
	3.5%	3.5%	3.5%	3.3%	3.1%	2.9%	2.7%	2.6%	2.4%	2.2%
	112.6	114.8	117.1	142.8	174.0	212.1	258.6	315.2	384.3	468.4
	2.3%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
	123.9	126.4	128.9	157.1	191.5	233.5	284.6	347.0	422.9	515.6
	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
	47 927	**48 904**	**49 889**	**60 042**	**70 129**	**79 226**	**87 550**	**94 359**	**99 376**	**102 847**
	2.1%	2.0%	2.0%	1.7%	1.4%	1.1%	0.9%	0.6%	0.4%	0.3%
	12 384	**12 760**	**13 142**	**17 028**	**20 972**	**24 859**	**28 445**	**31 457**	**33 993**	**35 872**
	3.1%	3.0%	3.0%	2.4%	1.9%	1.6%	1.2%	0.9%	0.7%	0.4%
	10 367	**10 682**	**11 002**	**14 287**	**17 654**	**20 935**	**23 987**	**26 579**	**28 707**	**30 331**
	3.1%	3.0%	3.0%	2.4%	1.9%	1.6%	1.2%	0.9%	0.7%	0.4%
	20 135	20 223	20 318	21 811	24 169	27 411	31 605	37 011	43 673	51 740
	0.4%	0.4%	0.5%	0.9%	1.2%	1.3%	1.5%	1.6%	1.7%	1.7%
	2.4%	2.4%	2.5%	2.9%	3.2%	3.4%	3.5%	3.7%	3.7%	3.8%
	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%

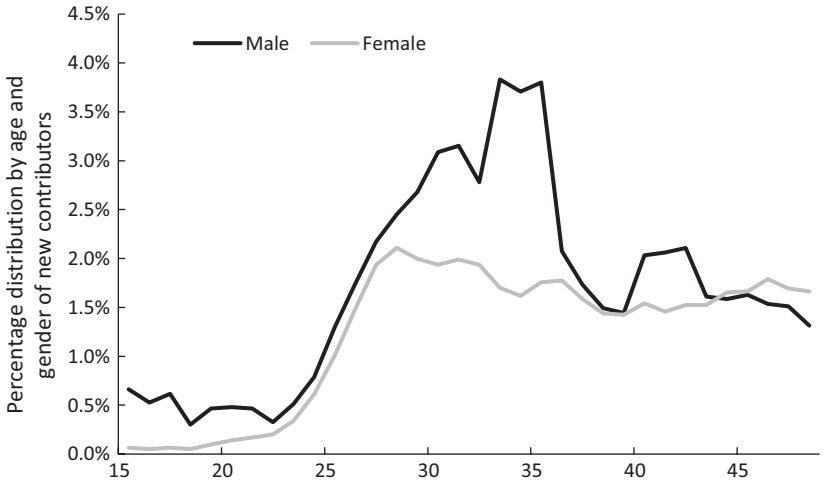
Appendix 3: Public Sector Scheme Assumptions

Appendix Figure 3.1: Number of Contributors by Age and Gender, 2021



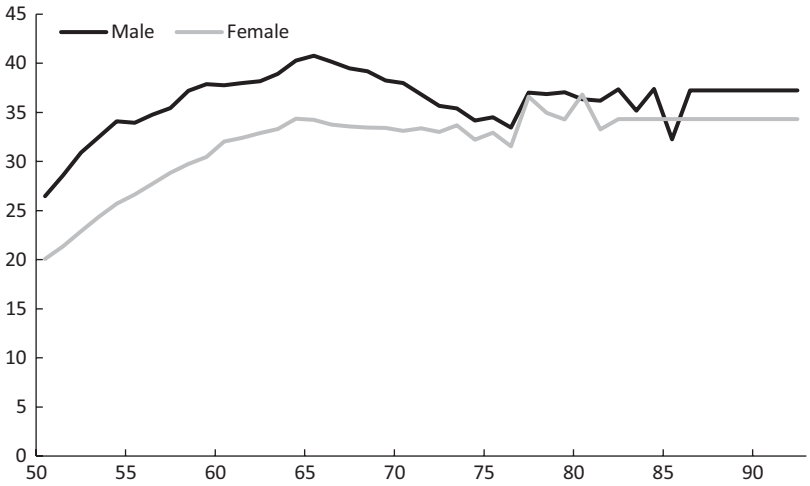
Source: Iraqi authorities' data and authors' calculations.

Appendix Figure 3.2: Distribution of New Contributors by Age and Gender, 2021



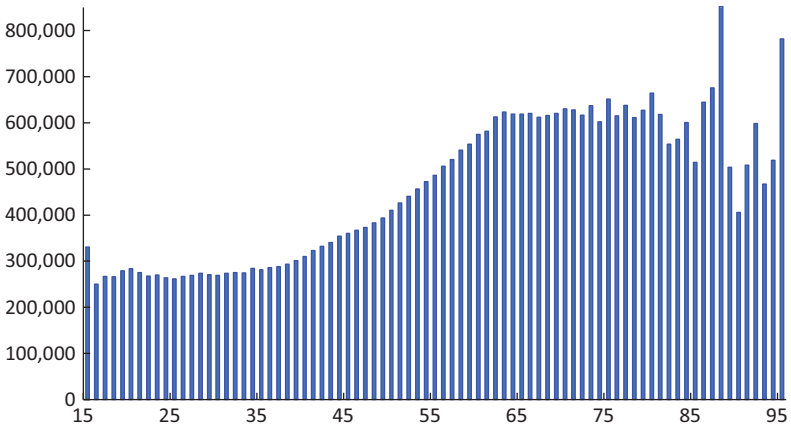
Source: Iraqi authorities' data and authors' calculations.

Appendix Figure 3.3: Average Length of Service at Retirement by Age and Gender, 2021



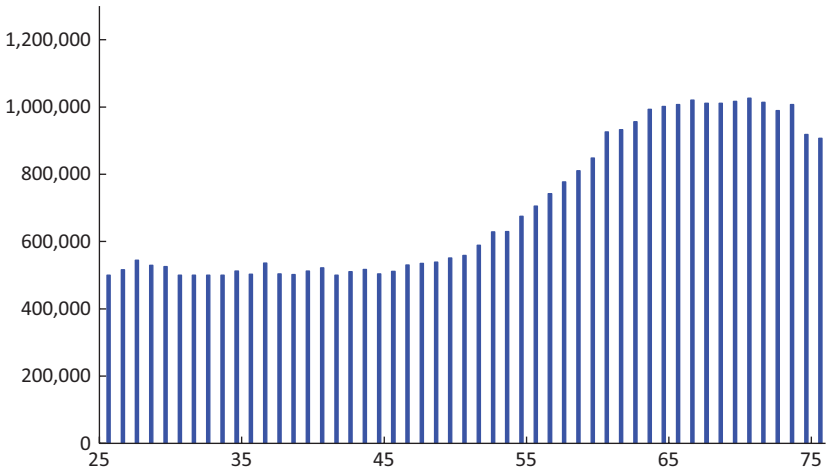
Source: Iraqi authorities' data and authors' calculations.

Appendix Figure 3.4: Average Monthly Basic Wage



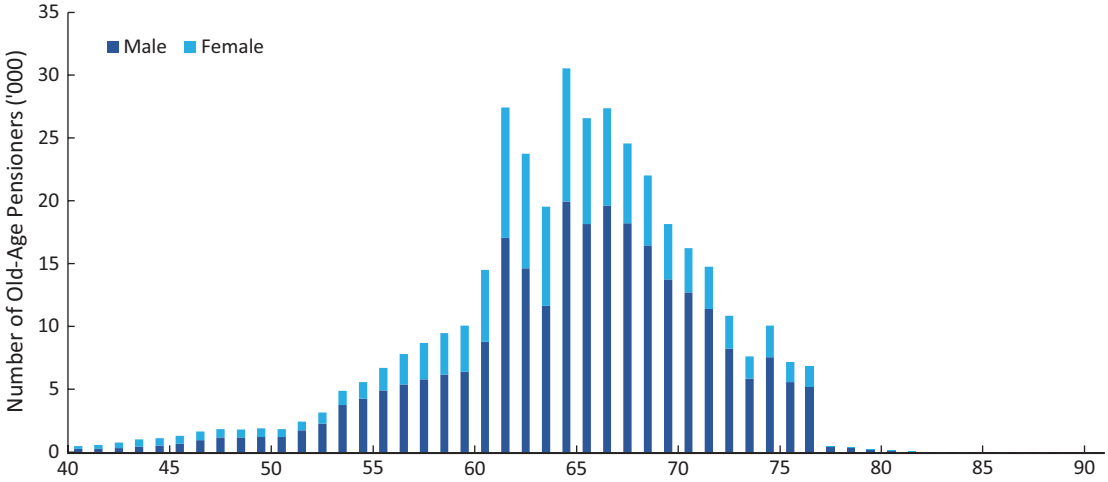
Source: Iraqi authorities' data and authors' calculations.

Appendix Figure 3.5: Average Monthly Pension



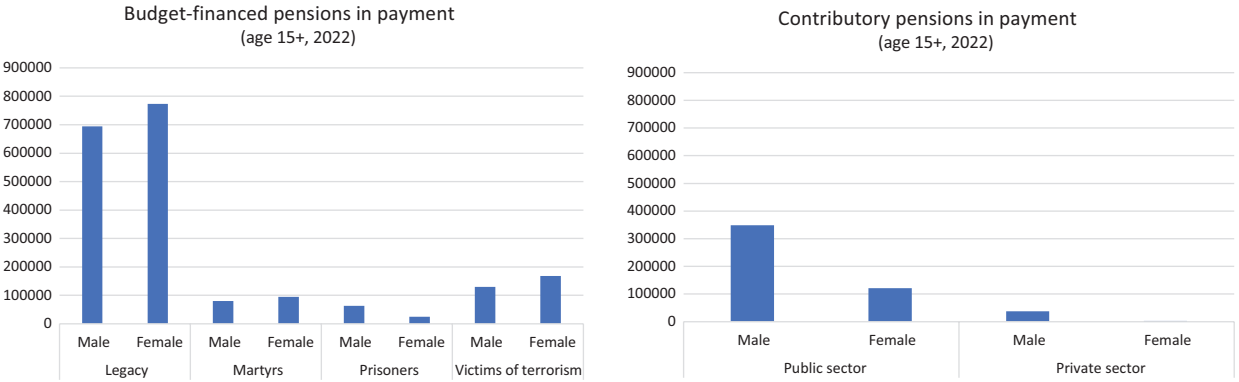
Source: Iraqi authorities' data and authors' calculations.

Appendix Figure 3.6: Number of Old-Age Beneficiaries by Age and Gender, 2021



Source: Iraqi authorities' data and authors' calculations.

Appendix Figure 3.7: Pensions in Payment by Gender, 2022



Source: Iraqi authorities' data and authors' calculations.

Retirement rates

Retirement rates are set in order to match the data on the number of SPF pensioners in payment at the end of 2022 (data received in April 2023).

Appendix Table 3.1: Retirement Rates for Males and Females

Retirement rates - Males

Age	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031+
49	0.0%	0.1%	0.2%	0.4%	0.5%	0.6%	0.7%	0.8%	1.0%	1.1%
50	0.0%	0.2%	0.4%	0.6%	0.8%	1.0%	1.2%	1.4%	1.6%	1.8%
51	0.0%	0.2%	0.5%	0.7%	0.9%	1.2%	1.4%	1.6%	1.9%	2.1%
52	0.0%	0.3%	0.6%	0.8%	1.1%	1.4%	1.7%	2.0%	2.3%	2.5%
53	0.0%	0.3%	0.6%	0.9%	1.2%	1.5%	1.8%	2.1%	2.4%	2.7%
54	0.0%	0.3%	0.6%	0.9%	1.2%	1.5%	1.8%	2.1%	2.4%	2.7%
55	0.0%	0.3%	0.6%	0.8%	1.1%	1.4%	1.7%	1.9%	2.2%	2.5%
56	0.0%	0.3%	0.6%	0.8%	1.1%	1.4%	1.7%	1.9%	2.2%	2.5%
57	0.0%	0.5%	1.0%	1.5%	2.0%	2.5%	3.0%	3.5%	4.0%	4.5%
58	0.0%	1.3%	2.5%	3.8%	5.0%	6.3%	7.5%	8.8%	10.0%	11.3%
59	0.0%	6.7%	13.3%	20.0%	26.7%	33.3%	40.0%	46.7%	53.3%	60.0%
60	0.0%	7.8%	15.6%	23.3%	31.1%	38.9%	46.7%	54.4%	62.2%	70.0%
61	0.0%	0.0%	11.3%	22.5%	33.8%	45.0%	56.3%	67.5%	78.8%	90.0%
62	0.0%	0.0%	0.0%	14.3%	28.6%	42.9%	57.1%	71.4%	85.7%	100.0%
63	0.0%	0.0%	0.0%	0.0%	16.7%	33.3%	50.0%	66.7%	83.3%	100.0%
64	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	40.0%	60.0%	80.0%	100.0%
65	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	25.0%	50.0%	75.0%	100.0%
66	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	33.3%	66.7%	100.0%
67	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	100.0%
68	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
69	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Authors' simulations based on ILO actuarial and World Bank PROST models.

Retirement rates - Females

Age	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031+
49	0.0%	0.1%	0.2%	0.2%	0.3%	0.4%	0.5%	0.6%	0.6%	0.7%
50	0.0%	0.1%	0.2%	0.3%	0.5%	0.6%	0.7%	0.8%	0.9%	1.0%
51	0.0%	0.1%	0.3%	0.4%	0.5%	0.7%	0.8%	1.0%	1.1%	1.2%
52	0.0%	0.2%	0.4%	0.5%	0.7%	0.9%	1.1%	1.2%	1.4%	1.6%
53	0.0%	0.2%	0.4%	0.7%	0.9%	1.1%	1.3%	1.5%	1.8%	2.0%
54	0.0%	0.2%	0.5%	0.7%	1.0%	1.2%	1.5%	1.7%	2.0%	2.2%
55	0.0%	0.3%	0.6%	0.8%	1.1%	1.4%	1.7%	2.0%	2.2%	2.5%
56	0.0%	0.3%	0.6%	0.9%	1.2%	1.5%	1.8%	2.1%	2.4%	2.7%
57	0.0%	0.6%	1.1%	1.7%	2.2%	2.8%	3.4%	3.9%	4.5%	5.0%
58	0.0%	1.3%	2.6%	4.0%	5.3%	6.6%	7.9%	9.3%	10.6%	11.9%
59	0.0%	6.7%	13.3%	20.0%	26.7%	33.3%	40.0%	46.7%	53.3%	60.0%
60	0.0%	7.8%	15.6%	23.3%	31.1%	38.9%	46.7%	54.4%	62.2%	70.0%
61	0.0%	0.0%	11.3%	22.5%	33.8%	45.0%	56.3%	67.5%	78.8%	90.0%
62	0.0%	0.0%	0.0%	14.3%	28.6%	42.9%	57.1%	71.4%	85.7%	100.0%
63	0.0%	0.0%	0.0%	0.0%	16.7%	33.3%	50.0%	66.7%	83.3%	100.0%
64	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	40.0%	60.0%	80.0%	100.0%
65	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	25.0%	50.0%	75.0%	100.0%
66	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	33.3%	66.7%	100.0%
67	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	100.0%
68	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
69	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Authors' simulations based on ILO actuarial and World Bank PROST models.

Growth of the insured population

For the growth of the insured population in the public sector, a target is established in 2100 such that the covered population in the public sector will represent 15 percent of the labor force in 2100 (14 percent for males and 17 percent for females).

Appendix Table 3.2: Number of Contributors and Pensioners under the Public Sector Scheme

Year	Number of Contributors	Number of pensioners					Ratio of contributors to pensioners
		Old age	Invalidity	Widows/ Widowers	Orphans	Total	
2022	2 986 000	392 296	17 789	106 912	155 037	672 034	4.44
2023	3 069 466	420 081	21 386	129 866	196 456	767 788	4.00
2024	3 153 401	466 520	24 991	154 274	235 007	880 792	3.58
2025	3 234 196	531 762	28 550	180 053	268 204	1 008 568	3.21
2030	3 644 058	1 083 523	44 972	328 956	359 225	1 816 677	2.01
2040	4412 188	1 707 151	77 551	701 379	475 618	2 961 699	1.49
2050	5 052 681	2 387 388	111 570	1 078 296	592 150	4 169 404	1.21
2060	5 537 055	3 167 626	144 805	1 414 541	691 390	5 418 362	1.02
2070	5818471	3 880 315	173 957	1 732137	801 847	6 588 256	0.88
2080	5 862 628	4 480 987	197 620	1 994 902	896 725	7 570 234	0.77
2090	5717018	4 948 675	213 840	2 186 503	967 235	8 316 253	0.69
2100	5 380 765	5 246 086	220 138	2 329 062	1 013 759	8 809 044	0.61
2110	5 399 149	5 364 349	217 734	2 414 804	1 035 299	9 032 186	0.60
2120	5 341 502	5 355 232	214 401	2 437 791	1 035 565	9 042 988	0.59

Indexation of the minimum pension

It is assumed that the minimum pension (500,000 ID in 2022) is indexed in line with wages from 2023 onward.

Indexation of pensions in payment

It is assumed that pensions in payment are indexed with CPI (and assume that they do not catch up with the minimum pension if the minimum pension eventually exceeds pensions in payment).

Reserve amount at valuation date

The starting reserve amount as of the end of 2021 is set at ID 11,580,450 million.

Appendix 4: Private Sector Scheme Assumptions

In addition to the demographic and economic assumptions, financial projections of the Iraqi pension system require a database specific to the schemes (characteristics of insured persons and pensions in payment) and specific actuarial assumptions.

Data and assumptions on the insured population

a. Number of insured persons and average wages

No precise data are available on the exact number of insured members of the private sector in 2021. In the absence of data, it is assumed that there are 500,000 total private sector contributors in 2021. This number considers the numbers projected for 2021 in the 2016 valuation and the views of internal stakeholders mentioning that coverage has increased more than anticipated between 2016 and 2021. The age and gender distribution is assumed to be identical to the 2016 distribution.

For estimating the average earnings in 2021, data from the LFS of 2021 were used. The average earnings of private sector insured workers were assumed equal to the average earnings of persons having completed secondary school according to the LFS. This assumes that formal sector workers have a higher education level than the average.

The assumed distribution of insured persons and their average earnings in 2021 appears in Appendix Table 4.1.

Appendix Table 4.1: Number and Average Monthly Earnings of Actively Insured Persons by Age and Gender, as of December 31, 2021

Age	Male		Female	
	Number	Average Monthly Earnings	Number	Average Monthly Earnings
16–19	4,271	439,564	222	480,832
20–24	30,257	543,248	3,092	571,833
25–29	83,975	793,846	13,038	675,572
30–34	85,450	854,279	11,692	714,425
35–39	67,458	856,729	8,309	714,239
40–44	49,742	755,685	6,902	710,641
45–49	41,090	663,072	5,759	654,765
50–54	32,238	564,678	4,073	618,132
55–59	21,578	549,112	2,052	684,289
60–64	19,178	514,837	1,492	595,421
65–69	7,622	518,539	511	438,147
Total	**442,860**	**732,699**	**57,140**	**676,919**

b. Salary scales

Appendix Table 4.2 presents the salary scales used for each gender. These salary scales are derived from the observed earnings profile of active contributors in 2019 and projected to their ultimate pattern from 2024.

For an appropriate treatment of minimum and flat-rate benefits, the actuarial model separates the insured population into three earnings brackets: the lowest 30 percent, a medium range of 40 percent, and the highest 30 percent, at each age and for each gender. Separate salary scales are established for each of these earnings brackets.

Appendix Table 4.2: Ultimate Salary Scales by Age and Gender

Age	Male	Female
15	1.000	1.000
20	1.274	1.180
25	1.548	1.361
30	1.822	1.541
35	2.096	1.695
40	2.191	1.745
45	2.241	1.795
50	2.291	1.845
55	2.341	1.895
60	2.391	1.945
65	2.391	1.945

c. Projected growth of the insured population

Under status quo, it is assumed that the private sector insured population will increase at the same rate as the total employed population of Iraq for the whole projection period. This means that private sector insured persons represent a constant percentage of 18.1 percent of private sector employment (9.3 percent of total employment).

Under reform, it is considered that the proposed measures for the inclusion of self-employed persons and informal workers would accelerate the rate of growth of the insured population, such that 30 percent of private sector salaried and 11.5 percent of self-employed would be covered by social security in 2120 (under the medium coverage scenario). This means that if the distribution of employment remains the same as presently, 19.4 percent of all private sector workers would be covered by social security in 2120. A high-coverage scenario is also considered for the projections.

Appendix Table 4.3: Coverage Scenarios by Sector of Employment

Employment Category	Present Coverage Rate	Projected Coverage Rate (in 100 Years)	
	Low-Coverage Scenario (%)	Medium-Coverage Scenario (%)	High-Coverage Scenario (%)
Salaried workers	18.1	30.0	70.0
Self-employed	0.0	11.5	38.0
Family workers	0.0	0.0	32.0
Employers	0.0	0.0	40.0
Total	**9.3**	**19.4**	**54.2**

Source: Author's calculations.

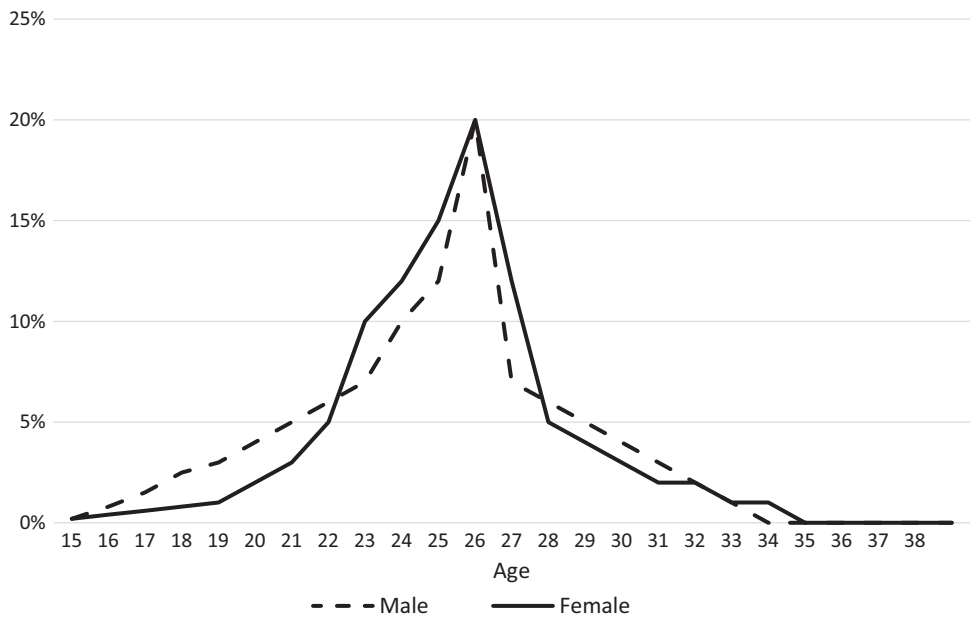
d. Age distribution of new entrants

For the application of the year-by-year cohort methodology, an assumption is required on the age and gender distribution of new entrants. The total number of new entrants is determined each year as the difference between the following:

- The increase of the insured population resulting from the application of the assumed rate of growth to the insured population of the preceding year, and
- The number of deaths, new invalids, and new retirees for the year determined after the application of the assumed mortality rates, invalidity incidence rates, and retirement rates described hereafter.

Once the total number of new entrants is determined, they are distributed by age in line with an assumed distribution. No data were available on the age and gender distribution of new entrants. A theoretical approach has thus been adopted for determining this distribution, which ensures consistency with the future evolution of the covered population. Distinct age distributions of new entrants are adopted for public and private sectors, and for each gender (see Appendix Figure 4.1).

Appendix Figure 4.1: Assumed Distribution of New Entrants by Age and Gender



e. Accrued past credits

A distribution of accrued past credits for the public sector was obtained from the social security administrative records. The same distribution was used for the private sector. Data are shown in Appendix Table 4.4.

Appendix Table 4.4: Average Past Contribution Years of Insured Persons, by Age and Gender

Age	Male	Female
20	1.9	1.7
25	4.5	3.8
30	7.6	6.7
35	9.5	10.4
40	11.8	14.8
45	14.2	18.7
50	18.1	23.5
55	21.6	29.3
60	29.2	33.0

Demographic assumptions related to the scheme

f. Mortality of insured persons

Mortality rates for the insured population are assumed to be equal to the mortality rates of the general population. Mortality rates were projected to decline continuously during the projection period in line with the assumed increase of the average life expectancy. This mortality pattern is also used to project survivors' benefits payable on the death of insured persons or pensioners. For invalidity pensioners, it is assumed that mortality rates are equal to five times those of the general population at age 20 years, decreasing linearly to three times at age 60.

g. Disability incidence

Since experience data on the invalidity of the private sector were insufficient to be credible, the incidence rates for the private sector are assumed equal to those of the public sector. Rates of entry into invalidity are assumed to remain constant for the whole projection period. It is assumed that among new disability pensioners, 40 percent are partially disabled. Disability incidence rates are shown in Appendix Table 4.5.

It is conservatively assumed that all new invalid persons have a degree of invalidity of 100 percent because of the absence of experience data on the degree of invalidity of past pensioners. On the other hand, the pension supplement granted to invalidities resulting from work accidents or diseases (equal to 35 percent of the reference salary multiplied by the degree of invalidity) is ignored in the projection, also because of the absence of data. It is considered that these two effects cancel to a certain extent.

Appendix Table 4.5: Disability Incidence Rates by Age and Gender

Age	Male	Female
25	0.0001	0.0005
30	0.0001	0.0003
35	0.0002	0.0011
40	0.0003	0.0020
45	0.0005	0.0034
50	0.0006	0.0043
55	0.0008	0.0054
60	0.0013	0.0101

h. Retirement behavior

Given the insufficiency of data for the private sector, retirement rates (under Draft law provisions) were established on a theoretical basis with consideration of the experience of the public sector's scheme for which data were available. These retirement rates appear in Appendix Table 4.6. The same assumption was used for projections under the current regime despite the difference in legal provisions but

Appendix Table 4.6: Initial Retirement Rates by Age and Gender

Age	Male (%)	Female (%)
49	5.0	5.0
50	5.0	5.0
51	5.0	5.0
52	5.0	5.0
53	5.0	5.0
54	5.0	25.0
55	5.0	5.0
56	5.0	5.0
57	5.0	50.0
58	5.0	25.0
59	25.0	25.0
60	5.0	25.0
61	5.0	25.0
62	50.0	25.0
63	25.0	25.0
64	25.0	25.0
65	25.0	25.0

Appendix Table 4.6: Initial Retirement Rates by Age and Gender *(continued)*

Age	Male (%)	Female (%)
66	25.0	25.0
67	25.0	25.0
68	25.0	25.0
69	100.0	100.0

considering that the retirement behavior in Iraq does not seem to be driven by the social security provisions. For projections under the ILO proposal, the retirement rates were gradually moved to higher average ages in line with the proposed increase of the legal retirement age to 65 over the next 15 years and the increase in life expectancy thereafter.

i. Family statistics

Family statistics are necessary for the projection of survivors' benefits. Assumptions must be established on the probability of having an eligible spouse at death, the average age of the spouse, the average number of children (and other survivors) possibly eligible for a benefit, and the average age of the children (and other survivors). It is also necessary to determine survival rates for children and other beneficiaries.

Since no data were available from the scheme on the family structure of the insured population, assumptions were established based on the experience of another country of the region. The probability of having an eligible spouse has, however, been adjusted for female contributors given the specific rules applicable to widowers' pensions, based on the scheme's experience. Sample assumptions are shown in Appendix Table 4.7.

Appendix Table 4.7: Family Statistics

Age	Male				Female			
	Probability of Having an Eligible Spouse	Average Age of Spouse	Average Number of Other Survivors	Average Age of Other Survivors	Probability of Having an Eligible Spouse	Average Age of Spouse	Average Number of Other Survivors	Average Age of Other Survivors
20	0.00	19	0.71	0	0.00	21	0.58	0
25	0.47	23	1.24	2	0.07	27	1.29	2
30	0.63	27	1.71	4	0.10	33	1.84	4
35	0.66	31	2.10	7	0.11	39	2.20	7
40	0.76	36	2.39	10	0.12	44	2.32	10
45	0.88	40	2.46	13	0.14	50	2.17	13
50	0.93	45	2.21	16	0.15	55	1.84	16
55	0.93	49	1.89	18	0.15	61	1.50	18
60	0.95	53	1.82	20	0.15	67	1.33	20
65	0.97	57	1.82	21	0.15	73	1.33	21
70	0.97	60	1.73	22	0.15	80	1.43	22
75	0.92	64	1.61	23	0.15	86	1.56	23
80	0.88	67	1.55	24	0.14	93	1.65	24

continued

Appendix Table 4.7: Family Statistics *(continued)*

Age	Male				Female			
	Probability of Having an Eligible Spouse	Average Age of Spouse	Average Number of Other Survivors	Average Age of Other Survivors	Probability of Having an Eligible Spouse	Average Age of Spouse	Average Number of Other Survivors	Average Age of Other Survivors
85	0.84	69	1.41	25	0.13	98	1.49	25
90	0.79	74	1.06	25	0.13	98	1.12	25

Other assumptions

j. Indexation of pensions in payment and scheme's parameters

It is assumed that pensions in payment are indexed in line with CPI increases.

The minimum wage is set equal to 350,000 ID per month in 2021. The minimum wage, maximum insurable earnings, and the minimum pension (under reform) are assumed to follow over time the evolution of the general wage increase.

k. Separation of insured earnings between the oil and non-oil sectors

It is supposed that 25 percent of the total insured earnings are for the oil sector at the valuation date. This percentage is assumed to gradually decrease to zero in 2100, in line with the macroeconomic assumption under which Iraq's economy will gradually exit the oil sector over the next 80 years.

l. Administrative expenses

Administrative expenses have represented on average 6.3 percent of contributions in the private sector over the last three years. For the public sector, administrative expenses are not identified (the government supports the cost of administration of the public sector's scheme through the budget of certain ministries). Given the larger size of the public sector's scheme compared to the private sector scheme (hence larger economies of scale), it is assumed that administrative expenses were globally representing 5 percent of the contributions of the combined schemes in 2016. It is projected that administrative expenses will be equal to the expenses estimated for 2016 (5 percent of contribution income), indexed annually according to the general wage increase assumed under the macroeconomic framework of the valuation.

Estimated pensions in payment in 2021

This section presents a distribution of pensions in payment at the end of 2021, estimated based on the projection of the 2016 valuation.

The number of pensions in payment in 2021 was adjusted by the following factors applied to the numbers in 2016 (based on the projected number of pensions in payment 5 years after the 2016 valuation date):

Appendix Table 4.8: Factor Adjustments for the Number of Pension Payments

	Male	Female
Old age	3.33	2.18
Invalidity	1.00	2.25
Widows	1.87	1.08

Source: Iraqi authorities' data and authors' calculations.

Average pensions were kept unchanged since the projected values for 2021 (in the 2016 valuation) were lower than those observed in 2016.

Appendix Table 4.9: Pensions in Payment at the End of 2021 for Males, by Age and Type of Pension

Age	Old Age		Invalidity		Widows	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
15–19	–	–	5	1,012,153	50	375,951
20–24	–	–	10	578,373	253	376,267
25–29	–	–	15	745,458	360	423,294
30–34	–	–	29	699,822	335	444,698
35–39	–	–	56	710,245	526	448,107
40–44	–	–	84	648,968	812	463,954
45–49	–	–	146	952,237	1,002	477,485
50–54	1,625	618,617	149	729,248	1,237	480,008
55–59	3,765	613,392	113	946,947	1,061	473,689
60–64	5,711	598,338	154	598,257	1,822	465,345
65–69	3,929	592,652	123	631,783	1,786	455,241
70–74	2,762	585,888	118	588,960	1,438	465,342
75–79	2,300	593,759	112	743,266	1,410	469,889
80–84	1,263	575,633	53	585,845	890	460,027
85–89	702	618,939	41	586,162	609	482,535
90–94	240	558,973	25	967,168	227	456,163
95–99	88	552,969	12	578,373	98	441,465
Total	**22,384**	**598,102**	**1,245**	**722,922**	**13,915**	**463,160**

Source: Iraqi authorities' data and authors' calculations.

Appendix Table 4.10: Pensions in Payment at the End of 2021 for Females, by Age and Type of Pension

Age	Old age		Invalidity		Widows	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
15–19	-	-	-	-	15	803,830
20–24	-	-	-	-	29	563,537
25–29	-	-	-	-	26	337,976
30–34	-	-	3	571,453	13	292,719
35–39	-	-	16	571,453	26	419,268

continued

Appendix Table 4.10: Pensions in Payment at the End of 2021 for Females, by Age and Type of Pension *(continued)*

Age	Old age		Invalidity		Widows	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
40–44	–	–	27	516,953	48	432,957
45–49	–	–	62	571,453	24	454,529
50–54	360	636,636	54	657,171	48	443,994
55–59	471	554,754	52	627,596	26	413,223
60–64	648	559,823	62	571,453	29	415,774
65–69	444	559,717	43	571,453	26	430,448
70–74	309	550,889	57	571,453	22	377,322
75–79	192	549,513	41	571,453	29	372,872
80–84	90	547,877	22	571,453	15	338,122
85–89	48	543,848	16	857,180	15	621,704
90–94	12	543,848	3	571,453	4	450,014
95–99	6	543,848			4	425,573
Total	**2,579**	**566,935**	**459**	**594,828**	**395**	**476,180**

Source: Iraqi authorities' data and authors' calculations.