



## Special Series on COVID-19

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# Pension Schemes in the COVID-19 Crisis: Impacts and Policy Considerations

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The economic downturn brought about by the coronavirus pandemic is leading to declining labor demand which, despite governments' efforts to preserve jobs, is translating into not only lower employment rates but also lower activity rates. In particular, older workers—who are more vulnerable to the coronavirus, have reasonably large pension entitlements, and often have a lower likelihood of re-entering employment—may seek to permanently exit the labor force and retire. In addition to a potentially higher inflow of pension beneficiaries, governments are introducing tax easements which reduce pension scheme contribution revenues. These developments impact both the sustainability and the adequacy of public pension expenditures, which may reinforce general fiscal pressures arising from the crisis. Funded pension schemes suffer from the crisis because lower returns diminish their asset values, while low yields on public debt instruments increase the present value of their liabilities. This can generate both explicit fiscal risks—in the case of government guarantees—and implicit fiscal risks through lower private pension benefits or financial strain on the sponsoring employers. This Note focuses on the impacts of the crisis on pension systems and their policy implications and is mostly limited to discussing public pension schemes that are overwhelmingly defined benefit and pay-as-you-go financed.<sup>2</sup>

## I. IMPACT OF THE CRISIS ON PENSION SCHEMES

**The current crisis influences pension schemes through a number of channels.** The main ones are (1) increased likelihood of individuals exiting the labor market and claiming pension benefits; (2) labor market effects, as contracting employment and stagnating or declining real wages may result in a declining wage tax

<sup>1</sup> Please direct any questions and comments on this note to [cdsupport-spending@imf.org](mailto:cdsupport-spending@imf.org).

<sup>2</sup> Privately underwritten schemes—both defined benefit and defined contribution ones—are addressed only to the extent of their capacity to generate fiscal and welfare risks.

base; (3) asset price shocks negatively impacting funded pension schemes' balance sheets; and (4) capacity of governments and private enterprises, as underwriters of pension obligations, to maintain solvency of defined benefit pension scheme under adverse conditions. This note discusses issues that governments can directly impact through their pension policy.<sup>3</sup>

**The extent to which pension schemes can accommodate these risks, and the risk-sharing between schemes' underwriters and members, will vary across pension schemes.** The severity of the financial and welfare consequences suffered by scheme underwriters and members depend on the schemes' precrisis financial position and basic characteristics, including the relationship between their assets and liabilities (including whether they can diverge, creating a funding gap), their capacity to access additional resources, and the risk-sharing between members and underwriters. For instance, (1) defined benefit schemes, where liabilities are less directly linked to assets and revenues, are more vulnerable than defined contribution schemes, where liabilities by definition equal the value of assets; (2) private pension schemes would typically find it more difficult to generate or access additional resources than public schemes; (3) in defined benefit schemes, the risk of resources (from contributions or liquidating invested reserves) falling short of obligations is borne by underwriters (that is, sponsoring employers, financial service companies or, as in the case of public schemes, the government), whereas in a defined contribution arrangement the risk of insufficient retirement balances is borne by the individual scheme member. These characteristics determine the impact of the crisis on pension schemes and the types of responses governments may consider.

**Economic crises may lead to an acceleration of early retirement applications and disability benefit claims.** Most contributory public pension schemes allow members to retire before the statutory retirement age, subject to certain conditions. The two main channels for receiving pension benefits prior to the statutory retirement age are early retirement or successfully claiming a long-term or permanent disability benefit.

- **Early retirement.** Contributory old-age pensions are conditioned on reaching the statutory retirement age and having accrued a sufficiently long contribution record ("service history"). However, most contributory pension schemes permit early retirement based on occupation, long service records, or individual choice (general early retirement). Best practice requires that early retirement is linked to lower benefits in order to balance the present value of expected pension benefits with total contributions paid. Social security regulations reflecting actuarially neutral<sup>4</sup> adjustments typically require early retirement deductions of between 0.3–0.6 percent per month of early retirement, which translates into benefits that are on average between 3.6–7.2 percent lower per year of early retirement.<sup>5</sup> Lower pensions may result in higher old-age poverty and necessitate further welfare transfers, especially since it is often less-educated, lower-earning workers whose labor market prospects are most jeopardized by a long crisis.

Evidence from past crises indicates that the impact of economic crises on retirement patterns is determined by two factors: while a decline in retirement wealth may push people to seek longer working careers, poor labor market prospects among workers who have the option to claim early retirement benefits generate incentives to exit the labor market as an alternative to unemployment. The overall impact of these factors depends on the structure of the pension system, the ease of accessing early retirement pensions, employment prospects, and the availability of transfers that can help workers to wait out the crisis. Whether it is the wealth or the employment effect that dominates workers' retirement decisions depends on the

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<sup>3</sup> Labor market, tax policy revenue administration, financial market, and other consequences of the crisis are discussed in other IMF publications, accessible at the [IMF COVID-19 Knowledge Hub](#).

<sup>4</sup> Actuarial neutrality is a marginal concept (as opposed to actuarial fairness), requiring that the present value of accrued pension benefits for working an additional year is the same as in the year before, that is, benefits increase only by the additional entitlement earned in that year or are reduced by the entitlements lost through contributing for one year less.

<sup>5</sup> For a standardized description of country-specific pension rules, including early retirement deductions, please refer to [Social Security Programs Throughout the World](#), a regularly updated online publication of the US Social Security Administration.

effectiveness of government efforts to help employers maintain labor demand, the relative importance of pension savings within expected old age income, the regulations determining the valuation of pension savings (that is, the extent to which asset price volatilities are directly reflected in the valuation of individual pension accounts), and the availability and generosity of welfare transfers which may encourage workers to stay economically active even at times of increasing unemployment.

- **Disability benefits.** Disability pension awards differ from early retirement in that difficulty in establishing clear and easily verifiable eligibility rules means that there is a greater role for subjectivity both in terms of self-assessment of health status and the decision to apply for benefits, and also in terms of the administrative process of determining eligibility. Disability benefit applications have long been observed to be countercyclical,<sup>6</sup> displaying an uptick at times of economic crisis and increasing unemployment.<sup>7</sup> This suggests that disability status—and subsequent benefits—is possibly used as an early retirement option and as an alternative to unemployment. This approach is disadvantageous from macroeconomic and fiscal perspectives in that it (1) permanently removes workers from the labor force and weakens the incentives to seek health-appropriate employment opportunities, (2) replaces a temporary fiscal expenditure (unemployment benefit and possibly retraining and other active labor market instruments) with a permanent benefit thus increasing the present value of transfers per person, (3) reduces the income tax and social contribution base permanently, and (4) reduces output. Given that longer absences from the labor market reduce the probability of re-employment, it may also have negative welfare consequence for the individual as it denies workers the incremental pension benefit based on future real wage increases. During crises, governments' willingness to revise eligibility rules or the way they are applied can reinforce these behavioral responses and aggravate their economic consequences.

**While the long-term impact of these developments on baseline pension expenditures may be low, the initial expenditure shock remains present for years and further increases the short-term fiscal pressures arising from the crisis.** An early retirement “boom” is later compensated for by smaller inflows: unless there is a permanent reduction in the effective retirement age, the impact will disappear in 4–8 years, given that usually there is an upper limit on early retirement. In the case of disability pensions, the marginal inflow works differently: the additional inflow is not compensated for by lower inflow in later years and the impact may be present for much longer, potentially decades, depending on the age distribution of the marginal beneficiaries. In general, if increased inflows are reinforced by permanently relaxed eligibility rules then the increase in pension spending will tend to persist over the long term. This risk is increased by political economy considerations: high or increasing unemployment is seen as a common measure of the success of economic policies and reflects more poorly on governments than lower labor force participation (which is rarely noticed by the electorate) or worsening financial and dependency indicators of social security schemes.

**The crisis also impacts the financial position of defined benefit pension schemes, irrespective of whether they are funded or pay-as-you-go financed, or privately or publicly underwritten.** In the case of contributory defined benefit schemes, the most immediate effect is the reduction of contribution revenues, driven by the contracting wage tax base.<sup>8</sup> This will result in a deteriorating social security balance and a declining funding ratio<sup>9</sup> in both public or private defined benefit (DB) schemes. While lower wages and higher

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<sup>6</sup> See Maestas, Mullen, and Strand (2015) and Benítez-Silva, Disney, and Jiménez-Martin (2009).

<sup>7</sup> Similar countercyclicity was also typical of early retirement, until the 1980s when fiscal pressures forced governments to tighten early retirement rules. Reforming disability systems is more difficult, however, exactly because of the more subjective nature of determining eligibility.

<sup>8</sup> Non-contributory defined benefit schemes, such as civil service schemes in numerous low-income countries or non-contributory basic pensions, are shielded from the direct impact of a contracting wage tax base. At the same time, governments may find it more difficult, in times of crises, to allocate the subsidies needed for observing pension obligations accrued by these schemes.

<sup>9</sup> In the case of pay-as-you-go defined benefit schemes, “worsening funding ratio” means an increase of unfunded, “implicit” pension liability.

unemployment also impact pension scheme liabilities through the reduction in future benefits, this reduction is more evenly distributed over time and is influenced by the combined effect of the age distribution of contributors, contribution histories, and the pension formula. Thus, while the revenue impact is immediate, the compensating effect of lower expenditures happens in the future and its magnitude is likely to be smaller, in present value terms, due to the various non-linearities present in DB security schemes.<sup>10</sup>

**Asset price shocks reduce the value of pension reserves in funded defined benefit schemes, negatively impacting funding ratios.** Ideally, funding ratios—the relationship between a defined benefit scheme’s assets and liabilities measured over the same horizon—should fluctuate around 100 percent, without permanently remaining below full funding.<sup>11</sup> Should funding ratios stay below 100 percent, regulations and underwriters’ fiduciary obligations will call for an action plan aiming to re-establish, within reasonable time, healthy funding ratios.<sup>12</sup> In the absence of a rebound of asset values, this may happen through a negotiated reduction of liabilities or by increasing the pension schemes’ reserves at the expense of the sponsoring entity. Funded pension schemes are also hurt by the current environment of low-yield government bonds which negatively impacts discount rates applied to future payment obligations. If funding gaps grow relative to regulatory benchmarks, employers sponsoring pension schemes may need to transfer additional resources to those schemes which, in turn, may have adverse consequences on their own financial position and viability. If the sponsoring employer is the government itself—as in funded pension schemes for public employees—the current funding shortfall or the resulting future scheme deficits will translate into lower spending elsewhere or a higher government deficit, leading to higher taxes or growing public debt.<sup>13</sup>

**In addition to declining funding levels, many funded DB schemes in the public and private sectors alike have negative operating cash flows, that is, the income from contributions and portfolio returns is smaller than the cash paid out.** For example, for US state pension funds the ratio of operating cash flow to assets dropped from an average of –1.9 percent in 2000 to –3.2 percent in 2017, with five states exhibiting average cash flows below –5 percent.<sup>14</sup> Whereas the funding gaps—and their reflection in cash flows—will eventually necessitate intervention by scheme sponsors by either reducing future payouts or increasing scheme resources (possibly through bailing them out using the sponsor’s own funds), liquidating assets at a time of depressed market values will result in even higher loss of public wealth, and later, require larger adjustments.

**Declining asset prices also negatively impact defined contribution schemes, but in this case the risk of insufficient assets is borne by scheme members.** Since the liabilities of defined contribution schemes equal the value their assets, there is no risk of obligations exceeding assets (although efficient asset-liability management remains important for matching maturities and ensuring liquidity). At the same time, lower asset values translate into lower benefits for members who retire—or otherwise liquidate their account balances—during a slump. This, in turn, may result in higher old-age poverty and additional welfare spending in later years, especially in countries where defined contribution schemes play a dominant role. An issue specific to defined contribution schemes is that from a purely technical perspective it is much easier to liquidate savings and

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<sup>10</sup> Benefit formula non-linearities in service time and wages are an important standard feature of public DB schemes, enabling redistribution both across scheme members and between taxpayers within and outside such schemes. These non-linearities often make pensions relatively higher for workers with shorter and/or lower contribution histories. Therefore, since benefit reductions are not proportional to the reduction of contribution revenues, the pension scheme’s long-term financial position may worsen.

<sup>11</sup> Funding levels or ratios can only be interpreted in a DB setup. Pure defined contribution (DC) schemes (functioning without performance guarantees and assuming no risks developing independently of assets (such as longevity) are by design fully funded as their liabilities are limited to the current value of their assets both at the aggregate and the individual level

<sup>12</sup> In the United States, the funding ratio of the 100 largest public DB pension schemes declined from an already low 75 percent to 66 percent in the first quarter of 2020, with the aggregate funding gap (the difference between the value of assets and the present value of corresponding obligations) of the same schemes increasing by almost USD 500 billion to USD 1.8 trillion in the same period (Milliman Pension Funding Index).

<sup>13</sup> This problem is becoming particularly pressing in poorly designed African civil service schemes but also in the United States, where public employee schemes operated by states have been facing large, potentially irreversible deterioration of their funding levels.

<sup>14</sup> All figures in the paragraph are taken from Milliman Pension Funding Index.

withdraw them early than it is in the case of defined benefit arrangements. Governments should exercise caution when considering supplementing or substituting budget-financed welfare transfers with policy measures that allow early withdrawal from defined contribution pension schemes.

**Further fiscal risks may arise from government guarantees supporting private pension scheme benefit obligations (in DB) or investment performance (in DC).** If the guarantor’s liquidity is ultimately ensured by the government, once the guarantee schemes’ reserves are exhausted the government needs to step in. Examples of such guarantee schemes include the Pension Benefit Guaranty Corporation (PBGC) in the United States and the Pension Protection Fund (PPF) in the United Kingdom. It is worth noting that in addition to these explicit guarantees, nonbank financial institutions may be viewed as being “too big to fail” or systematically too important to allow their bankruptcy.

## II. IMPACT OF PENSION POLICY RESPONSES

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**In many countries, policy responses to the current crisis have reduced current contribution revenues through permitting deferred payment or temporary reductions of social security contributions.** Deferral periods span 3–6 months and may be generally applicable or available to a subset of enterprises such as small and medium enterprises or companies in hard-hit sectors (for example, tourism). As of late April, more than 50 countries introduced contribution deferment in their social security systems.<sup>15</sup> Temporary contribution deferment or exemption is occasionally conditional on retaining workers in paid employment, although with reduced working hours and wages (as, for instance, in Spain).

**Contributions have also been reduced through temporary lowering of contribution rates or the pension base (China, Finland, Malaysia, Norway, Russia, Sweden).** These measures are introduced to reduce labor costs directly borne by employers, thereby keeping companies from going out of business and allowing them to retain their workers in paid employment. It is important to note that lower contribution rates—unless accompanied by actuarially neutral reductions in benefit accrual rates—increase the unfunded liabilities of defined benefit pension schemes. These, in the future, may translate into additional scheme deficits and subsidy needs.

**While the measures mentioned above are all temporary, their introduction and possible extension (depending on the speed of recovery) raises important issues that need to be addressed by detailed implementation regulations.** It is important that regulations clearly set out how crisis measures will evolve as economies emerge from the crisis so that long-term fiscal costs and undesirable incentives do not persist.

**The treatment of deferred contribution liabilities needs to be regulated,** especially in terms of (1) how long companies are given to become current on their contributions, (2) whether both employer and employee contributions are deferred, and (3) should companies going out of business without becoming current on their contribution liabilities, the ranking of social security agencies in the order of creditors and the responsibility for unpaid contributions remaining after liquidation. It is important to operate reliable registries of contribution arrears, and to separate those arrears that are permissible under special, COVID-related regulations from those that emerged before the crisis or may be accrued after the expiration of the temporary easements. The period allowed for becoming current on unpaid contributions needs to take into account a company’s capacity to pay without jeopardizing their commercial viability but also without imposing undue fiscal stress on the pension schemes—for instance, permitting 12 months to work-off contributions unpaid for a quarter would seem

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<sup>15</sup> For instance, Argentina, Egypt, India, Kosovo, Tunisia, Turkey, Ukraine. For a list of countries and measures, please refer to the online [Annex 1](#) of the April 2020 *Fiscal Monitor* and its regularly updated online version, as well as the International Labour Organization’s [webpage](#) dedicated to social insurance responses to the crisis.

reasonable. It is also crucial for policymakers to consider, ex ante, what indicator they may wish to use to trigger the return to normal tax payment schedules.

**It is equally important to clarify how pension entitlements accumulate** (including service time counting toward eligibility) during the period of deferment, both in the cases where contributions are paid after the deferment period and here contributions remain unpaid. This requires specifying if and how wages not yet covered by paid contributions count toward newly assessed pensions. Government decisions to permit late payment of contributions should not lead to lower pensions or delayed retirement. Special regulations may be needed to credit service time and covered wages during the period of tax easements. It is also necessary to regulate how government-encouraged part-time employment should count toward service time and the pension calculation base. While no specific recommendation can be made in this regard, it is important to inform both employers and workers about special rules and procedures.

**On the expenditure side, some countries have increased pension benefits in response to the crisis.**<sup>16</sup> In the case of social security pensions without a regular and rules-based benefit indexation regime, these increases are difficult to tell apart from ad hoc pension increases that the government may have in any case considered. If the last increases happened more than a year ago, these measures may simply ensure that benefits maintain their real value. In countries with regular and adequate pension indexation rules, the additional increases may have a weaker foundation in welfare considerations—especially since it is the working-age population that bears the brunt of the economic impact of the crisis—and been implemented without full attention to future costs. It is therefore important to ensure that any increases are carefully rationalized and not the result of opportunistic political agendas.

**As a general principle, ad hoc benefit increases should be avoided, and systematic indexation rules should continue to be observed.** Since elderly people are indeed more susceptible to COVID-19, their cost of living would increase beyond the consumer price index—which is typically a lower bound for regular benefit indexation—if private health expenditure grows in response to the epidemic. Even in such cases, however, additional transfers may be best introduced in a temporary and targeted manner, for example, instead of paying higher benefits to all elderly citizens, only the people suffering from the viral infection could receive higher transfers, possibly in the form of subsidized or free treatment.

### III. POLICY CONSIDERATIONS

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**Governments need to avoid using the pension system to address the negative consequences of the crisis and to implement temporary regulatory changes only sparingly.** Pension systems do not lend themselves easily to addressing short- and medium-term economic problems, including the current crisis, since they respond slowly to changing macroeconomic and demographic circumstances yet generate long-term obligations and expectations. Responses to temporary shocks, therefore, need to be limited in time to avoid inadvertently setting the pension system on a course—in terms of sustainability, adequacy and efficiency—which does not reflect policymakers' objectives, expectations of society, or the constraints faced by the country. It is equally important to directly address specific economic problems where they arise, instead of relying on the pension system, for example, addressing rising unemployment through labor market policies and employer support, increasing poverty through well-designed welfare transfers, and public health issues via improved access, quality, and affordability of public health care.

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<sup>16</sup> Benefit payments have been brought forward in a number of countries (among them Australia, Colombia, India, Kosovo, Turkey), and administrative easements were also introduced in numerous jurisdictions to make it easier to claim benefits without travel and with a smaller number of in-person interactions.

**Early retirement and disability pensions should not be used for accommodating temporary labor market pressures.** Where existing rules are adequate, these should be implemented as intended. Where they are poorly designed, undesirable consequences should be avoided where possible and reformed over the medium term.

- **Early retirement.** Early retirement provisions need to reflect actuarial neutrality to limit incentives to exit the labor market early and to avoid implicitly subsidizing early retirees. Limiting, in terms of months or total reductions, the length of early retirement will also help governments close the gap between statutory and effective retirement ages, improving system dependency ratios and resulting in higher average pensions. As the age-specific life expectancy of elderly people improves, it is also important to reflect these developments in regular—and, preferably, automatic—retirement increases which, however, can only yield the expected labor market and fiscal results if early retirement conditions are also revised.
- **Disability benefits.** As the recession continues, increasing unemployment will exert pressure on administrators of disability benefits schemes to take a more lenient approach to assessing both new claims and reassessing existing beneficiaries. Governments need to ensure that primary care physicians and medical/occupational staff—who play a crucial “gatekeeper” function in terms of determining the transition from short-term disability (sickness) to prolonged sick-leave and on to disability claims—apply assessment criteria with the same level of stringency as before the crisis. It is also important to resist the politically convenient but economically counterproductive option of substituting unemployment benefits with permanent disability pensions in the case of workers who could, once the recession eases, successfully seek employment.

**It is important that ongoing pension policy reforms aimed at containing pension spending are not stalled or reversed, especially since fiscal pressures are likely to be greater after the crisis.** Most governments have so far refrained from changing pension policy in response to the crisis. It is crucial that, even if recovery proves slower than expected, no major changes are introduced without careful analyses of their fiscal and welfare impacts. It is equally important that reforms introduced in the past or currently under implementation (in particular, systematic benefit indexation, retirement age increases, lengthening calculation periods, revising accrual rates, and the application of various types of automatic adjustments) are fully implemented since the pandemic-induced recession will most likely further worsen the sustainability of public pension systems, making reforms even more important than prior to the crisis.

**Permitting early access retirement savings in defined contribution schemes may affect the adequacy of future retirement income and needs to be regulated in a manner which ensures that remaining account balances are sufficient to meet governments’ pension policy objectives even under adverse conditions.**

Allowing early, partial, or full withdrawals may result in lower pensions or lead to realized value losses<sup>17</sup> by liquidating savings at depressed asset prices.<sup>18</sup> The decision to allow early withdrawals should carefully consider how much such withdrawals reduce expected total pensions. In multi-pillar systems where there are one or more DB components (including basic, non-contributory old-age benefits) ensuring an adequate pension benefit, early withdrawal rules may be more permissive. In countries where private, mandatory DC schemes dominate retirement incomes, the impact of early withdrawals may be more problematic and require caution. Consequently, while permitting partial early withdrawals from DC retirement accounts is a permissible policy option, such measures should be designed conservatively, taking into account their likely welfare and fiscal consequences.

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<sup>17</sup> Changes in asset prices are reflected in pension scheme accounts and individual account values continuously—however, they are only “locked in” as a permanent welfare loss if assets are liquidated at times of depressed asset prices.

<sup>18</sup> For a more comprehensive discussion of policy and regulatory considerations concerning defined contribution pension schemes, see Yermo and Severinson (2020).

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