Automatic Adjustment Mechanisms: Role and Lessons for the Pension Systems

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de Administradoras
de Fondos de Pensiones

Executive Summary

Automatic Adjustment Mechanisms (AAM) seek to implement changes to the benefits and main parameters of pension systems (contribution rate, official retirement age) that enable long-term improvements in terms of financial balance or pension sufficiency, generated in a less politically polluted process, based on technical factors, such as economic, financial and demographic trends (population aging caused by lower fertility rates and higher life expectancies), and their effects on pension systems. Thus, the political risk of inaction or erroneous pension reform action is considerably reduced.

The reforms aimed at improving the financial sustainability of the PAYGO defined benefit systems attempt to contain expenditure (by reducing benefits and/or raising the retirement age), or increase the taxable base (increasing contribution rates). In recent decades, many countries with these systems have made countless parametric changes, temporarily improving their precarious financial situation, without ensuring their long-term sustainability.

Moreover, since many of these changes are unpopular, political actors have often tended to make changes that are less visible and more difficult to understand, or to postpone them for future governments. On other occasions, long periods of transition have been established, excluding most current workers from the reforms and focusing their implementation only on young and future workers, thus causing an unequal burden between generations.

Given the above scenario, several countries with PAYGO pension programs have incorporated some form of AAM into their parameters to balance their systems, reducing the political cost of pushing through unpopular reforms, thus achieving greater transparency, improving the credibility of the system and generating greater intergenerational equity.

Unlike the PAYGO systems, in which adjustments are indispensable for improving the financial balance of the programs and relieving the tax burden, in the individually funded systems adjustments are necessary to ensure the adequacy of pension amounts in the face of increases in life expectancy and economic and financial trends. Thus, for example, as life expectancy at retirement increases, the gap between the pensions actually paid to retirees and the pension estimates that the pension system can provide for future pensioners will increase, since the pension will be received over a longer period of time.

This translates into a reduction in pensions that can be financed with the same accumulated balances, so if the key parameters that determine pensions (retirement ages, contribution rates and tax caps) are not adjusted, the benefits obtained by members automatically decrease.

Hence, it is important for these parameters to be reviewed, even more so because of the early withdrawals of pension funds that were approved in some countries (Chile, Peru) during the COVID-19 pandemic. One way to address that challenge is to make discretionary adjustments to contribution rates and/or official retirement ages, which consider improvements in the longevity of future retirees. However, after the creation of the individually funded programs in Latin America, such adjustments have not been made despite the significant increases in life expectancy and the drop in interest rates (with the exceptions of Mexico, and recently El Salvador, which increased the contribution rates).

Since any change in retirement ages and contribution rates has a high impact on workers enrolled in the system and on the labor market, the discussion can become distorted with political and economic pressures, that finally lead to stagnation.

Therefore, an AAM as technical as possible must be defined to adjust these variables over time. Nonetheless, this still seems to be an empty proposal: in the Latin American region there have been no processes that impose a periodic and automatic review of the key parameters to ensure their conformity with the objectives of defined replacement rates (the legislations of Peru and El Salvador had made some progress in this matter, but they have not materialized to date in Peru, and have been repealed in El Salvador).

A review of international experience shows a variety of ways in which automatic adjustment mechanisms are applied in pension systems: (i) 7 countries adjusted the official retirement age based on changes in life expectancy (Denmark, Estonia, Finland, Greece, Italy, the Netherlands and Portugal); (ii) 6 countries adjusted pensions based on changes in life expectancy, size of the working population, wage bill, or GDP, including so-called "sustainability factors" (Estonia, Finland, Greece, Japan, Lithuania and Portugal); and (iii) 7 countries have a "balancing mechanism" in pension commitments (Germany, Canada, the United States, Finland, Luxembourg, the Netherlands and Sweden). The balancing mechanisms are designed with the primary objective of ensuring a balanced budget of the pension system in the short, mid, and long term.

Among the main lessons learned from the application of automatic adjustments are:

1. They require ongoing implementation to achieve their goals of financial or social sustainability and confidence in the pension system, and are therefore best introduced with broad political support.
2. It is important for the body that calculates the indicators for applying adjustment mechanisms to be independent. Such indicators must also be calculated transparently.
3. The frequency of revisions for defining adjustments is important. Infrequent reviews will probably lead to significant changes in the parameters affected by the automatic mechanism, compared to the changes required by reviews in shorter periods.
4. The greater the speed of implementation of changes arising from the application of the

adjustment mechanism, the greater the likelihood of strong opposition.

5. It is important to establish an institutional framework that guarantees the application of automatic adjustments, to prevent delays in their implementation and avoid complications due to political debate.

6. For the individually funded programs to comply with this process, it is essential that the authorities establish certain replacement rate objectives and pension amounts to be paid to members. Once these objectives have been established, it is important to ensure that the design and value of the system's parameters are consistent with these objectives in the different countries.

Introduction

Contributory pension systems are a fundamental element for the social protection of the elderly and are designed to provide contributors with an income in the distant future, which may be affected by the uncertainties inherent in economic and demographic trends (population aging).

How can the financial sustainability of the PAYGO pension systems be ensured in view of population aging, with a declining ratio of contributors to pensioners? How can individually funded pension savings systems provide adequate pensions if retirees are living longer due to higher life expectancy on retirement?

In view of economic and demographic trends, public policy makers may choose not to act and accept the negative consequences that these trends may have for the financial sustainability of the system, or for the adequacy of pensions. Alternatively, they can adjust the parameters of the pension system. These adjustments may be discretionary, through the adoption of periodic legislative measures, as circumstances change.

Or, changes can occur automatically by setting rules on how pension system parameters should be adjusted. Although automatic rules do not eliminate all uncertainty, this option may be attractive to policymakers, since, even when the exact extent of future aging trends is unknown, the impact of a demographic trend on the pension system is often well known. Another advantage of automatic adjustments is that they enable changes that are often unpopular, which is why policymakers usually delay them.

This Pension Note provides information on how automatic adjustments have been implemented in pension programs worldwide, explaining the need to automatically adjust the relevant parameters to make the system financially sustainable and/or to achieve adequate pensions. The lessons learned from international experience in applying such adjustments are also mentioned, for pension systems in general and for individually funded programs in particular.

I. What are automatic adjustment mechanisms and how important are they for pension systems?

According to the OECD[1], the Automatic Adjustment Mechanisms (hereinafter, AAM) in pension systems refer to predefined rules that automatically change the parameters that determine pensions (for example: contribution rate, and legal retirement age) or the pension amounts, linked to the evolution of a selected indicator.

The indicators used in these AAMs may be demographic (e.g., life expectancy at a given age) or economic (e.g. wage or wage bill growth), or a combination thereof. "Automatic" means that parameters or benefits are adjusted according to a predefined rule when the indicator changes or crosses a critical threshold without the need for discretionary decisions or policy interventions.

While fully automatic schemes do not require legislative intervention, some others can be classified as "semi-automatic" mechanisms, in which case the changes they implement require parliamentary confirmation. Finally, others function as an automatic backup mechanism that triggers a predefined set of adjustments if political agreement cannot be reached on an alternative way to improve the financial sustainability of the pension system.[2].

AAMs in pension systems have existed since the 1930s, initially as indexing or for adjusting pensions, i.e., increasing pensions automatically in accordance with price increases (inflation) or wages, to maintain their purchasing power. Initially, pension amount increases were discretionary (i.e., the value of the pension depended on economic and political cycles), to reduce uncertainty and improve social sustainability. Denmark introduced pensions pegged to inflation in 1933, followed by France after World War II and most other OECD countries in the following decades. The indexation of pensions to average wages was first introduced in the Netherlands in 1956, followed by Germany the following year. Periods of high inflation encouraged countries to introduce indexation mechanisms, particularly the high inflation rates that followed the oil crisis in the 1970s. Pension indexation was also supposed to reduce conflict by avoiding recurrent political discussions about pension revaluation. By factoring in inflation and eliminating the need for a political settlement to maintain the purchasing power of retirees, indexing provided certainty by offering seniors a predictable real income stream.

Population aging has raised growing concerns about the financial sustainability of the PAYGO systems, with several countries adjusting their pension indexation rules to generate fiscal balances. Some who previously indexed pensions to wages, at least partially, shifted to price indexation; others conditioned the indexation of pension benefits to economic metrics other than prices or

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[1] See OECD Pensions at a Glance 2021, chapter 2 "Automatic adjustment mechanisms in pension systems." Available at:
https://www.oecd-ilibrary.org/sites/d9c5d58d-en/index.html?itemId=/content/component/d9c5d58d-en#section-d1e10635
[2] Such support mechanisms are necessary as a disciplinary tool to help make difficult decisions.

average wages, such as the growth of the total wage bill, or GDP. Thus, indexation considered changes in the size of the active population. Germany, for example, adjusted pensions based on the ratio of pensioners to contributors, and Sweden introduced an adjustment to the financial balance of the system, defined as the ratio of future pension expenditure to future income. Several countries are linking pension amounts or statutory retirement ages to changes in life expectancy. Finally, some countries completely changed the structure of their pension systems and moved away from defined benefit (DB) pension schemes to defined contribution (DC) schemes, both individually funded and notional, which include some kinds of automatic adjustments (see section III).

In short, by attempting to lessen the impact of demographic and economic shocks on the financing of contributory pension systems and incorporating objective technical rationality to substantiate changes to parameters, AAMs have the advantage of reducing the political costs of introducing reforms that are unpopular with the population (such as changes in the official retirement age, or ensuring better sustainability of the pension system). Second, since they are automatic, they are less erratic over time. Thirdly, since they are more transparent (based on technical rationality), they improve the credibility of the pension system. Finally, since AAMs enable better inclusion of future generations who today have neither voice no vote, they generate greater intergenerational equity. Nonetheless, a major challenge in implementing AAMs is to have a broad political consensus on their long-term desirability, to depoliticize pension decisions[3].

II. Why is it necessary to incorporate automatic adjustments to the parameters of pension systems in the regulations?

Ongoing increases in life expectancy are certainly great news for society, but they pose major challenges for public policies in general, and pension systems in particular. Ensuring adequate and sustainable pensions requires periodic adjustments to key parameters of pension systems to address the effects of demographic trends (population aging caused by lower fertility rates and longer life expectancies).

In the PAYGO programs, on the one hand, population aging has been addressed with ongoing discretionary changes to their parameters (increasing the retirement age and contribution rate) and/or in the benefits they provide (adjustment in the calculation formula to make them less generous or directly reduce them). By way of example, FIAP reports that over a 26.5-year period (1995 to June 2022), 82 countries increased contribution rates to their PAYGO programs, 64 raised the official retirement age, and 67 adjusted the pension calculation formula to provide less generous pensions, or simply reduced them. However, these changes have only temporarily improved the sluggish financial situation of these programs, without ensuring their long-term financial sustainability. Moreover, when these adjustments have failed to generate a balance, governments

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[3] See Fernandez, J. (2012). Explaining the introduction of automatic pension indexation provisions in 17 OECD countries, 1945–2000. Journal of European Social Policy, Vol. 22/3, pp. 241-258, http://dx.doi.org/10.1177/0958928712440202

assume the deficit, increasing their levels of indebtedness. Given the above scenario, several countries with PAYGO pension programs have introduced some form of AAM to balance their systems and ease their tax burden (see section III).

The creation of individually funded programs, on the other hand, has led to significant progress in various aspects of the functioning of pension systems, including long-term financial sustainability, but challenges remain in terms of adequacy of estimated pension amounts, mainly due to low contribution densities (explained by high rates of informality in employment), lower interest rates for calculating pensions, longer life expectancies in retirement, and low contribution rates.

One way to address that challenge is by making discretionary adjustments to contribution rates and/or official retirement ages, which consider improvements in the longevity of future retirees. However, after the creation of the individually funded programs in Latin America, such adjustments have not been made despite the significant increases in life expectancy and the drop in interest rates (the only exceptions are Mexico, which recently approved a reform that gradually increases the contribution rate from 6.5% to 15% at the expense of the employer, and El Salvador, which recently passed a law that increases the total contribution rate from 15% to 16% at the expense of the employer[4]).

For the individually funded programs, the remaining alternative is to establish some type of AAM. However, this is still an empty proposal: in the Latin American region there have been no processes that impose a regular, automatic review of the key parameters to ensure their conformity with the objectives of defined replacement rates. A 2012 reform in Peru introduced advances, as it incorporated a provision that required the regular review of contribution rates, with technical criteria.[5]However, to date, the Pension Commission has not submitted any proposal for regulatory amendments that involve changes in the contribution rate. Something similar occurred in El Salvador, where a 2017 law created an Actuarial Committee entrusted with monitoring the main parameters of the system, but unfortunately a new law in force since December 30, 2022, eliminated this Committee.

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[4] The Reference Law passed in Dec. 2022 states that it increased employers' contributions by 1 percentage point, from 7.75% to 8.75%. This increase from 5% to 6%, charged to the employer, goes directly to the so-called Solidarity Guarantee Account (CGS; in charge of managing the payment of old-age, disability, and survival pensions for life, until the exhaustion of the individual account of the retired member). Thus, the total contribution rate increased from 15% to 16% [total contribution to individual account: 9% (worker 7.25% + employer 1.75%); contribution to CGS (employer): 6%; AFP commission (employer): 1%].

[5] Law 29,903 of 2012 stipulates that the mandatory contribution rate must provide, in general terms, an adequate replacement rate for members, considering indicators such as life expectancy, the long-term returns of the pension funds, and the contribution density of workers. Any proposed changes to the contribution rate will require a legal amendment subject to the prior opinion of the Ministry of Economy and Finance and the Pension Commission, which must also entrust the review and assessment of the viability of the contribution rate every 7 years, at the most, by public tender to a reputable institution, which must propose the corresponding amendments to the legislation.

We cannot fail to mention the fact that, with the early withdrawals of pension funds approved during the COVID-19 pandemic (in Chile and Peru), the adjustment of the parameters governing pensions has become even more urgent.

III. International experiences with automatic adjustment mechanisms that have been established in the different relevant parameters of the pension system

Types of AAM

Table 1 provides a summary of the AAMs in force in OECD countries. The table focuses on AAMs related to mitigating the impact of demographic changes (population aging), so that "pure" price or wage indexation, or a combination of both, are not included here[6].

Reviewing Table 1, you will find the following:

- Approximately two-thirds of OECD countries employ at least one type of AAM for at least one of the mandatory (or quasi-mandatory) components of their pension systems, whether funded or notional.

- Fourteen countries do not have AAMs: Austria, Belgium, Korea, Czech Republic, France, Hungary, Ireland, Israel, New Zealand, Slovakia, Slovenia, Spain, Switzerland and Türkiye[7].

- Seven countries adjust the legal retirement age in accordance with changes in life expectancy: Denmark, Estonia, Finland, Greece, Italy, the Netherlands, and Portugal.

- Six countries adjust pensions in accordance with changes in life expectancy, size of the working population, wage bill or GDP (including so-called "sustainability factors"): Estonia, Finland, Greece, Japan, Lithuania, and Portugal.

- Seven countries have a "balancing mechanism" in pension commitments: Germany, Canada, the United States, Finland, Luxembourg, the Netherlands, and Sweden.

Most AAMs are fully automatic, while some are semi-automatic, as each adjustment requires political approval to be activated. Canada's scheme, for example, could be described as an automatic backup mechanism: when the PAYGO pension program is deemed to be financially unsustainable, it triggers a political process, and the backup mechanism is only automatically applied in the absence of a political agreement regarding an alternative solution.

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[6] A good recent report analyzing the rules of indexation of pensions with inflation at the international level is the OECD's "How inflation challenges pensions".

[7] According to OECD information, none of the non-OECD G20 countries currently have any AAMs.

Table 1. Automatic adjustment mechanisms that mitigate the impact of demographic changes in mandatory pension systems in OECD countries

Country	Defined Contribution Plan (DC; Funded)	Notional Account Plan (NDC; PAYGO)	Benefits linked to life expectancy, size of working population, wage bill or GDP (including sustainability factors)	Retirement age linked to life expectancy	Balance Mechanism
Germany					A (cr)
Australia	A				
Austria					
Belgium					
Canada					R (cr)
Chile	A				
Colombia	A				
Costa Rica	A				
Denmark	A			S	
Slovakia					
Slovenia					
Spain					
United States					A
Estonia	A		A	A	
Finland			A	A	A (cr)
France					
Greece		A(a)	A	A	
Netherlands(b)				A	A
New Zealand					

Notes: A = fully automatic adjustment; S = semi-automatic adjustment (adjustment requires political approval each time to be activated); R = automatic backup mechanism (a political process is activated and the backup adjustment is only applied automatically in the absence of political agreement on an alternative solution). (a) The Notional Accounts Scheme (NDC) in Greece applies to auxiliary pensions, which account for 12 per cent of total public expenditure on pensions. Starting in 2022, the auxiliary pension for new entrants to the labor market is accumulated as a DC instead of an NDC; workers under 35 will be able to join the DC plan voluntarily. b) The Dutch pension agreement foresees a transition of occupational pensions from DB to DC by 2027, but this has not yet been fully legislated. (cr): indicates that the balance mechanism incorporates automatic adjustments of the contribution rates.

Source: "OECD Pensions at a Glance 2021, chapter 2 "Automatic adjustment mechanisms in pension systems."

Table 1 (continued) Automatic adjustment mechanisms that mitigate the impact of demographic changes in mandatory pension systems in OECD countries

Country	Defined Contribution Plan (DC; Funded)	Notional Account Plan (DC, PAYGO)	Benefits linked to life expectancy, size of working population, wage bill or GDP (including sustainability factors)	Retirement age linked to life expectancy	Balance Mechanism
Iceland	A				
Ireland					
Norway					
Italy		A		A	
Japan			A		
Korea					
Latvia	A	A			
Lithuania			A		
Luxembourg					S (cr)
Mexico	A				
New Zealand					
Norway	A	A			
Poland		A			
Portugal			A	A	
United Kingdom	A				
Czech Republic					
Sweden	A	A			A
Switzerland					
Türkiye					

Notes: A = fully automatic adjustment; S = semi-automatic adjustment (adjustment requires political approval each time to be activated); R = automatic backup mechanism (a political process is activated, and the backup adjustment is only applied automatically in the absence of political agreement on an alternative solution). (a) The Notional Accounts Scheme (NDC) in Greece applies to auxiliary pensions, which account for 12 per cent of total public expenditure on pensions. Starting in 2022, the auxiliary pension for new entrants to the labor market is accumulated as a DC instead of an NDC; workers under 35 will be able to join the DC plan voluntarily. b) The Dutch pension agreement foresees a transition of occupational pensions from DB to DC by 2027, but this has not yet been fully legislated. (cr): indicates that the balance mechanism incorporates automatic adjustments of the contribution rates.

Source: "OECD Pensions at a Glance 2021, chapter 2 "Automatic adjustment mechanisms in pension systems.""

The different AAMs are presented below and the similarities and differences in the way countries have been applying them are analyzed.

1. Defined contribution plans (Funded)

In a defined contribution (DC) individually funded plan, retirees can withdraw money accumulated in their individual account in the form of a pension. The most typical modalities are programmed withdrawals[8] and life annuities[9]. In the latter, for example, they are valued considering the expected mortality rates: the longer the life expectancy, the lower the value of the annuity, so they automatically include an adjustment of pension amounts based on life expectancy. In programmed retirement, this is also recalculated annually considering the life expectancy indicated by the mortality tables, so that pensions are also automatically adjusted under this modality.

Thus, a DC plan is financially sustainable in the face of economic fluctuations and demographic trends, as no pension promise is made until a person begins to collect a life annuity or programmed retirement on retirement. However, although financial sustainability is guaranteed in this type of scheme, the adequacy of pensions could be at risk if there are no more automatic adjustments in the parameters that determine pensions (contribution rate, legal retirement age), to the extent that increases in longevity translate into a lower pension.

It is therefore expected that the pension replacement rate in a DC plan will gradually decrease if the official minimum retirement age and/or contribution rate does not increase as life expectancy increases. Without an automatic link between the official retirement age and life expectancy, workers would have to decide to postpone retirement to maintain the value of their pensions. Since many people tend to retire as soon as possible, or do not correctly estimate their future financial needs, relying on the personal decisions of individuals to voluntarily delay their retirement may not be ideal. Hence, even in DC plans, it is desirable that the minimum retirement age or contribution rate be linked to life expectancy, to help achieve adequate pensions over time.

2. Notional Account Plans (NDC, PAYGO)

In NDC plans, contributions are tracked as individuals pay contributions at a fixed contribution rate, and interest is credited to the account at a theoretical rate of return (notional interest rate). On retirement, the "accumulated" resources (notional capital) in the account are transformed into a life annuity, based on a conversion formula that considers life expectancy at the time of retirement,

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[8] In programmed withdrawals, pensioners receive monthly payments from the funds accumulated in their respective individual accounts. Such payments may be fixed or variable and will continue until the funds are exhausted. Programmed withdrawals expose retirees to longevity risk. However, since property rights to accumulated savings are maintained in this modality, pensioners are not exposed to solvency risk.

[9] Life annuities are contracts sold by insurance companies that undertake to provide lifetime payments (in fixed or variable amounts) to holders (and eventually to their beneficiaries) at specified intervals. In this option, the longevity risk is not assumed by the pensioner, but by the life insurance company. However, in this modality pensioners do face the risk that the respective insurance company may fail to fulfil its promises (solvency risk).

very similar to traditional DC plans. Nonetheless, unlike these plans, notional accounts are fictitious: contributions from active workers are used to pay for pensions of current retirees rather than accumulating in individual accounts.

Thus, in NDC plans there is an automatic adjustment of pensions based on the increase in life expectancy, through the life annuity with the conversion formula (which also depends on the notional interest rate and the pension revaluation policy). This achieves a narrowing of the relationship between the pensions granted and the contributions paid, improving the financial balance of the system. However, the achieved financial balance is only partial, since the notional interest rate that is used depends on past parameters (usually the rate is linked to the growth of GDP, the average wage, or the wage bill[10] of contributions or other factors), and not on the market. Unforeseen changes in life expectancy can also lead to structural problems in such systems[11]. In short, as in any PAYGO system, NDC plans do not solve the problem of demographic pressures, and the financial sustainability of the pension plan is not assured over time. Therefore, a complementary automatic balancing mechanism would be required to ensure the long-term financial sustainability of the pension system with notional accounts. Of the OECD countries that have this type of system (Italy, Greece, Latvia, Norway, Poland and Sweden), only Sweden has such a mechanism (see section III.5 "Balance Mechanisms" below).

3. Adjustments to the official retirement age based on changes in life expectancy

By automatically linking the official retirement age to life expectancy, countries can prevent its increase from negatively affecting the financial sustainability of traditional contributory PAYGO pension systems, or the adequacy of pensions in DC or NA schemes. Seven OECD countries have introduced this link, so that generations that can expect to live longer also have to work longer: Denmark, Estonia, Finland, Greece, Italy, the Netherlands and Portugal (see Table 1, column 5).[12]

Countries differ in the exact way that they link their official retirement age to life expectancy (see Table 2). The link is fully automatic in all countries except Denmark, where parliamentary approval is required to change the official retirement age when the link is applied. Denmark, Estonia, Greece and Italy link their official retirement age to the change in life expectancy on a one-to-one basis, meaning that a one-year increase in life expectancy at age 65 (60 for Denmark) leads to a one-year

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[10] The wage bill is the sum of the wages received by all workers of an enterprise, as payment for a job performed. This includes all the amounts that the company pays the worker, regardless of their nature.
[11] See Valdes-Prieto, S. (2000), "The Financial Stability of Notional Account Pensions," Scandinavian Journal of Economics, Vol. 102/3, pp. 395-417, http://dx.doi.org/10.1111/1467-9442.03205
[12] This link was also in force in Slovakia since 2017 but was removed as of 2020.

increase in the official retirement age. In Finland, the Netherlands and Portugal, the official retirement age increases by two-thirds of the increase in life expectancy at age 65[13].

| Table 2. Official retirement age is linked to life expectancy in seven OECD countries **Basic features of the link**								
Country	Increase in retirement age proportional to increase in life expectancy	Need for parliamentary approval to raise retirement age	Link based on life expectancy at age	Years between retirement age revisions	Period between the setting of the new retirement age and its implementation	Minimum Increase due to revision of retirement age	Maximum increase due to revision of retirement age	Retirement age drops as life expectancy diminishes
Denmark	1	Yes	60	5	15 years	6 months	1 year	No
Estonia	1	No	65	1	2 years	1 month	3 months	Yes
Finland	2/3	No	65	1	3 years	1 month	2 months	Yes
Greece	1	No	65	3	Max. 1 year	No	No	Yes
Italy	1	No	65	2	2 years	1 month	3 months	No
Netherlands	2/3	No	65	1	5 Years	3 months	3 months	No
Portugal	2/3 *	No	65	1	2 years	1 month	No	Yes
Note: * For someone with more than 40 years of contributions, the official retirement age increases by only half the increase in life expectancy.								
Source: "Pensions at a Glance 2021", chapter 2 "Automatic adjustment mechanisms in pension systems".								

Among countries with a one-to-one link, taking into account additional increases before the link is applied, the normal retirement age[14] is expected to increase by 4.5 years in Denmark and Estonia between 2021 and 2050, and by 2.8 and 2.5 years in Greece and Italy, respectively (see Graph 1).

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[13] While the Netherlands had legislated a one-to-one link as of 2025, in the 2019 Pension Agreement the social partners and the government agreed to apply a two-thirds adjustment instead. Sweden is also in the process of legislating a two-thirds link between retirement age and life expectancy.

[14] Defined as the age at which someone who entered the labor market at age 22 can retire after a full career without any pension reduction.

Graph 1
Evolution of normal retirement ages for those who retire between 2005 and 2050 in countries that now link the statutory retirement age to life expectancy
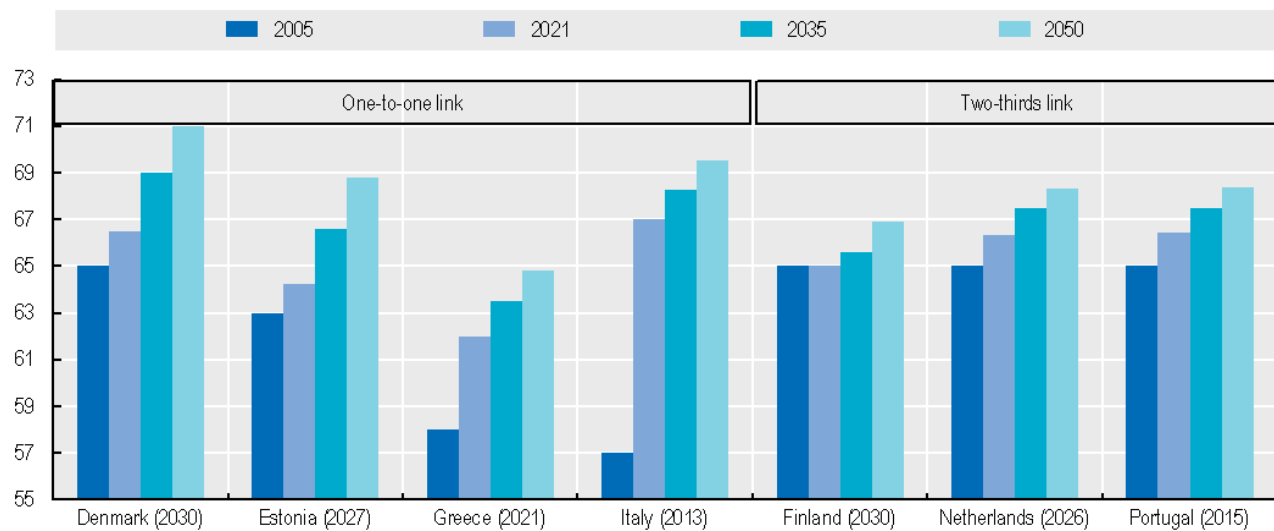
Note: The normal retirement age is defined as the age at which a person who entered the labor market at age 22 can retire after a full career without any pension reduction. The year in parentheses is the year when the link began or will begin to apply. The figures shown also include discretionary increases before the link is activated.
Source: "Pensions at a Glance 2021, OECD and G20 Indicators;" data available at: https://stat.link/wpvui3

According to the OECD, a two-thirds link keeps the proportion of adult life that people can expect to spend in retirement across generations roughly constant, which is why it is considered equitable. In fact, international experience shows that retirement lasts about half the length of a working career.

Whether the starting point is a financially balanced pension system, with income covering expenses, and whether fertility rates are close to the replacement level[15] (approximately 2.1 children per woman), a two-thirds link in a distribution system, with a fixed contribution rate, guarantees a stable replacement rate across generations. In this case, if the retirement age increases less than what a two-thirds link implies, then the contribution rate should rise, or pensions should diminish, to maintain the long-term financial balance of the pension system.

Raising the official retirement age is often politically unpopular, and in this regard the need to raise it when life expectancy improves should be clear to the general population. Unlike discretionary increases in the official retirement age, a link to life expectancy clarifies why changes in the official retirement age are needed and provides a transparent mechanism for determining the size of the

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[15] It is worth mentioning that a PAYGO system with a fertility rate at its replacement level would have a dependency rate equal to 1, so it would pay remarkably low pensions. In this case, for example, a contribution rate of 20 per cent would result in replacement rates of 20 per cent of the prevailing wage, assuming that all individuals of working age contribute to the system and all individuals of retirement age receive a pension. Hence, these measures under the proposed conditions would effectively ensure stable replacement rates, but at levels well below what a savings system would pay. For further details, see the Methodological Note of Pensions Note No.65.

adjustment. Public support for such a link could increase if it is widely perceived as fair, as occurs, for example, when the link keeps the part of adult life devoted to retirement constant between generations.

However, while linking the official retirement age strengthens the pension system against increased life expectancy, a two-thirds linkage does not protect it against other factors, such as low fertility rates. If the initial situation is financially unbalanced, or if a fertility rate below the replacement level (less than 2.1 children per woman) is expected, a faster link would be needed to ensure financial sustainability in case the retirement age is the only adjustment lever used.

Also, according to the OECD, when the goal is to avoid financial imbalances by maintaining the same replacement rates, the link between the official retirement age and life expectancy must be combined with a mechanism that proportionally reduces the accumulation of pension rights. Otherwise, raising the retirement age results in an additional accumulation of pension rights, leading to higher pension replacement rates at retirement age in the pensions of a PAYGO system, which can destabilize the financial balance of the system. Increases in the official retirement age may therefore not be sufficient to ensure the financial sustainability of traditional PAYGO pension systems that are based on steady accumulation rates of pension entitlements. This can be corrected through a sustainability factor, such as the "life expectancy coefficient" in Finland, which reduces the amounts of new pensions as life expectancy increases (see section III.4.1 "Linking benefits to life expectancy" below).

In Estonia, Finland, Greece and Portugal, the link is symmetrical, so it is assumed that the retirement age adjusts when life expectancy increases and decreases, while in Denmark, Italy and the Netherlands the link is not activated when life expectancy decreases. The latter three countries have a mechanism in place to ensure that, after a decline in life expectancy, the official retirement age does not increase until life expectancy reaches the same level as before it dropped. A recent example of symmetry is Portugal, which reduced the official retirement age from 66 years and 7 months to 66 years and 4 months, as of January 1, 2023, following the decrease in average life expectancy during the COVID-19 pandemic.

Most countries with an automatic link between the official retirement age and life expectancy proceed with gradual increases. Estonia, Finland and Portugal evaluate the link annually, and Italy every two years. If the mechanism establishes a change in the official retirement age, it takes effect two or three years later. The official retirement age changes by 1 and up to 2 months for each revision in Finland, and by 1 and up to 3 months in Estonia and Italy. If the increase in life expectancy would result in an increase in the official retirement age that exceeds this maximum, the excess increase in the official retirement age will be implemented in the next revision. The mechanism in the Netherlands is somewhat different, in that the official retirement age increases in 3-month increments, and the increase takes effect 5 years after its activation. Denmark's link differs from all

the others in several ways. In Denmark, revisions only take place every 5 years, and the increase in the official retirement age only takes effect 15 years later. As a result of the longer periods between revisions, the Danish official retirement age does not follow the same incremental path as in other countries, but increases by half-year or full-year leaps.

4.   <u>**Benefits linked to life expectancy, size of working population, wage bill or GDP**</u>

A broader set of measures automatically corrects pension levels to reduce the impact of demographic changes on pension expenditure. This includes linking pensions to life expectancy, size of the working population, wage bill or GDP.

4.1 Linking pensions to life expectancy

A sustainability factor that aligns pensions with changes in life expectancy between generations improves financial sustainability and can contribute to intergenerational equity by considering differences in the duration of retirement benefits.

In Finland, the so-called "life expectancy coefficient" adjusts new pensions similarly to the life annuity conversion factor in NDC systems. This ratio is calculated based on mortality rates from the age of 62 to take into account changes in the present value of total pension benefits due to changes in longevity. The mechanism ensures that pension wealth, i.e., the total amount of pension benefits received during retirement, does not increase as a result of increases in life expectancy. The life expectancy coefficient dropped from 1 in 2009 (reference year) applicable to the 1947 generation, to 0.957 in 2021 for the 1957 generation, implying a 4.3% reduction in new pensions due to this effect (see Table 3). Furthermore, the official retirement age will be linked to life expectancy as of 2030. Thereafter, the calculation of the coefficient will be based on the life expectancy of the year preceding the earliest age of eligibility for an old-age pension (e.g. Life expectancy at 65 years and one month in 2040, based on current projections). The coefficient is projected to be 0.869 in 2066, which means that the pension of a person entering the labor market at age 22 in 2020 will be reduced by 13% due to this effect.

In Portugal, the sustainability factor was introduced in 2007 and subsequently reformed with the introduction of the automatic link between the official retirement age and life expectancy in 2013. The Portuguese sustainability factor is equal to the ratio of life expectancy at 65 in 2000, to life expectancy at 65 in the year prior to accessing an old-age pension. It also only applies to early pensions contracted before the normal retirement age for people with a contribution history of less than 40 years at 60 years of age, generating substantial reductions in early pensions, in addition to fines of 0.5% for each month in which the pension is advanced (it is estimated that this factor alone would reduce additional pension benefits in case of early retirement by 30% in 2066).

Table 3. Life expectancy coefficients in OECD countries							
Basic characteristics of sustainability factors correcting pensions with life expectancy							
	Life expectancy at age	Sustainability factor based on	Projected sustainability factor value			Mortality period assessed	Also corrects when life expectancy decreases	Calculation frequency
			Reference year	2021	2066			
Finland	62	Survival rates	2009	0.957	0.869	Last 5 years available	Yes	Annual
Portugal	65	Life expectancy period	2000	0.833	0.697	Last year	Yes	Annual
Note: The sustainability factor for 2066 is the factor that applies to the cohort entering the labor market at age 22 in 2020. * The Portuguese sustainability factor only applies in case of early retirement. Source: OECD.								

Finland and Portugal differ in the graduality of the adjustments made by the life expectancy coefficient. In the former, mortality is assessed over a five-year period, compared to a one-year period in the latter. Hence, the Finnish mechanism provides a smoother correction over generations and ensures that differences in pension levels between generations reflect longer life expectancy trends rather than annual fluctuations in mortality rates.

When benefits match life expectancy, an additional link between life expectancy and retirement age can help improve pension adequacy. If the official retirement age remains unchanged, sustainability factors will lead to an erosion of replacement rates over time with the aging of the population, unless people themselves decide to retire from working life at more advanced ages. This is supposed to provide financial incentives to delay retirement. However, many people tend to retire as early as possible, even with low pensions, as a result of cognitive limitations, underestimation of longevity, and low levels of financial education.[16]

By linking the official retirement age to life expectancy, this erosion of pension levels at a given age is counteracted by keeping people in the labor market longer. Finland did that, although seven years after it introduced the life expectancy coefficient, and Sweden is likely to do the same with the introduction of a two-thirds link to delay retirement, reducing the erosion of new pensions due to the life annuity income conversion factor.

The case of Spain is worth clarifying: it is not included in the list of countries that automatically link the pension to life expectancy, because although Law 23/2013 established a "Sustainability Factor" that reduced pensions in accordance with the increase in life expectancy, this factor was never

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[16] See O'Dea, C. and D. Sturrock (2018), "Subjective expectations of survival and economic behaviour", IFS Working Papers, No. W18/14, Institute for Fiscal Studies."

applied (it was due to become operational in 2018), and was repealed in December 2021 and replaced by a new "Intergenerational Equity Mechanism" (MEI, by its Spanish acronym) that began operating as of January 1, 2023. The MEI increases the contribution rate to social security by 0.6 percentage points (0.5 points the employer; 0.1 points the worker). These resources will be directed to the public pensions reserve fund. Although the European Commission defines the IEM as a semi-automatic balance adjustment mechanism, it does not actually involve any type of automaticity, given that the increase in the contribution rate it establishes is transitory (between 2023 and 2032)[17].

4.2 Linking benefits to labor force size, GDP or wage bill

Estonia, Greece, Japan, Lithuania and Portugal link pensions to the size of the working population, GDP or wage bill in various ways. Table 4 summarizes the basic features of these adjustments, a common factor of which is that they seek to improve the financial balance in the pension system. These mechanisms affect current pensions and, in some countries, new pensions as well.

For example, the Estonian pension system includes an adjustment of pensions based on the evolution of the wage bill (more precisely, the taxable base), affecting both new and current pensions. Pensions are updated by 20% of the CPI and by 80% of the growth of contributions (total contributions of the last year vs the total contributions of the previous year). Similarly, pensions are also linked to changes in the wage bill in Lithuania. Moreover, a certain level of pension sufficiency is guaranteed in both countries by not adjusting benefits if the wage bill drops in nominal terms.

Nonetheless, the period assessed for updates in Lithuania is seven years, which makes the changes smoother, but also creates the need for additional corrections in case the seven-year average deviates too much from the current year's economic conditions. This is addressed through a reserve fund that mitigates the impact of short-term economic shocks, and by applying the update only if a surplus is projected in the current and next year. Furthermore, if total contributions exceed expenditure in the current year, up to a maximum of 75% of the surplus can be used to finance the pension adjustment). The seven-year adjustment procedure does not contain a mechanism to correct the adjustment of pensions if the projections on which the adjustment was based in previous years are incorrect. Thus, the lack of such a correction mechanism makes the AAM vulnerable to manipulation by changing projection methods or assumptions.

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[17] The Royal Decree-Law on Pension Reform of March 16, 2023, increases the current 0.6% additional contribution of the MEI to 1.2% in 2029, an additional tenth per year, of which the company would assume 1% and the worker 0.2% (83.4% of the total would be assumed by the company and the remaining 16.6% by the worker). The self-employed would support 100% of the 1.2% additional contribution (see details here). Moreover, in the current negotiation of the Spanish pension reform, one of the additional alternatives that is being considered is to amend the MEI in order to establish an automatic balance mechanism: if the average 2022-2050 expenditure on pensions is greater than 15% of GDP, and the increase in income derived from the reforms is less than 1.7% of GDP, and an unforeseen deficit is generated, its correction will have to be studied; and if there is no agreement on how to do so, as of January 1, 2026, an increase in social contributions will automatically be activated to cover the detected deficit.

Table 4: Adjustment of pensions to the size of the labor force, GDP or wage bill in OECD countries						
Basic features of adjustments for changes in labor force size, GDP or wage bill						
	Affects new pensions	**Affects current pensions**	**Based on the growth of**	**Degree of adjustment**	**Period assessed**	**Mechanism for protecting pension adequacy**
Estonia	Yes	Yes	Total contributions	80% (+20% CPI)	1 year	No negative adjustment
Greece	No	Yes	Nominal GDP	50 (+50% CPI)	1 year	
Japan	Yes	Yes	Total number of active participants in all schemes	Wage growth (revaluation of previous wages) and CPI growth (adjustment of current pensions)	3 years	Replacement rate for standard pension not less than 50%
Lithuania	Yes	Yes	Total wage bill	100%	7 years	No negative adjustment
Portugal	No	Yes	Real GDP	Fluctuates between CPI – 0.75% to CPI + up to 20% real GDP growth	2 years	

Note: a. Pensions are updated at the lower of two options: full CPI or 50% CPI and 50% GDP. Hence, the partial adjustment for GDP is only applicable if real GDP drops. b. Increases in life expectancy are also taken into account when adjusting new and current pensions in Japan but are approximated by a fixed rate based on long-term life expectancy projections. Japan opted for this fixed rate to avoid fluctuations in pensions due to circumstances such as pandemics. C. If the sum of the variation in the number of active participants and -0.3% is negative, that figure is added to the average wage growth for calculating pension entitlements and CPI growth in adjusting current pensions. D. In Portugal, the Adjustment varies in accordance with pension levels and real GDP growth.

Source: OECD.

5.   **Balance mechanisms**

Balance mechanisms are a type of AAM designed with the primary purpose of ensuring a balanced budget of the pension system, in the short, mid and long term. Thus, they can contain a variety of adjustments to both pensions and contribution rates[18], which are triggered by current or projected imbalances in the pension system. Table 5 summarizes the main features of the balance mechanisms in seven OECD countries: Canada, Finland, Germany, Luxembourg, the Netherlands, Sweden and the United States.

Table 5. Automatic balancing mechanisms in OECD countries Basic features of automatic balancing mechanisms							
	Affects new pensions	**Affects current pensions**	**Affects contributions**	**Based on the change in…**	**Period assessed**	**Mechanism for protecting sufficiency**	**Fully Automatic**
Canada	No	Yes	Yes	Estimated minimum contribution rate	75 years	No negative adjustment	Automatic backup
Finland	No	No	Yes	Ratio between size of reserve fund and expected pension expenditure	1 year	No	Yes
Germany	Yes	Yes	Yes	Pensioners/contributors ratio	1 year	No negative adjustment	Yes
The Netherlands	Yes	Yes	No	Capitalization ratio (value of fund over liabilities)	1 year	No	Yes
Sweden	Yes	Yes	No	Ratio of notional assets to liabilities	Long term	No	Yes
United States	Yes	Yes	No	Ratio of total assets plus revenue vs programmed withdrawals	1 year	No	Yes
Luxembourg	Yes	Yes	Yes	Ratio between size of reserve fund and expected pension expenditure	10 years	No	Semiautomatic

By way of example, the balancing mechanisms of 4 of these countries: Canada, Luxembourg, the Netherlands and Sweden, are described below.

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[18] Of the countries analyzed, 4 establish an automatic adjustment to contribution rates in their balance mechanisms: Germany, Canada, Finland and Luxembourg.

Canada

The Canada Pension Plan's (CPP) balance mechanism is an automatic backup mechanism, since it is automatically activated in the absence of political agreement. Every three years, actuaries calculate the minimum contribution rate required to fund pensions over the next 75 years. If the calculated minimum contribution rate exceeds the contribution rate established in the regulations, and the Finance Ministers at the federal and provincial levels cannot agree on how to restore the long-term financial sustainability of the system, then a security mechanism is activated that freezes the adjustment of current pensions and increases the contribution rates by 50% of the difference between the current contribution rate in the legislation and the minimum required rate calculated for a period of three years, until the next actuarial report. Hence, in the event of a deficit foreseen in the pension scheme, the procedure first induces a political debate, and only activates the adjustment mechanism if policy makers fail to agree on a solution. The mechanism then acts as a safety valve.

Luxembourg

Luxembourg has a semi-automatic balancing mechanism, forcing the government to act. The total contribution rate for old-age, disability and survival benefits is set by law for a period of 10 years, based on projections from the General Inspectorate of Social Security (IGSS). It is set up in such a way that the public pension reserve fund is at least 1.5 times the annual expenditure on pensions at all times, over a 10-year period. The IGSS also conducts an interim evaluation to see if it is necessary to adjust the contribution rate. Thus, the semi-automatic balancing mechanism mainly adjusts the contribution rates, although the adjustment of current pensions is also modified in case the contributions fail to cover expenditure. If contributions cover pension expenditure, the update with the CPI is complemented by average real wage growth. However, once current contributions are no longer sufficient to cover expenses, the law determines that the government must submit a proposal to parliament to make a less generous adjustment (for example, moving from an adjustment based on 100% of wages, to one based on 50% inflation growth and 50% increase in real wages). The semi-automatic adjustment of the contribution rate has not yet been put to the test, as the first revision of the contribution rate under the current mechanism was planned for 2022; the latest official estimates for the year 2021 indicated that pension expenses are expected to exceed total contributions in 2027, if the contribution rate does not change. Given that the European Commission[19] foresees that pension expenditure is expected to almost double, from 9.2% of GDP in 2019 to 18% of GDP by 2070, the pension contribution rate would almost have to double if the semi-automatic adjustment mechanism were applied. Given the current high contribution rate (24%), it seems unlikely that the rate will actually double, and therefore the semi-automatic link will not guarantee financial balance in the long term.

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[19] European Commission (2021), 2021 Ageing Report.

Netherlands

In Netherlands, an automatic adjustment mechanism for defined benefit (DB) contributory occupational schemes is currently in place. The revaluation of pension rights and the indexation of current pensions are directly linked to "capitalization ratios", i.e. the ratio of the present value of funds to their estimated future liabilities. In the event of a persistent deficit, indexation can be suspended, or pension levels reduced. A pension fund can adjust pensions and increase pension entitlements by total CPI growth only if it has a capitalization ratio above a certain threshold that varies between pension funds and can increase and index to less than CPI growth if that ratio is above 110%. Capitalization ratios below 110% lead to the freezing of pensions and pension rights. Ratios below 104.2% for more than five years lead to cuts in pensions and entitlements. In such cases, with the associated cuts spread over a maximum of 10 years, the ratio should return to 104.2%. This mechanism triggered cuts in entitlements and benefits in several pension funds in the wake of the 2008 financial crisis, as it was necessary to increase the capitalization ratio during that period while interest rates remained low and life expectancy increased. The resulting public discontent with the system led to the decision to partially suspend the automatic adjustment mechanism[20] and to propose a structural reform that replaces DB schemes with DC schemes. If the mechanism had not been suspended, many pension funds would have had to reduce pensions in nominal terms.

Sweden

Sweden complements its NDC PAYGO scheme with an automatic balancing mechanism, because its NA scheme does not adjust to the size of the working population; in fact, the notional interest rate in this country is equal to the growth of the average default wage. The Swedish Pension Agency calculates a "capitalization ratio" that divides the sum of the estimated contribution assets and the market value of the pension reserve fund between pension liabilities (accumulated theoretical pension rights and current pensions). If a deficit is detected (i.e. assets < liabilities; and thus capitalization ratio < 1), a brake is activated, reducing the notional interest rate below the wage growth rate to help restore the solvency of the system, limiting the accumulation in the NAs and reducing the indexation of current pensions. I.e., when liabilities are greater than assets, the automatic balance or brake is applied, which means that the increase in pensions as wages increase becomes slower, until the balance within the system is restored (assets=liabilities). The "brake" was first activated in 2010 due to the 2008 financial crisis, resulting in a decline in the value of pensions in both nominal and real terms, mainly because of the drop in the value of financial assets in the reserve fund.

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[20] The balance mechanism was partially suspended until the funds make the transition from DB to DC: pension funds will not be forced to reduce pensions if their capitalization ratio exceeds 90% (instead of the 104.2% previously legislated). Social partners have to determine the minimum capitalization ratio necessary for a pension fund to make the transition to DC, but it cannot be less than 90%. Until social partners reach an agreement, pension funds have to employ a target capitalization ratio of at least 95%. Note: The transition has not yet been legislated, but it is expected that the funds can move to DC as of 2023, and that all funds must have made the transition before 2027.

As a result of this experience, an element that softens the impact of the brake on pensions was introduced: since 2017, the possible reduction of the notional interest rate and the pension indexation rate triggered by the balance mechanism has been distributed over a period of three years. The government also attempted to counter the impact of negative indexation by reducing pension taxes. By doing so, a deficit in the pension system was avoided by transferring the cost to the general budget, which is what NDC schemes aim to avoid.

Once balance is achieved by applying the brake, any surplus can be used to raise the notional and indexation interest rates during an upgrade phase to the level they would have had, had there been no negative correction. However, under the solvency rules of the system, surpluses cannot be used to generate larger increases in pensions.

IV. What lessons can be drawn from the experience regarding AAMs for individually funded programs?

As seen in section III, there have been AAM experiences in the key parameters of the system in several countries. Understanding how these mechanisms have been implemented can help contribute experiences that serve to create instances that safeguard the consistency between their design and their objectives in individually funded programs.

The main lessons learned from the implementation of the AAMs are summarized below:

1. **AAMs require ongoing implementation to achieve their goals of financial or social sustainability and confidence in the pension system and are therefore best introduced with broad political support.** For example, Germany's demographic factor, legislated in 1997, which adjusted benefits to half the growth in life expectancy at age 60, was eliminated when a new government came to power a year later. In 2004, the sustainability factor was introduced, linking pensions to the pensioners/taxpayers' ratio. To ensure sufficient trade union and political support, the implementation of the mechanism is subject to some restrictions, such as a minimum net replacement rate. In contrast, as seen in section III, Sweden's notional account scheme with the aforementioned automatic adjustment mechanism (the so-called "brake"), was developed through political collaboration beyond the governing coalition. While the 2008 global financial crisis provided a stress test for the Swedish automatic balancing mechanism, the general principles of such a mechanism have remained largely unchallenged, although this experience shows that interventions by politicians are still needed in periods of high volatility. Hence, the Swedish mechanism is more likely to succeed in meeting its long-term objectives due to its political design and sustainability, strengthened by the broad consensus-building process among all political parties prior to pension reform.

2. **The political independence of the body that calculates the indicators with which the MAAs are applied is important, and these indicators must also be calculated transparently**. By clearly indicating the methodology used in the calculations, transparency and confidence in the pension system are improved, as changes in the methodology require clear explanations. For example, indicators based on projections may be prone to intervention because they are based on a number of assumptions. Policymakers can affect such indicators by changing the assumptions on which they are based. For example, the activation of the Canadian balancing mechanism is quite sensitive to the assumptions made by the chief actuary, and there is some controversy surrounding the latter's dismissal in 1998. According to a study [21], the dismissed chief actuary claimed to have been pressured to adjust assumptions when initial calculations showed that the system's contribution rate at the time was not sufficient to achieve financial sustainability.

3. **Frequent revisions of the system's situation, to define adjustments, are important**. Occasional revisions will likely lead to larger changes in the parameters affected by the AAM, compared to changes required by less time-consuming revisions. For example, Italy's conversion factor adjusting the benefits of the notional account system with respect to life expectancy, was initially adjusted every 10 years, and the adjustment required political approval. However, given the magnitude of the adjustment to be applied when the coefficient was adjusted for the time in 2005, the government retracted and postponed the adjustment until 2010. With an annual revision of the conversion factor, the result would probably have been weaker opposition to the size of the required adjustment. Thus, more frequent adjustments reduce the need for substantial corrections and therefore generate less pressure to intervene in the functioning of the mechanism.

4. **One-to-one links of the official retirement age to life expectancy may not be politically sustainable in the long run**. They could be used in the mid-term in countries that need to restore financial sustainability, but in the long term it is difficult to justify the continued reduction in the proportion of life spent in retirement relative to the length of working life. Slovakia, for example, revoked its one-to-one link, although further attempts are being made to re-establish it. The Netherlands replaced its one-to-one link with a two-thirds link as part of the implementation of the Pension Agreement. Denmark has no concrete plans to abandon its current one-to-one link, but a committee has been set up to analyze the effects of relaxing the link after 2040.

5. **The faster the implementation of the change resulting from the application of the AAM, the greater the likelihood of strong opposition**. Political pressure can arise most strongly when the defined automatic adjustments are implemented in a short time frame, with little or no transition, because the impact on the benefits or conditions applied to the affected groups will

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[21] See Bosworth, B. and R. Weaver (2011), "Social Security on autopilot: International experience with automatic stabilizer mechanisms", Center for Retirement Research Working Papers 2011-18, Center for Retirement Research, Chestnut Hill, MA.

be more noticeable.

6. **The design of an AAM should consider the country's administrative capacity**. Sufficient administrative capacity is needed for successful implementation, as this may require specific knowledge and experience, as well as adequate data collection. The required capacity varies according to the chosen measure, being relatively easy to implement. For example, the adjustments of the official retirement age to the observed changes in the life expectancy of the period, whereas measures based on future indicators require some estimation capabilities.

7. **It is important to establish a legal institutional framework that guarantees the application of automatic adjustments**. In some cases there have been delays in implementing these adjustments, and in others the heat of political debate has hampered them, despite agreement on the technical basis of the adjustments. Furthermore, the global financial crisis of 2008 had a profound impact on pension systems, leading to the suspension or revision of supposedly automatic adjustment mechanisms, such as, for example, in Germany or Sweden, so as not to affect the living standards of pensioners.

8.   **In individually funded contributory programs**:

   a. Unlike the PAYGO systems, in which adjustments are indispensable for improving the financial balance of the programs and relieving the tax burden, in the individually funded systems adjustments are necessary to ensure the adequacy of pension amounts in the face of increases in life expectancy and economic and financial trends.

   b. As life expectancy on retirement increases, the gap between the pensions actually paid (to retired members) and the pension estimates that the pension system can provide for future pensioners, will increase, since the pension will be received over a longer period, which translates into a reduction of the pensions that can be financed with the accumulated balances.

   c. Given their operating principles, if the key parameters that determine pensions (retirement ages, contribution rates and tax ceilings) are not adjusted, the benefits obtained by members automatically decrease. It is therefore extremely important to review these parameters.

   d. Since any changes in retirement ages and contribution rates have a high impact on workers enrolled in the system and the labor market, the discussion can become tainted with political and economic pressures that ultimately end in inaction. An AAM should therefore be defined in a process that is as technical as possible, to adjust these variables over time. The process must be accompanied by appropriate information and education for members. In Chile, for

example, some proposals have been made in this regard, but they have not been implemented to date: the Advisory Council in the 2008 Social Security Reform considered it necessary to carry out an actuarial study every 5 years, evaluating the effect of demographic and financial changes on replacement rates and fiscal commitments; and on the other hand, in 2003 the Undersecretary of Social Security proposed a series of improvements to the pension system, including the adjustment of the official retirement age in accordance with increases in life expectancy. The adjustments to the most important variables of the system should rest on an institutional framework that aims to ensure consistency between the design and parameters of the pension system and the objectives of replacement rates. The absence of this institutional framework is a weakness of Chile's current pension system.

e. It is important to check that the established legal and technical institutional frameworks enable adequate definitions of the most relevant aspects of the pension system or avoid the presence of risks and unjustified restrictions to its operation (see Box 1 in the Appendix).

Appendix

Box 1

It is important to check that the established legal and technical institutional frameworks enable adequately defining the most relevant aspects of the pension system, such as:

1. **Constitutional rules regulations** There needs to be an analysis of constitutional rules and regulations that can detract from the flexibility and efficiency of the operation of the individually funded program.
2. **Legal changes to the system**. There must be certainty regarding the institutions or individuals who have the power to propose legal changes to the pension system that are discussed in Parliament.
3. **Quorum**. It is important to bear in mind the percentage of parliamentary approval (Congress) that is required to make changes to the pension system law.
4. **Legal and technical institutional frameworkπ that reviews parameters consistent with system objectives**. It is essential to have a legal institution entrusted with periodically reviewing the main parameters of the system (retirement age, contribution rate, tax ceiling) and proposing adjustments to them, based on technical criteria that consider the evolution of demographic trends and labor and financial markets, the ultimate purpose of which is that such parameters are consistent with the achievement of the objectives of the pension system.
5. **Clearly defined objectives**. To comply with the aforementioned process, it is imperative that the authorities set certain targets for replacement rates and pension amounts to be received by members. Once these objectives have been established, it is important to ensure that the design and value of the system's parameters are consistent with these objectives in the different countries. For example, retirement ages should be reviewed and adjusted according to the variations in life expectancy, to keep the relationship between the contribution and retirement periods relatively stable.
6. **Consistency with other system pillars**. The parameters of the individually funded programs must be consistent with the conditions and benefits granted by the other pillars comprising the pension system. These adjustments, in turn, must safeguard the incentives for the formalization of the labor market and contributions to the contributory programs.
7. **Entity independent of political power**. Ideally, there must be an institution or technical council independent of political power, capable of giving opinions, making diagnoses, and proposing changes to different aspects of the pension system. It is important for this entity to have an effective influence on the issuance of the complementary rules and regulations of the law [22].
8. **Specialization and scope of the body responsible** for the auditing of the individually funded system.
9. **Election, autonomy, and duration of the Pension Commission** in its capacity (or institution responsible for auditing the pension system) and whether its election and term coincide with the presidential election and term.

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[22] An example of this type of initiative is the existence of the Technical Investment Council in Chile.

Bibliography and sources of information

- Bosworth, B. and R. Weaver (2011). "Social Security on autopilot: International experience with automatic stabilizer mechanisms", Center for Retirement Research Working Papers 2011-18, Center for Retirement Research, Chestnut Hill, MA.

- European Commission (2021). "2021 Ageing Report". Available at: https://economy-finance.ec.europa.eu/publications/2021-ageing-report-economic-and-budgetary-projections-eu-member-states-2019-2070_en

- Fernández, J. (2012). Explaining the introduction of automatic pension indexation provisions in 17 OECD countries, 1945–2000. Journal of European Social Policy, Vol. 22/3, pp. 241-258, http://dx.doi.org/10.1177/0958928712440202.

- O'Dea, C. and D. Sturrock (2018). "Subjective expectations of survival and economic behaviour", IFS Working Papers, No. W18/14, Institute for Fiscal Studies.

- OECD (2021). "Pensions at a Glance 2021", capítulo 2 "Automatic adjustment mechanisms in pension systems". Available at: https://www.oecd-ilibrary.org/sites/d9c5d58d-en/index.html?itemId=/content/component/d9c5d58d-en#section-d1e10635

- OECD (2022). "How inflation challenges Pensions". Disponible en: https://www.oecd.org/pensions/How-inflation-challenges-pensions.pdf

- Valdes-Prieto, S. (2000). "The Financial Stability of Notional Account Pensions", Scandinavian Journal of Economics, Vol. 102/3, pp. 395-417, http://dx.doi.org/10.1111/1467-9442.03205