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Summary Note

Lifecycle Notional Accounts: An integrated view of welfare policies along the lifecycle

Background

In the context of an ageing population, the debate on the reform of welfare policies was first focused on pension policies, where the effect of ageing is more sizable and visible in application of earmarked taxes addressed to finance them. *Healthcare* and *long-term care* (LTC) programs are increasingly under scrutiny as they are also affected by changes in family structure. In parallel, a growing concern has arisen on the need to take a holistic view of welfare policies and their effects along the lifecycle. In addition to contributions from the scientific literature in economics, sociology, political science, and other fields, this approach has also been suggested -explicitly or implicitly- by international institutions like the EU, ILO and OECD.

SUSTAINWELL follows this path and aims to advance towards a more detailed proposal for a life-cycle-oriented welfare state (WS), stressing the following points - which are central to the project's identity and a holistic understanding of welfare policies:

- Capturing interactions among lifecycle individual decisions and WS policies[1], clarifying the intra- and intergenerational redistribution effects of these policies. Arguably, this recommends accounting for the role and interaction among the different sectors providing welfare (family, market and the public sector).
- Ensuring that the WS is both adequate and sustainable, by defining an appropriate financing rule combining the *pay-as-you-go* (PAYG) logic with capitalization. We aim at an integrated lifetime welfare policy, in the spirit of the *Notional Accounts* (NA) pension system, while extending it to other social policies along the whole lifecycle.

It is worth mentioning that the development of the WS has been gradually substituting family transfers. Three distinctive features of those transfers are relevant. First, there are two lifecycle periods of economic dependency with quite different properties (childhood and elderhood). We all experience childhood and most of us elderhood, but not everyone has children (which significantly affects the intergenerational flow of private transfers along the entire lifecycle). Second, available data on family transfers show that they tend to be more intensively forward (from parents to children). On the contrary, public transfers tend to be backwards, focusing mainly on the elderly. Third, resources could be moved back and forward through the capital markets but, in practice, people face liquidity constraints that prevent obtaining credits to finance consumption during childhood.

[1] Interactions are outlined in *Table 1*, together with well-known efficiency and equity reasons for public intervention in the different policies.

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The way to organize the WS policies and finance should take these features into account by:

- Considering all available resource allocation strategies and adopting a lifecycle perspective, this approach takes a wider view of inter and intragenerational inequality.

- Incorporating non-market production which sheds light on the roots of the *gender gap* and, in parallel, calls for a broader definition of welfare, which might challenge the equity-efficiency trade-off.

What the public consultation is about:

The overarching goal is to design a new integrated view of welfare policies based on the long-lasting debate on pensions, inspired in *Notional Accounts* (NA). The *Lifecycle Notional Accounts* (LNA) include individual transparent virtual accounts (yet with some social sharing), keeping the PAYG financing (yet with some capitalisation) and incorporating automatic balancing mechanisms to foster long-term sustainability.[2] This is part of SUSTAINWELL's research work and is the basis for the public consultation.

From our perspective, the proposed LNA system would define:

- Benefits that should be universal or based on needs.
    - Full coverage in Health and Education (alto in tertiary?)
    - Access to support in family, active employment policies - including lifelong learning.
- A retirement pension formula, capturing lifetime contributions to market and non-market activities like care, including investment in children and possibly absence of unemployment and sickness leaves.
- Ways to increase career flexibility and to advance benefits to facilitate child rearing period.

The design of **Lifecycle Notional Accounts** (LNA) should contemplate the following features:

1. Apply and extend the logic of *Notional Accounts* (NA) to the rest of social policies. Hence, virtual accounts and the automatic adjustment mechanisms introduced so far in some national pensions systems would be extended to the entire WS.
2. Fostering incentives to work in market production, incorporating elements of *active employment policy* (flexicurity and workfare).
3. Benefit formulas would be wider - recognizing not only working careers - but also *nonmarket production*. In particular, virtual accounts would include informal care (possibly both in the household and outside).
4. Given financial constraints faced during the *child rearing period*, the system should include the possibility of advancing benefits with some sort of credit system.
5. As done in Sweden and other countries applying NA, combining the PAYG financing with compulsory capitalization when expenses are strongly affected by aging, as it happens in retirement pensions, healthcare and LTC. To the best of our knowledge, capitalization has not been applied in healthcare and LTC public systems. Individual capitalisation can be more naturally applied in the

[2] Annex A.2 summarizes the implementation process of NA in different countries.

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case of retirement pensions than in the case of healthcare and LTC where the insurance component is much higher. Nevertheless, a certain level of capitalization is needed to face demographic transition, but accounts should be collective and not individual to allow for risk-sharing.

6. Consider private investment in children to internalise the positive external effects of having children. This could be done in different ways. For example, considering own children's contribution in the pension formula. Another option would be adapting Sinn's (2000) proposal of setting up a mixed retirement pension system, diversifying risks, combining a PAYG financed pension for people who has children, with a fully funded system for those without children. Related to the *role of the family*, this would allow internalizing the positive external effects of having children in the presence of a PAYG public system.
7. Ensuring that all the incentives fostering sustainability are promoted. For example: In order to avoid individual's savings disincentives, the retirement pension benefit should never be affected (reduced) by eventual private savings.

Still, some benefits need to be provided universally (as education) or based in needs (as health). And it is necessary to assess in each policy the desirable degree of coverage and level of provision and, thus, the resulting redistributive effects and other aspects that are subject for the consultation. *Table 2* in the appendix summarizes those issues for each social policy related to a particular event along individuals' lifecycle: Childcare, primary and secondary education, tertiary education, healthcare, parenthood, sickness, unemployment, disability, retirement pensions, survivors' pensions, long-term care, poverty.

First, in some cases, benefits should be compulsory due to externalities (education and public health). Second, whenever non-market provision is relevant, there should be margin for personal choices (childcare). Third, equity recommends having social insurance due to failures in market and non-market (family) provision. The level of benefits provided can be total (according to needs), based on contributions, flat benefit (like the *Universal Basic Income*, in the case of poverty) or means-tested. In principle, universality and full coverage are desirable for all the programs considered but might not be feasible and might affect incentives harming public finance sustainability. Universality seems more necessary in merit goods like education and health (and LTC). Finally, it is consulted the way to reflect *market* and *non-market activity/production* in the LNA system to incentivize it.

LNA also aims to account for interactions among the different lifecycle policies. It is worth considering, first, that education and health policies, at the beginning of the lifecycle, are key to foster equal opportunities. Its effects, however, are mediated by family background. Second, that most of the social policies interact with labour market - and with non-market - activity of the concurrent generations (parenthood, childcare and LTC, education, health, sickness and disability, and retirement pensions). Moreover, some have strong implications on future productivity and equity (health and education). Regarding retirement pensions, it is important to keep incentives to save in the design of the benefit formula. Additionally, retirement pensions are at the end and can be designed to foster the right incentives to reach sustainability, but some benefits might need to be advanced to the working and childrearing period.

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Programme outline

The online session (via Zoom) on 13 November 2025 will provide an opportunity to sharing perspectives, experiences and good practice to advance on the design of a new perspective of the welfare policies throughout the lifecycle.

Time (CET)	Segment
3:30 – 3:45	Opening remarks (Ció Patxot) and Introduction round
3:45 – 4:45	Panel discussion with experts: - **Anna Cristina D'Addio,** *Senior Policy Analyst* at UNESCO - **Celine Peyron,** *Social Protection and Employment Policy Specialist* at the ILO Social Protection Department - **Shereen Hussein,** *Prof. of Health and Social Care Policy* at the London School of Hygiene & Tropical Medicine - **Fiona Stewart,** *Lead Financial Sector Specialist* at the World Bank Group
4:45 – 5:45	Open discussion
5:45 – 6:00	Closing remarks

Chaired by **Nicole Mun Sim Lai** *Economist Population Affairs Officer* at UNFPA
Presented by **Cio Patxot**, *Professor of Economics* at Universitat de Barcelona and SUSTAINWELL *Project Coordinator*.

Guiding questions (further detailed in the consultation):

- ***Question 1***: In your opinion, considering parents' investment on children, should they receive public support while rising them instead of extra pension benefits? Should the recognition of childcare in pension rights - or credits - be shared between parents according to their previous labour supply?
- ***Question 2:*** What other relevant interactions among policies should be considered to design the *Lifecyle Notional Accounts?*
- ***Question 3:*** What other externalities (i.e. fiscal) could be integrated through *Lifecyle Notional Accounts*?
- ***Question 4:*** Given public provision, what best practices or national policies have been implemented combining public and private mix in production?
- ***Question 5:*** What good practices or national policies have successfully been implemented taking a lifecycle perspective? How could they be potentially replicated?

Outcome

The results from the consultation and the online session will shape the content of an *EU Policy Brief* to be released at the end of the project (by January 2027) which will be made publicly available.

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Table 1: Reasons for public intervention in providing welfare

	EFFICIENCY reasons	EQUITY reasons	Lifecycle perspective & interactions
Education	Information problems (long run investment). Possible consumption myopia and/or liquidity constraints. Huge positive externalities (merit good) Key for future growth (returns decreasing in the education level)	Human right, "complex good" Key to equal opportunities and Sen's capabilities approach	At the beginning of lifecycle: huge impact on adult outcomes (employment, income, etc.) => virtuous spiral (reduces social protection need and prefunds future PAYG benefits). Family background matters
Healthcare	Imperfect information (high personal cost of bad decisions, supply could induce demand, potential moral hazard and adverse selection) Potential competition issues Potential externalities (merit good)	Human right - marketable commodity? Affects capabilities	Strong interaction with educational investment (e.g. prevention) and labour opportunities
Old age	Suboptimal savings (myopia); lack of annuities markets and financial education Externalities: More need for poverty alleviation PAYG => the only way to ensure against inflation	PAYG=> Intergenerational redistribution. Intragenerational redistribution or better use another tool?	Final outcome, resulting from lifetime opportunities and behaviour PAYGO => positive external effects of parenthood
Unemployment	Interdependent probabilities (common shock); asymmetric information (adverse selection & especially moral hazard, which remains in public insurance) Potential negative externalities to social assistance (under covered individuals and their families)	Insurance company charge higher premiums to riskier	Strong interaction with past education and old age Important considering a lifecycle approach in labour market active policies (including Job design and lifelong learning) to avoid moral hazard and unemployment trap
Family policies	PAYG => Positive externality of having children Quality of childcare ensured by market?	Gender, parents/childless, etc. Intergenerational transmission	Family environment crucial for child development including education outcomes (reduces need for other interventions) Family conciliation (interaction of market and non-market work and wellbeing) affects labour market outcomes
Long term care	Myopia limits demand; uncertainty limits provision of insurance	Human right	Accounting for non-market production to visualize care Interaction among market and non-market production with wellbeing
Poverty	Might incentivize dependence on social assistance If interpreted as an insurance and private (charity), potential free riding	Human right. Avoid "leakage" (people without needs receiving) and "gap" (uncovered needy)	Covers potential unprotected needs through other programs

Note: Based on Abio, Patxot and Souto (2025).

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Table 2: Basis for the consultation on Lifecycle Notional Accounts (LNA)

	Lifecycle needs / Policy issues	Childcare	Education	Healthcare	Parenthood	Sickness	Unemployment	Disability	Retirement pensions	Survivors' pensions	LTC	Poverty
1	**All affected (versus contingency)**	Yes	Yes	Yes, to some extent	No	No	No	No	Yes	No	No	No
2	**Insurable by the market?**			Yes, but equity & efficiency issues		Yes, but equity issues (high premium)	Yes, but equity issues (high premium)	Yes, but equity issues (high premium)	Yes, referred to unknown individual life expectancy(1)	Yes, related to pensions	Yes, but long run implies uncertainty (instead of risk)	No
3	**Financing**	PAYG	Child fund? Credit tertiary education?	Funded (partially, but collective not individualized)	Need to move resources backward	No (PAYG)	No (PAYG) (2)	No (PAYG)	Fully funded, except minimum pension	Pension fund can be inherited and PAYG social insurance	Funded (partially, but collective not individualized)	PAYG
4	**Level => intragenerational redistribution**	According to needs	Total (equal opportunities)	Total needs		Based on contributions or flat benefit?	Based on contributions or flat benefit?	Based on contributions or flat benefit?	Based on contributions plus universal minimum	Based on contributions or flat benefit?	Total needs	UBI or means tested?
5	**Reflect in LNA (as incentive)?**	Yes (although all of us receive)	Public cost or private cost (Benefit reflected in future wages)	No (not full responsibility, but possible moral hazard)	Yes. Recover investment and correct externality	No (but fully responsible, possible moral hazard)	Yes? (stronger moral hazard than health?) Partly responsible)? LNA as active employment policy	No (but fully responsible, possible moral hazard)	Yes	Yes	Yes, care received and given	Add UBI?

(1) This can only be achieved through annuities

(2) Austrian backpack is fully funded and can be received as pens

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Further reading

Abio, Patxot and Souto (2025) *Review of the lifecycle policies*, SUSTAINWELL Research notes. *Under EC revision*.

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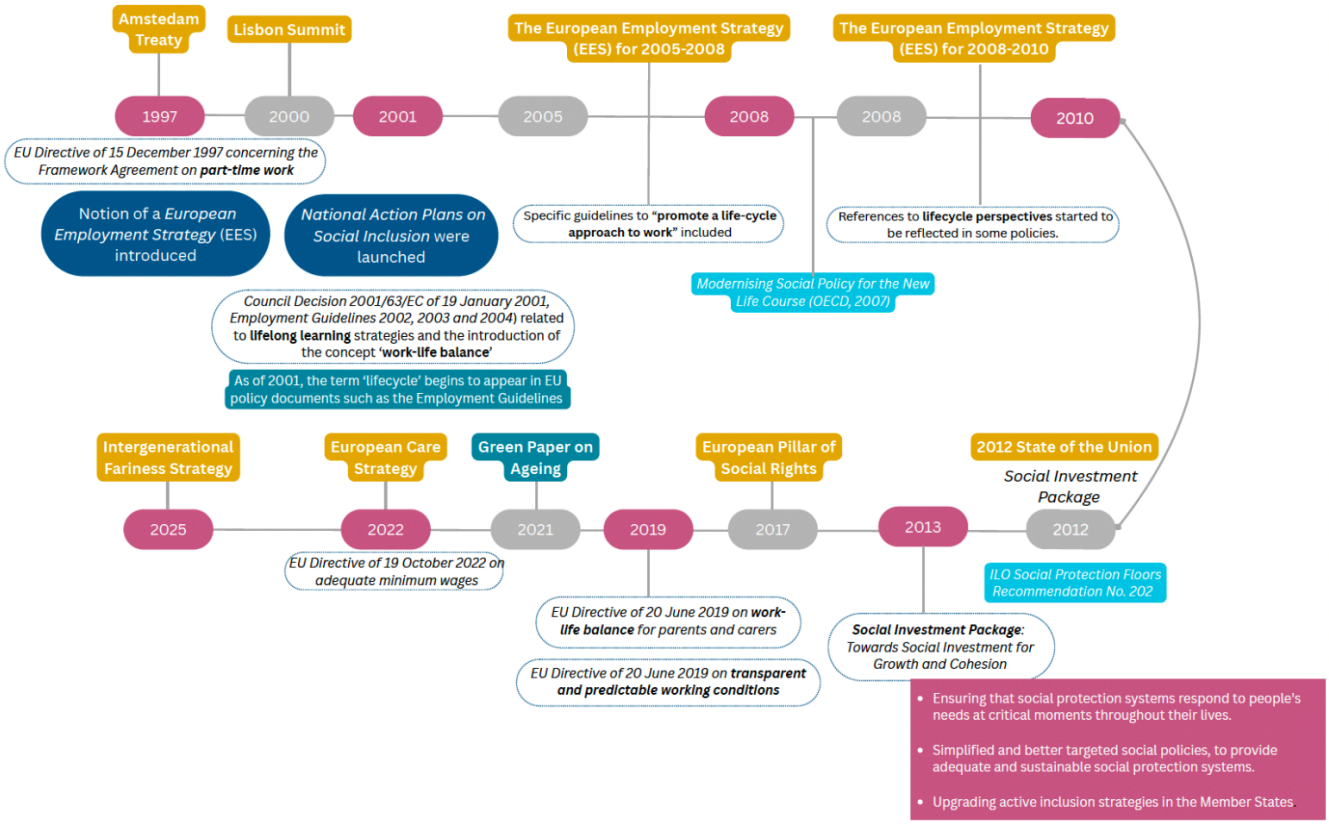
ANNEX A.1. The *European Social Agenda* towards a lifecycle perspective of welfare state



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ANNEX A.2. Implementation process of NA in different countries

It is though that the concept of *Notional Accounts* (NA) dated from the French "points- based earnings-related pension" introduced in 1945. In this system, individual contributors accumulate "points", and the pension was determined by the accumulated sum of pints at retirement age. The French point system, however, seemed to operate in the fashion of conventional defined-benefit plans, and not of NA (Valdes-Prieto, 2000). A similar national scheme was introduced in Germany in 1992 (Wilke, 2009). Buchanan (1968) suggested replacing social security payroll taxes in the United States by mandatory individual purchases of "social insurance bonds". When the individual retired, these bonds would be credited with a rate of interest compounded over the working life (Disney, 1999). The introduction of individual retirement saving accounts in countries like Chile and the United Kingdom is believed to have been another influence on the development of NA (Disney, 1999). In the United Kingdom, for example, individuals have been allowed to voluntarily opt out of either the public SERPS (*State Earnings-Related Pension Scheme)* or employer plans to set up a defined contribution, known as "personal pensions", as part of the social security system since 1988[3].

NA were first proposed in **Sweden** in 1994, triggered by demographic trends and a deep economic recession in the early 1990s (Palmer, 2000). The old PAYG system was replaced with a combination of a PAYG *notional defined contribution* (NDC) system and a DC privately managed financial account scheme, based on a total contribution rate of 18.5% on earnings. The reform, which was enacted in 1998, would aim at achieving a sustainable and fair system The characteristics of the system were the following: (i) became defined contribution, (ii) calculate pensions based on the entire work life, (iii) benefits were linked to life expectancy at the time of retirement, and (iv) retirement age became flexible (Aspegren et al., 2019). The first pillar of the present system is a so-called non-financial or notional defined-contribution (NDC) system. It is still PAYG, retaining part of its intergenerational insurance nature, but introduces a system of notional accounts where contributions are fixed and benefits of the basic pension are calculated at the time of retirement as a function of those contributions and the life expectancy at that point in time. The system has proved resilient and sustainable. Demographic factors (increased life expectancy, immigration flows), however, put the system into question on the adequacy of the pensions in the long run. The Parliament undertook a reform in 2017 (Aspegren et al., 2019) with the aim at strengthening incentives to work and to stay longer in the labour force to fund other measures, entailing increases in expenditures. Since 2020, reforms have targeted retirees with low income (European Commission, 2024).

In **Italy**, the reform was implemented in two steps with the "Amato" reform first in 1992 and, the "Dini reform" in 1995. The Amato government extended the number of contributory years, increased the retirement age and lengthened the period determining the reference salary for pension calculations. Later, the Dini government went further introducing a NDC scheme and flexible retirement. This reform changed the way benefits were calculated to account

[3] https://www.cbpp.org/sites/default/files/archive/3-16-99socsec-exec.htm

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automatically for increases in life expectancy (Aspegren et al., 2019. While frequent calls for a general reform of the pension system were made, the situation changed radically in 1992 under the pressure of the exchange rates and the need to control the deficit (Franco, 2002). Italy's pension system had three main problems: (i) high and rising expenditure on GDP, (ii) inadequate labour market incentives, and (iii) chaotic distributional effects (Franco, 2020)[4]. The first set of reforms were a standard 'parametric' changes (World Bank, 2000), with an explicit increase in the retirement age, cuts in accrual factors and indexation arrangements. The 'Dini' reforms explicitly linked pensions entitlements more closely to contributions. The contributions would be revalued in line with a moving average of GDP growth, and the annuity would be calculated as a product of this revaluation and a 'transformation coefficient' conditional on the age of retirement (Disney, 2000). There were, however, some reasons for thinking that the Dini reform may have not eliminated the risk of fiscal crisis in Italy arising from high pension expenditure. The contributory method introduced in 1995 was generalized to all employees in 2012 (S. G. Nadalet, 2021) with the 'Fornero' reform. The latest reforms (2016-2022) aim for reinforcing solidarity elements for better protection against poverty and facilitating early retirement via a plethora of temporary early-retirement options (European Commission, 2024).

Latvia was the first country to introduce an explicit system of notional accounts in 1996, significantly influenced, however, by the developments involved in the subsequent Swedish and Polish reforms (World Bank, 2001). Latvia's reform, which replaced a standard unfunded defined benefit programme, was intended to be multi-pillar, along *World Bank* lines (Disney, 2000). The system combines NDC and funded defined contribution (FDC) schemes covering all workers in a largely unified way. The NDC benefit is calculated based on total past contributions uprated with notional interest rates and remaining (period) life expectancy when retiring. The *old-age safety* net consists of the basic pension, which is equal to 6% of the gross average wage and is withdrawn fully against NDC and FDC pensions. Both earnings-related and first-tier pensions can be accessed without penalties at 63 years and 9 months in 2020, increasing gradually to 65 years in 2025 (OECD, 2019). There are credits to the system for specified non-contributory periods including military service, time spent in higher education, periods of sickness and unemployment, childcare, etc. (Disney, 2000).

In **Poland**, the radical pension reform was first proposed by the government in 1995; the legislation, however, was not implemented until 1999. The reform has also a multi-pillar aspect, with mandatory unfunded component, and a smaller compulsory and voluntary funded components. As in Latvia and Sweden, the notional account structure works by accumulating contributions in a 'virtual capital account (Disney, 2000). Since 2014, the public NDC scheme is the default option - workers can opt-in to allocate 2.92% of their gross wages to the privately managed DC scheme (OFE) (OECD, 2023).

In **Norway**, a new pension system was introduced in 2011 (Christensen, 2012) replacing the universal pension with a guaranteed minimum benefit, and the earnings-related pension with a NDC scheme. The pensionable age for the NDC pension is between 62 and 75. An employee can

[4] https://www.intereconomics.eu/contents/year/2020/number/2/article/lessons-from-italy-a-good-pension-system-needs-an-effective-broader-social-policy-framework.html

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earn credits back for unpaid work caring for others, or for having performed mandatory military or civilian service. Credit is also given through unemployment benefits.

Among OECD countries, **Australia** has the largest mandatory defined contributions scheme: employers must pay 9% of their employees' earnings into their pension accounts. In **Mexico**, the contribution is 6.5% of earnings with the government paying 5.5% of the minimum wage into all accounts. For an average earner, the total contribution comes to 7.1% of earnings, like Poland's contribution rate (7.3%). **Hungary** has slightly higher contributions (8% of earnings). The savings scheme in **Denmark** requires contributions of just 1% of earnings, but DC occupational plans (which cover most employees) have contribution rates that vary between 9 and 17% (OECD, 2005). About two-thirds of OECD countries employ some form of *Automatic adjustment mechanisms* (AAMs) in mandatory or quasi-mandatory pension schemes. The UK government is proposing significant changes to defined contribution (DC) pension schemes on a consultation, *Pensions Investment Review: Unlocking the UK pensions market for growth*, published on 14 November 2024.

After independence, former Soviet Union countries in Central and Western Asia inherited an extensive system of welfare, including PAYG old age pensions characterised by low retirements ages. Subsequent economic and demographic changes, however, triggered many reforms of the pension systems – including a shift away from Defined benefits towards DC systems. **Kyrgyzstan** (1997) was an early reformer and introduced a notional defined benefit pension while maintaining the PAYG element. **Kazakhstan** moved forward switching to a fully funded defined contribution scheme comparable with that introduced in Chile in the 1980s. Workers' contributions are credited to individual savings accounts and invested in a range of financial assets rather than being used to fund current pension obligations (Falkingham and Vlachantoni, 2010). In 2010, **Tajikistan** gradually switched from the DB pension scheme to the NDC programme finally implemented in 2013. It is currently composed of a NDC component and mandatory individual accounts[5]. **Azerbaijan** applied rules like those used by Tajikistan, including allocating a fixed contribution amount for each full year of the work record before the launch of the NDC scheme (2006) (World Bank, 2021). **Turkmenistan** introduced a NDC system and established a Pension fund in 2012, following recommendations from the UNDP with the project "Support to Pension System Development"[6]. The insured's accumulated notional pension capital to the average life expectancy after retirement a month. Pension rights earned before 2013 are converted into an initial amount of notional pension capital based on years of work, earnings, and average life expectancy after retirement[7].

In **Russia,** a NDC system of individual accounts was introduced in 2011 for individuals born in 1967 or later. Currently, contributions to the individual accounts are diverted to the social insurance programme. Retirement ages are still low, at 61 and six months for men and 56 and six months for women, gradually rising to 65 (men) and 60 (women) by 2028. The pension has a notional defined contribution component combined with a flat-rate universal benefit and individual accounts (Stott 2003).

[5] ISSA country profiles, accessed in June 2025.
[6] http://www.untuk.org/content/view/330/122/
[7] ISSA country profiles, accessed in June 2025.

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