# ANNUITY AS AN INSTRUMENT GUARANTEEING STABLE RETIREMENT INCOME

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***Abstract:*** *Most retirement income strategies force retirees to accept the intrinsic longevity risk, as they manage a volatile investment portfolio, with no knowledge of the time horizon, inflation or spending needs. Annuities are voluntary pension insurance products typically provided by life insurance companies, investment funds, or other financial institutions that can provide retirees income for the remainder of their life. We examine annuities as a way to guarantee income during retirement through a comparison with other retirement strategies in OECD countries.*

***Keywords:*** *Risks, annuity, stable income, pension.*

***JEL Classification:*** *E22, E61, E12, E23.*

## BACKGROUND AND MOTIVATION

For many countries, public pension reforms have resulted in more choice and risk to individuals. As such, the primary responsibility for providing retirement income has shifted from governments to individuals themselves. In this article, we give an overview of the risks individual face in choosing a retirement income strategy, highlighting the appeal of life annuities as a viable solution. We also examine the challenges faced by life annuity providers in offering these products and discuss several established approaches to managing them.

## RISKS

The growing interest in retirement income strategies is primarily driven by the increasing longevity risk. Life expectancy trends have exceeded their pre-pandemic levels and are likely to increase. Currently, the average retirement age for an individual in an OECD country is approximately 65 years for both men and women in most EU countries, while life expectancy in the EU reached over 81 years in 2023 (OECD/European Commission, 2024). In other words, an individual in the EU needs retirement income for at least 16 years, and this trend is continuing to rise. Hence, the need for sophisticated retirement income strategies is driven largely by *longevity risk*—the risk of outliving one's savings.

For public finance or other retirement income providers, this challenge is magnified by the substantial disparities in life expectancy between socio-economic groups. In a study of 15 European countries, life expectancy with lower education was 8 years shorter compared to those with higher education, with the gap being largest in Estonia, Hungary, and Lithuania. The main factor contributing to the gap was low income (OECD/European Commission, 2024). For retirement income providers, this means that lower earners tend to have a shorter life expectancy and thus would receive the benefits of retirement income over a shorter period of time, while higher earners, with longer life expectancies, face the risk of outliving their savings. Addressing the need for personalized income strategies to meet these differing needs is a challenge retirement income providers. While one solution is to differentiate retirement ages based on socio-economic groups' differing life expectancies, OECD (2023) argues that defining such groups and implement the corresponding rules is not feasible in

practice. Consequently, choosing a retirement income strategy is becoming an increasingly personal decision—one that the government cannot make on behalf of an individual.

Furthermore, inflation often leads to higher expenses for retired individuals, as energy and food make up a larger portion of their consumption baskets. Therefore, protecting against inflation is a key function of a retirement income strategy, particularly in light of recent inflation surges. Addressing this through automatic pension indexation may be a challenge for public finance. In particular, indexing pensions, along with public and private wages, may lead to second-round effects, making inflationary shock more persistent (Checherita-Westphal et al., 2022).

As such, modern retirement income strategies rely on assets held in tax-sheltered accounts and rely on investment growth to provide inflation protection. This approach not only requires active management, along with time and knowledge of investment management, but also carries the inherent risk of market volatility.

## LIFE ANNUITIES

*Life annuity* is a pension product usually offered by life insurance companies. Its purpose is to mitigate these risks for an individual and can provide them with guaranteed income for the remainder of their life. In simplest terms, life annuity offers payments for the lifetime of an individual in exchange for an upfront premium.

The defining features of an OECD life annuity product are that the product is fully financed by the contributions or premiums towards its purchase, that payments are calculated on an actuarially fair basis, i.e. the promised payments are computed based on a discount rate and mortality assumptions reasonable at the time that the annuity is purchased, and that there is a longevity insurance component in the promised payments (OECD, 2016).

Life annuities often offer a *guaranteed period*, which protects an individual against losing their principal in the case of early death. In such a case, the death benefit owing to the named beneficiary is equal to the present value of any payments remaining in the guaranteed period.

Inflation protection is another key feature of life annuities. The guaranteed payments are indexed to the inflation rate, ensuring a stable retirement income in real terms rather than nominal terms. To achieve this, life annuity products rely on investment growth. Importantly, the individual does not make any investment decisions. The insurer assumes all investment risks, which eliminates the need for active management or investment knowledge on the part of the individual.

With traditional life annuities, the individual fully relinquishes their premium assets to the insurer (OECD, 2016). This means that withdrawals, such as for cover emergencies, are not allowed, which is a significant drawback of the product. However, it is important to note that withdrawing some or all of one's savings is a strategy with very limited benefits. Not only is the withdrawn amount subject to inflation, but it is also taxed, putting the individual at depleting their capital much too quickly. Nevertheless, while traditional fixed-payment life annuities lack flexibility, more modern products address this by offering numerous variations. These products provide access to underlying capital, greater flexibility in the timing of the payout phase, and even risk diversification within the investment portfolio (OECD, 2016). On the other hand, these products are designed to be sustainable for the insurer, adding complexity to the decision-making process for individuals. As a result, the business model of life annuities is *advisory*, with an advisor, acting on behalf of the insurer, helping the individual choose the right life annuity product based on their retirement income needs, concerns, and financial goals. In this way, life annuities meet the growing demand for personalized retirement income strategies.

For these reasons, life annuities address nearly all concerns that individuals may have regarding their retirement income strategy, including the protection against erosion of their capital base through inflation or taxation, achieved through investment growth. The insurer assumes all risks associated with investment management and guarantees lifetime payments for the individual, all while offering a spectrum of highly personalized strategies delivered through the advisory model.

## RISKS FACED BY INSURERS AND THEIR MANAGEMENT

Given the guarantees offered by a life annuity product, the insurer faces risks to those described earlier—longevity, investment, and inflation; however, the insurer faces several other risks as well. In this section we summarize these main risks faced by the insurer as the life annuity provider and discuss a modern approach to their management.

The insurer faces risks similar to those an individual faces when making their retirement income strategy decision. For the insurer, longevity risk is the long-term risk of underestimating the improvements in mortality and the resulting increase in life expectancy, which in turn results in the need to make payments for longer than provisioned for. Moreover, because the duration of liabilities is long in general, the insurer faces reinvestment risk (that interest rates will have fallen), the risk of a fall in equity markets, and inflation risk. All of these risks are compounded by the existence of longevity risk as the time horizon increases (OECD, 2016).

The risk exposure for the insurer is driven by assumptions used to price the life annuity. The price of this product should be the present value of expected future payments, as well as any expenses incurred for offering the product, given the expected survival of the individual and the discount rate. The discount rate assumed is typically risk-free. In this case, the insurer could invest the premium received in government bonds and be certain that the bond payments would match the payments owed to the annuitant, which is a risk-free investment strategy. If the discount rate is higher than the risk-free rate, the insurer must invest in higher risk assets offering a higher return in order to meet the future payments. To mitigate the possibility of investments falling below the guaranteed rate, the insurer could offer a lower price to the consumer (assuming a higher discounted rate), thereby potentially increasing sales and market share (OECD, 2016).

As previously mentioned, investment risk is greater for annuities with longer expected duration. We hence explain a way that the insurer may address the longevity risk. The first critical factor is anti-selection, which refers to the tendency for individuals who can expect to live longer lives, e.g. those in good health, to also be the once most likely to purchase a life annuity. As a result, the average survival for these individuals is higher than that of the population average. Hence, to manage the risk of not having sufficient funds to pay future payments, the insurer must price the life annuity assuming a higher survival rate. The other critical factor is heterogeneity of socio-economic characteristics in the population. To address this, the insurer may base mortality assumptions on the premiums paid by the individuals. Because higher earners generally have longer life expectancies, this approach typically provides more accurate survival estimates (OECD, 2016).

## CONCLUSIONS

Life annuities provide individuals with guaranteed income for the remainder of their life, while protecting them from the longevity and reinvestment risks that they are exposed to. Life annuities are highly personalized, which is becoming an increasingly relevant property of retirement income strategies, all while not requiring individuals to have specialized knowledge or time investment. The insurer, as the life annuity provider, assumes all risks, which they can then manage through established strategies. For these reasons, life annuities offer a compelling solution to the growing demand for retirement income strategies, from the perspective of both individuals and providers.

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