Abstract
The fundamental objective of pension provision is to provide an adequate, safe and sustainable income to people in retirement. As life expectancy projections continue to be revised upwards, policy makers have a responsibility to ensure the pension system is sustainable and the costs of increasing longevity are shared fairly between generations. The financial status of the Cyprus Social Insurance Scheme will continue to deteriorate leading to a projected increase of the impact on government finances of an additional 2.2 percent of GDP by year 2030, placing an overall unsustainable burden on public finances. Given the anticipated pressures on the long-term financial sustainability of the state social security system as well as significant gaps related to supplementary coverage and income adequacy at retirement, employer-provided retirement provision will constitute an even more important pension supplement for old-age and is therefore expected to be further developed with the aim of safe, sustainable and effective social protection. Securing an adequate retirement income for citizens should be a priority for policy makers and any reform measures to improve sustainability should not come at the expense of the system’s adequacy.

Keywords: Pension, adequacy, sustainability, pension reform, Cyprus.

1. Introduction
Cyprus has a comprehensive social security system providing old age, survivors’ and disability benefits. The General Social Insurance Scheme (GSIS) was introduced in 1957 and since the 1964 reform extends compulsory insurance to every person gainfully employed in Cyprus, including all categories of self-employed. The Government Employees Pension Scheme provides retirement and survivors pensions to civil servants, members of the educational service, the police and the armed forces. It is financed almost entirely by general taxation on a pay-as-you-go basis. Employees of public utility organizations, local governments and of other public law authorities are covered under the same terms and

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conditions as civil servants and their pension benefits are financed via contributory occupational pension schemes.

However, the majority of private sector employees have no supplementary pension protection at all or they are covered by arrangements, like Defined Contribution Provident Funds, with serious weaknesses in terms of their effectiveness as retirement income vehicles. As a result, the main source of retirement income for the majority of the workforce remains the GSIS which will not, alone, be able to offer an adequate, safe and sustainable pension income.

The GSIS is facing a major financial sustainability challenge because of decreasing fertility, increasing longevity, inadequate financing and design faults. This paper analyzes the main sources of retirement income currently available for workers in Cyprus and the expected impact on the government's finances from rising pension costs and discusses reform options.

2. Current sources of retirement income and coverage

In addition to the primary source of retirement income, which is the GSIS, supplementary (second pillar) pension provision in Cyprus includes:

- the Government Employees Pension Scheme;
- other Public Sector Employees Pension Schemes;
- the Banking Sector Defined Benefit and Defined Contributions Schemes;
- the Doctors' Pension Fund;
- the Lawyers' Pension Fund; and
- Industry-wide and Single-Employer Financed Defined Contribution Provident Funds.

The latest statistics available indicate that over 50 percent of the workforce do not participate in a second pillar occupational pension scheme and are entirely dependent on the GSIS for meeting their retirement needs (Figure 1). Therefore, reforms should also be directed towards improving the coverage of the workforce from supplementary pension provision.
3. Adequacy

The risk of poverty of the 65+ age group in Cyprus is the highest among all EU member states, reaching as high as 45 percent in 2010. The main reason for the very high poverty risk of older persons seems to be the low level of basic minimum pension and the low credits accrued under the supplementary GSIS in force after October 1980. In addition, access to second pillar schemes is limited and lump sums are paid out each time the employee changes or loses their job. Moreover, self-employed people contribute on the basis of notional incomes fixed by category of occupation without any obligation to declare their actual income where this is higher.

Current replacement rates are rather low. The evolution of the aggregate replacement ratio from GSIS, defined as the ratio of the average first pension for new old-age pensioners to the average earnings of the active contributors aged 55 and over, is at 40 to 45 percent and is expected to
increase to just over 50 percent on average once the GSIS supplementary part matures.

Figure 2 below shows the projected total replacement ratios (GSIS plus second pillar fund where available) for a sample of new hires joining various sectors of the economy to assess the overall adequacy of the system. For the calculations, it has been assumed that benefits from second pillar lump sum funds are directed for retirement needs and that the person stays in the same job until retirement at age 63. The new hire profile used is a 25 year-old male entering the workforce at a starting salary of €1,500 per month with a real salary increase assumed at two percent per annum and a real maximum insurable earnings increase at 0.25 percent per annum. Defined contribution benefits were assumed to accumulate at a real investment return of two percent per annum.

Data from the US Retirement Confidence Survey indicate that 60 percent of workers expect to live comfortably on around 70 percent of their pre-retirement income. However, given escalating health care expenses, a typical 40 year-old worker may actually need to replace more than 100 percent of pre-retirement income in retirement to live comfortably. In the absence of a relevant survey in Cyprus, a mid-range point of 85 percent was adopted as a reasonable future retirement need factor. The resulting replacement ratios are as follows:

![Figure 2](image_url)

**FIGURE 2**

*Projected income replacement ratio at retirement*

Source: Aon Hewitt.
The analysis for other employee profiles shows similar outcomes, with the gap to the set retirement need factor growing for higher salaried individuals, given the cap on insurable earnings applied on the GSIS benefits. Given this analysis, it is apparent that the current overall pension system design cannot deliver the required adequacy levels. For workers covered under supplementary systems the gap is relatively small and can be filled via individual retirement savings. The large adequacy problem is faced by workers with no supplemental provision, who represent the large majority of the labour force.

4. Sustainability

The GSIS has been investing its reserves exclusively in non-marketable government debt. The implication of this is that the GSIS reserves have effectively become a ‘notional’ fund that is not available to meet future pension liabilities. The Scheme has therefore transformed from ‘partially funded’ into a completely ‘pay-as-you-go’ scheme, relying on future contributions and government tax revenues for the payment of pensions.

The latest Actuarial Study as at 31st December 2009 projects that the associated cost of providing pension benefits will increase dramatically in the next 20-30 years with the PAYG cost rate increasing from 12.2 percent in 2010 to 22.6 percent in 2040 and 36.8 percent in 2060. This translates to an increase in pension costs from about seven percent of GDP in 2010 to about 16.5 percent of GDP by 2050, driving public pension expenditures among the highest in the EU. This will have significant implications for the government’s future ability to fund these pension costs or alternatively to fund other important sectors of the economy, like healthcare, education, security forces, etc.

The Actuarial Study shows that the Scheme is projected to reach its first important sustainability Milestone, i.e. the year in which the benefits payable by the fund exceed the contributions received by the fund, in 2032. However, this may not be an adequate sustainability measure as it ignores the impact of the GSIS on the finances of the government. A better measure is the surplus/deficit net of government contributions. The government participates in the financing of GSIS via its contributions as an employer, the general government subsidy, interest on 'debt' and via special contributions towards minimum pensions. Looking at the net cash flow to the government, which is equal to income from private sector contributors plus some other income minus scheme’s expenditure, the GSIS is already in deficit with a negative impact on the fiscal deficit and the public debt. The projected increase of the impact on government finances is an
additional burden of 2.2 percent of GDP (rising to an additional burden of 3.2 percent of GDP if the cost of the public sector pension scheme is also factored in) by year 2030, placing an overall unsustainable burden on public finances.

The current fiscal position of the government is very unfavorable; leaving a limited, if any, fiscal space to absorb the above projected increases in the budget costs or to accumulate an effective reserve for the GSIS that will act as a buffer for implementing smooth reforms over a comfortable timeframe.

5. Reform Proposals

Reforms should ensure that the pension system helps people to save for their retirement, while supporting the most vulnerable in a fiscally sustainable way. The current design and structure of the Cyprus pension system is a major barrier to saving, particularly as few people have a clear idea of what their state pension will be worth when they retire. As longevity continues to improve, policy makers have a responsibility to ensure the country's pension system is sustainable and the costs of increasing longevity are shared fairly between generations. People should be supported to take more responsibility in saving for their retirement.

Securing an adequate retirement income for citizens should be a priority for policy makers and any reform measures to improve sustainability should not come at the expense of the system's adequacy.

Sustainability measures

The GSIS normal retirement age should be increased gradually at least to age 67 and then automatically on the basis of life expectancy at retirement. Raising the retirement to 67 would reduce the fiscal impact from the GSIS by an estimated one percent of GDP on average over the next 30 years.

GSIS Supplementary section benefit accrual should be gradually reduced from the current level of 1.5 percent. For every ten percent reduction in the accrual rate, the fiscal impact from the GSIS would reduce by an estimated 0.5 percent of GDP on average over the next 30 years.

Real Reserve Accumulation and Investment Policy: Implementing a combination of sufficient reform policies early could create cash surpluses allowing a significant accumulation of reserves. The aim of such a Fund would be to act as a buffer to contribute to the rising burden of pension and other benefit costs as it faces up to the pressure of an ageing population, by setting aside assets so as to i) reduce the impact of pensions
in future generations and ii) smooth contributions for social security benefits over time.

When such reforms, in combination with a favorable fiscal space or revenues from natural resources, enable the accumulation a Real Reserve, the investment policy framework design currently underway should be concluded and implemented.

One of the most important mitigating factors to the sustainability challenge of maturing social security systems would be the continued economic welfare of the country in general, sustaining and growing a healthy wage base. To the extent that this is enhanced by the implementation of investment strategies that utilize the funds for the general economic growth, such strategies should be pursued to the best possible extent.

Investments with social and economic utility include, for example, private-sector initiatives, state enterprises, low-cost housing, old-age facilities, health infrastructure, tourism and projects enhancing human resources. These should be considered in addition to an internationally diversified portfolio of assets.

These types of investments may make a substantial contribution to long-term national growth rates even if the indirect rates of return may not always be fully reflected in the monetary rates of return. By contributing to long-term national economic growth, they can improve the financial status of the social security scheme in terms of the number of members, the amount of their insurable earnings, and the rate of return on the scheme’s investments.

**Adequacy Measures**

A key trend attempting to protect pension income adequacy has been the move from largely single to multi-tiered systems. This is a result of the trend in most EU Member States to reduce the share of public PAYG pensions in the total pension provision, giving an enhanced role to supplementary second pillar funded schemes, which are increasingly of a Defined Contribution (DC) type.

Figure 3 shows that for most EU countries, funded occupational second pillar pensions will provide for a larger share of retirement income in 2046 than in 2006 as a result of pension reforms (measured by gross theoretical replacement rates). Cyprus needs to align with this trend.
The role of Occupational schemes (including voluntary Provident Funds) should be redefined to align them towards retirement Adequacy objectives. Measures to consider could include:

- Tax incentives, which are currently provided to the private sector for financing occupational schemes, should be geared so that these schemes are aligned towards retirement.
- Restricting the payment of benefits for reasons other than retirement, ill health or death.
- Restricting the level of benefits paid out in cash lump sums with the remainder converted to pension income via annuity purchase or Income Drawdown.

• Implementing a portability framework for transfers of accrued rights between occupational schemes.

• Considering the merging for occupational pension schemes, e.g. on the basis of economic activity, to maximize efficiency via economies of scale.

• Improving the Investment management framework under which these schemes operate, e.g. allowing the use of individual Investment choice for members including lifestyling, to align asset allocation decisions with individual retirement needs.

• Considering a Mandatory second Pillar system with automatic enrollment of workers, for example with a Minimum Employer contribution rate (this rate could be linked to the Cost of Living or GDP growth subject to a cap and a threshold).

6. Conclusion

The fundamental objective of pension provision is to provide an adequate, safe and sustainable income to people in retirement. As life expectancy projections continue to be revised upwards, policy makers have a responsibility to ensure the pension system is sustainable and the costs of increasing longevity are shared fairly between generations. Given the anticipated pressures on the long-term financial sustainability of the state social security system as well as issues related to income adequacy at retirement, employer-provided retirement provision will constitute an even more important pension supplement for old-age and is therefore expected to be further developed with the aim of safe, sustainable and effective social protection.

Reforming the pensions system is crucial in order to reduce the growing public pension costs and achieve long term fiscal consolidation as well as improving adequacy. The choice for policy makers should be the immediate decision to implement gradual reforms that will allow equitable sharing within generations. Delays in making the necessary pension reforms will require more extreme and inequitable measures when the costs spiral out of control.

Securing an adequate retirement income for citizens should be a priority for policy makers and any reform measures to improve sustainability should not come at the expense of the system's adequacy.
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References


