

Pension Models and Guidelines Comparison

**A supplementary paper prepared for the 2025
Pension Strategy Group (PSG) report**

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Chapter 1 - Introduction

Every society finds some means of supporting its members once age prevents them from earning a living. Across the developed world, including Malta, pension arrangements that served adequately for generations are now under strain as the number of retirees grows while the working-age population funding them contracts.

That demographic pressure has fuelled a vigorous debate over pension reform, and in particular over whether countries should shift away from state pay-as-you-go provision towards funded or privately managed arrangements. In common with other states facing these questions, the Pensions Strategy Group has used its successive five-yearly reports to examine the economics of pensions and what those economics imply for designing new schemes or reshaping established ones.

Sound policy design starts by settling on objectives and only then turns to the instruments for delivering them. The aims pursued by pension systems are, in broad terms, three (Barr & Diamond, 2006):

- To provide security against destitution in old age;
- to spread consumption more evenly across the life cycle, transferring resources from the high-earning years to those of lower or no earnings; and
- an insurance function — guaranteeing the means of living to those who live unusually long.

More generally, such systems aim to replace income for people whose capacity to earn is reduced by old age, disability, or the loss of a household breadwinner. In some instances, they operate as direct transfers from the state to defined target groups and can be judged on that basis; more often, though, the central purpose is to give individuals a vehicle through which to insure themselves against the future loss of earning power.

Securing the long-run sustainability of the system is a universal goal of pension design. Financial sustainability means the scheme can honour the claims made on it from the resources at its disposal (Barr & Diamond, 2006). This part of the Report reviews a range of international and national models in order to draw out the features they share as well as the points on which they diverge materially.

Chapter 2 - The Main Pension Models

The Geneva Association Model

Roughly five decades ago the Geneva Association began mapping the issues that would shape the future of insurance and its wider effect on business and society. The Association — a global forum of insurance and reinsurance chief executives that also functions as a think tank — launched a programme, christened the “Four Pillars”, on lengthening life cycles, the encouragement of longer working lives, and pensions, which subsequently grew into a continuing research effort (The Geneva Association, 2001).

The aim of the Four Pillars Research Programme was to find workable ways of financing pensions in the years ahead and, more broadly, of restructuring social security. Demographic change — above all rising life expectancy — was expected to weigh ever more heavily, and could prove beneficial provided that healthy ageing allowed older people to keep contributing economically and socially to the service economies of the coming decades (The Geneva Association, 2001).

The Association set out its four pillars in the following terms:

1. **Pillar I pensions** — state-funded benefits for retirees, generally calculated from years of employment, salary and the age at which the benefit is drawn, and paid as a monthly sum; these are also termed social pensions.
2. **Pillar II** consisting of:
 - a. **Public pensions** — retirement benefits for public-sector employees, paid either as a lifelong monthly amount (defined-benefit plans) or as a savings-account balance (defined-contribution plans) to which employee and employer normally both contribute; and
 - b. **Private pensions** — identical in form to public Pillar II provision, except that the contributing employer is a private company rather than a government body.
3. **Pillar III pensions** — personal savings of any kind — cash, bonds, equities, mutual funds or property — that fall outside Pillar I or Pillar II.
4. **Pillar IV pensions** — provision associated with retirement, typically from around age 65.

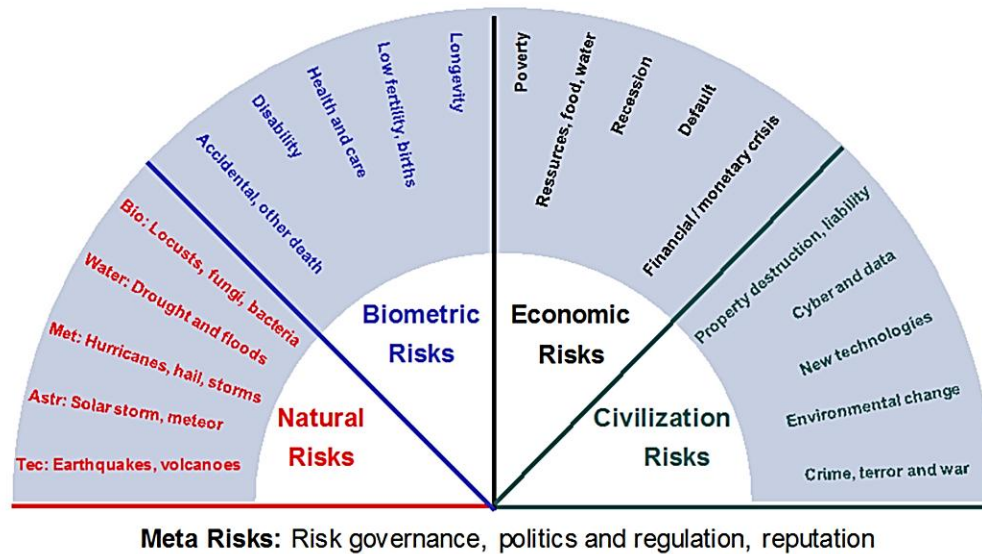


Figure 1: Types of Risks Society is facing.

Several of the risks flagged by the Association’s founders remain live and continue to test pension systems, even as fresh ones have appeared. Figure 1 sets out the categories of risk that policymakers have to confront (The Geneva Association, 2016).

The Association’s vocabulary went on to become the conventional terminology in European Commission and OECD documents and presentations. One notable conclusion of its research was that first-pillar pensions would have to remain central for most of the population, while occupational and personal pensions, as their reach widened, ought to cushion any relative decline in first-pillar value over coming decades and to reinforce retirement provision as a whole (The Geneva Association, 2001).

The thrust of the work, accordingly, was to examine how private solutions might complement public social policy — one of the twentieth century’s great accomplishments — and to manage the rebalancing between public and private provision by emphasising the growth of the latter. The funded second pillar was also viewed as better suited to the increasingly fluid careers and cross-border labour market that characterise the modern service economy (The Geneva Association, 2001).

Although European pension systems differed widely several decades ago, the Geneva Association’s research has been influential in the more recent reforms that have brought greater convergence within the European Union and a sounder balance through multi-pillar designs (The Geneva Association, 2016).

World Bank Multi-Pillars

The World Bank’s conceptual framework for pensions was first articulated in a 2005 study (Holzmann et al., 2005).

While the Bank's own experience indicated that no single remedy fitted every pension problem and that no one reform template could be transplanted across all contexts, it nonetheless distilled a set of analytical principles and a conceptual framework to steer its work (Holzmann et al., 2005).

The Bank's policy framework rests on a five-pillar model offering a menu of design elements for shaping pension arrangements and reform. Multi-pillar structures lend flexibility, are better able to serve the principal target groups in a population, and spread the economic, demographic and political risks to which pension systems are exposed (Holzmann et al., 2008). The five pillars are:

1. **A non-contributory Zero Pillar** — directed squarely at poverty alleviation, it gives every older person a minimum floor of protection and ensures that those with low lifetime incomes, including people only loosely attached to the formal economy, have basic security in old age.
2. **A mandatory First Pillar** — financed, as a rule, on a pay-as-you-go basis, with contributions tied in varying degrees to earnings so as to replace part of pre-retirement lifetime income.
3. **A mandatory Second Pillar** — usually an individual savings account such as a defined-contribution plan, with extensive design choices covering active or passive investment, the selection of investments and managers, and the form of withdrawal. By tying contributions, investment returns and benefits closely together, such plans support enforceable property rights and can foster financial-market development.
4. **A voluntary Third Pillar** — highly flexible and discretionary, taking many shapes. Third pillars offset rigidities elsewhere in the system but carry risks similar to those of second pillars.
5. **A non-financial Fourth Pillar** — encompassing informal support such as that from family, other formal programmes such as health care or housing, and further individual assets, financial and otherwise, including home ownership and, where available, reverse mortgages.

Over time the Bank has refined and extended this model, and it has shaped research and policymaking across its membership of 189 countries, the EU among them. The Bank's Pension Reform Options Simulation Toolkit (PROST) projects contributions, entitlements, and system revenues and expenditures far into the future (Holzmann et al., 2008; Wiener, 2019).

PROST is intended to underpin evidence-based policymaking by linking the quantitative and qualitative assessment of pension regimes. It is a flexible, computer-based toolkit that adapts readily to widely differing national circumstances, and policymakers and other stakeholders have applied it to appraise existing schemes and reform proposals in more than ninety countries (Wiener, 2019).

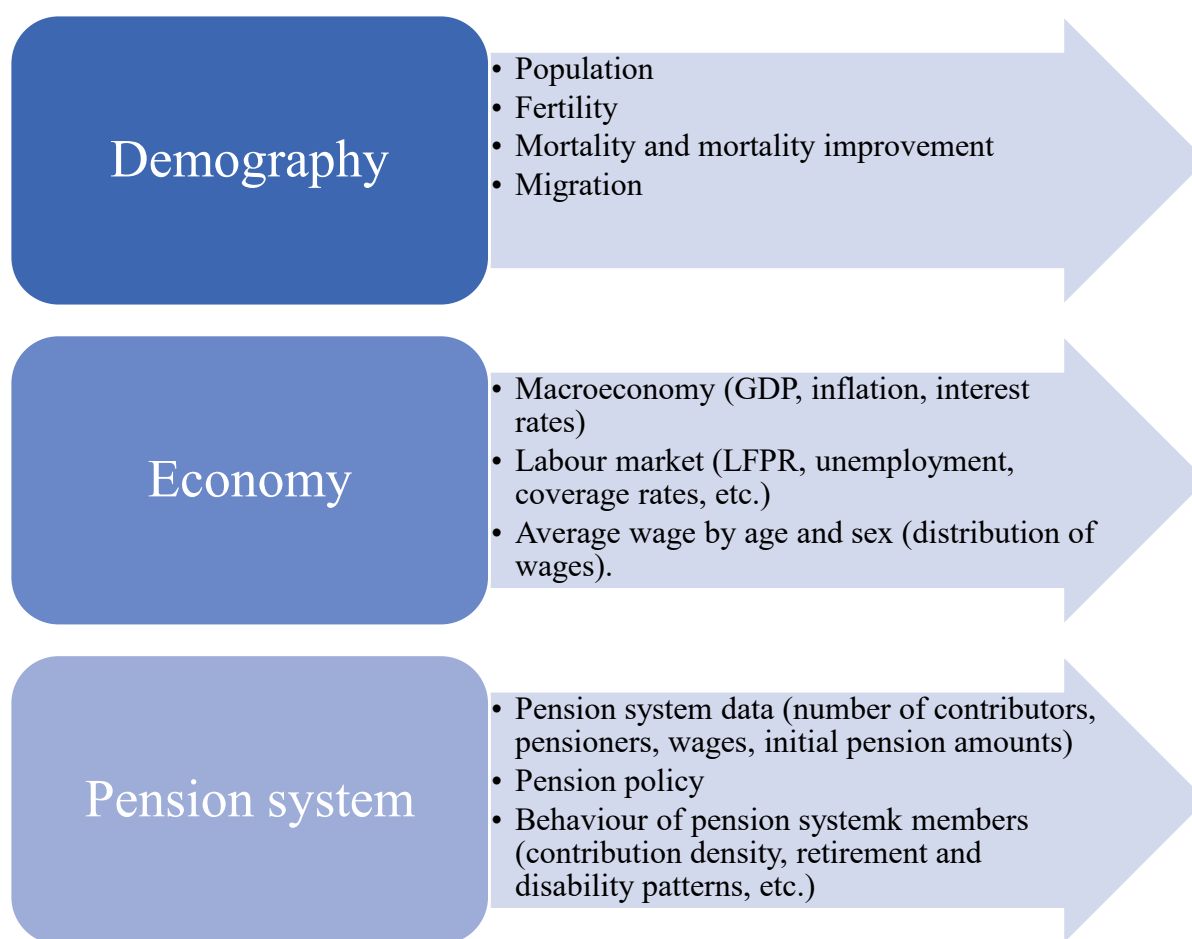


Figure 2: World Bank PROST model inputs.

As Figure 2 shows, three domains underpin the model: demography, the economy and the pension system. The principal parameters for each are specified, framing the data requirements and the assumptions on which the analysis rests (Wiener, 2019).

Figure 3 sets out the system provisions used in the modelling. These are generic and flexible, and adapt easily to varying national settings. The model can follow single-year cohorts of pensioners, whether over one year or across time, and project their coverage, benefits and financial flows. Two strengths stand out: it can view the pension system both in aggregate and at the level of the individual, and it allows assumptions to be varied from year to year (Wiener, 2019).

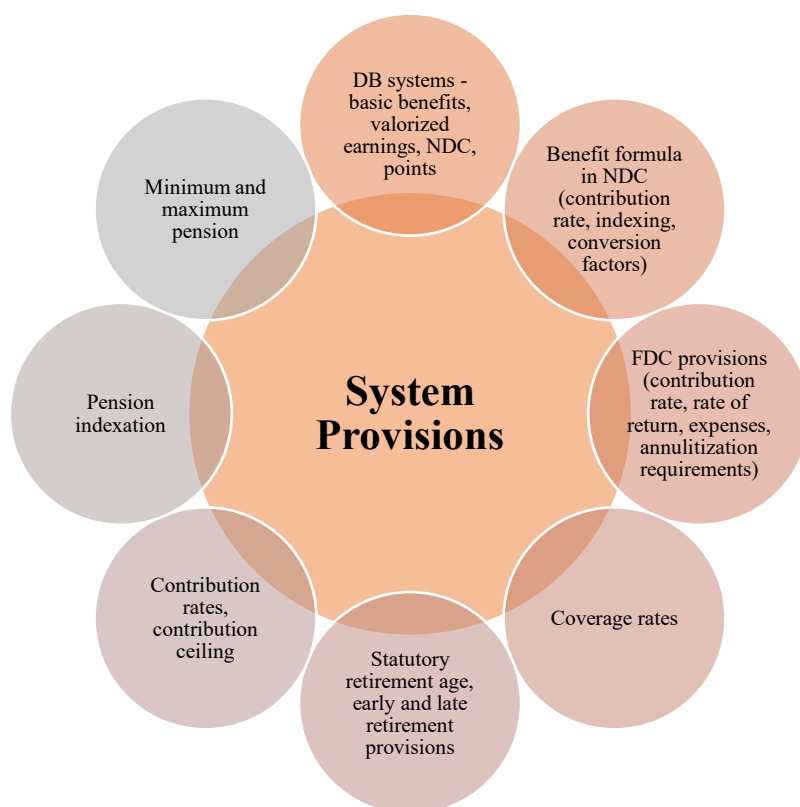


Figure 3: System Provisions of most Pension Schemes.

The model's outputs include projections of (i) population, life expectancy and population dependency ratios; (ii) the number of contributors and of pensioners by type, the system dependency ratio and the coverage rate; (iii) wages, pensions both at award and after retirement, system revenues, expenditures, current balances, assets and debt, programme liabilities, and the equilibrium contribution rate for defined-benefit plans; and (iv) individual-level results such as annual contributions and benefits, present values and the internal rate of return (Wiener, 2019).

PROST also supports diagnosis of a system, addressing questions such as (i) the financial sustainability of pay-as-you-go schemes — their financial flows, the transfers governments make to cover deficits, implicit pension debt and the financing gap; (ii) the adequacy of expected benefits at and after retirement and by category of pensioner; and (iii) distributional effects and equity issues within and between generations (Wiener, 2019). It is worth noting that the PSG itself uses this model to simulate how prospective policy measures would affect the system and successive cohorts of pensioners, to project future expenditure, and to test the system's sustainability.

ILO Multi-Tier Model

The ILO/PENSIONS model can hold several pension schemes within one framework. Each scheme may address a different population, with its own eligibility rules, benefit formula, contribution rate and administrative costs. That flexibility makes the model well suited to capturing a mix of arrangements, such as schemes for private-sector workers, public employees and the military (International Labour Organization [ILO], 2022).

The model, which shares the PROST engine with the World Bank, is widely employed for planning and scenario work, since users can set their own parameters — projection horizon, nominal or real values, gender, age, retirement age, contribution rates and eligibility conditions — within national models to suit a variety of purposes. It produces outcome tables and indicators at several levels, allowing the system's performance to be assessed at the population-group, scheme and aggregate levels. The outcome tables span both demographic and financial dimensions, giving a rounded picture (ILO, 2022).

The model also projects inactive contributors, allowing for cases in which they re-enter activity, retire once they meet the eligibility criteria, or leave the system permanently through death. Users may, in addition, define reference salaries for the pension calculation over differing numbers of years, in either real or nominal terms (ILO, 2022).

The ILO's guiding principles for developing and reforming pensions encompass universal coverage, compulsory membership, solidarity and equal treatment. On this view the benefit structure of a scheme should serve the following broad objectives (ILO, 2022):

- i) extending coverage to the whole population;
- ii) replacing the earnings lost on voluntary or involuntary retirement for everyone who has contributed;
- iii) uprating that income for inflation and, to some degree, for the general rise in living standards; and
- iv) fostering conditions in which additional voluntary retirement saving can develop.

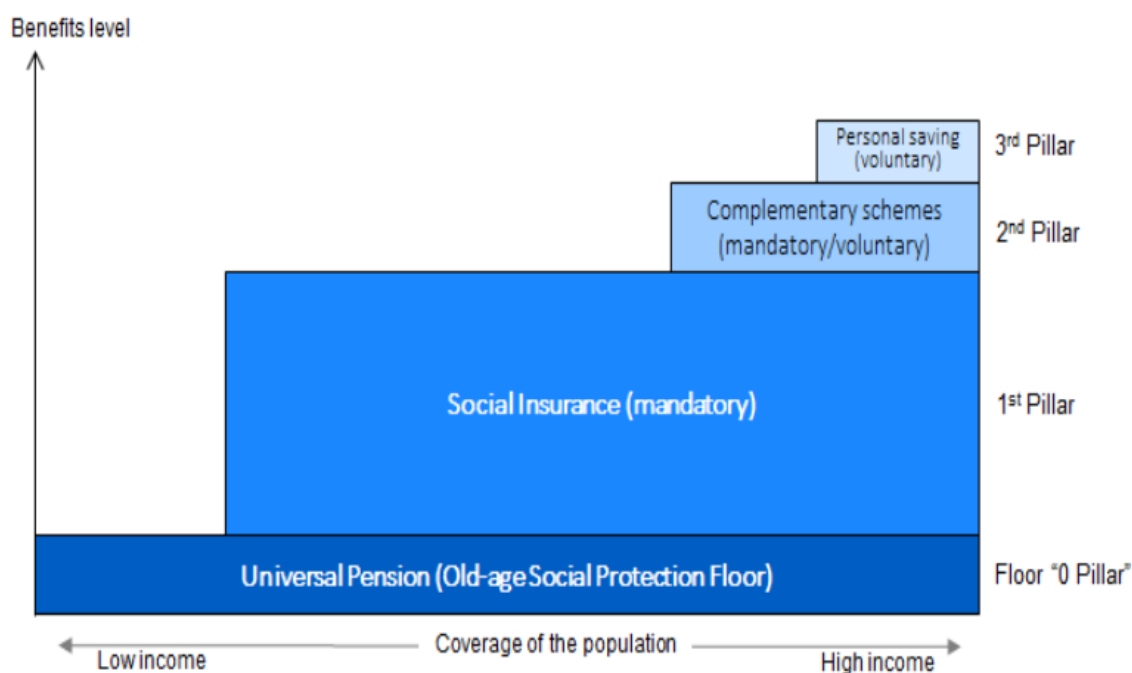


Figure 4: The ILO Multi-Tier Model.

The model has four pillars:

1. **Pillar 0, or the pension floor** — a non-contributory scheme guaranteeing a minimum income, at a benefit level sufficient for a life of decency and dignity.
2. **First Pillar, or social insurance pillar** — a mandatory defined-benefit scheme funded by employer and worker contributions. It should deliver at least a minimum pension equal to 40 per cent of pre-retirement insured income after 30 years of contributions, together with a reduced minimum for those with at least 15 years.
3. **Second Pillar, or complementary pillar** — a complementary contributory tier, whether voluntary or mandatory, occupational or non-occupational, and of defined-benefit or defined-contribution form. Usually employer-financed and privately managed, it tops up the benefits of the first two pillars and depends on strong state involvement, particularly in regulation and supervision.
4. **Third Pillar, or voluntary personal savings pillar** — complementary, voluntary private schemes for those able to save more, typically run by private administrators under open market competition and government oversight.

The ILO's model and its pension research have been drawn on widely by individual countries to inform policymaking and to gauge the effects of changes to their systems (ILO, 2022).

OECD Model

The OECD first laid out its model in the 1998 report *Maintaining Prosperity in an Ageing Society*, which distinguished three pillars, or types of pension arrangement (Figure 5; OECD, 1998):

First Pillar — publicly run, defined-benefit, pay-as-you-go schemes, usually funded by a payroll tax;

Second Pillar — privately managed schemes furnished as part of the employment contract; and

Third Pillar — personal pension plans taking the form of saving and annuity products.

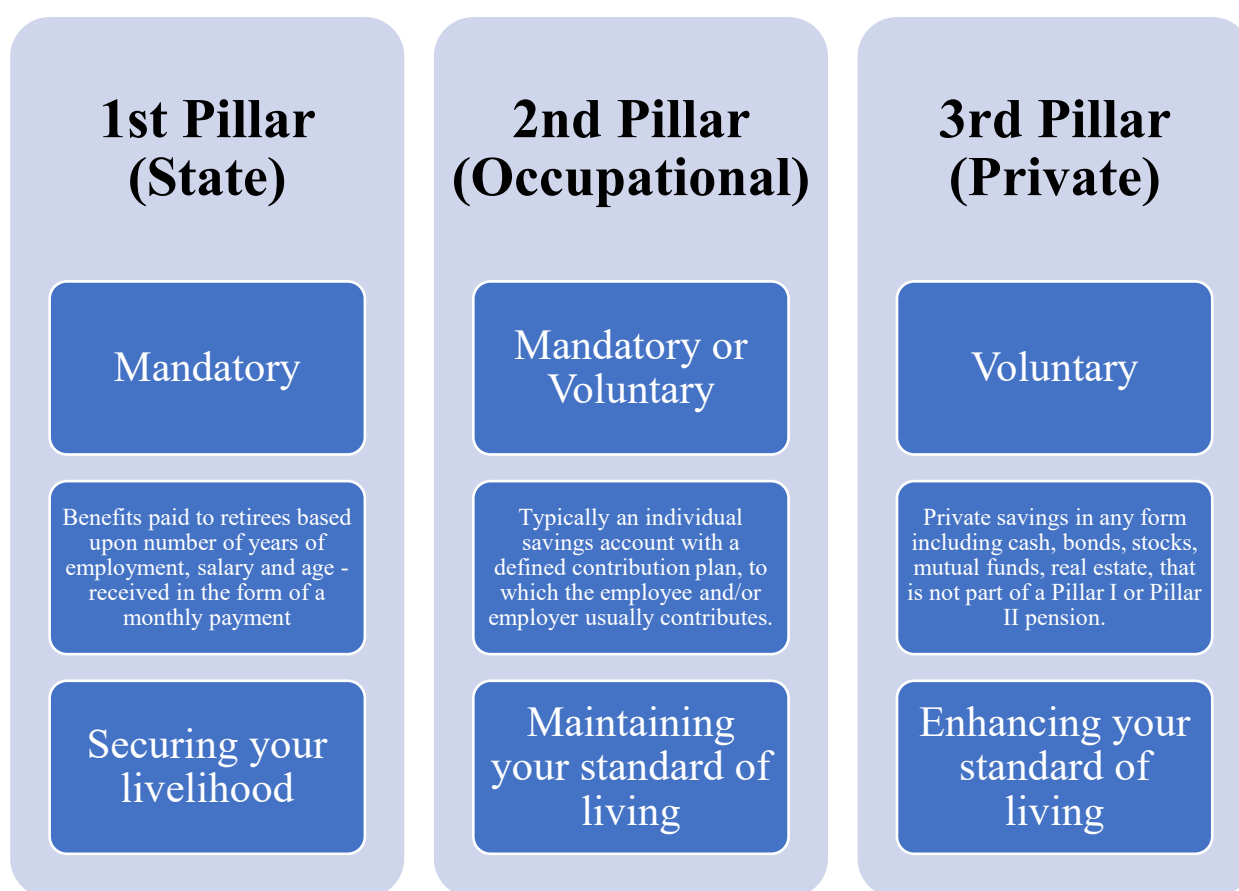


Figure 5: The OECD Pension Model.

In 2004, however, the OECD abandoned the pillar concept altogether, opting instead for a descriptive global classification of pension plans, funds and entities that would remain consistent across countries with very different retirement-income systems (OECD, 2005).

The OECD's approach proceeds as follows: (i) it is organised around the role and purpose of each part of the system; (ii) it has two mandatory tiers — a redistributive part, designed to secure pensioners some absolute minimum standard of living, and an

insurance part, designed to deliver a target standard of living in retirement relative to working life; (iii) voluntary provision, individual or employer-based, forms a third tier; and (iv) within these tiers schemes are further sorted by form (public or private, defined-benefit or defined-contribution). The typology thus separates form from function, and description from prescription (OECD, 2005).

Under the new typology, pension systems fall into two tiers: the first providing universal coverage and income redistribution, the second providing mandatory insurance. Either tier may be operated by the public sector, the private sector or both, through various programmes (social assistance, targeted, basic or minimum) and structures, whether defined-benefit or defined-contribution (OECD, 2005).

The OECD has likewise done valuable work for its 38 members. Its studies, alongside its guidelines and recommendations on pension reform, are watched closely and have frequently prompted changes to national pension designs (OECD, 2005).

National Models

National systems draw on the models described above but differ enormously in how they apply them. Cultural, legal, social and economic conditions all shape the precise architecture and operation of any given pension system (ILO, 2022).

Some OECD countries run wholly separate schemes for civil servants and other public-sector staff, and a number maintain special arrangements for agricultural workers and the self-employed. These are set aside here, the comparisons that follow covering only the main national scheme for private-sector employees (OECD, 2021b).

Tier: function	First tier: universal coverage, redistributive				Second tier: mandatory, insurance		
Provision	Public				Public	Private	
Type	Social assistance	Targeted	Basic	Minimum	Type	DB	DC
Australia		✓					✓
Austria		✓			DB		
Belgium		✓			DB		
Canada		✓	✓		DB		
Czech Republic	✓		✓	✓	DB		
Denmark		✓	✓		DB/DC		✓
Finland		✓			DB		
France		✓		✓	DB + points		
Germany	✓				Points		
Greece		✓		✓	DB		
Hungary				✓	DB		✓
Iceland		✓				✓	
Ireland		✓	✓				
Italy	✓				Notional ac		
Japan			✓		DB		
Korea			✓		DB		
Luxembourg	✓		✓	✓	DB		
Mexico		✓					✓
Netherlands	✓		✓			✓	
New Zealand			✓				
Norway		✓	✓		Points		
Poland				✓	Notional ac		✓
Portugal		✓		✓	DB		
Slovak Republic				✓	Points		
Spain				✓	DB		
Sweden		✓			Notional ac	✓	✓
Switzerland		✓		✓	DB	Defined credit	
Turkey		✓		✓	DB		
United Kingdom		✓	✓	✓	DB		
United States		✓			DB		

DB: Defined benefit.
DC: Defined contribution.

Notes on first-tier schemes: Social assistance refers to general programmes that also cover older people. Targeted covers specific schemes for older people that are resource-tested. Basic schemes are either universal, flat-rate programmes or pay a flat amount per year of coverage. Minimum pensions are redistributive parts of earnings-related schemes.

Notes on second-tier schemes: Includes quasi-mandatory schemes with broad coverage. France has two programmes: the public scheme and mandatory occupational plans. Denmark's scheme is a hybrid of DB and DC.

Source: Based on information provided by national authorities.

Table 1: Structure of Pension Systems in OECD countries.

Viewed globally, the great majority of countries pay old-age pensions as periodic cash benefits through at least one scheme, and frequently through a combination of contributory and non-contributory arrangements (ILO, 2022).

Pairing contributory with non-contributory schemes is the commonest way of organising pension provision worldwide, found in 106 of the 195 countries for which data exist (54 per cent). In a further 70 countries (36 per cent), contributory schemes alone provide old-age pensions — in most cases (67 countries) through a public social-insurance scheme covering mainly employees and the self-employed, with the result that informal-economy workers are frequently excluded (ILO, 2022).

In 14 countries, by contrast, pensions are delivered solely through non-contributory schemes, the majority of which (eight countries) offer universal coverage. A handful of countries provide no pension as such but pay lump sums through provident funds or comparable programmes; under ILO social-security standards these are not regarded as adequate old-age protection, which calls for a periodic payment for the duration of the contingency, that is until death (ILO, 2022).

In some countries, government-mandated plans are delivered through employers and occupational groups (as in Australia, Iceland and Switzerland) or through financial firms (as in Hungary and Mexico). Elsewhere, where collective bargaining has a long history, provision is settled within collective agreements (as in the Netherlands and Sweden) (ILO, 2022).

Defined-benefit schemes remain dominant worldwide, present in 90 per cent of countries. In one country in six (16 per cent) they are supplemented by mandatory defined-contribution schemes. Only 7.3 per cent of countries depend solely on mandatory defined-contribution schemes built on individual accounts, and just 3 per cent operate notional defined-contribution schemes alone (ILO, 2022).

There are, in addition, products — chiefly in Anglo-Saxon countries — that do not sit neatly in either the second or the third pillar, as well as financial products used for retirement that lack many of the features of conventional third-pillar provision (ILO, 2022).

Malta's system can be said to contain all the elements of the models above, except that what is usually termed the second pillar — occupational pensions — remains embryonic and, unlike in the more highly ranked systems, is not mandatory.

Chapter 3 - Principles and Guidelines

A financially stable old-age pension system

The system should be built so as to avoid any inherent financial instability and to remain sufficiently robust against socio-economic and demographic change. Policymakers should guard against the danger of a lasting mismatch between the system's outgoings and its income (Social Protection Committee & European Commission, 2024).

How well countries achieve this can be judged through Theoretical Replacement Rates (TRRs). For standard 40-year careers, replacement rates are projected to decline across most EU states over the next four decades: set against their 2022 values, the 2062 figures fall appreciably in most countries (Figure 6). Put another way, a 40-year career is less likely to yield a high pension in 2062 than it did in 2022, implying that adequate pensions will rest increasingly on longer working lives. In seven countries, Malta among them, replacement rates are instead expected to rise, pointing to greater pension adequacy there (Social Protection Committee & European Commission, 2024).

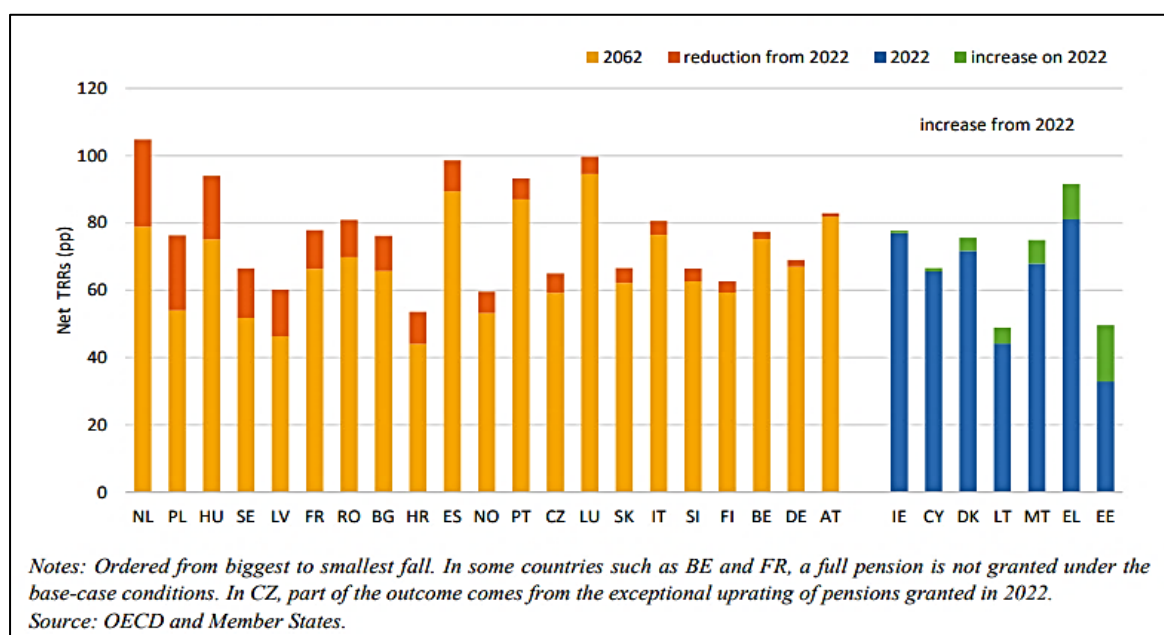


Figure 6: Net TRRs, base case (40 years to SPA), average-earner, 2022 and 2062, men, pp, EU27 Member States and Norway.

A fair system with strong work incentives

The system must give people sufficient incentive to take up paid work. (i) Additional work effort, such as moving from part-time to full-time employment, should yield a return within the pension system. (ii) Ideally, earnings after the age of 64 should also generate a pension credit.

Figure 7 plots the changes and levels of theoretical replacement rates for men entering the labour force as a result of labour-market measures, including incentives to work longer. Bars carrying a minus sign denote reforms that lowered replacement rates between 2006 and 2012, while bars carrying a plus sign denote reforms that raised them over the same period (Social Protection Committee & European Commission, 2024).

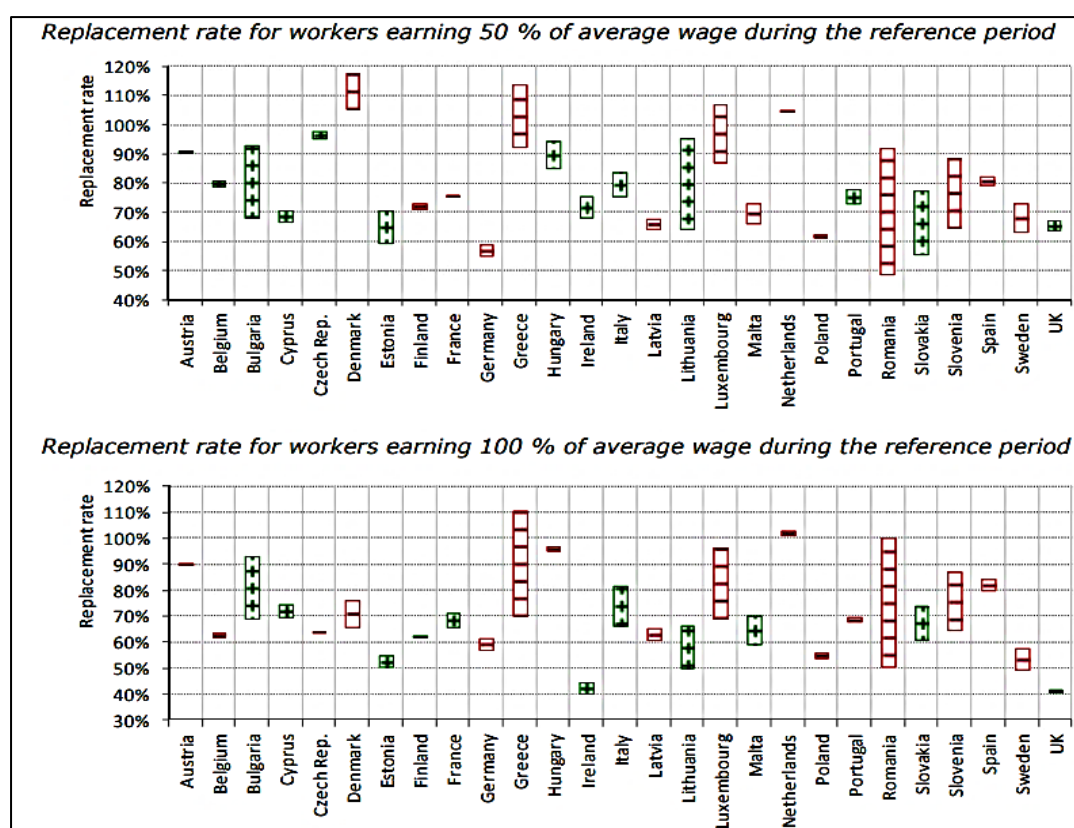


Figure 7: Changes and levels of theoretical replacement rates of individuals entering the labour force between 2006 and 2012.

On the OECD's analysis, the effects of labour-market reform ranged from positive outcomes in countries such as Bulgaria and Lithuania to negative ones in Greece and Romania, the results holding for workers on both 50 per cent and 100 per cent of the average wage. In Malta's case the outcome was positive for those on the full average wage but negative for those on half of it. These figures will have improved markedly,

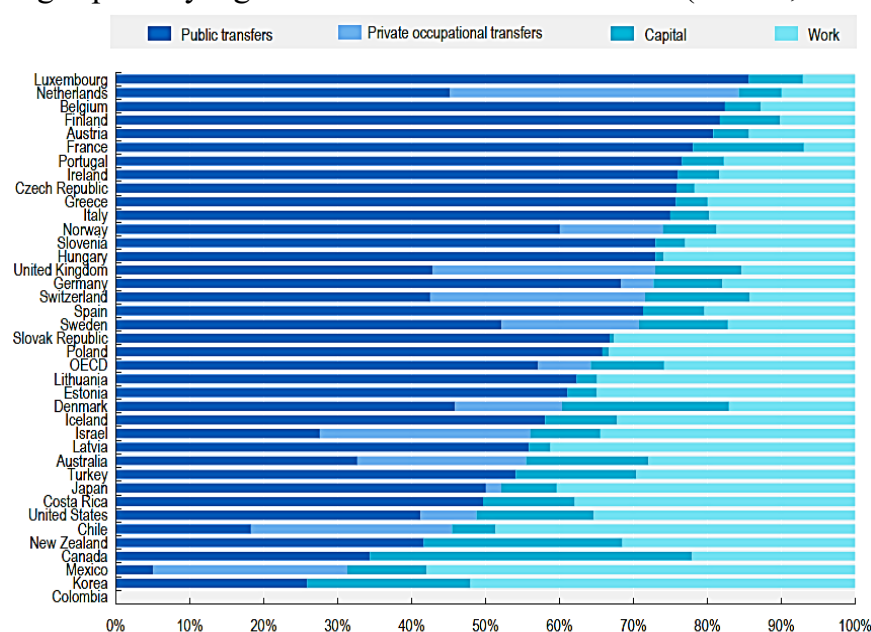
however, following the strong work incentives the Maltese Government introduced in 2015 (OECD, 2021b).

Increased savings

It is very much to be wished that future pensioners build up capital to draw on in retirement, although a universal scheme is acknowledged to dull the individual's incentive to save for a pension (Barr & Diamond, 2006).

Retirement incomes in OECD countries come from a mix of sources that differs sharply between countries. In some, public transfers form the bulk of older people's income; in others, capital income — particularly from private pensions — matters greatly. Everywhere, though, low-income retirees depend almost wholly on public pensions and other transfers (OECD, 2021b).

Of the four main income sources on which older people in the OECD rely (Figure 8), public transfers (earnings-related pensions, resource-tested benefits and the like) together with private occupational transfers (pensions, severance pay, death grants and so on) supply roughly two-thirds of total income. On average, public transfers account for 57 per cent and private occupational transfers for 7 per cent of older people's income, the latter being especially significant in 13 OECD countries (OECD, 2021b).



Note: Income from work includes both earnings (employment income) and income from self-employment. Private occupational transfers include pensions, severance payments, death grants and other. Capital income includes private personal pensions and income from the returns on non-pension savings. Data are for 2018 except for some countries; see note of Table 7.1.

Source: OECD Income Distribution Database, <http://www.oecd.org/social/income-distribution-database.htm> (July 2021 version).

StatLink <https://stat.link/lqhcun>

Figure 8: Income sources of older people, latest available year.

Work makes up about 26 per cent and capital roughly 10 per cent of older people's income on average (OECD, 2021b).

In Malta, people aged 65 and over were on the whole less worried about having enough income in old age (5.8 on a scale of 1 to 10) than the wider adult population (6.2). The same pattern held across the EU-27, where older people scored 5.0 against 5.9 for all adults. This can be traced to the fact that both the 65–74 and the over-75 age groups hold greater net wealth than the average household; those aged 65–74 also have a higher median than the population at large, while the over-75s sit somewhat below it (Central Bank of Malta, 2023).

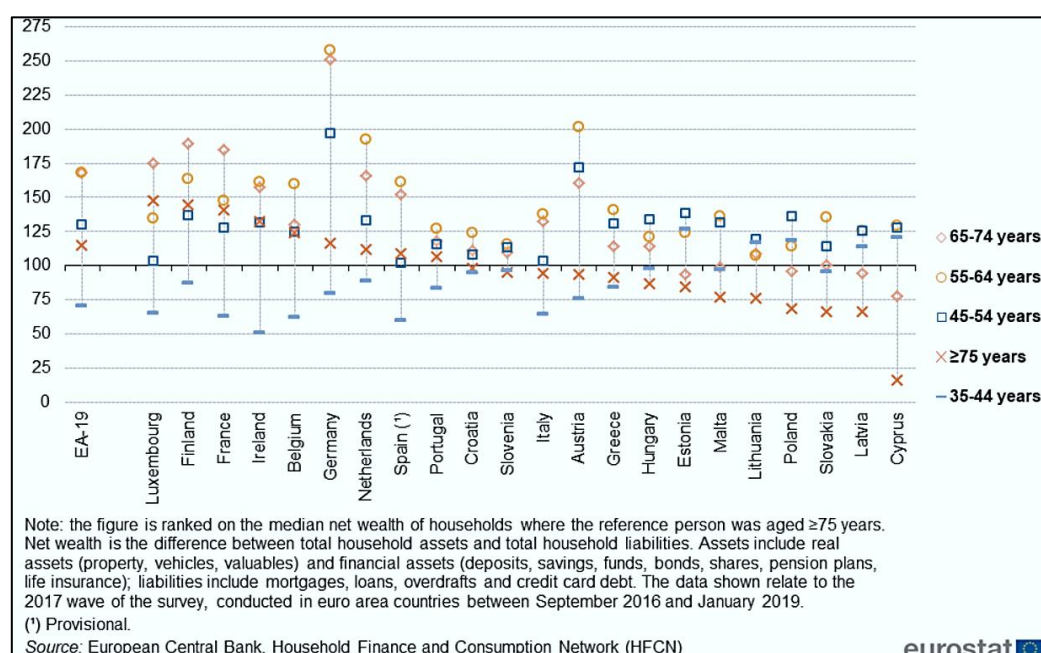


Figure 9: Median net wealth of Households, by age class - 2017.

Set against the rest of the EU, Malta shows a notably low dispersion of household net wealth across age groups (Figure 9), reinforcing the sense among Maltese pensioners that they are comparatively well placed relative to other cohorts (Central Bank of Malta, 2023). This relatively untroubled outlook on their old-age income may stem from a tendency to carry less debt — mortgages, loans, overdrafts and credit-card balances; a high rate of home ownership, which provides an asset in later life; lower consumption in old age; and the wide range of in-kind public goods (health, transport and so on) supplied free by the state. At the same time, some 85 per cent of Maltese citizens firmly believe their government should save more now to ready the public finances for population ageing, implying that they would prefer not to run down their own wealth in old age and reflecting a view of savings less as a mere safety net than as wealth to pass on to their children (Central Bank of Malta, 2023).

Basic characteristics of the link								
	Increase in retirement age as proportion of increase in life expectancy	Need for parliamentary approval of retirement-age increase	Link based on life expectancy at age	Years between retirement age revisions	Period between setting new retirement age and it taking effect	Minimum increase per retirement age revision	Maximum increase per retirement age revision	Retirement age goes down with decreasing life expectancy
Denmark	1	•	60	5	15 years	6 months	1 year	
Estonia	1		65	1	2 years	1 month	3 months	•
Finland	2/3		65	1	3 years	1 month	2 months	•
Greece	1		65	3	Max 1 year	No	No	•
Italy	1		65	2	2 years	1 month	3 months	
Netherlands	2/3		65	1	5 years	3 months	3 months	
Portugal	2/3 *		65	1	2 years	1 month	No	•
Note: * For someone with more than 40 years of contributions, the normal retirement age increases by only half of life-expectancy gains.								
Source: OECD based on information provided by the countries.								

Table 2: Retirement Age and Life Expectancy in seven OECD countries.

Life-long earnings principle (the pipeline principle)

Identical lifetime earnings ought not to produce markedly different pensions according to the shape of a person's income over their working life — for instance, those whose income peaked late receiving more than those who earned steadily throughout, or steeply rising careers being rewarded while stable ones are penalised (Barr & Diamond, 2006).

Value protection tied to income trends

To make pension instruments more stable, the value of benefits should be linked to income trends rather than to prices, which makes the system more resilient to national economic swings. This also gives every period of income equal weight in the pension, regardless of when in a working life it was earned. The value is recalculated using an income index that tracks the growth of average pensionable income in society — the so-called automatic balancing mechanism.

Going forward, other principles include:

Automatic adjustment to changes in average life expectancy

Just as the system adjusts to income growth, it manages demographic risk — the risk of changing average longevity — automatically. The total pension balance is unchanged, but as average life expectancy rises, the annual amount is reduced so that payments are spread over more years. Unlike the usual practice in private insurance, the demographic adjustment of the income pension is applied annually through annuity divisors based on observed rather than assumed life-expectancy trends. The pension fixed at retirement is not, however, directly affected by later changes in average life expectancy after age 65.

Evening-out of the pension over the pension period

Most people would rather have purchasing power spread evenly across retirement. The pension, though uprated by the growth in average real wages, can therefore be levelled by bringing forward part of the expected income indexation as soon as payments begin — a form of “advance interest”. Purchasing power is thus higher at the outset and lower towards the end of retirement than it would be if the uprating were applied as during the working years without such an advance.

Gender differences in life expectancy ignored

Because women live longer than men on average, identical lifetime earnings would otherwise translate into a lower annual pension for a woman than for a man; the system should instead secure gender equality.

No fixed retirement age

A modern system should rest on the principle that there is no fixed retirement age. The old-age pension could be claimed at any point after a given age, with all income pensionable irrespective of when it was earned, and paid employment beyond 65 earning fresh pension credit. An age such as 65 would still matter: a fixed share (perhaps 12–18 per cent) might be paid from that point; the guaranteed pension could not be drawn earlier; and the liability to retirees would be set using annuity divisors — demographic life-expectancy data by birth cohort — fixed for each annual cohort as it reaches 65.

Automatic or semi-automatic adjustment mechanisms (AAMs)

These are pre-set rules that adjust pension parameters or benefits automatically in line with the evolution of demographic, economic or financial indicators. They can shield pensions from uncertainty: indexation can protect adequacy against present and future inflation, and, more broadly, automatic adjustments to benefits, contribution rates and retirement ages can serve a range of aims. Around two-thirds of OECD countries use

some form of AAM in their mandatory or quasi-mandatory schemes; selected examples appear in Table 3 (OECD, 2021a).

Basic characteristics and risks covered by different NDC schemes					
	Notional interest rate applied to the contribution assets (growth rate of)	Indexation of pensions in payment	Automatic balancing mechanism	Risks covered for pension finances	
				Changes in labour force size	Changes in life expectancy*
Italy	GDP	CPI		• ^a	•
Latvia	Wage bill	CPI + 75% of real wage bill growth		•	•
Norway	Average wage	Average wage – 0.75% ^d			•
Poland	Wage bill (but no less than price inflation) ^b	CPI + 20% average wage		• ^c	•
Sweden	Average wage	Average wage – 1.6% ^d	•		•
Greece ^e (being phased out)	Total contributions	lowest of total contributions and CPI		•	•

Note: ^a Italy's NDC scheme only partially covers risks posed by a declining labour force and declining productivity. The annuity

Table 3: Features of some NDC schemes in OECD countries.

Implementation of Models and Principles

It is also instructive to consider how far the national models discussed earlier have absorbed features of the international ones. Taking OECD member states as an illustration, and without attempting to capture every institutional detail of each country, the analysis here is confined to whether they follow the typology of the models (OECD, 2021b).

The function of each component is shown in Figure 10. The first tier comprises programmes providing the first layer of old-age social protection, where retirement income is calculated without regard to past earnings and which often aim at some absolute minimum standard of living. The second tier, made up of mandatory earnings-related components, smooths consumption — and hence living standards — between working life and retirement (OECD, 2007).

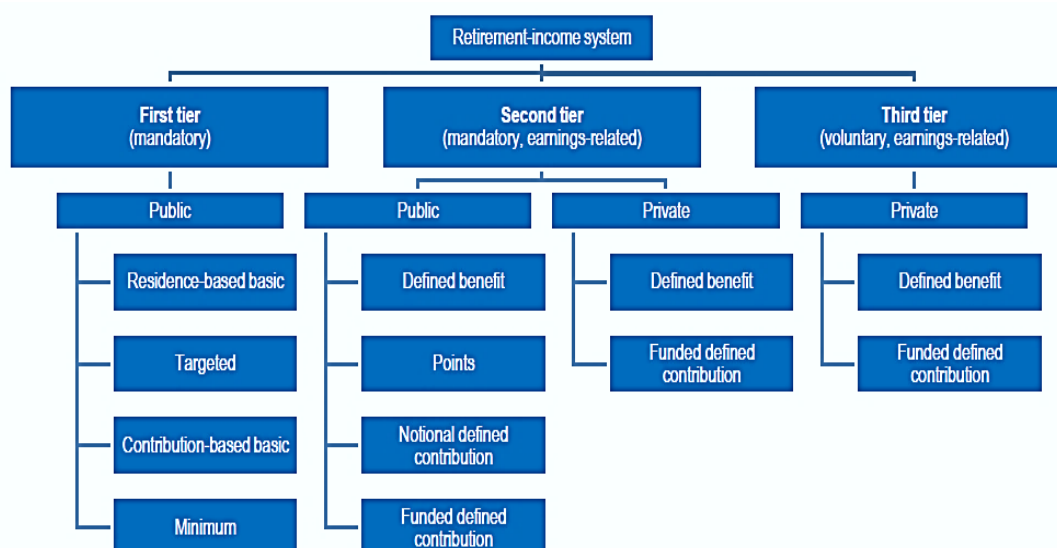


Figure 10: Taxonomy: Different types of retirement-income provision.

Table 5 maps the architecture of OECD pension systems according to the rules governing eligibility and benefit level, classifying mandatory earnings-related pensions as public or private in line with the national accounts. Panel A reflects the latest legislation for future retirees, while Panel B identifies where those rules differ from the ones applying to current retirees (OECD, 2021b).

Basic pensions can take one of two forms: a residence-based benefit, or one available only to those who contributed during their career. The amount may rise with years of residence or contribution but is independent of career earnings. Eight OECD countries operate a residence-based basic pension for future retirees, while Norway and Sweden are replacing theirs with means-tested targeted schemes; nine OECD countries have a contribution-based basic pension (OECD, 2021b).

First tier						Second tier				First tier						Second tier			
Residence-based		Contribution-based				Residence-based		Contribution-based				Residence-based		Contribution-based					
Basic	Targeted	Basic	Minimum	Public	Private	Basic	Targeted	Basic	Minimum	Public	Private	Basic	Targeted	Basic	Minimum	Public	Private		
Panel A. Latest legislation (applying to future retirees entering the labour market in 2018 at age 22)																			
Australia	✓				FDC	Mexico	✓							✓			FDC		
Austria		✓		DB		Netherlands	✓										DB [q]		
Belgium		✓		DB		New Zealand	✓												
Canada	✓			DB		Norway		✓								NDC	FDC		
Chile	✓				FDC	Poland			✓					✓		NDC			
Colombia		✓		DB	FDC	Portugal			✓					✓		DB			
Costa Rica				DB	FDC	Slovak Republic			✓					✓		Points			
Czech Republic		✓	✓	DB		Slovenia			✓					✓		DB			
Denmark	✓			FDC	FDC [q]	Spain			✓					✓		DB			
Estonia		✓		Points		Sweden		✓								NDC + FDC	FDC [q]		
Finland	✓			DB		Switzerland			✓					✓		DB	DB		
France		✓		DB + Points		Turkey			✓					✓		DB			
Germany				Points		United Kingdom			✓								FDC [q]		
Greece	✓			DB + NDC		United States								✓		DB			
Hungary		✓		DB															
Iceland	✓				FDC [q]														
Ireland	✓	✓				Argentina			✓	✓				✓		DB			
Israel	✓	✓			FDC	Brazil			✓	✓				✓		DB			
Italy				NDC		China			✓					✓		NDC + FDC			
Japan		✓		DB		India			✓					✓		DB + FDC			
Korea		✓		DB		Indonesia			✓					✓		DB + FDC			
Latvia			✓	NDC + FDC		Russian Federation			✓					✓		Points	FDC		
Lithuania		✓		Points		Saudi Arabia			✓					✓		DB			
Luxembourg		✓	✓	DB		South Africa		✓											
Panel B. Current legislation where different from Panel A (applying to new retirees in 2020)*																			
Chile	✓		✓	DB	FDC	Mexico			✓					✓		DB			
Estonia		✓		DB/Points	FDC	Norway	✓	✓						✓		DB	FDC		
Italy			✓	DB + NDC		Poland			✓					✓		DB/NDC			
Latvia			✓	DB/NDC + FDC		United Kingdom			✓					✓		DB			

Note: *Information for non-OECD countries unavailable. A tick for the column "Targeted" is only shown if a full-career worker at 30% of the average wage is eligible. [q] = Quasi-mandatory scheme based on collective agreements with a very high coverage rate, see Chapter 9. DB = Defined benefit, FDC = Funded defined contribution, NDC = Notional defined contribution. The contribution-based basic pension in Israel is a 2% top-up (total maximum 50%) on the residence-based basic pension for each contribution year beyond 10 years. In Switzerland, the government sets contribution rates, minimum rates of return and the annuity rate at which the accumulation is converted into a pension for mandatory occupational plans. This scheme is therefore implicitly defined benefit. In Mexico, the government pays a transfer to the individual private FDC account of a contributing employee every month. In Canada, the basic pension (OAS) is income-tested but only through the tax system ("claw back").

Source: See "Country Profiles" available at <http://oe.cd/pag>.

Table 4: Structure of retirement-income provision in mandatory schemes.

Eligibility for such income is conditional on meeting residence criteria, and the benefit depends on income from other sources and possibly on assets, so poorer pensioners receive more than better-off ones. Every country runs a general safety net of this kind, but only those are marked in which a full-career worker on very low pay (30 per cent of the average) would qualify — eight OECD countries, both now and in future (OECD, 2021b).

Minimum pensions may relate to a single contributory scheme or to all schemes combined and are currently found in 16 OECD countries, with Chile and Italy phasing theirs out. In most, entitlement is assessed against pensions alone rather than other income. Minimum pensions either set a floor for total lifetime entitlements, which may rise once the contribution period passes certain thresholds, or rest on minimum pension credits that compute low earners' year-by-year entitlements on a higher notional earnings level (OECD, 2021b).

Within the OECD only Ireland and New Zealand lack mandatory second-tier pensions; elsewhere four kinds of scheme are found (OECD, 2021b).

For future retirees, public pay-as-you-go provision will take a general defined-benefit (DB) format in 20 OECD countries, the pension depending on years of contribution, accrual rates and individual pensionable earnings. In another eight countries DB

schemes still cover current retirees but have been closed to new entrants (Table 4, Panel B). Mandatory or quasi-mandatory private occupational DB schemes operate in two OECD countries, the Netherlands and Switzerland (OECD, 2021b).

Points schemes exist in five OECD countries: the French occupational plans run by the social partners under public supervision, and the Estonian, German, Lithuanian and Slovak public schemes. Workers accumulate points based on their earnings, and at retirement the total is multiplied by a point value to give a regular pension (OECD, 2021b).

Notional defined-contribution (NDC) schemes lie at the heart of the system in five OECD countries (Italy, Latvia, Norway, Poland and Sweden), with a smaller NDC component also forming the supplementary tier in Greece. These are pay-as-you-go public schemes with individual accounts that credit a notional return to contributions, mimicking funded defined-contribution plans; the balances exist only on the managing institution's books. At retirement the accumulated notional capital is converted to a monthly pension via a formula based on life expectancy (OECD, 2021b).

Funded defined-contribution (FDC) plans are compulsory for future retirees in 12 OECD countries. Contributions flow into an individual account, and the accumulated contributions and investment returns are usually converted into a monthly pension at retirement. In Denmark and Sweden, quasi-mandatory occupational FDC schemes sit alongside smaller compulsory public plans (OECD, 2021b).

OECD countries use four principal routes to provide a minimum standard of living in old age (Table 6). The left-hand part of the table reports the value of benefits under each type of scheme, expressed in relative terms — as a share of each country's gross average wage — to ease comparison, while the right-hand part shows recipients as a proportion of the population aged 65 and over (OECD, 2021b).

Benefit level

The benefit values shown are for a single person. In some cases, notably minimum pensions, each member of a couple may hold an individual entitlement; in others, especially targeted schemes, the household is the unit of assessment and generally receives less than twice a single person's entitlement (OECD, 2021b).

Benefit value in 2020 (% of gross AW earnings)				Recipients in 2018 (% of population aged 65 and over)				Benefit value in 2020 (% of gross AW earnings)				Recipients in 2018 (% of population aged 65 and over)			
Residence-based basic	Targeted	Contribution-based basic	Minimum	Residence-based basic	Targeted	Contribution-based basic	Minimum	Residence-based basic	Targeted	Contribution-based basic	Minimum	Residence-based basic	Targeted	Contribution-based basic	Minimum
Australia	27.0				63			Mexico	11.9		30.1		55		..
Austria	22.6		28.0		1		10	Netherlands	29.2				104	1	..
Belgium	29.0		32.5		5		33	New Zealand	39.8				105	2	..
Canada	12.9	19.2		98	32			Norway	15.4	30.5			103		..
Chile	16.5		17.7		60		..	Poland			23.6				2
Colombia			65.7					Portugal	27.0		28.6		7		38
Costa Rica	13.0		19.0					Slovak Republic	17.4		30.3		0		6
Czech Republic	11.5	10.4	12.7			119		Slovenia	34.7		33.0				2
Denmark	17.6	19.6		103				Spain	20.4		35.5		3		25
Estonia	16.0		15.5		1	117		Sweden	22.2				..	35	..
Finland	21.9				38			Switzerland	22.3		16.3		0		..
France	28.4		20.2		4		38	Turkey	11.1		33.5				10
Germany	19.3				1			United Kingdom	21.6	16.7			16	105	..
Greece	21.8				..		..	United States	15.6				2		..
Hungary		7.4	6.8		0		1								..
Iceland	33.3	17.7		67	..		..	Other G20 countries							..
Ireland		26.4	27.7		14	61		Argentina	21.1	12.5	26.4		..	..	41
Israel	11.9	24.7	6.0	88	..	..	..	Brazil	45.3		49.1				..
Italy		19.8	22.7		7		32	China			..				..
Japan	18.0	15.1			3	92		India			8.0				..
Korea	7.8	11.9			69	43		Indonesia			14.6				..
Latvia	7.4		12.6		..		..	Russian Federation	23.3	14.2			..	..	..
Lithuania	10.2	13.2			3	109		Saudi Arabia			23.9				..
Luxembourg	31.1	12.0	39.1			115		South Africa	14.9						..

Note:.. = Data are not available. The benefit level shown is for new pensioners in 2020. The contribution-based basic amounts refer to the benefit level for a full career. People in Greece, the Netherlands and New Zealand cannot receive a targeted benefit on top of a full residence-based basic pension.
Source: Information provided by countries and OECD's Social Recipients database.

Table 5: Current level and recipients of first-tier benefits.

Just four OECD countries provide neither a basic nor a minimum pension: Australia, Finland, Germany and the United States. Germany, however, has added a supplement to its points scheme that will pay more to low earners with long careers. Almost all OECD countries, moreover, offer targeted benefits subject to further means tests. The coexistence of several programmes complicates any reading of effective benefit levels, since benefits are additive in some cases and partly substitutable in others (OECD, 2021b).

Residence-based basic pensions exist in ten countries, averaging 20 per cent of the gross average wage and reaching a maximum of 40 per cent in New Zealand, with Norway and Sweden phasing theirs out. All OECD countries provide targeted benefits to residents, though in Greece, the Netherlands and New Zealand these cannot be drawn on top of a full residence-based basic pension, while in Canada, Denmark and Iceland the basic pension does not reduce the targeted benefit. On average across the OECD, targeted means-tested schemes can pay 19 per cent of gross average earnings, rising to 20 per cent once residence-based basic pensions are included (OECD, 2021b).

Turning to the contributory parts of first-tier provision, one-third of OECD countries have neither a contribution-based basic pension nor a minimum pension. Nine countries provide contribution-based basic pensions worth, on average, 14 per cent of average earnings at the full rate, ranging from 6 per cent in Israel, where they top up the residence-based basic pension, to 28 per cent in Ireland. In half of OECD countries, low contributory pensions are raised to a higher minimum, up to an average of 27 per cent of average earnings (OECD, 2021b).

These minimum pensions range from around 7 per cent of the average wage in Hungary and 13 per cent in the Czech Republic and Latvia to roughly 39 per cent in Luxembourg and 66 per cent in Colombia (OECD, 2021b).

Coverage

The weight of first-tier benefits differs greatly across the OECD. The share of the over-65s receiving them is given in the last four columns of Table 5 above, though differing conventions for counting recipients — for example where benefits go to couples or households — can somewhat reduce comparability between countries (OECD, 2021b).

Unsurprisingly, residence-based basic pensions tend to have the widest coverage, but contribution-based basic pensions also reach very large numbers in most countries that operate them. Recipient counts sometimes exceed 100 per cent of the population aged 65 and over, pointing to beneficiaries who are younger than 65 or living abroad (OECD, 2021b).

The take-up of minimum pensions varies widely between countries and rises with the level of the benefit. Nearly 40 per cent of the over-65s receive one in France, and around 30 per cent in Belgium, Italy and Spain, against under 10 per cent in the Slovak Republic and 2 per cent or less in Hungary, Poland and Slovenia (OECD, 2021b). Targeted schemes show a similarly wide spread, with Australia, Chile, Korea and Mexico in particular reaching more than one in two people aged 65 or over (OECD, 2021b).

Evaluation Criteria

A great many principles and guidelines apply to the various international and national models. Among the more common primary and secondary criteria are the following (Holzmann et al., 2005):

Primary Evaluation Criteria

1. *Adequacy*: an adequate system pays benefits high enough to keep the whole population out of old-age poverty — judged against a country-specific absolute standard — and gives the great majority a dependable means of smoothing consumption over a lifetime;
2. *Affordability*: an affordable system stays within the financial means of individuals and society, without crowding out other social or economic priorities or imposing unsustainable fiscal costs;

3. *Sustainability*: a sustainable system is financially sound and can be kept going over a foreseeable horizon under a broad range of reasonable assumptions;
4. *Equitability*: an equitable system redistributes from the lifetime rich to the lifetime poor in line with society's preferences, without taxing workers or retirees outside it; an equitable defined-benefit system pays the same benefit for given service across income groups and cohorts, subject to any redistribution parameters that apply;
5. *Predictability*: a predictable system pays benefits that are (i) set in law rather than left to the discretion of policymakers or administrators, (ii) indexed so as to insulate the individual from inflation and from wage and interest adjustments before and after retirement, and (iii) protected, so far as possible, against longevity risk; and
6. *Robustness*: a robust system can absorb major shocks, including economic, demographic and political ones.

Applying these criteria means weighing the connections between the various elements and the trade-offs among them. Contribution rates for a mandatory first pillar that look affordable to employers and employees, for instance, may compromise benefit adequacy or the financing of the system. Adequacy in preventing old-age poverty is, similarly, bound up with how care for the elderly — typically a very large share of consumption at that age — is funded (Holzmann et al., 2005).

Secondary Evaluation Criteria

Having appraised a system or reform against the primary criteria, one should turn to secondary criteria to gauge its contribution to output and growth, on the understanding that a pension system's capacity to deliver retirement income is inseparable from its ability to support economic stability and development. The relevant secondary criteria include (Holzmann et al., 2005):

- (i) minimising distortions to the labour market;
- (ii) contributing to the mobilisation of savings; and
- (iii) contributing to the development of financial markets.

Whatever its design, a pension system's benefits are ultimately claims on future output. It is essential, therefore, that the system contributes over time to growth and output so as to be able to honour the benefits promised. To that end, reform should advance labour- and capital-market efficiency, strengthen the mobilisation of savings, and support financial-market development (Holzmann et al., 2005).

Several policy levers can improve both the sustainability and the adequacy of the system. On one side, these include incentives to defer retirement, the strengthening of pension pillars beyond the statutory scheme, and measures to bolster the adequacy of

retirement incomes; greater flexibility in retirement choices, such as allowing partial retirement as workers approach the legal age, can help too (OECD, 2021b).

On the other side, insurers could offer products that soften the line between saving and retirement protection. A minimum guaranteed return would help shield invested capital, provided policyholders give up their rights to early redemption.

Adding cover for demographic, biometric and longevity risks — by combining pension products with health and long-term-care provision — is a further option. Insurers might also build in more flexibility, letting individuals adjust the size of their private pension income to their needs, or defer the pay-out phase so as to avoid crystallising losses by selling at the bottom of the market.

Economics of the Models

Debate about competing pension models too often becomes mired in disputes over which financial portfolios are safest or grow fastest, whether government promises are more secure than individually held assets, and which generation should bear what share of the bill — with the result that the economic fundamentals common to all pensions, public or private, funded or pay-as-you-go, get lost (Barr & Diamond, 2006).

A few themes recur whenever one tries to secure resources for people at the end of life, when they no longer produce for their own needs (Figure 10): the central importance of national output to the viability of any pension; the pervasive risk and uncertainty every scheme faces; and the imperfect information available to whoever manages it, be it the government, a private firm or the prospective beneficiary (Barr & Diamond, 2006).

Output is the key. In the end, the production and consumption of goods and services is what makes any pension work. There are two routes to old-age security. The first, storing today's output for future use, is a non-starter: it is costly, ignores changing needs and tastes, and cannot cover many services — medical care being a prime example (Barr & Diamond, 2006).

The alternative is for individuals to trade current output for a claim on future output. They can do so either by saving part of their earnings to amass money with which to buy goods and services later from younger workers, or by relying on a promise — from children, an employer or the state — to supply what they need in retirement. These routes give rise to the two familiar pension forms: funded schemes that pay out of financial assets built up over the years, and promise-based schemes, commonly the pay-as-you-go arrangements financed by governments, like Malta's, from current tax revenue (Barr & Diamond, 2006).

Both funded and pay-as-you-go plans are claims on future output, and neither is of any use to retirees unless the economy produces enough goods and services to meet them.

Pensioners do not want currency for its own sake but food, heating, medical care, a seat at the cinema and so on; money is beside the point unless the goods and services are there to buy (Barr & Diamond, 2006).

Risk and uncertainty. Both private funded plans and public pay-as-you-go systems are exposed to risk. Over the long run the risks include demographic shifts such as the rapid population ageing that threatens most systems; over the short run they include the theft or mismanagement of privately held assets and the failure of governments or firms to keep their pension promises. Uncertainty also covers unforeseeable political change, war, and economic shocks such as the recent burst of inflation (Barr & Diamond, 2006).

Such uncertainties endanger a system's viability by depressing output, by generating inflation, or by both. Because many of them spring from political risk, every pension system depends critically on effective government, albeit in different ways.

Although governments may renege on their promises, their pay-as-you-go systems are largely insulated from inflation, since the inflated pensions they pay are matched by the inflated revenues they collect in tax (Barr & Diamond, 2006).

Funded schemes, whether public or private, are more exposed to inflation. Private funded schemes carry extra risks besides — the incompetence or fraud of fund managers, market swings in the value of equity-held accumulations, and the value of annuities, which turns on life expectancies and the soundness of actuarial projections. The claim that funded pensions diversify risk should not, therefore, be pushed too far (Barr & Diamond, 2006).

Imperfect consumer information. Since no one can be well informed about the future, government administrators, private fund managers and individuals alike face the problem of imperfect information. For people who depend on defined-contribution plans the difficulty is sharper, because private pensions are complex and built on a web of financial institutions and instruments (Barr & Diamond, 2006).

Financial markets are poorly understood even in the industrial countries with the most sophisticated systems. Most people fail to grasp that invested pension assets are at risk if they do not appreciate, conceiving of risk only as theft or fraud. In Malta, where public knowledge of and interest in financial markets is fairly low, most people cannot distinguish a bond from an equity (Barr & Diamond, 2006).

Public education can dispel some of this ignorance, but a residue is irreducible, since even the financially sophisticated are not necessarily well-informed consumers. Given the high cost of a wrong choice, imperfect information calls for stringent regulation of pension management to protect consumers where they cannot protect themselves — and where the least well-off tend also to be the least well-informed (Barr & Diamond, 2006).

Pension Policy Changes

Over the past decade or so, the strains on the various models have driven governments the world over to intervene, whether through ad hoc measures or systemic reform, in order to align pension policy with shifts in the labour market and in health and social conditions (OECD, 2021b).

Automatic adjustment mechanisms, mentioned earlier, are a case in point: depending on how pension spending and its financing have evolved, they have variously been introduced, suspended or scrapped. They are, nonetheless, generally regarded as a means of improving the financial and social sustainability of pension systems (OECD, 2021a).

Changes made in various other countries have included:

- raising contributions, at times sharply;
- swapping pay-as-you-go auxiliary pensions for funded defined-contribution schemes;
- altering contributions to private pensions, including permitting the withdrawal of pension assets;
- strengthening income protection for those who earned little over their careers;
- adjusting retirement ages, in some cases tying them to life expectancy;
- increasing earnings-related pension benefits;
- reshaping occupational pensions, mostly by narrowing individual choice over both investment and the withdrawal of assets;
- extending protection to those with low pensions or none;
- encouraging longer working lives;
- paying deferral bonuses as a lump sum rather than in annual instalments where retirement is postponed;
- exempting workers who draw an old-age pension from further contributions;
- removing differences between men's and women's retirement ages;
- softening the effect on pensions of career breaks caused by unemployment;
- revising indexation, whether to wages or to prices and whether full or partial;
- changing early-retirement ages, easing or tightening them, with consequent effects on benefits; and
- introducing measures that make it easier to combine work with a pension.

Some of these measures were meant to ease pensioners' circumstances, especially in hard times, while others were forced on governments by the mounting weight of pension expenditure; some were plainly beneficial for pensioners and others painful (OECD, 2021b).

Malta's system has likewise evolved, as successive governments have deployed the extra resources from a growing economy, recognised the need to improve adequacy — particularly for the vulnerable — and begun to grapple with the pressures of an ageing population. Several of the reforms noted above have also been adopted in Malta.

Reform has been especially active over the past decade, due in no small part to the constructive influence of the Pensions Strategy Group's reports.

Chapter 4 - Concluding remarks

Both the choice of pension model and its detailed design are matters of controversy, which centres on two questions in particular: whether the first-tier, mandatory, state pay-as-you-go pension should be minimal or substantial; and how the second tier should be arranged — above all, whether it should be mandatory, private, funded and defined-contribution (Barr & Diamond, 2006).

For all the divergence of opinion worldwide, a set of parameters appears to be common to every model (Barr & Diamond, 2006).

The decisive factor is effective government — a precondition for well-run pensions however they are organised. Government cannot be removed from the business altogether. At root it must steer the economy so as to expand output. Where systems are public, it must give confidence that the promises it makes will be kept; where they are private, it must uphold a regulatory framework guaranteeing high fiduciary standards and transparency in private capital markets. The latter demands constant vigilance, as the collapse of industrial and other giants — leaving millions of pensions stranded — has shown (Barr & Diamond, 2006).

In economic terms the distinction between pay-as-you-go and funding is secondary. Some contend, for example, that raising the retirement age is politically easier under a private scheme; others that a state scheme combining poverty relief with consumption smoothing, by drawing in middle-class voters, keeps its electoral support. Whatever the politics, the welfare gains of one arrangement over another are ambiguous — hardly surprising, since pay-as-you-go and funding are simply different financial means of organising claims on future output (Barr & Diamond, 2006).

A given set of objectives can be reached by different routes; there is no one-to-one mapping of instruments to aims. Where the goals include mandatory consumption smoothing with some redistribution and risk pooling, the United States meets them through a mandatory, publicly run, pay-as-you-go pension that combines poverty relief and consumption smoothing. The United Kingdom achieves much the same, for a large share of pensioners, by pairing a flat-rate pay-as-you-go state pension set roughly at the

poverty line with privately run, funded, defined-benefit occupational pensions (Barr & Diamond, 2006).

Alternatively, the goals may be mandatory consumption smoothing together with a safety net, the aim being to keep consumption smoothing and poverty relief fairly distinct so that redistribution operates only through the poverty-relief element. Sweden pursues this combination through a publicly run, pay-as-you-go defined-contribution scheme alongside a safety net. The Swedish arrangement adds an element of solidarity by treating years spent raising children as contribution years, but is otherwise, in most respects, a public-sector counterpart of arrangements found elsewhere (Barr & Diamond, 2006).

The scope for choice in pension design is broad. The lesson is not that one size fits all, but that, so long as government is effective, a considerable range of options is open. This is why the Maltese Government cannot simply lift models or practices from other countries and combine them at will (Barr & Diamond, 2006).

In earlier reports the PSG has held that, given Malta's mature pay-as-you-go system, the Government should keep addressing population ageing chiefly by raising output, rather than by trimming the generosity of pensions or lifting contributions. In the PSG's view, however, the system's longer-term sustainability also depends on a determined effort to build up private savings and voluntary occupational pensions.

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