
Individual responsibility for the adequacy of retirement income

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Abstract Population aging is challenging the financial sustainability of social security systems. Recent reforms rely on the diversification of the sources of retirement income, namely on personal retirement saving plans. This paper analyses the role that individuals are supposed to assume in this context and presents the development of such plans in Portugal. Additionally, the paper considers the problem of individuals' capacity to protect themselves adequately in the absence of proper financial education and consumer regulation.

Keywords: *aging, individual responsibility, personal saving plans in Portugal*

Introduction

Aging is challenging the functioning of social security systems in many industrial countries. To overcome potential financial sustainability problems, many economists and policymakers prescribe reforms that rely both on capitalisation¹ and on individuals.

These issues are being debated within the European Union.² At the same time, many countries are undergoing reform, enhancing the role of personal saving plans.^{3,4}

This paper analyses individuals' capacity to provide adequate retirement income, given the growing responsibility that they are supposed to take. The issues of education and regulation are considered. Additionally, the paper describes the main features of Portuguese social security system, including the creation of the social security trust fund and the inception of voluntary personal retirement saving plans.

The second section reviews the lifecycle model as well as the contributions from behavioural finance and psychology to understand saving behaviour. The third section addresses the importance of education and regulation, given the growing importance of occupational and personal private pensions. The subsequent section describes the Portuguese social security system, taking into account recent reforms and the pension funds industry. The final section concludes.

Lifecycle model and the psychology of saving

Lifecycle theory, according to Modigliani (1986),⁵ has had a wide influence on economists' thinking about the timing of retirement as well as the determination of saving. Modigliani's basic hypothesis was that far-sighted workers will rationally plan their consumption over a

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full lifetime. Accordingly, they take account of the likely path of their labour earnings as they age and then prudently accumulate savings in anticipation of their retirement. In this manner, it will be possible to maximise the worker's lifetime wellbeing, subject to the constraint that lifetime consumption cannot exceed the worker's lifetime wealth.⁶ Rational and far-sighted workers will plan to avoid situations in which all of their lifetime wealth has been consumed long before they expect to die.

In simple versions of the lifecycle consumption model, the individual is well informed about the path of their future earnings, their age at death, and the interest rate they are able to earn on their savings. If the worker has stable preferences throughout their life, their planning problem is formidable but tractable.⁷

The lifecycle model emphasises the sharp drop or complete cessation of labour earnings at retirement, meaning that individuals must find another way to pay for their consumption, namely personal saving. Hence, individuals who do not expect to retire until shortly before they die do not need to save much for retirement. Thus, retirement and saving decisions are interrelated.

Some evidence supports this theory,⁸ although some criticisms have been made because it is not very successful in accounting for important aspects of personal saving. Many individuals reach old age with very little savings.⁹ Even considering the effects of uncertainty, when people decide when to retire or how much to save for retirement, their choices may be poorly informed, shortsighted, and less than rational. The crucial problem is that unlike other economic choices, which may be repeated many times throughout the life period, the decision of when to retire is

made only once. The opportunity to improve on the decision-making through experience, as is the case when consumers learn how to budget and shop for groceries, clothing, or property, for example, is absent.

The existence of social security systems as well as mandatory occupational pension schemes means that the optimal amount of savings depends on individual circumstances, although it affects the lifetime trade-off between consumption and retirement in a complex way. The impact of social security systems on retirement depends on the contributions individuals must make and on the benefit formula.¹⁰ Additionally, the effect of occupational pension plans on retirement depends on the plan type: defined-benefit or defined-contribution. Individuals who can expect pensions that replace a large percentage of their net earnings have much less need for savings than workers who do not anticipate pensions.

Social security reforms that rely on individuals to make their own decisions about retirement must take into account that too many individuals base their retirement and saving choices on herd behaviour, faulty logic, or defective information. Moreover, the majority often show astonishing ignorance of the most basic provisions determining future retirement incomes.

The role of education and regulation

In order to make retirement systems more effective in providing sustainable and adequate protection for their ever-growing elderly populations, greater attention should be put on education and regulation issues. Otherwise, the effects of a planning error could be catastrophic for the wellbeing of the aged.

The replacement of state pensions

with individual investment accounts implies that workers might have to decide on four important questions:

- the age when they will retire;
- how much savings to place in their accounts;
- how to allocate their savings across different investment options; and
- how fast to make withdrawals from their accounts.

The reforms that rely on individuals' responsibility to make their own decisions about retirement saving and investment seem acceptable if individuals make these choices rationally and competently. There is no opportunity to correct significant mistakes.

The decision to save, the investment decision and the decumulation decision are far more complex than what is supposed by the lifecycle theory. Although consistent with the fundamental economic proposition that individuals can and do try to maximise their self-interest, often those decisions have less than perfect outcomes. Hence, this new perspective regarding how 'real' people make economic decisions must be considered in the design and in the management of retirement systems.¹¹

Understanding why people save and what they invest in are questions of great importance in this context. If the lifecycle analysis holds true, households should have some demonstrated skill at estimating their needs for retirement. This requires accurate estimates of uncertain future processes including lifetime earnings, asset returns, tax rates, family and health status, and longevity. In fact, survey and empirical research suggest that individuals are not particularly good at the retirement savings problem. Few people feel they are able to plan effectively for retirement.^{12,13} On the other hand,

DeVaney and Chiremba (2005)¹⁴ found that obtaining more education, being more willing to accept risk, and enhancing past savings behaviour were among the factors that were most influential in having a larger amount saved for retirement, when comparing the retirement savings of the baby boomers and other cohorts in the USA. Their findings supported the lifecycle hypothesis that household savings tends to increase with age and the theory of planned behaviour.¹⁵ retirement savings behaviour was shown to be influenced by attitude, subjective norms, perceived control and past experience.

Behavioural economists rely on a psychological explanation called 'lack of willpower' or 'bounded self-control' to explain the lack of retirement preparation. That is, individuals try to save for retirement, but too often prove to be limited in their capacity or desire to execute intentions,¹⁶ as happens with other behaviour modification programmes such as exercising, dieting or quitting smoking. The recognition of this problem gives support to the use of commitment devices or mechanisms that help foster desirable changes in behaviour. Concretely, pension plans should be formulated such that contributions are automatically deducted from workers' pay before the money can be spent. Withdrawal restrictions on individual retirement accounts and other retirement plans also appear to be commitment devices, imposing a psychological and financial hurdle on accessing money, helping to counteract lapses in personal willpower.

Often, individuals also deviate from standard economic theory because they are easily influenced by decision framing, which means that responses to a question vary based on how it is asked. Additionally, when confronted with difficult decisions, individuals tend to

adopt heuristics that simplify the complex problems they face, for example, accepting the available default option. Inertia and procrastination also have an important impact on decision-making.¹⁷

The investment decision has been widely explored by modern portfolio theory. The question is: do investors in general and plan participants in particular understand and act on the predictions of mean-variance theory? Much research clearly is against mean-variance behaviour among investors. Weak preferences for the selected portfolio were found.¹⁸ Framing effects and inertia are also detected.¹⁹

Finally, the last phase of financial decision making for retirement, the decumulation decision, confronts many sources of risk. The most important of these are longevity risk, inflation risk, health risks (leading to unexpected expenses and costs), and capital risks, contributing to experiencing consumption shortfalls during retirement.

Retirement plan design in the future should incorporate these results. Retirement saving decisions are complex, meaning that individuals need help. Plan sponsors, benefit plan consultants, consumers associations and policymakers should give that help. The OECD has especially focused its work efforts on the regulatory and policy issues arising from the growing importance of private pensions. Its mission is to assist countries in the development of an adequate regulatory and supervisory framework that protects the rights of members and beneficiaries and ensures the financial security of pension plans and pension funds. In fact, delivering pension promises is an objective shared by all private retirement systems, but the ways of doing this are complex. The OECD has approved a set of 15 basic principles and two specific guidelines, considering regulation, governance and the

protection of rights of members and beneficiaries.²⁰

Provision of retirement income in Portugal

The prospect of rapidly aging populations is likely to lead to insolvency of state pension schemes unless contributions are raised and benefits cut.

The dependency ratio of young people (0–19 vs 20–59) in Portugal is declining dramatically — 44.64 per cent in the period 1960–2001, corresponding to 40.8 per cent in 2001. Moreover, the projected figure of 41.9 per cent for 2020 gives no cause for optimism.²¹ Additionally, the dependency ratio of the elderly (60 and more vs 20–59) increased by roughly 76.5 per cent between 1960 and 2001 and it is estimated that will reach 45 per cent by 2020.

Two determinant factors contribute to this disequilibrium: fertility rate and life expectancy. The fertility rate of 1.42 in 2001 is insufficient to replace the population, while the projection for 2020 of 1.69, despite some recovery, is also insufficient. Life expectancy at birth registered gains of approximately 20 per cent between 1960 and 2001, for both males and females, reaching 73.5 and 80.3 years respectively. On the other hand, life expectancy at age of 60 observed gains of 12.4 per cent and 16.2 per cent respectively for males and females over the period 1960–1999, with values of 18.2 and 22.2 years.

This evidence has resulted in a course of action to enhance workers' responsibility to save for their retirement. The following section presents the main features of Portuguese social security system according to the new law of 2002 and the characteristics of the pension funds industry, namely those concerned with personal saving plans.

Social security

In accordance with the terms of Portuguese Law Nr. 32/2002, 20th December,²² which regulates the social security system, the system comprises three other systems:

- the public social security system;
- the welfare provisions system; and
- the complementary system.

The public social security system comprises three sub-components: the benefits system;²³ the solidarity system and the family protection system. The welfare provisions system is developed by public institutions, namely autarchies, and by private institutions without profit purposes. Finally, the complementary system comprises legal regimes, contractual regimes and optional schemes.

The objective of the benefits system is to provide compensation for the loss or reduction of occupational earnings in the event of:

- sickness;
- maternity, paternity and adoption;
- unemployment;
- work accidents and occupational sickness;
- disability;
- old age; and
- death.

Those legally entitled to benefits under this sub-system are either employees or self-employed, constituting the general regime. In addition, the unemployed as well as non-working individuals have the option of subscribing to the sub-system, constituting the special regimes. The benefits system is based on the legal obligation to make contributions and covers the social insurance regimes applicable to employees and the self-employed.

The complementary system is regulated specifically, although it must meet certain criteria.

The financing of the system must follow the principles of diversification of the sources of income and of selective taxation criteria. More specifically, the financing of pecuniary benefits, which replace occupational earnings, is a two-fold process, namely through the contributions of employees, and through the contributions of employers. Furthermore, the law stipulates that there must be transference into the social security trust fund (FEFSS), created in 1989, of an amount between 2–4 per cent of the contributions of employees, up to the point at which the total expenditure on pensions for a minimum period of two years is ensured. In addition, any annual surplus in the benefits system, as well as profits on asset sales and the gains from financial investments, flow into the reserve fund, to be managed under principles of capitalisation. In fact, the public social security system must consider the pay-as-you-go technique as well as the funded one to its financing. The return on the investments will serve to reinforce the financial reserves sufficiently to help absorb the expected rising costs as more and more members of the active population go into retirement and long-term unemployment remains high.

The simulation of the fund's assets was made by Silva *et al.* (2004)²⁴ concluding that the fund's assets reach their peak of €12bn in 2012, that the fund will be mobilised for the first time in 2011, and will run out in 2026. As with other studies, particularly the Annual Report of the Board of Trustees of the Federal Old-Age and Survivors' Insurance and Disability Insurance Trust Funds (USA), the analysis of the actuarial and financial equilibrium of the system in the short term (the next 10 years) and in the

Table 1: Retirement saving plans indicators

Retirement saving plans	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Number	8	9	11	11	14	15	17	17	20	21
Amount (€000s)	193,334	236,041	305,534	414,980	516,964	473,462	436,450	411,445	401,204	411,991
Contribution inflows (€000s)	41,420	33,429	59,307	97,824	94,348	73,358	62,718	71,448	46,346	51,648
Number of participants	38,649	42,511	53,413	63,980	72,665	70,556	69,482	61,565	64,593	65,579
Rate of return (%)	na	na	na	na	na	1.92	1.20	-0.20	-0.36	4.30

Source: Boletins de Fundos de Pensões, 1995–2003, ISP; Relatório do Sector Segurador e Fundos de Pensões, 1999–2003, ISP

Table 2: Trust fund rates of return

Trust Fund	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Rate of return (nominal) (%)	9.20	9.20	9.10	7.40	5.30	4.64	4.11	3.28	2.51	6.50
Rate of return (real) (%)	6.33	6.64	6.76	5.71	4.15	3.50	1.97	0.96	0.21	4.45

Source: Instituto de Gestão de Fundos de Capitalização da Segurança Social, Relatório de Actividades 2004

long term (the next 50 years) was presented.

Personal pension schemes

Pension funds have been in existence in Portugal since 1985,²⁵ although the creation of retirement saving plans only occurred in 1989. In 2003, there were 21 retirement saving plans amounting to €412m (Table 1). Participation in these plans is voluntary. The amount of contributions to retirement savings plans (RSP) has grown considerably. The evolution of the number of participants in RSP is also remarkable. However, in 2003, the number of RSP participants represented only 2 per cent of the active population, which means that the level of participation is still low. This gives weight to the criticisms of the lifecycle model and the explanation presented by behavioural economists as to the lack of retirement preparation. On the other hand, there might be factors that discourage people from choosing private funded pensions, namely the acceptance

of a high degree of risk.²⁶ Many people simply do not want to participate in a pension system where they are obliged to accept a high degree of risk.

Indeed, when compared with the performance registered by the social security trust fund, the performance of RSP is not so good. Data show that public management has systematically beaten private management in the last five years (Table 2), fuelling the debate over the choice between public and private management of pension funds.²⁷ This is even more striking as the criteria that asset portfolio composition must obey by law is similar in both cases, whereas Portuguese government securities must have a minimum weight of 50 per cent.

These results reflect either the investment strategy or the funds' asset portfolio composition.

Conclusion

Underlying the global movement of social security reforms, spurring

individual choice, is an implicit assumption about behaviour, namely that the individual citizen to whom the responsibility of choice has been handed is a well-informed economic agent who acts rationally to maximise their self interest.

In the real world, however, people's decisions are subject to several restrictions:

- bounded rationality, in the sense that certain types of decisions and problems may be simply too complex for individuals to master on their own;
- bounded self-control, in the sense that individuals have the right intentions or beliefs, but they lack the willpower to carry out the appropriate changes in behaviour; and
- bounded self-interest or bounded selfishness, in the sense that many individuals do seek to maximise their personal welfare, yet they prove far more cooperative and altruistic than economic theory predicts they will.

The recognition of these constraints are very important for the design, the management and the regulation of retirement systems. Plan sponsors and policymakers are becoming more aware of these issues, taking action toward consumer education and regulation.

The development of pension plans in Portugal, whether occupational or personal, justifies a deep examination of the problem of individuals' capacity to protect themselves adequately in the absence of proper financial education and consumer regulation. Campaigns to educate people might be irrelevant, however, as the more people learn, the better they can see the impact of financial market volatility upon their retirement incomes. Further research is needed on this issue.

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