

Management of Pension Funds: the Case of Portugal

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Abstract – The concern with the long term viability of most of existing government-operated pension systems, due to demographic changes, have led to various proposals for pensions reform, many of which have already been put into action. However, pension reform remains a highly controversial issue due to its complexity. This article brings attention to the management performance issue concerning funded systems. Detailed evidence and discussion is given to both investment performance results of public pension reserve funds, within the Social Security system, and to private pension funds in Portugal. Policy implications are also analysed and discussed.

Keywords - Social security system, partially funded system, private pensions, investment performance, Portugal.

1. Introduction

One of the central questions regarding the financing of pensions concerns the existence, or non-existence, of prior accumulation. This may take the form of obligatory State social insurance or, alternatively, of a private insurance scheme, which is either obligatory or optional. Either form must guarantee the payment of the pensions required.

Two methods for the financing of benefits are available: the pure distribution system¹, where current contributions cover the payments of current pension obligations, and the pure capitalization system², where a reserve is created previously for the purpose of attaining the defined benefit which it is intended to guarantee, contributions being calculated actuarially. Capitalization comprises the investment, at compound interest rates, of the total of premiums or contributions received, net of management and acquisition charges, in order to obtain, by a given date, the capital necessary to distribute as life pensions. These mechanisms or technical instruments cannot be defined as being uniquely public or private. State capitalization can exist alongside private pension distribution and, conversely, private capitalization alongside State distribution.

¹ Or pay-as-you-go system.

² Or fully funded system.

The debate about the need, if any, for pension reform, initiated by the concern for long term financial viability of existing government-operated pension systems (Bongaarts, 2004), must highlight their basic principles and the various aspects related to efficiency, distribution, and stability (Lindbeck and Persson, 2003; Bonoli and Palier, 2007; Börsch-Supan, 2007; Lewis and Lloyd-Sherlock, 2009; Cutler and Waine, 2013). Hence, the move from an unfunded (pay-as-you-go) and non-actuarial system, to a more actuarial system, or even to a fully funded system, requires considerable discussion about these aspects, as well as risk and risk sharing issues, administrative costs (CBO, 2004), and investment performance (Logue and Rader, 1998; Thomas and Tonks, 2001; Cogburn and Reddick, 2007). In addition, the choice between public and private management of pension funds is crucial (World Bank, 1994, 2001). Eventually, the design of a balanced pension system is desirable (Ostaszewski, 2012b). Recently, an agenda for making pensions adequate and sustainable in the long term was proposed (by the European Commission, in 2012).

Many OECD countries, including Portugal, have built up public pension reserves to help pay for State pensions. In these countries, in 2009, public pension reserves were worth nearly 20% of GDP (OCDE 2011). On the other hand, private pension arrangements have been growing in importance in recent years, as pension reforms have reduced public pension entitlements. In 2009, OECD pension fund assets reached USD 16.8 trillion. This trend is aligned with the idea that the retirement systems should be supported by four pillars or tiers (Dixon, 2008; Ostaszewski, 2012a).

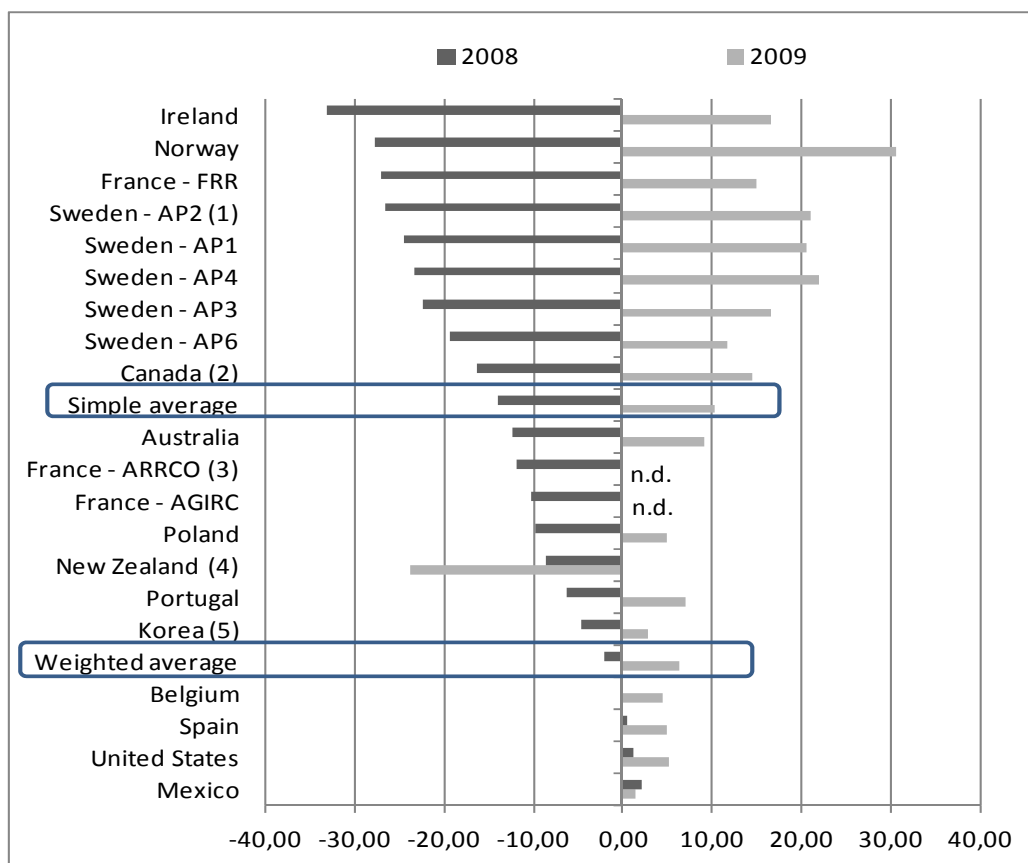
This paper analyses the investment performance of public and privately managed pension funds in Portugal. Both are affected by the financial crisis, which has simultaneously led to decreasing levels of interest rates, real economic growth rates and rates of return, since the 1980s (Ostaszewski, 2012a). The next section describes the issues concerning public pension reserve funds. Following this, the private pension funds market is analysed, as well as the comparison of investment performance results. Conclusions are then presented.

2. Public pension reserve funds

Public pension reserve funds (PPRFs) are reserves established by governments to meet public pension expenditure³. Therefore, they are expected to play a major role in the future financing of public pension systems, alleviating the impact of population ageing (Coleman, 2006). However, due attention to PPRFs investments and impact on financial markets has not been given. Indeed, one might ask what information is available to assess the investing strategies of PPRFs in order to understand investments in Citigroup, Morgan Stanley, and Merrill Lynch, during the 2008 financial crisis, by several sovereign

wealth funds where PPRFs are included (Gintschel and Scherer, 2008; Ainina and Mohan, 2010). In addition, good pension fund governance is needed to value creation (Clark and Urwin, 2008; Truman, 2008).

By the end of 2009, the total amounts of PPRFs assets were equivalent to USD 4.6 trillion for the 17 OECD countries (OECD, 2011). The largest reserve was held by the US Social Security Trust Fund, at USD 2.5 trillion, accounting for 54.7% of total OECD assets, although these assets consist of non-tradable special bonds issued by the US Treasury to the Social Security Trust⁴. Japan's government pension investment fund was second, with USD 1.3 trillion, representing 28.2% of the OECD total.



1. There are five Swedish National Pension Funds (AP1-AP4 and AP6).
2. 2009 data refers to fiscal year 2010, ending March 31, 2010.
3. AGIRC and ARRCO are unfunded mandatory supplementary plans for white-collar and blue-collar workers respectively, with reserves. More information on these plans can be found in the OECD Private Pensions Outlook 2008.
4. Data refers to June of each year.
5. 2009 data refers to the period January-March 2010.

Source: Adapted from OECD Global Pension Statistics.

Figure 1. PPRFs' real net investment return in selected OECD countries, 2008-2009 (%)

Countries such as Korea, Sweden and Canada had also accumulated large reserves, respectively accounting for 4.7%, 2.3% and 2.3% of the total.

On the other hand, in 2009, on average, PPRF assets accounted for 18.4% of GDP in the OECD area. The Swedish AP funds registered the highest ratio, with 27.2% of GDP. Other countries with a significant ratio included Korea, with 26.1%, and Japan, with 23.2%.

Regarding asset allocation of public pension reserve funds, bonds and equities were the predominant asset classes within PPRF portfolios at the end of 2009. In some reserve funds, there was a strong equity bias, which reflects their long-term investment outlook and a generally greater investment autonomy. For example, in 2009, Ireland's national pensions reserve fund invested 72.0% of its assets in equities and 5.5% in bonds, whilst the figures for Norway were respectively 61.4% and 33.9%, for Sweden (AP3 fund) 50.2% and 35.6%, and 44.2% and 23.7% for Australia. On the other hand, reserve funds in Japan, Portugal, Poland and Mexico invested much more in bonds than equities in 2009. The Belgian, Spanish and US PPRFs, the extreme cases, are by law, fully invested in government bonds (except for the case of the Spanish fund, where 3.3% of total assets are invested in cash and deposits).

Furthermore, some PPRFs also started to invest in real estate and non-traditional asset classes, such as private equity and hedge funds. The funds with the highest allocation of private equity and hedge funds were New Zealand (26.7% of total in 2009), Canada (17.1%) and Australia (12.7%).

Investment performance is a most important issue in relation to public pension reserve funds. Generally, in 2009, public pension reserve funds regained ground lost during the 2008 crisis. However, the impact of the crisis on PPRFs' investment returns varies greatly across countries, as some funds experienced strong negative returns in 2008 of more than -20% (Ireland, Norway, the French pension reserve fund and Sweden), while others had positive returns (Belgium, Spain, the United States and Mexico)⁵. At the end of 2009, all funds for which data is available, experienced positive, real net investment returns, ranging from 1.3% in Mexico, to 30.7% in Norway. On average, investment returns were slightly negative in 2008, and positive in 2009 (when weighted by total assets), increasing from -2.0% in 2008, to 6.2% in 2009. By the end of 2009, the total amount of PPRF assets was on average 7.3% higher than at the end of 2008, and 13.9% higher than in December 2007.

Taking into account the burden of future generations, the Portuguese government introduced partial public capitalisation in 1989, with the creation of a public

pension reserve fund⁶. Since then, the surplus of the providential system is transferred to this fund, although not on a regular basis, for investment in financial markets, which are managed under the principles of capitalization⁷. Thus, the public Social Security system is financed by the pay-as-you-go system, as well as the reserve fund. The idea is that return on investments will be sufficient to reinforce the financial reserves and help absorb the expected rising costs created by the fact that more and more members of the active population are entering retirement, plus the phenomenon of high long term unemployment.

The Social Security Law of 2000 explicitly takes into account and reinforces partial capitalisation, stipulating that between two and four percent of employees' contributions must be transferred into the reserve fund (employee contribution rate is 11% of gross remuneration), up to the point where expenditure on pensions is guaranteed for a minimum period of two years. This measure is in addition to the annual surplus in the providential system, and was designed to ensure the financial viability (sustainability) of the Social Security system. Silva et al. (2004) analyse the accounts of the providential system, as well as its impact on the portfolio of the public pension reserve fund. They conducted a simulation of the fund's assets which allowed them to conclude that the fund's assets reach their peak of 12,032.502 million euros in 2012 and that the fund will have to be mobilized for the first time in 2011, and will run out in 2026. More recently, the new Social Security Law of 2007 establishes that the complementary system includes a public regime of capitalization⁸, in addition to the existent complementary regimes of an individual and collective nature⁹.

The partial pre-funding of the otherwise pay-as-you-go system by the establishment and development of a public pension reserve fund was subject to an analysis of investment controls, in order to evaluate the sound management of this type of fund (Yermo, 2007, 2008). Comparison with private pension plans

⁶ Or Social Security Trust Fund (Fundo de Estabilização Financeira da Segurança Social - FEFSS).

⁷ This pension fund mainly invests the surpluses of employee and employer contributions over current payouts. Hence, this is a Social Security reserve funds or SSRFs (Truman, 2008).

⁸ In February 2008 retirement certificates (*Certificados de Reforma*) were established. They are for voluntary, individual contributions. In December 2011 their reference value was 1.08710 € and the fund value was 19,990,439.64 €. The contribution rate is between 2% and 4% of employees' salary. At the end of 2009, there were 7425 contributors.

⁹ These include professional and individual private pension plans.

⁵ Real (after inflation) returns are calculated using national valuation methodologies.

is unavoidable. The following section describes the Portuguese public pension reserve fund.

1.1 The Portuguese public pension reserve fund

The public pension reserve fund is managed by a State institution, the IGFCSS¹⁰. The investment policy followed by the management board of IGFCSS must guarantee preservation of capital, which necessitates a rate of growth at least equal to the expected inflation rate for the Euro Zone. The public pension reserve fund is considered an instrument of public capitalisation.

At the end of the financial year of 2009, the FEFSS' assets stood at 9,407.66 million euros, corresponding to 97.8% of annual pension benefits expenditure (or 11.74 months, which is still inferior to the objective of two years), representing 5.7% of GDP. Portuguese State bonds constitute the greatest proportion of investments, reflecting the legal obligation that not

equities in portfolio composition has meant that performance has been adversely affected by the financial crises of 2000-2002 and 2008 onwards (Franzen, 2010).

All the same, the management model of FEFSS won the Investments & Pension Europe Award for the best pension fund in Portugal in 2006 and in 2009.

In 2009 a new strategic management policy was established, which includes risk management indexation to EFFAS Portugal and transition to a dynamical benchmark.

3. Private pensions funds

Private pension arrangements are increasingly important for the provision of retirement income, as pension reforms have reduced public pension entitlements. Private pensions are mandatory and voluntary private pensions as well as occupational

Table 1. Investments returns on PPRF in Portugal, 2000-2009, %

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average 2000-2009
Nominal rate of return	4.11	3.28	2.51	6.50	5.90	6.76	5.18	4.08	-3.86	6.25	4.07
Real rate of return	1.97	0.96	0.21	4.45	3.46	4.44	3.20	0.98	-5.35	5.28	1.96

Source: IGFCSS Annual Reports

less than 50% of assets must be invested in government bonds. Equities accounted for 17.13% of the portfolio, although the legal maximum is set at 25%.

As from 2002, a new eligible asset class was approved - the strategic reserve, with a cap of 5% of total assets. By 2009 it represented 2.27% of the portfolio.

2.1 The profitability of the Portuguese public pension reserve fund portfolio

Investments results for the period 2000-2009 are generally positive (Table 1).

Over this ten year period, assets under management have significantly grown, displaying an average nominal rate of return of 4.07%, and an average real rate of return of 1.96%. The growing weight of

and personal private pensions (OECD, 2011). In 2009 the United States had the largest pension fund market within OECD member countries, with assets worth USD 9.6 trillion, representing 57.1% of the total.

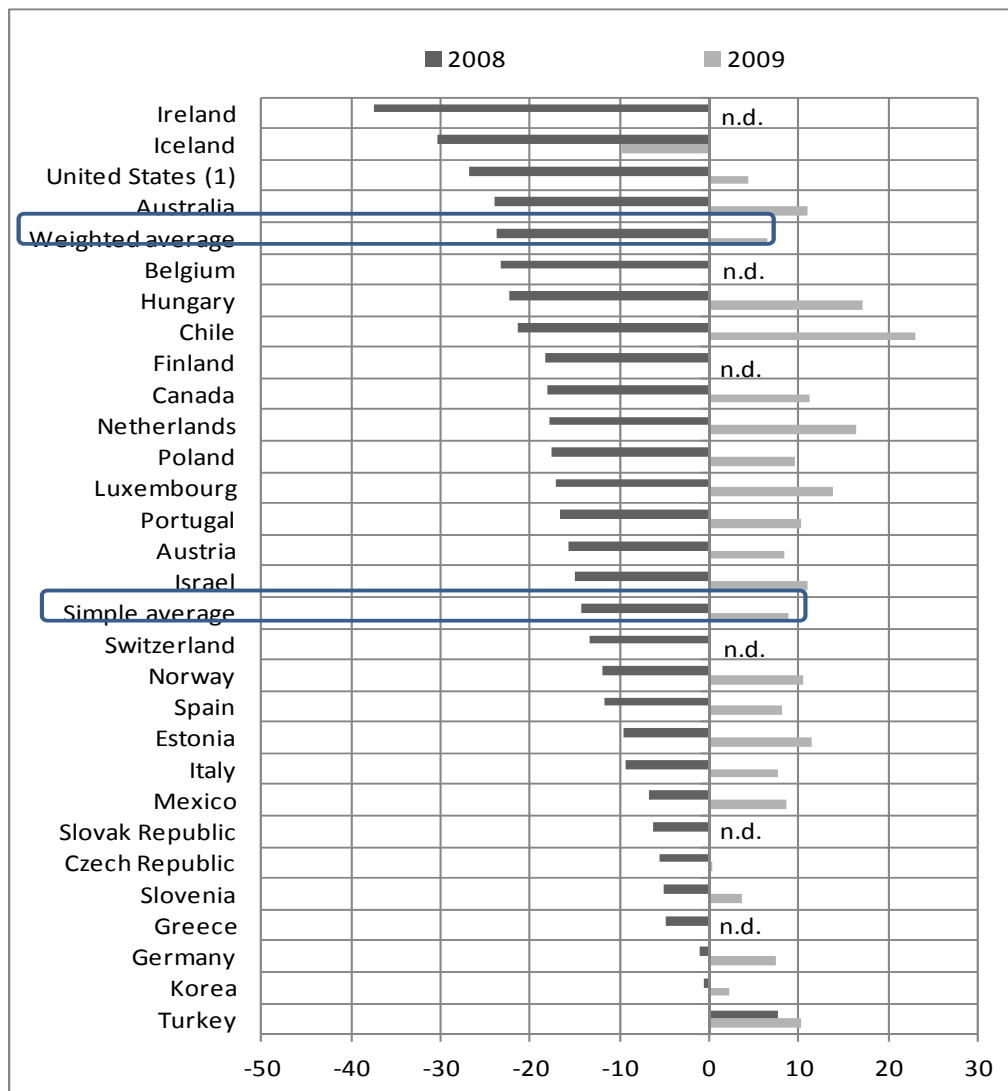
¹⁰ IGFCSS – Instituto de Gestão de Fundos de Capitalização da Segurança Social, approved in 1999.

Several other OECD countries have large pension fund systems. In 2009, the United Kingdom had assets worth USD 1.6 trillion, accounting for a 9.5% share of the OECD pension fund market. Japan had USD 1.0 trillion, representing 6.2% of the total. The Netherlands, USD 1.0 trillion (6.1%); Australia, USD 0.8 trillion (4.8%); and Canada, USD 0.8 trillion (4.8%).

In 2009, three countries registered asset-to-GDP ratios higher than 100%. The Netherlands (129.8%), Iceland (118.3%) and Switzerland (101.2%). In addition to these countries, Australia (82.3%), the

United Kingdom (73.0%) and the United States (67.6%) exceeded the OECD weighted average asset-to-GDP ratio of 67.6%. In such countries, funded pensions have been in place for a long time, and, with the exception of the United Kingdom and the United States, have mandatory or quasi-mandatory private pension systems. Pension fund assets were of varying importance relative to GDP in the other countries. Almost 40% of the countries (13 out of 34) had asset-to-GDP ratios above 20%.

Some countries have introduced mandatory funded pension systems in recent years. Chile has the longest



1. 2009 data refers to the period January-June 2009.

Source: Adapted from OECD Global Pension Statistics.

Figure 2. Pension funds' real net investment return in selected OECD countries, 2008-2009 (%)

history and has accumulated assets close to the OECD average (65.1%). Hungary, Mexico, Poland and the Slovak Republic also introduced mandatory private pensions in the late 1990s and early 2000s. Assets have grown rapidly since that point, reaching around 13% of GDP in Hungary and Poland.

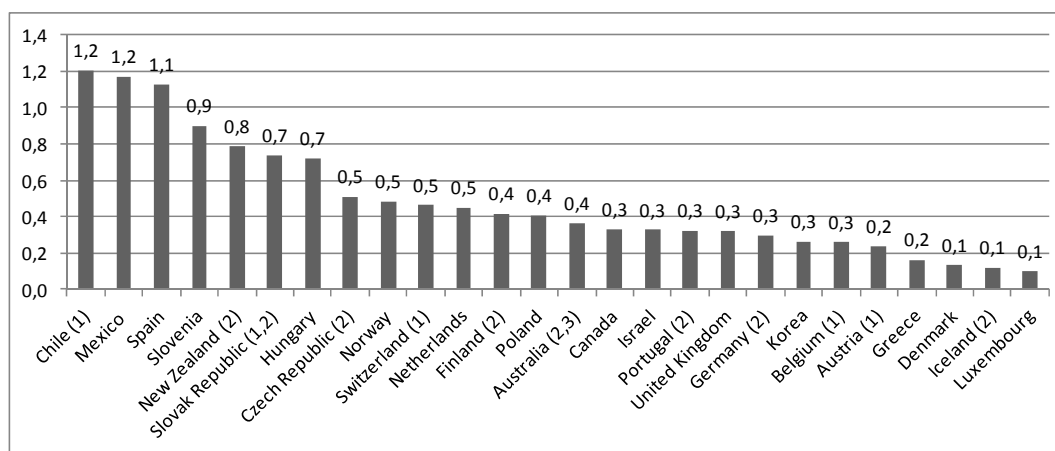
At the end of 2009, bonds and equities were the most common kind of investment in pension fund portfolios. Proportions of equities and bonds vary considerably across countries but there is a greater preference for bonds in general.

On average, pension funds experienced a positive investment rate of return of 6.5% in real terms up to the end of 2009, recovering from a negative average return of 22.5% in real terms in 2008 (Figure 2). The best performing pension funds amongst OECD countries in 2009 were Chile (23%), Hungary (17%), The Netherlands (16%) and Luxembourg (14%). In fact, during 2009, pension funds in the OECD

recovered around USD 1.5 trillion of the USD 3.5 trillion in market value that they had lost in 2008 (from USD 18.7 trillion in December 2007 to USD 15.3 trillion in December 2008).

Pension funds efficiency, as measured by the total operating costs in relation to assets managed, ranges from 0.1% to 1.2% (Figure 3).

In general, countries with defined-contribution systems and those with large numbers of small funds appear to have higher operating costs than countries that only have a few funds offering defined-benefit, hybrid, or collective defined-contribution pension arrangements. This is in contrast to the general trend of transition from defined benefit to defined contribution plans (Turner and Hugues, 2008).



1. Data refers to 2008.

2. Data does not include investment management costs.

3. Data does not include self-managed superannuation funds.

Source: OECD Global Pension Statistics.

Figure 3. Pension funds' operating expenses as a share of total investments in selected OECD countries, 2009 (%)

1.1 Private pension funds in Portugal

In Portugal, a voluntary occupational private pension system has been in operation since 1985, with a specific fiscal status which, in certain sectors such as banking, serves as an alternative to the defined benefit plans provided by the public sector. Personal retirement saving plans (PRSP) were launched in 1989.

The importance of the private pension sector has been growing in recent years, as pension reforms have reduced public pension entitlements and facilitated a complementary system (Garcia, 2004, 2006). In addition to occupational pension plans, this sector includes voluntary personal pension plans, both of which constitute the second and third pillars of the retirement system (Ostaszewski, 2012b).

Decree-Law Nr. 12/06 currently regulates their activity, following the 2003/41/CE Directive. The

main purpose of these provisions is to achieve the consolidation of the funds' role as the privileged vehicle for private, complementary financing of the costs of covering the social risks associated with retirement.

Indeed, as far as complementary plans are concerned, this system can be considered to be a veritable put-option, in favour of employees, as explained by Merton et al. (1987).

A distinction must be made between those pension funds managed by dedicated pension fund management companies and those under the management of life insurance companies. In 2010, there were 25 pension funds management institutions and 237 pension funds with 19,725 million euro of assets under their management¹¹.

The majority of pension funds, about 80 per cent of them, are managed by pension fund managers representing 98 per cent of the value under management, enhancing the role of pension funds management companies. In 2009, the private pension funds industry represented 13.40% of GDP of Portugal, amounting to 21,917 million euros. Closed pension funds are prominent among the various types of pension funds, representing more than 80 per cent of the amount under management. A closed fund is generally one in which there is only one member/sponsor. Should there be more than one member, this is subject to the condition that a connection of a corporate, associative, professional or social nature exists among the members, and that the consent of all of the existing members must be given before new members can be included. Closed funds, as well as open funds, are occupational. In an open fund there is no requirement for any connection whatsoever among the different parties constituting the fund and adhesion to the latter depends solely on acceptance being granted by the fund's managing institution¹². PRSP type is for personal funds.

With regard to employment sectors, the banking and telecoms group pension schemes together account for the largest segment of the occupation pension fund market in Portugal.

The majority of pension plans are of the defined benefit type. In defined contribution plans, contributions are customarily calculated as a pre-determined fraction of salary, although this fraction does not necessarily remain constant throughout the employee's working life. Many defined benefit plan

formulae take into account the Social Security benefits to which employees are entitled. In such cases, the plans are said to be integrated and the value of the complementary pension will depend on the final value of the State pension. Contributions to these plans are generally based on a targeted benefit and can be shared between the employer and the employee.

As far as participation in their financing is concerned, the pension plan can further be classified as contributive or non-contributive. In the case of the former, the employee finances the plan together with the employer, which leads to the existence of vested rights; in the latter case, the employer has sole responsibility for the financing, and such rights usually cease to exist in the event of an employee's early departure.

On the other hand, there is a decreasing trend of the defined benefit plans type of pension, and an increasing trend of the defined contribution plans type, probably as a result of accounting rules and regulatory changes (Yermo, 2007).

2.1 The composition of the portfolio and profitability

Investments portfolio composition registers a declining trend of the public debt component. By 2009, private pension funds invested 21.30% in government bonds. On the other hand, the proportion accounted for by equities and trust units rose substantially, representing 37.50% in 2009.

With regard to profitability, only aggregate information is available (Table 2).

¹¹ Since 2010 the government of Portugal transferred some funds of the telecom and banking sectors to the social security system. The money was used to reduce the fiscal deficit and help meet Maastricht targets.

¹² Open funds can be constituted on the initiative of any institution authorized to manage pension funds. The global net value of the fund is divided into whole or partial participation units, which can be represented by certificates.

Table 2. Nominal returns on pension funds in Portugal, 2000-2009, %

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average
Total	3.1	-2.2	-3.4	8.2	7.2	9.1	8.8	6.3	-13.9	9.7	3.21
Closed pension funds	3.3	-2.2	-3.5	8.3	7.3	9.2	9.0	6.5	-14.2	9.8	3.31
Open pension funds	0.7	-1.0	-1.1	6.0	4.8	6.0	5.3	3.1	-9.5	7.8	2.2

Source: Relatório do Sector Segurador and Fundos de Pensões, 2003 to 2006, ISP (according to ISP, management costs are negligent)

The average rate of return for all types of pension funds decreased over the period 2000-2002. A positive trend is noticeable since 2003. However, the 2008 crisis had a very negative impact on profitability. In that year, pension funds registered the lowest rates of return in all the period, for all types of pension funds.

This means that risks associated with pension funds should be taken into account especially that of market risk (Garcia, 2004; Bovenberg, 2007; Franzen, 2010).

4. Results comparisons

Comparing the investment performance results of State capitalisation by the analysis of public pension reserve funds, as opposed to those of private pension funds, enables one to conclude that the former clearly perform better in a bear market (Figure 4).

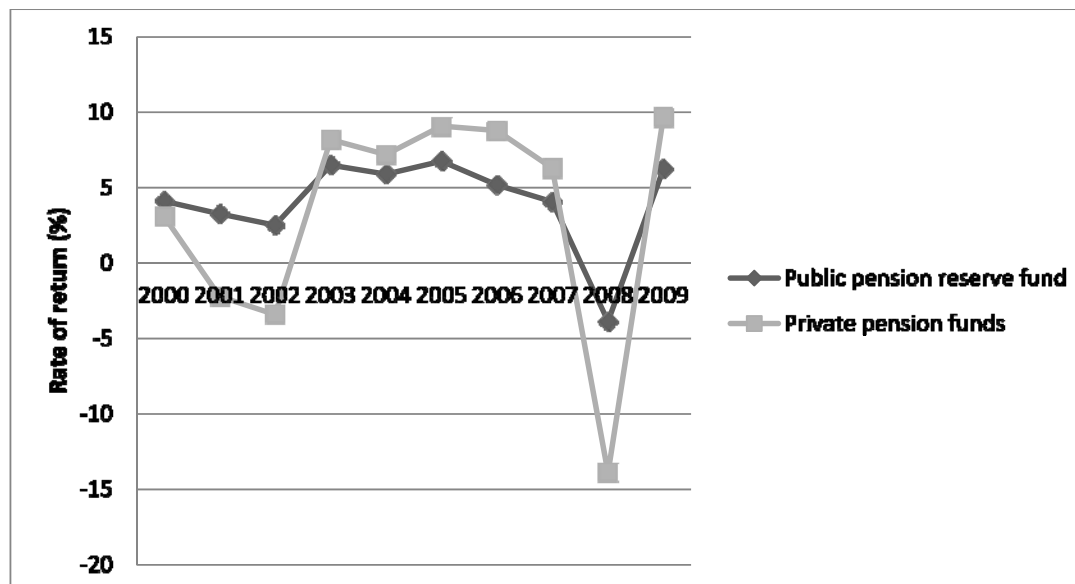


Figure 4. Pension funds' nominal net investment return in private and public pension funds in Portugal, 2000-2009 (%)

In addition, the average rate of return over this ten years period is higher in the case of public pension reserve funds being 4.07% versus the average of 3.29% in the case of private pension funds.

Portfolio composition, as well as the performance of different types of assets might explain this conclusion. The weight of bonds is much bigger in the State portfolio, always being more than 70%, due to limitations by law, as opposed to the weight registered in private pension funds' portfolios, which is less than 50% since 1999.

Investment performance assessment in comparative terms should be considered by policy makers when the importance of complementary private retirement savings is increased. In fact, the 2008 crisis has highlighted the vulnerability of funded pension schemes to financial crises and economic downturns (Orenstein, 2013). Furthermore, it has emphasized the need to review the regulatory framework and scheme design to improve the safety of private pensions. Indeed, in the European Union, two instruments are already in place: the Directive on the protection of employees in the event of insolvency of their employer, and the Directive on the activities and supervision of Institutions for Occupational Retirement Provision. The pension market integration in the EU has been passing through several phases (Hennessy, 2011).

5. Conclusion

The aim of this work has been to analyse public pension reserve funds and private pension fund markets in Portugal. The focus of the analysis was on asset management results comparison and on the policy implications of the results.

The basic pay-as-you-go government-oriented pension is complemented by a privately-funded pension which, when integrated with the Social Security scheme, constitutes a true financial option sold by the employer to the employee. For the employee, the most important factor is the guarantee of a secure income on retirement, regardless of the pension's source. Therefore, an optimum portfolio of pension benefits is created, with the State component being the risk-free asset and a private component comprising the volatile asset, both occupational and personal.

The introduction, in 1989, of partial public capitalisation, together with the establishment of a public pension reserve fund return, highlights the need for comparison with existing private capitalisation. The assessment of public, versus private, pension fund management, reinforces the idea that public management is not necessary bad and that private management is not necessarily good.

Furthermore, investment performance analysis of pension funds in Portugal, either occupational or personal, justifies a detailed analysis of the problem of individuals' capacity to protect themselves adequately in the absence of proper financial education and consumer regulation (Casey, 2004; Garcia, 2006; Waine, 2009). Frequently, the global movement of Social Security reforms has an implicit assumption about behavior, namely that the individual citizen to whom the responsibility of choice has been handed to, is a well-informed economic agent, who acts rationally to maximize their self-interest (Ring, 2010). However, in the real world, peoples' decisions are subject to several restrictions such as bounded rationality, bounded self-control, bounded self-interest or bounded selfishness (Burtless, 2004). In fact, individuals often base their retirement and saving choices on herd behavior, faulty logic, or defective information, showing astonishing ignorance of the most basic processes that determine future retirement incomes (Webb, 2009; Munnell et al. 2011; Casey and Dostal, 2013). Social Security reforms might have created unintended consequences in the case of the risk posed by a retirement crisis (Lalani, 2012; Borowski, 2013).

The recognition of these constraints is very important for the design, management and regulation of retirement systems. Retirement plan sponsors and policymakers are (and should be) becoming more aware of these issues, and are taking actions to promote consumer education and regulation (European Commission, 2012).

References

- [1] Ainina, F. and Mohan, N. (2010), "Sovereign Wealth Funds: Investment and Governance Practices", *Journal of Asia-Pacific Business*, 11:4, 278-295.
- [2] Blundell-Wignall, Adrian, Yu-Wei Hu, and Juan Yermo (2008), *Sovereign Wealth and Pension Fund Issues*, Paris: Organization for Economic Cooperation and Development.
- [3] Bonoli, G. and Palier, B. (2007), "When Past Reforms Open New Opportunities: Comparing Old-age Insurance Reforms in Bismarckian Welfare Systems", *Social Policy & Administration*, 41: 555-573. doi: 10.1111/j.1467-9515.2007.00572.x
- [4] Borowski, A. (2013), "Risky by Design: The Mandatory Private Pillar of Australia's Retirement Income System", *Social Policy & Administration*, 47: 749-764. doi: 10.1111/spol.12041
- [5] Börsch-Supan, A. (2007), "Rational Pension Reform", *The Geneva Papers on Risk and Insurance*, Vol. 32: 430-446.

- [6] Bovenberg, A. L. (2007), "Risk Sharing and Stand-Alone Pension Schemes", *The Geneva Papers on Risk and Insurance*, Vol. 32: 447-457.
- [7] Burtless, G. (2004), *Social Norms, Rules of Thumb, and Retirement: Evidence for Rationality in Retirement Planning*, The Brookings Institution, October.
- [8] Casey, H. B. (2004), "Why People Don't Choose Private Pensions: The Impact of 'Contagion'", Discussion Paper PI-0503, The Pensions Institute, UK.
- [9] Casey, B. H. and Dostal, J. M. (2013), "Voluntary Pension Saving for Old Age: Are the Objectives of Self-responsibility and Security Compatible?", *Social Policy & Administration*, 47: 287-309. doi: 10.1111/j.1467-9515.2012.00853.x
- [10] CBO (2004), *Administrative Costs of Private Accounts in Social Security*, A CBO study, March.
- [11] Clark, G. L. and Urwin R. (2008), "Best-practice pension fund governance", *Journal of Asset Management* 9, 2-21.
- [12] Cogburn, J. D. and Reddick, C. G. (2007), "Public Pension Management: Issues and Trends", *International Journal of Public Administration*, 30:10: 995-1020.
- [13] Coleman, D. (2006), "Europe's Demographic Future: Determinants, Dimensions, and Challenges", *Population and Development Review*, 32: 52-95.
- [14] Cutler, T. and Waine, B. (2013), "But is it 'Fair'? The UK Coalition Government, 'Fairness' and the 'Reform' of Public Sector Pensions", *Social Policy & Administration*, 47: 327-345. doi: 10.1111/j.1467-9515.2012.00871.x
- [15] Dixon, A. D. (2008), "The Rise of Pension Fund Capitalism in Europe: An Unseen Revolution?", *New Political Economy*, 13:3: 249-270.
- [16] European Commission (2012), WHITE PAPER *An Agenda for Adequate, Safe and Sustainable Pensions*, Brussels, 16.2.2012, COM(2012) 55 final.
- [17] Franzen, D. (2010), "Managing Investment Risk in Defined Benefit Pension Funds", *OECD Working Papers on Insurance and Private Pensions, No. 38, OECD*.
- [18] Garcia, M. T. M. (2004), An Analysis of Pension Funds in Portugal. *Pensions – An International Journal*, Volume 9, Number 3, April: 227-245.
- [19] Garcia, M. T. M. (2006), Individual responsibility for the Adequacy of Retirement Income. *Pensions – An International Journal*, Vol. 11, No. 3, May: 192-199.
- [20] Gintschel, A. and Scherer, B. (2008), Optimal asset allocation for sovereign wealth funds. *Journal of Asset Management*, 9, 215-238.
- [21] Hennessy, A. (2011), The Role of Agenda Setting in Pension Market Integration. *Journal of European Integration*, 33:5: 577-597.
- [22] Jongaarts, J. (2004), Population Aging and the Rising Cost of Public Pensions. *Population and Development Review*, 30: 1-23.
- [23] Lalani, L. (2012), Managing Systemic Risk in Retirement Systems. in *Risk Management: Part Two Systemic Risk, Financial Reform, and Moving Forward from the Financial Crisis*, presented by the Society of Actuaries, Casualty Actuarial Society and Canadian Institute of Actuaries, 1st Edition.
- [24] Lewis, C. M. & Lloyd-Sherlock, P. (2009), Social policy and economic development in South America: an historical approach to social insurance. *Economy and Society*, 38:1: 109-131.
- [25] Lindbeck, A. & Persson, M. (2003), The Gains from Pension Reform. *Journal of Economic Literature*, Vol. XLI, March: 74-112.
- [26] Logue, D.E. & Rader, J. S. (1998), *Managing Pension Plans: A Comprehensive Guide to Improving Plan Performance*, Harvard Business School Press.
- [27] Merton, Bodie, Z. & Marcus (1987), Pension Plan Integration as Insurance against Social Security Risk. *Issues in Pension Economics*, NBER.
- [28] Munnell, A. H., Golub-Sass, F., & Webb, A. (2011), How much to save for a secure retirement. Issue in Brief 11-13, November. Chestnut Hill, MA: Center for Retirement Research at Boston College.
- [29] OECD (2011), *Pensions at a Glance 2011: Retirement-income Systems in OECD and G20 Countries*. OECD Publishing. http://dx.doi.org/10.1787/pension_glance-2011-en
- [30] Orenstein, M. A. (2013), Pension Privatization: Evolution of a Paradigm. *Governance*, 26: 259-281. doi: 10.1111/gove.12024
- [31] Ostaszewski, K. (2012a), The financial crisis: impact on the four pillars of old-age protection (Chapter 4) in *Addressing the Challenge of Global Ageing—Funding Issues and Insurance Solutions*, edited by Patrick M. Liedtke and

- Kai-Uwe Schanz, The Geneva Association, Geneva, Switzerland, 2012.
- [32] Ostaszewski, K. (2012b), The holistic view: why all pillars need to work in concert (Chapter 8) in Addressing the Challenge of Global Ageing—Funding Issues and Insurance Solutions, edited by Patrick M. Liedtke and Kai-Uwe Schanz, The Geneva Association, Geneva, Switzerland, 2012.
- [33] Ring, P. J. (2010), Governance and governmentality: a discussion in the context of UK private pension provision. *Economy and Society* 39:4:534-550.
- [34] Silva, C. M. P., Calado, J. P. T., & Garcia, M. T. M. (2004), “The Financial Sustainability of the Portuguese Social Security System”, *The Geneva Papers on Risk and Insurance*, Vol. 29, No. 3, July: 417-439.
- [35] Thomas, A. & Tonks, I. (2001), “Equity Performance of Segregated Pension Funds in the UK”, *Journal of Asset Management* 1, No.4: 321-343.
- [36] Turner, J. A. & Hughes, G. (2008), “Large Declines in Defined Benefit Plans Are Not Inevitable: The Experience of Canada, Ireland, the United Kingdom, and the United States”, Discussion Paper PI-0821, The Pensions Institute, Cass Business School, City University.
- [37] Truman, E. M. (2008), “A blueprint for sovereign wealth fund best practices”, (Policy Brief #PB08-03). Washington, DC: Peterson Institute for International Economics.
- [38] Vittas, D., Impavido, G., & O’Connor, R. (2008), “Upgrading the Investment Policy Framework of Public Pension Funds”, Policy Research Working Paper 4499. The World Bank.
- [39] Yermo, J. (2007), “Reforming the Valuation and Funding of Pension Promises”, OECD Working Paper on Insurance and Private Pensions No. 13.
- [40] Yermo, J. (2008), “Governance and Investment of Public Pension Reserve Funds in Selected OECD Countries” OECD Working Paper on Insurance and Private Pensions No. 15.
- [41] Waine, B. (2009), “New Labour and Pensions Reform: Security in Retirement?”, *Social Policy & Administration*, 43: 754–771. doi: 10.1111/j.1467-9515.2009.00694.x
- [42] Webb, A. (2009), “The case for investing in bonds during retirement”, Issue in Brief 9-17, August. Chestnut Hill, MA: Center for Retirement Research at Boston College.
- [43] World Bank Policy Research Report (1994), *Averting the Old Age Crisis, Policies to Protect the Old and Promote Growth*, Oxford University Press.
- [44] World Bank (2001), *New Ideas about Old Age Security*, Holzmann, R. and Stiglitz, J. E. (Editors)