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Retirement pensions and sovereign debt in the euro area

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The debt problem in the euro area is being exacerbated by burdens on pay-as-you-go retirement pension systems caused by demographic change. According to information published by the European Commission, public expenditure on retirement pensions in the euro area could increase from 11% of GDP in 2008 to 13.8% by 2060.

In most countries, the critical phase with the heaviest demographic burden will occur between 2025 and 2040. However, there will even be problems in the current decade, primarily in Greece and Spain.

Various countries have recently set in train substantial pension reforms. These countries include Greece and Spain. The ratio of government pension expenditure in these two countries was previously expected to double by 2060 to around 24% and 15% of GDP respectively, but the expenditure could now be pegged back to a significantly lower level in both cases. This would, of course, require rigorous implementation of the agreed reforms.

In fact, the pensions ratio could be largely stabilized by raising the actual retirement age in the euro area by 1.5 years by 2030 and then by a further six months by 2050. Reforms with this objective in mind are already underway. Having said that, even retirement at the age of 65 is by no means the norm in many places.

France, Portugal, Spain, and above all Ireland have used capital from their national reserves to acquire government bonds or to finance public expenditure. This can only be justified if sensible cuts in government expenditure are not put on hold as a result.

The recent crises and increasing life expectancy have also impacted funded pension systems. Life insurance companies and pension funds that provide the funding for defined benefit plans are also facing challenges caused by low yields on bonds with high ratings. The decline in the respective yields has increased the values of the funds' liabilities. As a consequence, adjustment of the benefit commitments made by pension funds is now being widely discussed.

The "not-all-eggs-in-one-basket" principle remains valid for old-age provision at the macro level, too. It is wise for societies to have a multi-pillar pension system including a public pay-as-you-go pension scheme and funded schemes, namely occupational or company pension funds and individual pension plans. Although funded schemes are prone to shocks from the financial markets, they promise higher returns than pay-as-you-go systems over the longer term in ageing societies.

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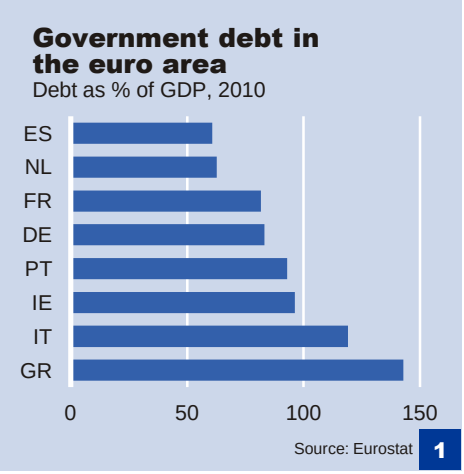


Introduction

It is well known that public finances in many countries within the euro area are in a parlous state. At end 2010, only four countries achieved the target for the national debt specified under the Maastricht Treaty, i.e. less than 60% of GDP. In the euro area as a whole, the actual ratio was 85%, significantly above the permitted value. The debt problem only partly results from fiscal intervention following the recent crises, although this situation varies from country to country. Even before the crises took hold, the quality and sustainability of fiscal policy in various countries left much to be desired. Back in 2007, eight member countries breached the 60% barrier for government debt. It is obvious that considerable consolidation efforts are necessary in countries where government debt is (too) high in order to bring the indebtedness down to a level that can be funded on a long-term basis and that is in line with EU stability targets.

This becomes even more important when you consider that, in many countries, rising costs in state pay-as-you-go social security systems (systems funded by current contributions) are inevitable owing to demographic change. Both national healthcare systems and schemes for the provision of old-age pensions are affected by substantial unfunded expenditure obligations. Healthcare in particular – where costs are driven not only by demographics, but also by increasing income and wealth and, above all, advances in medical technology – can expect to see sustained dynamic growth in expenditure. On the other hand, there is probably still significant room for efficiency savings in healthcare systems in many countries. Furthermore, we should not overlook the fact that a fair proportion of healthcare expenditure could be considered a capital investment that contributes to the well-being of the population and the productivity of the economy. This capital investment becomes increasingly significant precisely where the proportion of the population accounted for by the older end of the workforce will rise sharply over the longer term.

This study limits itself to retirement pension systems so that it can focus on the issues in this one particular area. For the foreseeable future, the proportion of public expenditure accounted for by retirement pensions will in many countries remain higher than that for public expenditure on healthcare. The longer-term funding problems for state retirement pensions are particularly dramatic in countries in which the population is ageing sharply and public institutions are the principal providers of retirement pensions. This currently applies to the majority of the countries in the euro area.

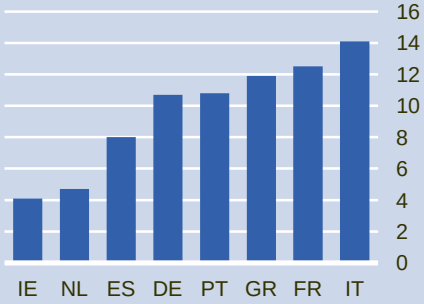
Difficulties in retirement pension systems caused by changing demographics have been looming for some time. In various countries, the politicians have already taken some action and initiated structural reforms aimed at safeguarding stability and ensuring that the systems can be funded over the longer term. In the EU, the relevant Community institutions have been supporting appropriate reforms since the start of the Lisbon Strategy back in 2000. In the course of this and subsequent strategies – the current one being Europe 2020 – the relevant initiatives have aimed to promote and coordinate national reforms. This ought to have helped countries ensure that reforms were well down the line by now. However, the goal has not yet been achieved in a large number of countries. The lack of sustainability in fiscal and retirement pension

policy represents a significant risk for the stability of the euro and the cohesion of the European Monetary Union.

Against this backdrop, euro area heads of state or government and other EU partners agreed a new Euro Plus Pact in March of this year. The parties to this new pact for the euro committed themselves to increased coordination of economic reforms. In accordance with the objectives of Europe 2020, the partner countries are now also attaching importance to further progress on reforms related to state systems for the provision of old-age pensions.

However, attention also needs to be paid to fiscal risks that could materialize from adverse trends in capital-based retirement pension systems. So far, funded retirement pension systems have shown themselves to be largely stable as a result of prudent investment strategies and/or the recovery in key equities markets in the past two years, which, of course, has partially been questioned by the recent slump. Nevertheless it would be wrong to sound a general all-clear. The recent turmoil in the financial markets has demonstrated that the sovereign debt crisis is an ongoing major issue for capital-based pension systems in the euro area. This is all the more true as the funds not only have to cope with high volatility in the equity markets, high spreads for sovereign bonds among the euro countries and increased costs for hedging strategies, but also with difficulties caused by persistently low yields on bonds with high credit ratings. The latter has an adverse impact on providers of funded pensions responsible for defined benefit plans, as the decline in the respective yields has boosted the funds' liabilities. Furthermore there are the challenges stemming from demographic change, particularly increasing life expectancy, which also raises pension funds' liabilities.

Government spending on pensions
% of GDP, 2008



Source: OECD 2

This study intends to highlight the financial risks concealed in the various retirement pension systems within the euro area. It will consider those countries that are economically strongest, as well as Greece, Ireland and Portugal. The first part of the study is devoted to state systems. In which countries is there an urgent need for action? What action is best suited to stabilizing these systems over the longer term? To what extent have the required additional reforms already been initiated? The basis of the data for the study has been provided primarily by analyses from the EU Commission, whose experts have repeatedly examined the financial outlook for state pension systems – most recently in detail in 2009.[1]

The second part of the study outlines the position in funded defined benefit plan systems in the selected countries, focusing on private schemes. Is there also a need for benefit adjustments or other restructuring measures in private defined benefit plans? As there are no data available on the performance of pension funds in the past few weeks, the analysis primarily deals with the situation prior to the latest turmoil in the financial markets. In addition, attention is also given to national reserve funds established in some countries. Various governments are now drawing on the resources of these funds earlier than planned. To date, these aspects have hardly featured in public debate on the issue.

[1] European Commission (2009). Pension schemes and pension projections in the EU-27 Member States – 2008-2060. Volume I – Report. Occasional Papers 56/Oct. 2009.

I. State pay-as-you-go systems: Position and outlook

Broad band of public spending on pensions

Figures from 2008 reveal extremely variable levels of government spending on pensions in the euro area countries. Measured as a percentage of GDP, figures range from approximately 4% in Ireland[2] to 14.1% in Italy. The average for the euro area is approximately 11% (see graph 2).

This range of figures reflects the different age structure of the populations in the individual countries and also, more than anything else, differences in institutional factors and in aspects related to the approach to pensions. This becomes clear when the spending ratio is broken down into the relevant components (see overview).

Components of the ratio of pension expenditure*

$$\frac{\text{Expenditure}}{\text{GDP}} = \underbrace{\frac{\text{Population 65+}}{\text{Population 15-64}}}_{\text{Old-age dependency ratio}} * \underbrace{\frac{\text{No. of retirees}}{\text{Population 65+}}}_{\text{Coverage ratio effect}} * \underbrace{\frac{\text{Population 15-64}}{\text{Working pop. 15-64}}}_{\text{Employment effect}} *$$

$$\underbrace{\frac{\text{Average pension}}{\frac{\text{GDP}}{\text{Working hours15-71}}}}_{\text{Pension level effect}} * \underbrace{\frac{\text{Working pop. 15-64}}{\text{Working hours 15-71}}}_{\text{Residual}}$$

The key factors impacting on the pension expenditure ratio – and that will also affect the future changes in the ratio in individual countries – therefore include:

- **Old-age dependency ratio.** This is the relevant measure for the age structure of the population in this case and represents the key demographic variable.
- **Coverage ratio in the systems.** This is determined by the scope of the systems, i.e. the proportion of the population that in principle has an entitlement to a state-funded pension, and by the pensionable age. The lower (higher) the average age at which people draw a pension, the greater (smaller) the group of pension recipients.
- **(Average) pension level.** This is defined as the ratio of the average pension paid per pension recipient in the state systems to the average pay of the working population. The average pension over the course of time depends on (the duration of) the (former) occupations relevant under pension law and on the rules applied to calculate the individual pension entitlements or pensions.
- **Employment rate** (or its inverse). This shows the proportion of persons of working age (in this case aged 15 to 64) who are actually in gainful employment and therefore helping to generate national output.

* Source: For further information, see European Commission (2009), p. 37 ff.

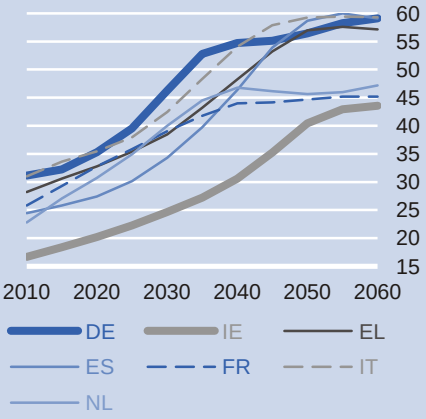
When the latest values for the relevant variables in the different countries are considered, this mostly reveals a broad band of figures, which explains the differences in the spending ratios.

On the basis of population age breakdown (i.e. the old-age dependency ratio), Germany and Italy are shown to be currently the oldest populations each with around 31 persons aged over 65 for every 100 persons aged 15 to 64, Ireland being the youngest with an equivalent figure of just under 17 per 100. As an average across the euro area, there is currently one retired person for approximately every 4 persons of working age (26 per 100). Greece and Portugal,

[2] The Irish finance ministry has assumed a ratio of 5% for 2010, based not only on a drop in GDP as a result of the crisis, but also on the additional spending required to support an early-retirement program for civil servants. Minister for Finance (2010). Financial Emergency Measures in the Public Interest Act 2009 (No. 5). Annual review and report to the House of the Oireachtas, p. 8.

Sharp rise in old-age dependency ratios

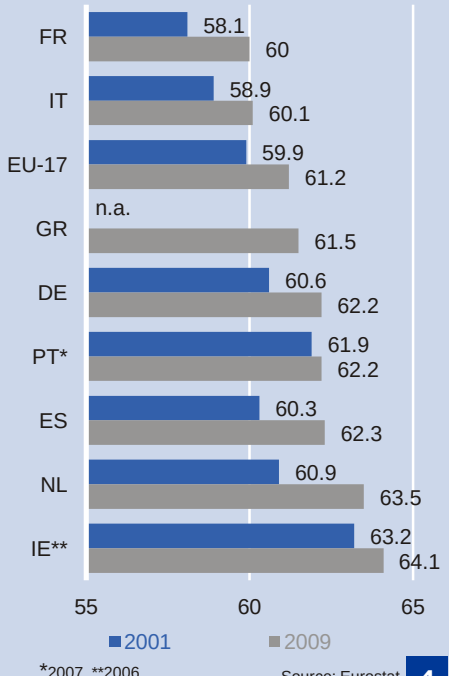
%



Source: European Commission 3

Earlier exit from the labour market

Average age of exit from the labour market (years)



*2007, **2006

Source: Eurostat 4

with figures of 28 and just under 27 respectively, are slightly above average, whereas Spain and France (with 25 and just under 26 respectively) are positioned a little below the average.

Differences in the coverage ratios for the individual pension systems (to the extent that they relate to the group of persons subject to [mandatory] pension insurance) primarily reflect sociopolitical traditions in the individual countries. However, the state systems largely cover a very high proportion of the population, or at least the working population. Logically, this applies to countries such as the Netherlands that have welfare systems in which all citizens are granted a right to benefits.

The countries covered by this study are dominated by state pension systems in which membership is mandatory for all persons working in the private sector, or at least for a huge proportion of such persons. However, there are a wide range of institutions acting as providers for the schemes themselves. Whereas countries such as Germany have one dominant provider (specifically, the statutory pension scheme) and no other providers (or just a relatively small number of providers for specific professional groups), other countries have a wide range of schemes specific to occupation. The latter applies particularly in Greece. Prior to a reform that came into force in March 2008, the national regulator counted 133 different pension schemes.[3] After the mergers carried out under the reforms, the number of schemes was reduced to 11 (and is to be further reduced to 3 (plus 3 more: for professional persons, for journalists and the fund of the Bank of Greece) by 2018 under the latest plans), although organizational merger is still lagging behind the legal formalities. In Germany and Italy, for example, the self-employed, or at least certain groups of self-employed persons, are generally exempted from mandatory membership of public social security systems.

In addition to payments to retirees previously employed in the private sector, government spending on pensions also includes pension payments to retired civil servants and public-sector workers. In Germany and France, for example, the latter pension payments currently account for around 17% of total government expenditures on pensions.[4] Some of these pension systems conceal a heavy burden caused by a huge public-sector workforce and generous pension benefits.

In order to facilitate future funding of state pay-as-you-go systems, some countries, such as France, Ireland and Portugal, have set up national reserve funds. In the Netherlands, they have gone so far as to ensure that the pension scheme for civil servants is largely capital-based. However, other than this model scheme, the contributions to the reserve funds are generally rather low. Furthermore, some countries are drawing on the resources in the reserve funds (earlier than planned) in order to relieve the burden on public finances (see part II).

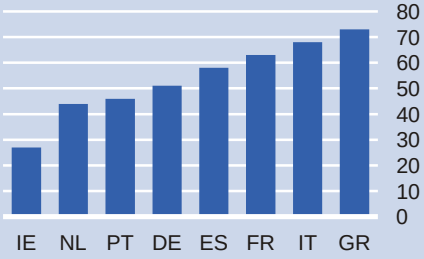
[3] The pension schemes are public bodies whose benefits are guaranteed by the state. The schemes were originally designed as capital-based – i.e. funded – systems. However, for many years they have been operating in practice as unfunded pay-as-you-go systems. European Commission (2009), p. 121. Some funds nevertheless still have appreciable capital reserves at their disposal (see p. 21 below).

[4] Ponds, Eduard et al. (2011). Funding in Public Sector Pension Plans: International Evidence. OECD Working Papers on Finance, Insurance and Private Pensions, No. 8, p. 13.

As a result of comments made by the German Chancellor, Angela Merkel, among others, some public debate has taken place recently regarding the retirement age in euro area countries. Chancellor Merkel's comments have given rise to a widely held impression that the retirement age, particularly in the heavily indebted countries on the periphery of the euro area, is relatively early. In fact, early exit from the labour market is a widespread phenomenon. Based on figures from 2009, citizens across the euro area as a whole withdraw from gainful employment at the early age of 61.2 years on average. Exit ages range from 60 and 60.1 years in France and Italy, respectively, to 63.5 and 64.1 years in the Netherlands and Ireland (2006), respectively. Exit ages in the southern euro area periphery countries are in line with the average (Greece 61.5 years) or even later than this average (Spain 62.3 years, Portugal (2007) 62.6 years).

Benefits under state pension systems

Average pension payment* as % of average income, 2007

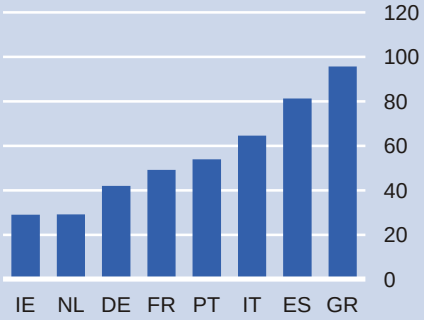


*Retirement pensions plus invalidity and surviving dependants pensions.

Source: European Commission 2010 **5**

However, exit from the labour market should not be equated with drawing a pension. Early retirement is only a burden on public finances if the early retiree has a right to state benefits, be these benefits an early pension without sufficient discount, or (age-specific) unemployment benefit. In the past, many countries granted such payments to persons taking early retirement in order to bring down the official unemployment figures. However, governments started to have a rethink in the mid-1990s. Since then, options and incentives for drawing early-retirement benefits have been significantly reduced in a number of countries, including Germany. The widely taken approach nowadays is that if a person wishes to draw a pension before the statutory retirement age (normally 65 years), this is only possible if the person concerned accepts a discount on the pension, such discount generally being substantial.[5] As a consequence, in the period from 2001 to 2009 alone, the euro area average age of exit from the labour market rose by 1.3 years.

Levels of state pensions*



*Full (gross) pension for an average earner after a long working life as per legal position in 2008 as % of average gross earnings.

Source: OECD 2011 **6**

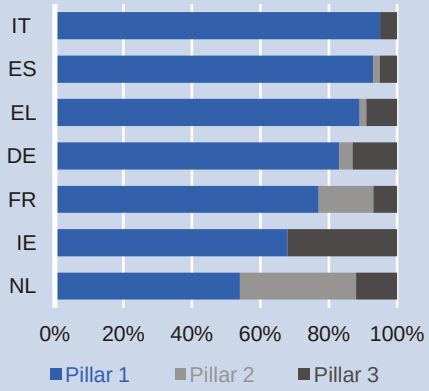
The average pension per pension recipient – which divided by the average income of the working population produces the average pension level – is what might be described as the 'pricing compo-nent' of pension spending or the spending ratio. As in the case of the old-age dependency ratio (the demographic component), there are also considerable differences in the average level of pensions between countries. In Ireland, the average pension granted under the state pension schemes is just 27% of the average pay in the country. In contrast, the equivalent ratio in Greece in 2008 was 73%, more than two-and-a-half times the level in Ireland.[6]

The level of state pensions and their range reflect the role of national pay-as-you-go systems within the structure of old-age pensions. In countries in which state systems grant relatively generous benefits to the bulk of the retired population, the second and third pillars of retirement pension provision, i.e. occupational and individual pensions, are of minor significance. For example, in Italy, Greece and Spain, some 90% or more of retirement income

[5] OECD (2011). Pensions at a Glance 2011, p. 19 ff.

[6] These global figures mask significant differences between the level of benefits paid by the individual schemes. For example, the average pension level for public-sector workers is well over 100%, whereas many agricultural employees receive a pension that is barely more than one tenth of their previous wage. European Commission (2009). p. 122. The large spread between the replacement rates for individual occupational groups reflects different formula and parameters used to calculate the pensions. The pension funds for private sector employees had some 800 distinct pension scales that varied, for example, according to the pensioner's trade and the date of the start of his or her career. OECD (2011). Economic Survey Greece. August 2011.

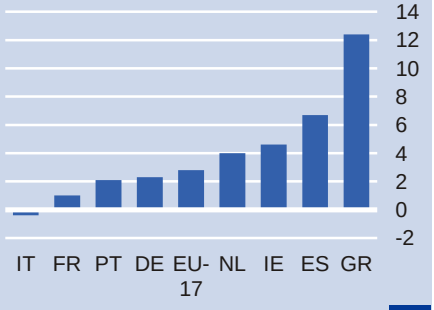
Retirement income by source*



*Excluding earned income. As at 200.
No distinction between pillars 1 and 2 possible for Ireland here.

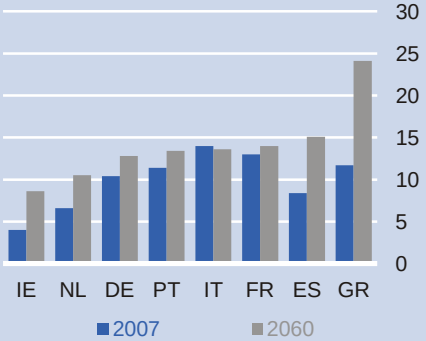
Sources: OECD, own estimates 7

Government pension spending 2007-2060
Change as percentage points of GDP



Source: European Commission 2009 8

Continued broad band of pension spending
Government pension spending as % of GDP, 2007 and 2060



Source: European Commission 2009 9

(excluding earned income) is derived from public sources. On the other hand, in other countries, primarily Ireland and the Netherlands, private pension providers play the key role. Both of these countries already have a balance of different systems.

Significant longer-term growth in pension spending, …

Countries that operate highly generous state pension schemes and that are entering the forthcoming phase of an acceleration in population ageing are facing a leap in pension expenditure – a leap that in some cases will be massive. This is highlighted by projections published by the European Commission in 2009.[7]

These forecasts suggest that government spending on pensions in the euro area in the next 50 years (2007-2060), measured as a percentage of GDP, could rise by a total of 2.8 percentage points. If the crises of the last few years adversely impact growth potential in the EU over the entire current decade or even over the long term, this forecast would have to be increased by a further 0.9 percentage points and 1.4 percentage points respectively for the 27 member states of the EU.[8]

The European Commission calculated (in the conditions prevailing in 2008) that, of the countries considered in this study, the greatest increases would apply to Greece, where pension spending would increase by 12.4 percentage points, and to Spain, which would see spending rise by 6.7 percentage points. The increases in Germany (2.3 pp), Portugal (2.1 pp) and, above all, France (1 pp) would be modest. In Italy, the pension spending ratio would even be slightly down by 0.4 pp.

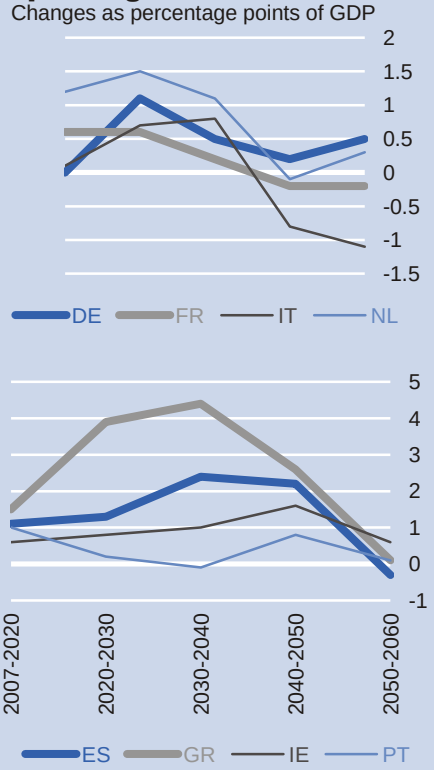
At the end of the forecast period, government pension spending (as a percentage of GDP) would therefore be approximately 24% in Greece and around 15% in Spain, the latter owing to the relatively low starting level. In contrast, the majority of the countries, including Germany, France, Italy and Portugal, would achieve pension spending ratios of around 13% to 14% in 2060. The ratio in the Netherlands and Ireland would be significantly lower.[9] The main reason for this in both countries is the substantial proportion of pension activity already accounted for by private providers offering funded pensions.

… critical in many places, primarily in the next two decades

Nevertheless, the trend in pension spending up to 2060 is not consistently upward. Pension spending ratios over the five decades under consideration primarily increase significantly between 2020 and 2030, and between 2030 and 2040. In the decade up to the middle of the century, the spending ratio in the euro area then only rises by a relatively modest 0.4 percentage points. The average ratio for the euro area reaches a high in this decade and then falls slightly between 2050 and 2060.[10]

7 For further information see: European Commission (2009), p. 24 ff.
8 European Commission (2010). Progress and key challenges in the delivery of adequate and sustainable pensions in Europe. Occasional Papers 71, p. 53.
9 However, according to more up-to-date forecasts from the Irish finance ministry, the ratio in Ireland could rise to 13% by 2050, primarily as a consequence of the current crisis. Minister for Finance (2010). Loc. cit. p.8.
10 In most emerging markets (with the exception, for example, of Ukraine, Russia, Turkey), government spending on pensions (measured as a percentage of GDP) will only increase slightly in the next two decades in contrast to the current forecasts of substantial growth in spending in the euro area. See International Monetary Fund (2010). From Stimulus to Consolidation: Revenue and Expenditure

Government pension spending
Changes as percentage points of GDP



Source: European Commission 2009 **10**

According to the EU forecasts, some countries, including Greece, Portugal and Spain, will be faced with an increase in the ratio of 1 percentage point or more even in the current decade. This underlines the importance of swift reforms to pension systems, particularly in the above countries, although the need for reform in Portugal is rather more limited overall in view of the forecast trend for the subsequent decades.

Population ageing key reason behind growth in expenditures

According to the components breakdown carried out by the European Commission experts, population ageing is not only the most significant, but in fact the sole driver responsible for the rise in the pension spending ratio in almost all countries. In the EU, the old-age dependency ratio (population aged over 65 divided by population aged 15 to 64) will have already doubled by the middle of the century. At that point, there will then be only two persons of working age for every person over 65. If the effect of the other components were to remain constant, the rise in the old-age dependency ratio would cause the pensions spending ratio to more than double in Greece, Spain and also Ireland, although the absolute increase in the spending ratio in Ireland would be relatively low. Demographic change will also force the spending ratio in Italy and Portugal to spiral upwards with a leap of around 10 percentage points or more (see table 11).

The old-age dependency ratio is already rising everywhere, in some cases resulting in a substantial burden even in the current decade. The strongest impact will be seen, however, when the population born in the baby-boom years of the late 1950s, 1960s and early 1970s reaches the retirement age of 65 in the third and fourth decades of this century. The extent to which this demographic change actually impacts on pension spending in practice depends, however, on the trends in the other components.

Breakdown of components in the growth of government pension spending 2007-2060
As % of GDP

	2007 level	Old-age dependency ratio effect	Coverage ratio effect	Employment effect	Pension level effect	Residual	2060 level
IE	4.0	5.9	-1.5	-0.2	0.7	-0.3	8.6
NL	6.6	6.6	-1.5	-0.2	-0.6	-0.4	10.5
EU-15	10.2	7.7	-1.8	-0.6	-2.3	-0.6	12.6
DE	10.4	7.9	-1.9	-0.8	-2.2	-0.8	12.8
PT	11.4	9.8	-1.7	-0.6	-4.5	-0.9	13.4
IT	14.0	10.4	-3.2	-1.1	-5.5	-1.0	13.6
FR	13.0	8.4	-2.2	-0.5	-4.0	-0.7	14.0
ES	8.4	10.7	-0.9	-0.9	-1.7	-0.5	15.1
GR	11.7	12.7	-0.4	-0.6	0.8	-0.1	24.1

Source: European Commission 2009 **11**

Some relief from initial successful reforms

According to the forecasts published by the EU, the effect of the other components is predominantly to reduce the spending ratio (see table 11). This applies in particular to the coverage ratio and

Policies in Advanced and Emerging Economies. IMF Policy Paper. April 2010. P. 20 ff.

the average pension level. Over the forecast period, the coverage ratio falls in all the countries considered in this study; in other words, the number of over 65s increases more rapidly than the number of pension recipients. This demonstrates that the experts expect to see an increase in the actual pensionable age as a consequence of relevant reforms. The forecast drop in the average pension level for many countries (with the exception of Greece and Ireland, for example) also reflects corresponding reforms. In fact, the projections only take into account legal changes approved by mid-2008.

There has been further progress with reforms since then (see below). These efforts are necessary. As demonstrated by the analyses referred to above, further reforms are still required in various countries if the countries concerned are to achieve sustainable funding for their state pension systems.

Double dividend from raising the retirement age

The sustainability of pay-as-you-go social security systems can be re-established by increasing contributions, by reducing the growth in expenditures, or by a combination of these two approaches. However, the flexibility to generate higher government revenue, that is to say higher taxes and/or social security contributions, is severely limited in many places. First, the overall tax and social security rate, for example in France and Italy, is already at a high level at around 43% of GDP in each case. Secondly, there are fundamental problems in raising taxes and/or social security contributions that affect earned income and/or investment income. Intervention of this kind tends to have a negative impact on job creation (and the availability of capital) and therefore weakens growth potential. Furthermore, any such action by a government reduces disposable household income with a knock-on effect on consumer demand.

Any approach to making state retirement pension systems more sustainable should therefore focus on the expenditure side.[11] This is also supported by a current review being conducted by the IMF.[12] According to this study, more sustainability in pension systems is best achieved by increasing the retirement age because this also allows economic growth to be increased over the long term. Compared with this approach, direct cuts in the pensions paid under the systems only have minimal positive impact on growth. In contrast, increases in tax on employment income and in social security contributions can only help to stabilize state pension schemes at the expense of growth.

According to the IMF analysis, the actual retirement age in the euro area would have to be increased by 1.5 years by 2030, and by a further six months between 2030 and 2050, in order to stabilize the ratio of government pension spending at the level of 2014.[13] If such action were to be taken, the euro area countries would be able to directly counter the effects of demographic change. First, the countries would be able to reduce the number of pension recipients; secondly, they would be able to increase the number of people in gainful employment provided that the relevant age group continued to work for a correspondingly longer period in practice. The increase

[11] Of course, the strengthening of the contribution base, i.e. the promotion of employment, can and must also be an important factor in helping to establish sustainable funding for state social security systems in the euro area (see below).
[12] Karam, Phillippe et al (2010). Macroeconomic Effects of Public Pension Reforms. IMF Working Paper 10/297.
[13] Karam, Phillippe et al (2010). Loc. cit. p. 11.

On the path to a higher retirement age (developments 2000 – 2008)

- **Germany:** gradual increase from 65 to 67 years between 2012 and 2029; remains at 65 years if working life is 45 years or longer.
- **France:** for those with a long working life, gradual increase in the retirement age from 60 to 62 years, to come into effect by 2018 (general retirement age in the private sector, 65).
- **Greece:** for those with a long working life, increase in the retirement age from 58 to 60 years (otherwise men 65, women 62).

Latest steps toward a higher retirement age

- **France:** from 2012 to 2018 increase in the minimum retirement age to 62 from 60; general retirement age for workers, who have not made full contributions will rise to 67 by 2023 from 65 in 2018.
- **Greece:** alignment of general retirement age for women at 65 by 2015; for persons with a long working life, increase from 60 to 65 – even for public-sector workers – by 2018. Introduction of a mechanism to adjust the retirement age in line with the development of the life expectancy at 65 – by 2021.
- **Italy:** from 2010, in public sector (only), alignment of retirement age for women at 65 years; according to the latest austerity plan the respective increase in the private sector will start from 2015 (previously 2020); introduction of a vesting period for the start of the first pension payment of up to one year; from 2015, realignment of the general retirement age in accordance with changes in life expectancy; according to details from the public pensions institution (INPS), the retirement age could increase by over three years by 2050 as a result.
- **Portugal:** from 2015, increase in the retirement age for civil servants from 62 ½ years to 65.
- **Netherlands:** government, employers and labour have agreed on an increase from 65 to 66 years in 2020 with an adjustment every five years thereafter in accordance with trends in life expectancy.
- **Spain:** general increase from 65 to 67 in stages between 2013 and 2027 (but unchanged at 65 years for persons who have had a working life at that point of more than 38.5 years (previously 35 years).
- **Ireland:** increase to 68 years in three stages (from 2014 to 66, from 2021 to 67, and the final stage from 2028).

in the amount of work carried out and the fact that the relevant population group would spend a higher proportion of its income during the (overall longer) period of employment would generate a positive impact on growth. The IMF study shows that GDP in the euro area in 2050 could then be almost 6% higher than in the baseline scenario without reforms.

The alternative option of reduced pension payments adversely impacts economic growth because it decreases consumer spending. On the other hand, there are positive effects because interest payments are lower and associated investment activities become brisker. The overall final outcome is that GDP at the end of the period covered by the forecast is 0.4% higher than in the baseline scenario. If stabilization is achieved on the back of tax increases, the assumed negative impact on employment and the restriction of consumer spending lead to a loss of GDP of well over 1% in the long term.[14]

Retirement age of 65 still some way off

It is positive that the reform process in the euro area is largely focusing on achieving a higher retirement age and this will have the effect of promoting growth (see the first overview left). As the relevant reforms will only take effect gradually and will only achieve full impact when the population born in the baby-boom years reaches retirement age, longer-term effects that relieve the burden of pension spending can be expected. In the forecasts published by the European Commission, the longer-term effects are reflected in the fall in the coverage ratio. In the just three years that have passed since mid-2008, further countries have moved toward the possibility of establishing a higher retirement age, as shown in the second overview (left). The action pursued by the different countries as shown in the overview has not been included in the forecasts referred to above.

According to OECD forecasts, by 2050, the statutory retirement age conferring an entitlement to draw a full pension will, in the twelve euro area countries with the largest economies, increase by approximately one year to 64 years as a result of the reforms in the last few years.[15]

An average retirement age of 65 is therefore still some way off. Further staged increases in the retirement age are not only sensible from an economic perspective, they can also be justified on the basis of the continued increase in life expectancy. In a recent report, the German Council of Economic Experts has argued the case for linking the retirement age to further changes in life expectancy, to take effect from 2030; such a change could be expected to increase the retirement age by a further two years to 69 by 2060.[16] The faster and more rigorously the countries particularly affected by the

[14] In both cases, a negative impact on consumer spending presupposes that at least some households will not respond in neutral fashion to the changes by the government, i.e. if there are cuts in benefits or tax increases they will not take into account the fact that the changes will be followed by lower taxes or contributions in the future. Such behavior contrary to the theory of rational expectations can be explained by a shortsighted approach or – theoretically more compelling – limits on the cash available in the households concerned.

[15] OECD (2011). Pensions at a Glance 2011, p. 25. The OECD does not include in these forecasts the increase in the retirement age to 67 agreed in Germany and Spain because employees with many years of service will continue to receive a full pension at 65. However, if these reforms are included, the increase will be to well over 64.3 years.

[16] Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung (2001). Herausforderungen des demografischen Wandels, p. 157 ff.

demographic change take action in this regard, the faster and more effectively they will be able to limit the imminent rise in spending.

If a higher retirement age is to yield a double dividend in practice as a result of an increase in gainful employment, it will be necessary to launch complementary initiatives to bring flexibility to the labour market and to improve the employability of older persons. The former would include, for example, the waiver of seniority arrangements in respect of remuneration and the removal of provisions that provide protection against the termination of employment contracts, provisions that act as a restraint on employment. The second point would include, for example, the professional development of older persons and the issue of corporate health.

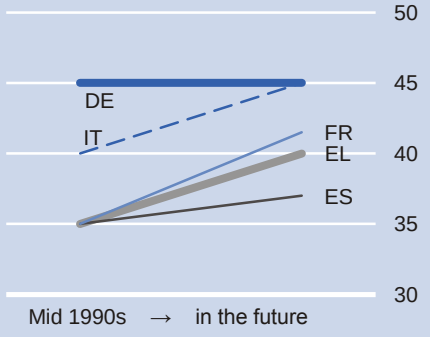
Reduction in pension level

In addition to measures that work towards a later retirement age, the list of reforms in the euro area also includes cuts in benefits. There are a number of starting points in this regard:

1. Valorisation, which means the mechanism linking the individual pension entitlement to the length of gainful employment and the amount of employment income for the person concerned. In this regard, there is a clear trend toward strengthening the principle of equivalence.[17] The amount of the pension is increasingly based on the total length of gainful employment and the average income achieved during this period or in the individual years. The following measures are examples of this trend:
   - **France**: From 2012 to 2020, increase in the contribution period for a full pension from 40.5 to 41.5 years in line with life expectancy gains. In 1993, it was only 35 years.
   - **Portugal** (2002 reform): The calculation of pensions is based on average income over a person's entire working life, rather than the previous arrangement in which the calculation was based on the best 10 of the previous 15 years of employment. The adjustment will be completed in 2016. Transitional arrangements apply until then.
   - **Spain**: The pension amount is based on the wages earned over the previous 25 years of the contribution period (instead of the previous 15 years).
   - **Greece**: In the future, pensions will be based on the average wage of a person's entire lifetime instead of wages for the previous five working years. In addition, the contribution period necessary for a full pension will be raised from 37 years to 40 years. Furthermore, reduction of the statutory accrual rate for pension entitlements in the contribution-based scheme to 0.8% - 1.5% a year, depending on the years of service, from 2% - 3% a year.
2. Pension indexing, i.e. the adjustment of pensions over the course of time.
   - It is common to move away from an exclusive link between pensions and wages and to switch instead to a link between pensions and changes in consumer prices (for example, France and Italy in the 1990s, Portugal since 2008 (mixed index comprising the inflation rate and GDP growth), and most recently Greece (a mixed index from 2014 comprising

More contribution years necessary

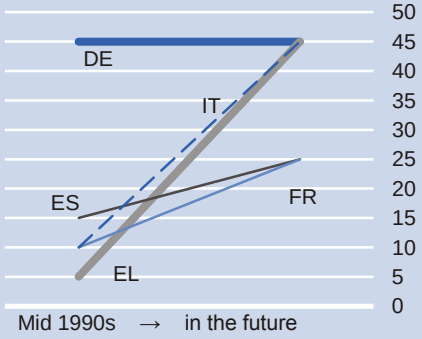
Number of working years (subject to contributions) necessary for full pension



Sources: European Commission, OECD 12

[17] In the calculation of pensions, more fairness in terms of benefits can not only help to decrease state expenditures and indebtedness, but also strengthen the incentive to earn benefits in the official economy.

Reference pay for pension calculation
Number of 'best' income years that count for individual pensions



Sources: European Commission, OECD 13

inflation rate and GDP growth; in the past, many Greek pension schemes linked pensions to public sector wages)).

— Taxation on pensions. The state's net expenditure can also be reduced in this way.

3. Introduction of demographic adjustment factors.

— In Italy (for persons who first joined the workforce in 1996 or thereafter) and in Portugal (since 2008) the pension amount has been directly linked to life expectancy: if life expectancy increases, the pension level falls.

— In Germany, pension increases generated by wage increases are lower if there is an increase in the proportion of persons receiving pensions.

Countries that structure their systems entirely on the basis of the principle of equivalence and also take into account demographic adjustment factors can ensure that their pay-as-you-go pension systems are entirely protected against demographic change. Other than Italy (and Germany in some aspects), Estonia and Latvia are countries in the euro area that have established such systems.

There are however limits to cuts in pensions. State systems should – ideally in conjunction with private pension schemes – provide citizens that have an average income and an average length of working life with an old-age income that is sufficiently above the poverty line. In this context, there is to a certain extent a downside to the increased alignment of pensions with income and working life. It is unavoidable that persons with low income or an erratic record of employment will be exposed to an increased risk of poverty in old age. This risk needs to be countered with suitable measures in the jobs market and in education and training policy so that employment prospects for such persons are improved.

Latest reforms in many places substantial

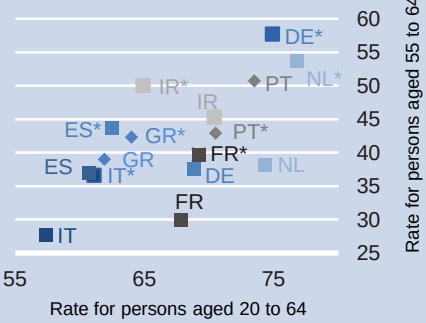
Generally speaking, it can be stated that the reform of state pension systems is still underway. Back in 2008, a few countries, such as Germany, Portugal and Italy, launched far-reaching stabilization measures. Since then, further countries have undertaken substantial reforms that have not yet been taken into account in the calculations carried out by the European Commission referred to above.

First and foremost among such countries is Greece. If Greece implements its agreed reforms rigorously, the increase in government pension spending over the longer term will be only slightly greater than the increase in GDP. According to Greek government advisers, pension spending could then amount to 15.5% of GDP in 2060 – rather than the current forecast of around 24%. Admittedly, this does require a recovery in the Greek economy in the foreseeable future. It also depends on Greece's ability to resolutely continue the reorganization of pension schemes that has already been initiated in order to reduce administrative costs. In addition, it is crucial that the large spread between pension levels for individual occupational groups will be reduced as planned.

Prospects have also brightened for Spain, a latecomer to reforms in 2008 when it was still facing forecasts of a huge increase in pension spending. The Spanish government is predicting that the pension spending ratio will turn out to be two percentage points lower than current forecasts owing to the higher retirement age over the longer term. Furthermore, as a result of the implementation of other measures aimed at achieving a further extension of (average)

Widespread uptrend in employment

Employment rates 2000 and 2010(*), as %



Source: Eurostat

14

working life, the government intends to reduce the ratio by a further 0.2 percentage points for each extra year added.

In Ireland, there are rather limited options for immediate cuts in state pensions of retired private sector employees, which are relatively low in any case.[18] In 2010, the Irish government therefore rightly initiated a significant increase in retirement age. Ireland has set an example with an increase in the retirement age to 66 in 2014 and even to 67 and 68 from 2021 and 2028 onward.

If the funding of pay-as-you-go systems is to remain sustainable, the effective working life of citizens must be significantly extended, primarily by means of a higher (actual) retirement age. As part of this process, employment and economic growth in the euro area must be strengthened by further structural reforms, for example in the labour market. Although the employment of older persons (persons aged 55 to 64) has already increased over the past decade in many countries, the average for the euro area is just under 46% and there is therefore still a great deal of room for further improvement. Of course, the critical factor for the peripheral euro countries is how quickly they can return to a path of growth.

II. Funded systems: Difficult position in GIP countries

Challenges for defined benefit plans

Many funded pension systems are also facing significant challenges as a result of the recent series of crises, i.e. the financial markets crisis, the sovereign debt crisis including the latest turmoil in financial markets, and as a result of demographic change. There is a need for action, particularly in bodies responsible for defined benefit plans. These plans cover individual or all elementary risks in retirement pension provision, specifically a (longer-term) drop in relevant returns, sustained upward trends in prices or an unforeseen increase in life expectancy on the part of the beneficiaries.[19] The returns risk affects all plans that guarantee a specific level of interest on the accumulated pension capital during the contribution phase and/or during the period of retirement. Correspondingly, inflation risk is relevant in the case of plans with inflation-protected benefits. A long life on the part of the beneficiary can become a problem if a lifelong annuity (regardless of the available capital) has been promised. More comprehensive defined benefit plans that largely cover all these risks are (still) widespread in the euro area, primarily as part of occupational pension schemes.

In many countries funded occupational defined benefit plans are typically managed by pension funds. However, conventional pension insurance, as offered by insurance companies, also provides security against the risks specified above. (See box p. 15 for the key differences between pension funds and insurance companies.)

[18] Pensions (in excess of EUR 12.000 per year) of retired public servants are liable to an income-graduated reduction according to a new law from 1 January 2011.

[19] In contrast, defined contribution plans do not provide any protection against the risks specified above. The retirement benefits payable under defined contribution plans are based solely on the value of the contributions paid in during the period in which the beneficiary is employed and on the interest earned in the markets by these contributions.

Pension funds and (life) insurance companies

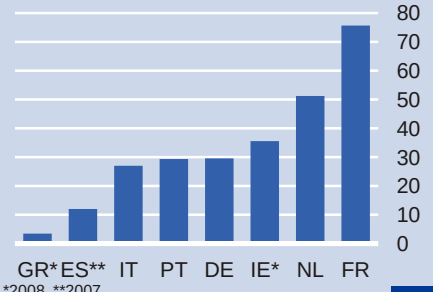
Both types of institution offer defined benefit plans. However, there are important differences in the products that they (typically) offer, the allocation of business risk among stakeholders, and the regulatory environment. Features of typical pension insurance agreements are that the premiums and the benefits are cast in stone in advance, although the policyholders may benefit from particular investment returns in the form of improved benefits and/or lower premiums; policyholders do not however bear any losses. On the other hand, in the case of pension funds, premiums and/or benefits may also be adjusted in the event of a cover shortfall. In pension funds, elementary risks (and opportunities) are therefore borne by the recipient and/or the payer of the contributions, i.e. the active plan members and generally employers (as plan sponsors). In contrast, it is ultimately the business owners who are liable in insurance companies, i.e. the shareholders in the case of stock corporations.

Compared with pension funds, insurance companies tend to be subject to stricter solvency and coverage requirements as well as more restrictive investment regulations in some places. For example, under international standards, there are no quantitative investment rules applicable to pension funds. Instead, the prudent person rule is widely applied. Under this rule, the relevant legislative authority does not for the most part impose any specific quantitative standards in respect of investments in individual asset classes. However, the rule requires that the responsible trustees and asset managers comply with certain guiding principles, such as risk diversification, and implement a forward-looking investment policy that takes into account a number of factors, including the age structure of the plan beneficiaries. In practice, this also leads to certain investment restrictions in the same way as the solvency and coverage requirements. Despite this, pension funds have traditionally taken a more returns-oriented approach and have therefore invested higher shares of their assets in equities.

Experts maintain this is explained by the pressure on pension funds to generate appropriate real returns by investing in tangible assets (equities, real estate).* Even today, plans managed by pension funds still frequently provide for relatively generous benefits such as a 'return' on the contributions in line with the increase in pay and/or the adjustment of pensions based on the same criteria or at least in line with increases in consumer prices. Pension funds therefore tend to be subject to a higher risk of divergence in the maturity structure of their receivables and liabilities than institutions that base their investment strategies more on bonds with aligned maturities.

*Davis, Philip E. (2002). Prudent person rules or quantitative restrictions? The regulation of long-term institutional investors' portfolios. Journal of Pension Economics and Finance I, p.157 ff.

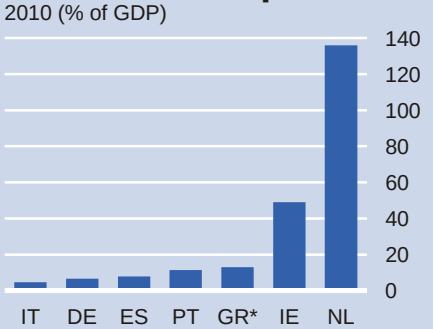
Life insurance company assets
As at end 2009 (% of GDP)



*2008, **2007

Source: CEA 15

Pension fund assets, international comparison
2010 (% of GDP)



*2009

Sources: National authorities, OECD 16

In the euro area, life insurance companies dominate the market for defined benefit plans. According to estimates from the European Central Bank (ECB), total pension assets managed by insurance companies equate to around 58% of euro area GDP, approximately four times the volume managed by independent pension funds (14.3%).[20] In the countries covered here, insurance companies in France, the Netherlands, Ireland, and Germany are well established in this area of business. In contrast, pension funds do not play any significant role (yet) in France, Italy, Portugal or Spain. Admittedly, capital-based pension provision is still generally a fringe activity in southern European countries. In contrast, considerable pension assets are held by pension funds in Ireland, and especially in the Netherlands (equivalent to 49% and 136% of GDP respectively).

Providers of funded defined benefit plans are subject to regulatory requirements to protect the interests of the pension scheme members. This regulation normally includes the fundamental requirement that plans be funded in full.[21] This means that providers must at all times be in a position to meet their benefit obligations, which results in tight budget restrictions. In simple terms, at any point during the life of the plan, the available capital stock to date together with the present value of contributions still due in the future must equate to the present value of the benefits to be paid out under the plan, such benefits being estimated on the basis of actuarial calculations.

The financial balance in defined benefit plans does not therefore depend solely on the interest earned or the return on pension fund

[20] ECB (2011). Insurance corporations and pension funds in the Euro area. In Financial Integration in Europe. May 2011, p. 43 ff. In this document, the ECB points out that insurance companies also act as important managers of pension fund assets; for their part, pension funds are significant shareholders in insurance companies [and banks].

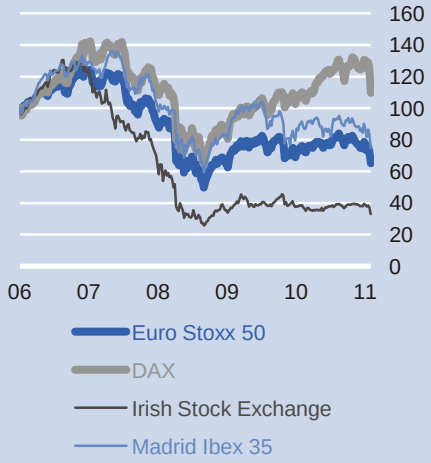
[21] Exceptions are, for example, direct pension entitlements to occupational pensions in Germany, funded within an organization via provisions and/or externally via trust arrangements.

assets. A key factor is also the discount rate used to calculate the present value of future cash flows. This discount rate is generally determined in accordance with specifications laid down by the regulatory authority and there is what amounts to a close link between these specifications and trends in relevant market returns. In the euro area, a widely used point of reference is the euro swap curve (i.e. yields on the best investment-grade bonds).

Given the need for full funding and the need to comply with regulatory specifications for the discount rate, changes in market prices or yields have a more or less direct impact on defined benefit plans. Unfavourable market trends – in other words a fall in market prices for fund assets, a drop in yields relevant to the discount rate, or a combination of both these trends – could result in a shortfall within a pension plan. Over the last few years, providers of defined benefit plans in the euro area (and worldwide) have been faced with all three problems as a result of the turmoil in financial markets. When viewed over time, an environment in which (bond) yields are low represents a particular challenge. Low yields do not only result in high present values of liabilities, they can also cause problems for pension providers with an immediate need for increased investment. In addition to all this, the sustained rise in life expectancy is presenting a challenge for all providers that guarantee lifelong benefits of an insurance nature.

Stock market prices in Europe

Index base: July 7, 2006 = 100



Source: WEFA 17

The problems have of course not materialized to the same extent in all countries and for all pension providers. First, there have been quite different trends in the individual segments of financial markets within the euro area over the last three years. For example, significant variances have become apparent in the recovery of national equities markets in terms of the timing and intensity of the recovery (e.g. despite the recent slump, the DAX 30 (which admittedly is a total return index) has roughly increased by 70% since the low in the spring of 2009 and is currently (Mid August) at around 6,000, which is about 25% below the high of July 2007; in contrast, the Irish market (ISEQ Overall) continues at a level that is barely one quarter of the high prior to the crisis). Secondly, individual providers or groups of providers have varying degrees of exposure to these market risks. This is the result of the basic differences in investment behaviour between pension funds and insurance companies.

Insurance companies generally take a more conservative approach to their investments (see box, p. 15). According to an ECB analysis, bonds represent the largest component of insurance company assets by some way, accounting for 41% of such assets.[22] In the case of pension funds on the other hand, the largest item comprises investment fund units or equities, accounting for 39% of assets.[23]

The following text outlines the position of pension funds and insurance companies in the euro area prior to the latest turmoil on the financial markets. Given the country-specific relevance of these institutions and the topic under discussion, the analysis can be limited to the major countries and the Netherlands plus the periphery countries in the euro area.

[22] ECB (2011). P. 41.
[23] This relates primarily to investments by Dutch pension funds. These pension funds have traditionally invested heavily in equities and equity funds.

Defined benefit plans in Germany, stable position

In Germany, the (complex) market for funded defined benefit plans has traditionally been dominated by insurance companies. In 2010, life insurance companies' total assets amounted to EUR 752 bn, and those of comparable occupational pension schemes, i.e. *Pensionskassen*, EUR 110 bn. Together this equates to 34.5% of GDP. This figure does not include the assets from unit-linked life insurance products (EUR 56 bn). In the past ten years or so, pension funds (under German law) and, in particular, trust arrangements (CTAs, contractual trust arrangements) have come into the market.[24] Assets of DAX 100 companies managed by pension trusts were estimated at EUR 165 bn (6.6% of GDP) as at end-2010.

In the last few years, insurance companies in Germany have remained sound as a result of conservative investment policies and stringent regulatory requirements.[25] Recently, the sovereign debt crises in the periphery countries have not presented them with problems. According to a survey conducted by BaFin in October 2010, total percentage investment in the individual GIIPS countries by all insurance companies was in single digits. Recent press reports have stated that German insurance companies have significantly scaled back their investments in the last few months, principally those in Greek government bonds. Of course, contagion effects from the peripheral countries and widening spreads among the core countries in the euro would be a serious challenge. There are further risks. BaFin refers to the negative impact caused by low interest rates and the huge exposure of insurance companies to banks.[26]

In its latest annual report BaFin also states that the short-term risk bearing capacity of the pension funds continues to be adequate. Nevertheless, the German regulator does draw attention to the issue of long life expectancies, which could lead to a situation in which "the pension funds have to adjust the basis of their calculations and strengthen their benefit reserves..."[27]

As far as company pension schemes (primarily direct pension commitments and pension funds) are concerned, the funding position improved slightly in 2010 according to information published by consultants Towers Watson.[28] This information states that pension plan assets in DAX 100 companies grew by 14% in 2010. This resulted from substantial additional contributions and a positive return on investment of 8.6% in CTAs, which are considerably more committed to investments in equities than is the case in pension funds or insurance companies. On the other hand, pension obligations increased by 13% to approximately EUR 250 bn. According to the consultants' information, the main factor was a fall in the median discount rate from 5.3% in 2009 to 4.9% in 2010. Overall, the level of funding in the plans rose slightly from 65 to 66%.

France: Insurance companies dominate

Life and pension insurance companies predominate in the market for pension products in France. In contrast, private pension funds

[24] For many companies, CTAs are now the vehicle of choice for external funding of direct pension commitments that were previously funded internally, primarily by means of provisions.
[25] BaFin (2011). 10. Jahresbericht der Bundesanstalt für Finanzdienstleistungsaufsicht, p. 92.
[26] BaFin (2011), p. 114.
[27] BaFin (2011), p. 120.
[28] Watson Towers (ed.) (2011). Benefits. Das bAV-Fachmagazin von Towers Watson Deutschland, 01/April 2011 edition, p. 19 f.

have no appreciable significance. According to the French Federation of Insurance Companies, actuarial reserves in life insurance companies (provisions mathématiques vie), which reflect liabilities, amounted to EUR 1.308 bn or 68% of GDP in 2010 (including EUR 210 bn in unit-linked contracts, assurance vie en unités de compte (UC)). Measured on the basis of contribution volume, France – with a volume of EUR 144 bn in 2010 (including EUR 19 bn in UC) – is again the largest life insurance market in the euro area, ahead of Germany and Italy.

Bonds account for 70% (37% corporate bonds and 33% government bonds from OECD countries) of the total assets in the French insurance industry, life insurance companies holding 80% of these assets. Investment in corporate bonds has been stepped up considerably as a result of low yields on sovereign bonds and the debt crisis in the periphery countries of the euro area.[29] Life insurers are also in the process of reducing the ratio of equities in their portfolios, which prior to the crisis was 10–15%. The companies are thereby preparing themselves for new regulatory requirements (Solvency II). Life insurance companies are also attempting to generate a further increase in the sale of unit-linked products in order to mitigate their risk.[30]

Major changes are faced in particular by the public reserve fund.[31] The fund has assets of EUR 37 bn, equivalent to just under 2% of GDP. Following a decision by the French parliament in December 2010, the fund must each year pay EUR 2.1 bn to the CADES (Caisse d'amortissement de la dette sociale) starting from the current year up to 2024. CADES has the task to refinance the debt from the public pension scheme and to amortize French social security debt until 2025. At the same time, there will be no further capital paid into the reserve fund. The switch to payout mode is therefore being made 10 years earlier than planned. This switch has a number of effects including considerable consequences for the fund's investment policy which must now be driven by the new payment obligations. The original policy, which had a greater orientation toward returns, now needs to be replaced by a strategy that is aimed more at hedging the payments. As part of this change in policy, the proportion of equities in the portfolio, which had been reduced significantly over the last few years, will not be restored to the pre-crisis level.

Italy: Considerable market share for defined contribution plans

As in France, the role of insurance companies is a significant feature of the Italian pensions market. However, defined contribution plans have a relatively strong share of the market. Although technical reserves in traditional life insurance companies at end 2010 amounted to just under EUR 305 bn (19.7% of GDP), the data for unit-linked products, in addition, showed reserves of EUR 106 bn (6.8%). Since end-2007 the latter have been declining from EUR 134 bn, however, as the demand of the respective products decreased during the financial market crisis in 2008 and 2009.

More than any other market, the pension funds market (which, admittedly, is relatively underdeveloped) is a market that comprises defined contribution plans. Similar to the rules for providers of

Pension funds in Italy*

Old pension plans ("pre-existing" pension funds set up prior to reform in 1992).

Plans of this type still exist, primarily in the finance sector. Generally, they no longer have any active members; they simply pay out pensions. The assets are managed internally within the company in some cases.

Pension funds – in the narrow sense of the term, independent bodies with assets that are strictly separated from those of the company – were created in 1993. The 'new' funds generally offer defined contribution plans. However, many funds now offer a number of investment options that normally include products guaranteeing to preserve the principal value of the contributions. Currently, there are three types of private pension system:

1. **Closed pension funds.** These are only available to specific groups of persons (employees in a company, a sector) and may also be limited to a particular region. Typical features are also that employers and unions may have extensive rights to be involved in the governance of the funds.
2. **Open pension funds.** These are created for employees by banks, investment companies (SGR, SIM), or insurance companies on an autonomous basis (as a separate portfolio of fund assets). If the collective membership amounts to more than 500 persons in an institution, a supervisory body must be established with an equal number of representatives nominated by the institution.
3. **Individual systems.** Permitted systems include: insurance-based plans, i.e. capital-forming insurance policies, life and pension insurance policies, equity-linked insurance policies.

Contributions to these plans are derived largely from the system of severance grants, the funds in which (in the case of larger companies with more than 49 employees) have had to be invested outside the company concerned since 2007. If employees select an open or closed pension fund for this purpose, the resources must be invested in a subfund that guarantees at least preservation of the principal amount. (The alternative is investment of the monies via the company in a special fund held by INPS, the social security organization).

*See Paci, Sergio et al. (2010). Pension funds in Italy. CAREFIN-Centre for Applied Research in Finance, Università Bocconi. Milan.

[29] Senior, Christine (2011). Diversity embraced. In Special Report France. Investment & Pensions Europe (IPE) (2011). Vol. 15, No. 5. May 2011, p. 45.
[30] Ibid.
[31] See. IPE (2011). Special Report France. May 2011, p.38 ff.

'Riester' pensions in Germany, the funds only have to guarantee the beneficiaries will receive back the contributions they have paid in to the fund in the case of monies added to the pension fund from the system of occupational severance grants (see box on page 18).

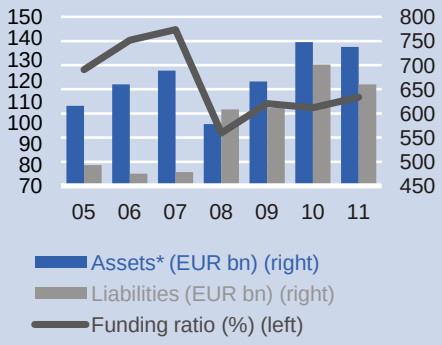
At the end of 2010, assets in occupational pension funds amounted to EUR 72 bn, which was equivalent to 4.7% of GDP. The bulk of these assets (EUR 42.1 bn) belong to 'pre-existing' plans that have been closed to active employees since 1993. Under the new plans (2.8% of GDP), the closed pension funds have assets of EUR 22.4 bn, approximately three times the assets held by the open funds (EUR 7.5 bn). Of these amounts, approximately 10% of the assets in the closed pension funds and approximately one sixth of the assets in the open funds are accounted for by guaranteed monies under the severance grant system.

The breakdown of the assets in the closed funds as at the end of 2010 was as follows (equivalent figures for the open funds in parentheses): just under 70% (48%) in bonds, over 17% (just under 24%) in equities and similar investments, just under 8% (over 22%) in investment units, and 4.4% (5.2%) in cash. In contrast, the assets in the 'pre-existing' plans tend to be invested on a more short-term and a low-risk basis owing to the necessity to make payments. The ratio of equities is low at 6.8%. In addition to bonds (approximately 47%) and investment fund units (19%), real-estate investments account for a significant proportion (17%).

Following a massive slump in 2008, overall returns on pension funds increased sharply in 2009 and modestly in 2010. Employees, however, have a choice of plans and the performance of the individual plans was extremely variable depending on investment focus.

Dutch pension funds: Substantial reforms ahead?

Funding ratio, Dutch pension funds
Year-end and quarter-end



*Invested assets at the risk of the funds

Source: DNB 18

Prior to the recent financial market turmoil, the financial situation of Dutch pension funds had markedly improved compared with the difficult period during the financial market crises. In June 2011 the funding ratio reached 111%. Back during the course of 2009, the ratio climbed from 92% at the end of March to 109% in the third quarter; however, it then fell back to 99% until September 2010.

This rollercoaster performance reflects the recovery on international equities markets, from which the funds were able to benefit significantly based on an equities ratio of over 36% in 2009 and 2010. This was boosted by increases in bond values as a result of the drop in interest rates. The performance also reflected, in particular, fluctuations in the value of liabilities. The improvements in Q1 2011 were the consequence primarily of an increase in discount rates. (In fact, the assets of the funds fell by EUR 10 bn or 1.3% in Q1 2011.) According to a study conducted by the Dutch central bank, the funding ratio of the reviewed pension funds rises (falls) by 13 percentage points (by 10 pp) if there is an increase (drop) in the yield curve of 100 bp.[32] However, this means that the current market turmoil hit the funds twice, as equity markets have plummeted and the flight from equity into quality has pushed down bond yields.

In the first half of 2010, the funds still have satisfied, on average, the minimum funding ratio of 105% specified by the regulatory authority. However, the ratio was substantially higher in the years prior to the

[32] The differences in the intensity of the impact is caused by the fact that pension funds have in some cases hedged the risk of falling interest rates. De Nederlandsche Bank (2011). Adequate liquidity management a prerequisite for interest rate hedging. DNBulletin. June 8.

crisis (end of 2007: 144%). Furthermore, there are still currently considerable differences between the individual funds, of which there are 514 in total.[33]

The problems of the last few years have triggered an ongoing debate about reforms. This debate has also been fuelled by the fact that, in addition to trends in interest rates, rising life expectancy is causing additional problems. This has revealed the flipside of the generous benefits offered by many schemes, such as indexing of pensions based on inflation or even wage and salary increases.

Efforts to bring about reform are focusing on a number of factors, including establishing a link between plan benefits (at least in the case of new pension commitments) and certain key factors, such as returns on assets or life expectancy. The aim is to make the system of generous defined benefit plans with fixed benefits and restrictive funding rules more flexible. Thus the traditional system could evolve into a new one characterised by more hybrid defined contribution arrangements. While the Dutch government, some trade unions and employers have already agreed on major principles of a reform, some other unions are still opposed to it. Nevertheless, the involved parties, i.e. pension funds, trade union, employer, and government representatives, have continued their work on the reform details.

According to an assessment carried out by the Dutch central bank, life insurance companies are also faced with similar problems. This sector is particularly dependent on investments (bonds) for which the returns have been volatile and low in the last few years.[34]

Spain: Limited market share for defined benefit plans

In Spain, the role played by life insurance companies and pension funds in the market is very much overshadowed by the state pension system. This is highlighted by the volume of mathematical reserves held by life insurance companies, which is relatively low at EUR 130.65 bn or 12.3% of GDP, and remains so even if you add in the technical reserves of EUR 17.3 bn (1.6% of GDP) in connection with unit-linked products.

By international standards, the Spanish pension funds market (see box) is one of the markets that could still be expanded. As at the end of 2010, assets in Spanish pension funds amounted to EUR 85.7 bn, equivalent to 8.1 % of GDP. The largest proportion of these assets (almost 62%) is accounted for by individual defined contribution plans. Company and professional association pension funds are also dominated by defined contribution plans.

According to the Mercer asset allocation survey from May 2011, Spanish pension funds hold a relatively high proportion of their assets (36%) in equities, within which the proportion of foreign equities (15%) has probably been recently increased. The proportion accounted for by domestic bonds is 53% (19% sovereign bonds, 34% corporate bonds).[35]

Following a sharp drop in 2008, Spanish pension fund assets recovered again in 2009 only to contract slightly in the last year (0.13%). According to OECD calculation the Spanish funds' real net rate of investment returns was 2.8% in 2009 and -1.3 in 2010.[36]

Pension funds in Spain

There are three types of pension funds in Spain (proportion of total assets as at 2010 in parentheses):

4. Employer-operated funds (planes de empleo; 37.3%),
5. Funds set up by trade associations, employers and unions, or other professional associations (planes asociados; 1.1%) and
6. Individual pension funds (planes individuales; 61.6%).

Of the 1540 planes de empleo, 1085 are defined contribution plans, 435 are mixed systems, and only 20 are pure defined benefit plans. In the case of the 155 planes asociados, the corresponding figures are 155, 79, and 1 respectively. The 1360 planes individuales are all defined contribution plans.

[33] De Nederlandsche Bank (2011a). Annual Report 2010, p. 95 f.
[34] De Nederlandsche Bank (2011a), p. 90 f.
[35] Mercer (2011). Asset allocation survey. European institutional market place overview 2011.
[36] OECD (2011a). Pension markets in focus.

In addition to private pension funds, there is a public reserve fund for social insurance. As at the end of 2010, this fund comprised (gross) assets of EUR 64.4 bn or 6.1% of GDP (nominal amount: EUR 61.53 bn or 5.8%). Almost 88% of the assets consist of Spanish bonds. The remaining amount is spread among German, Dutch and mainly French bonds (accounting for 39%). A core aspect of the fund's investment policy is the purchase of bonds from Spanish public-sector entities.

Portugal: Diversification underway

The Portuguese market is characterized by a certain preponderance of insurance companies, although there are also a significant number of pension funds. As at the end of 2010, technical reserves held by life insurance companies amounted to EUR 46.6 bn, which equated to 27% of GDP. Roughly one third is related to individual retirement pension plans subsidized by the government (PPR).

As at the same date, pension funds were managing assets of EUR 19.7 bn, equivalent to 11.4% of GDP. The bulk of these assets (EUR 18.5 bn, 10.7% of GDP) are accounted for by closed pension funds operating on behalf of a defined number of employees (from one or more entities). Open pension funds, which can offer PPR plans just like insurance companies etc., rank well behind the closed funds. In addition, there is a state pension fund (Social Security Trust Fund, FEFSS) to stabilize the budget the public social security schemes with assets of EUR 9.2 bn (equivalent to 5.3% of GDP).

The closed pension funds, many of which are derived from former company pension schemes that were funded by provisions before being passed on, offer defined benefit plans for the most part. The benefits in many of these plans are defined as a supplement to state pensions, in other words the plans must offer greater benefits if there is any cut in the state pension.

In the wake of the sovereign debt crisis, the pension funds have noticeably reallocated their assets. Between March 2010 and March 2011, they increased cash from 4% to 13%. In contrast, the proportion of government bonds and corporate bonds was reduced from 22% and 28% respectively to 20% in both cases. The proportions accounted for by equities (14%), investment fund units (24%), and real estate (10%) remained largely unchanged. The reallocation also included a certain degree of diversification away from the domestic market. Nevertheless, within a twelve-month period, the assets held by the closed pension funds still contracted by EUR 2.3 bn (11%), whereas assets in the open funds on the other hand rose by 5%.

As in other countries, employers in Portugal are seeking to bring about a switch away from defined benefit plans and into defined contribution plans. However, a switch of this kind is subject to the consent of the trade unions.

Greece: Strong home bias for investments

In Greece, the issue of funding by capital is of minor significance. There has been little development of private pension provision in particular. In 2009, the reserves or funding held by life insurance companies amounted to EUR 6.9 bn, which equated to just under 3% of GDP. There was also an additional EUR 2.4 bn of assets directly attributable to the policyholders.

In (August) 2009, the assets in other retirement pension schemes were estimated at EUR 31 bn or 13% of GDP.[37] These assets predominantly comprised resources held by the numerous occupational funds (see footnote 3), some of which also offer healthcare insurance. To date, only a small number of major enterprises have set up their own company pension funds.

Greek pension funds and occupational funds are subject to relatively restrictive investment requirements. For example, they cannot invest more than 23% of their assets in "high-risk assets" and 90% must be invested in domestic equities (or comparable products).[38] Up to a few years ago, investments abroad were generally prohibited.[39] Consequently, pension schemes invested heavily in fixed-income securities, primarily Greek sovereign bonds. In 2010, there is therefore likely to have been a degree of sharp contraction in the assets of the pension funds depending on the carrying amount of the assets concerned. According to calculations from the OECD, which primarily surveys company pension funds, these funds' real net rate of investment returns was -7.4% in 2010.[40] The assets held by Greek life insurance companies declined in 2009 by 9.4%.

Ireland: Significant equities ratio in defined benefit plans

The funded elements of the retirement pension system in Ireland, particularly the pension funds, have been severely scarred by the crisis. Although this tends to apply the systems in Greece and Portugal too, there is no other country that is affected by the debt crisis where funded pension systems play such a key role in the market. According to OECD data, Irish pension funds held assets of EUR 75.5 bn (equivalent to 49% of GDP) at the end of 2010. At the end of 2009, life insurance company assets held directly for the benefit of policyholders (including private health insurance) reached a figure of EUR 70 bn (44% of GDP). Ireland is therefore one of the few countries in the euro area in which pension funds hold a greater volume of assets.

Measured on the basis of assets, defined benefit plans still predominate in Ireland.[41] As demonstrated by the latest Mercer asset allocation survey, the relevant pension funds in Ireland have invested much more heavily in equities (equities accounting for 63% of assets)[42] than the pension funds in other euro area countries. (Even the life insurance companies have an above average equities ratio at 50% (2009).) Although, non-domestic equities dominate (35% of total assets), exposure to the domestic market is substantial (28%). Following the dramatic slump on the Irish equities market between spring 2007 and spring 2009, the funds were therefore then able to draw some benefit from the (slight) recovery in the market. Nevertheless, many funds still find themselves in a difficult position,

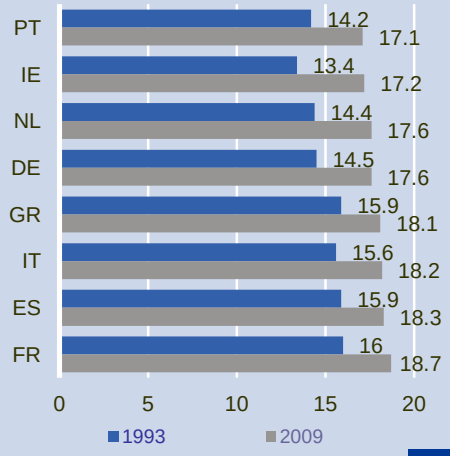
[37] Foundation for Economic and Industrial Research (2010). The Greek Economy 2/10. Quarterly Bulletin No 60. July 2010, p. 26.
[38] McMeeken, Roxanne (2011). Greece – Some scope for reform. In Investment & Pensions Europe (IPE) (2011a). Vol. 15, No. 6. June 2011, p. 50 f.
[39] Angelidis, Timotheos and Nikolaos Tessaromatis (2009). The efficiency of Greek public pension fund portfolios.
[40] OECD (2011a).
[41] Traditionally, defined benefit plans have accounted for a significant proportion of the market in Ireland. However, some 80% of these plans are now closed to new active members or will be closed shortly. The number of active members in officially registered defined benefit plans therefore contracted by more than 36 thousand to approximately 0.55 million in 2010. Defined contribution plans numbered 0.26 million active members.
[42] Proportion weighted by size of surveyed fund (unweighted, 50%).

especially in view of the low yields on high graded bonds, that have driven up the funds‘ liabilities in Ireland, too.

The regulator (Pensions Board) estimates that 75% of registered defined benefit plans reported a funding deficit as at the end of 2010, and in many cases this deficit was substantial.[43] Funds that fail to satisfy the specified minimum funding standards must submit proposals for the necessary adjustments to the regulator by a particular deadline. However, the final submission deadline for stabilization plans has already been repeatedly postponed. To ease the situation further, the Irish government has announced a reform of the regulatory framework for pension funds. This reform will include new risk management rules, smoothing of the effects from fluctuations in bond markets, and a transition to changes in the benefits provided under pension plans.

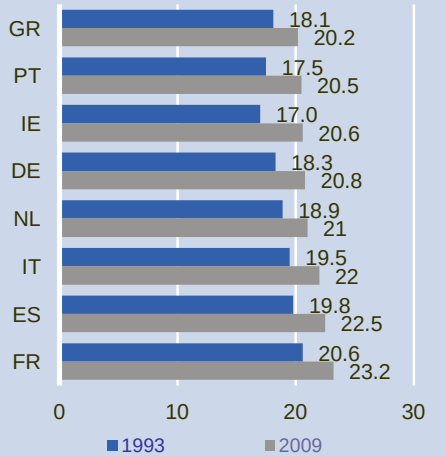
Significant portions of the assets in the state pension system's reserve fund are on the way to being used up much earlier than planned. The 'discretionary' portfolio in this fund,[44] which at the end of 2010 still had assets of EUR 15.1 bn (equating to 9.8% of GDP), has gradually been liquidated to help rescue national finances.[45]

Rising life expectancy I
Life expectancy for men aged 65



Source: Eurostat 19

Rising life expectancy II
Life expectancy for women aged 65



Source: Eurostat 20

Private defined benefit plans: Persistent concerns

Prior to the recent slump in stock markets and the widening of sovereign bonds spreads even among the core countries, the funded pension systems in the euro area showed a mixed picture. While the position of private defined benefit plans in Germany, France and especially the Netherlands has largely improved from the downturn during the financial market crisis in 2008, the situation in the peripheral countries has deteriorated as a result of the sovereign debt crisis there. The recent turmoil in the financial markets is likely to modify the picture again. Based on the 2008 experience, the situation for funded defined benefit pension plans in the core countries will probably become more difficult, too. Pension funds there are facing a double whammy as lower equity prices have reduced the value of their assets while the value of their liabilities has increased due to lower yields. This is a challenge especially for countries like the Netherlands, where funded pension schemes are a major element in the system of old-age provision.

The position faced by partially funded pension funds in Greece and pension funds in Ireland will remain particularly difficult, as these funds have invested a high proportion of their assets in domestic government bonds and/or equities. The losses on fund assets are casting a shadow over the financial prospects for Greek and Irish employees when they retire. The losses are probably going to cause the most severe problems in Greece where, in theory, assets already need to be liquidated to fund pensions because of the high level of unemployment and a lack of contributions being paid into funds.

On top of all this, there is demographic change. Rising life expectancy represents a challenge for pension institutions everywhere. Therefore, it is important that the markets have already begun to provide appropriate hedging instruments. Unfavourable

[43] The Pensions Board (2011). Annual Report and Accounts 2010.
[44] The fund also comprises another portfolio (directed portfolio, public policy investments made at the direction of the Minister for Finance), the funds in which amounted to EUR 15.5 bn. at 30 June 2011. This portfolio is invested in a number of areas, including shares in Irish banks
[45] During the first half of 2011 the fund liquidated EUR 10 bn to contribute part of the Irish State’s EUR 17.5 bn contribution to the EU/EMF Programme of Financial Support for Ireland.

labour market trends could also have a negative impact, particularly on pension funds more reliant on contributions from employed persons. Greek funds are not the only ones to mention here, but company pension funds in several countries. For these funds much depends on the impact of the recent market turmoil on the real economy and on employment, which has largely been stabilized over the last few months, at least in the core of the euro area. In the medium and longer terms, a shortage of skilled workers could become an issue in various countries. As in the case of state pensions, restrictions on benefits paid under company defined benefit plans are therefore now also being discussed in many places.

Private pension provision remains indispensable

The crises of the last few years have not left funded retirement pension systems untouched and the recent turmoil will add new scars. Besides funded schemes in Greece and Ireland, funds with substantial exposure towards shares will be particularly affected. But the sovereign debt crises and the fall in share prices will also impact the public pay-as-you-go pension schemes in many countries, as these shocks will weaken the systems‘ funding basis, i.e. ecomomic growth and employment. Therefore, the “not-all-eggs-in-one-basket” principle remains valid for old-age provision at the macro-economic level, too. It is wise for societies to have a three (or four)-pillar system including a public pay-as-you-go pension scheme (plus a basic flat-rate welfare scheme for pensioners), and two funded schemes, namely occupational or company pension funds and individual pension plans.

Although capital-based pension schemes are prone to shocks from the financial markets, they promise higher returns than pay-as-you-go systems over the longer term in ageing societies. A good diversification of capital (including at the international level) can help to stabilize the funded schemes. Herein lies the weakness of public reserve funds, because the assets are invested primarily in bonds from domestic public-sector entities. Private institutions are more flexible in this regard. Moreover, private assets are protected against raids on the funds from governments.

However, comprehensive defined benefit plans from private institutions that (largely) cover the risk in retirement pension provision are faced with cost problems owing to rising life expectancy and persistent relatively low (bond) yields. The fact that this problem has hit company pension schemes is highlighted by the fact that fewer and fewer employers are offering such plans. In their place, defined contribution plans are now widely gaining ground. Even though savers in these plans bear a higher risk in principle, they do also benefit much more from uptrends in financial markets. When all is said and done, citizens will themselves have to bear the consequences of the general rise in life expectancy (which does not fundamentally constitute a risk because it is a hard and fast trend) in the form of a longer working life and/or greater efforts to save more.

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