

The Regulation of Occupational Pension Schemes in the EU and USA¹

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1. Introduction

The purpose of this report is to review and compare different types of regulation throughout the EU and the USA. In particular we are concerned with how regulation affects the security of individual pension scheme members and we concentrate on the regulation of defined benefit occupational pension schemes.

Savings made specifically for retirement pensions have characteristics that make them significantly different from other forms of saving. In particular, there are often restrictions in how they can be invested and how and when they can be drawn down. For example, pension savings are not freely accessible: in most countries they can only be accessed after a particular age and must largely be taken as an income stream rather than a lump sum. In return for these restrictions, and because most governments feel that it is desirable for individuals to make some provision for retirement rather than relying solely on state provision, savings to 'approved' pension vehicles are often taxed less heavily than other forms of savings. Whilst we do not consider the taxation of pension savings (see Booth and Cooper, 2000), the privileged status of pension savings relative to other forms of saving has led to government intervention in the market to ensure that only appropriate savings vehicles benefit from any concessions. This form of regulation is driven by the desire of government to minimise revenue loss.

Governments also regulate pension scheme providers in order to protect members of pension schemes from fraud or other financial abuses. The two strands of intervention sometimes operate in conflict with one another.

A theoretical case can be made for government intervention in markets when they are exposed to the risk of failure. Intervention might be appropriate, for example, due to information asymmetry, externalities or monopoly provision. Each of these circumstances can arise in pension provision. There is evidence from the UK that individuals do not have a strong understanding of the need to save for retirement (OFT, 1997); externalities are caused by government's desire to avoid people having to live in severe poverty; and monopoly provision arises in countries where there is little choice of provider.

However, governments also intervene for more prosaic reasons: in order to produce confidence in pension savings vehicles; to ensure revenue, perhaps by prescribing government bonds as investment vehicles; to match provision with what the state provides.

This report is mainly concerned with the need to ensure security and confidence for pension scheme members, and this concern is reflected in the structure of the report. Most pension scheme members will be unconcerned with aspects of scheme management, provided they receive the benefits they think they are entitled to. Consequently, our first section addresses the issue of members' entitlements, and their ability to understand at any point in their careers how their entitlements might be affected by actions taken regarding their employment.

Funding is crucial to a pension scheme's ability to meet its members' expectations, particularly in the event of an employer's insolvency. The second section looks at what 'funding' means in different countries and how it is achieved and assessed.

Finally, we consider the way pension schemes are established and managed.

2. Vesting and Disclosure

In this section we consider those aspects of a scheme that impact directly on members' ability to control their pension accrual.

Most defined benefit pension schemes in the EU and USA have a final salary design. That is to say, most benefits are calculated as a multiple of a fraction of service and the salary received at or close to the time when the benefit becomes payable.

When pension schemes were originally introduced, the retirement pension was frequently the only benefit paid. Other benefits, such as life insurance and dependants' benefits are more recent additions. In particular, benefits paid on withdrawal, when a member leaves the employment of the employer who provides the pension scheme for alternative employment, have often been introduced relatively reluctantly. This is presumably because employers view occupational pension schemes as a means to retain staff. However, whilst employers or pension fund institutions may have freedom in the design of pension arrangements according to their particular circumstances, governments generally feel that members of pension schemes should have some rights to pension on withdrawal and have often had to legislate in order to achieve this. Most of the countries we consider now have minimum vesting legislation and we look at how this varies, and the consequences for members, in the next section.

Due to the development described above, occupational pension schemes in the past were perceived as a generous, optional, benefit, provided by benevolent employers for their employees. Membership could be made a condition of employment. There was very little pressure to market schemes to employees, or to explain to them what they were entitled to, and the contributions were considered to be taken from the employer's profits.

Nowadays, particularly in countries such as the UK where pension scheme membership can no longer be compulsory and where private pension saving is an essential part of the government's retirement strategy due to relatively low state benefits, a different view is taken of occupational pension schemes. The contributions are largely considered to be deferred pay, which would otherwise have been remitted to the employees, and far more information is available to members. However, the amount of information statutorily provided to pension scheme members varies quite considerably throughout the EU and USA. We would argue that employees should be provided with sufficient information to enable them to understand exactly what they are entitled to under various contingencies and the likelihood of the scheme being able to meet their entitlement. This is discussed in section 2.2.

2.1 Vesting

Vesting and portability are normally discussed in relation to employee mobility and economic efficiency. However, here we consider how they contribute to employee security. The two details we shall discuss are eligibility for a vested benefit and the rate of revaluation in deferment. In most of the countries we consider members are also permitted to take their vested benefit as a transfer value to a new pension provider, but the issue of portability is not germane to our report. Note that contributions to schemes directly deducted from employees' pay will vest immediately, it is only the extent to which the value of the accrued benefit exceeds this amount that is a concern.

The absence of an early vesting requirement can mean that members who leave the scheme before retirement age receive little pension. Thus although they are members of an apparently secure pension scheme, their individual benefit is far from secure. Vesting periods in the EU vary from immediate to 10 years (see Table 1).

Table 1
Vesting periods in the EU and the US

Length of Vesting	Countries
Immediate	Denmark, France, Finland, Spain, Sweden
1 Year	Belgium, Netherlands
2 Years	UK
5 Years	Austria, Greece, Ireland, Italy, USA ^(a)
10 Years	Germany, Luxembourg
None prescribed	Portugal

(a) Pension schemes in the USA have a choice of two vesting regimes.

A long vesting period has key advantages for an employer³, making the scheme less expensive to administer and creating a financial disincentive for employees who are members of the scheme to leave employment, particularly as they come close to the vesting date. However, pension schemes are increasingly viewed as a vehicle for deferring pay, so that those members who leave within the vesting period have effectively been paid less than their peers who chose to remain in employment. Longer vesting periods are also likely to lead to increased cross subsidy within a pension scheme. For example, women tend to spend less time in one job than men (ONS, 2000) and so might be unfairly disadvantaged.

This leads to the problem of assessing a fair return for deferred pay (Cooper, 1997). In the UK, the prescribed rate of revaluation for a deferred pension is the lesser of the change in the RPI over the period of deferment, or 5% per annum compounded over the period of deferment. Since National Average Earnings increase faster than the RPI, it is

³ There is evidence that employers acting in an unregulated environment impose extreme vesting rules, giving an example of market failure due to monopoly power (Davis, 1995).

fair to say that this less than compensates the early leaver for the pay forgone. However, relative to the position in the USA and some EU countries, UK employees are relatively well off.

In France, employers must participate in, and their employees must join, schemes that are often both industry and sector wide. The largest of these are ARRCO and AGIRC. To all intents and purposes a member's service with a scheme is unbroken on changing service (unless the members nature of employment changes significantly), so there is full and immediate vesting of pension rights. Effectively, the deferred pension is being revalued at the rate of salary growth experienced by the member. In a single employer scheme, it could be argued that revaluation in line with an individual's salary growth overcompensates for the deferral of pay (Cooper, 1997). However, in the French system, the extent to which this gives rise to cross subsidy might be viewed as consistent with the aims of the multi-employer schemes.

At the other extreme, in Portugal there are no legal vesting requirements, although this is under discussion between employers and employees. Currently, however, when pension scheme members leave the company they lose any right to accrued benefits, and tax law does not encourage companies to set voluntary vesting requirements. In Greece, although there is no regulation for vesting, in practice pension benefits vest after 5 years of service up to a maximum of 10 years for full vesting when the pension plan is funded through a deposit administration contract.

In some countries eligibility for vested benefits relies on age, as well as membership. For example, in Sweden members must be over age 28, and in Germany they must be older than 35, to be entitled to vested benefits.

Whether we view members' accruing pension benefits as representing deferred pay or as savings, then it seems clear that they are not secure until individual members complete their vesting period. Thus, for example, the 'savings' of employees in Belgium with 3 years' service are more secure than those of a similar employee in Germany, but less secure than a UK employee's, where they will be revalued during deferment rather than frozen. Employees are often aware of the importance of vesting. Research indicates that they become less likely to move jobs as they approach vesting, only to become more likely shortly afterwards (Lazear and Moore, 1988). This places unnecessary strains on employees, and inconsistent costs on employers, particularly where there are minimum funding regulations. This is discussed in section 3.

2.2 Disclosure of Information

In order to be able to plan effectively for retirement, individuals need to be given adequate information. They should at least be able to understand the amount of benefit they would be entitled to under various contingencies and its level of security. However, it is probably reasonable that prescribed levels of disclosure should vary according to the intended recipient. The interested parties include

- individual members;
- the Trustees (or similar), who act on behalf of the members;

- the sponsoring employer;
- the regulators, which include government departments responsible for pension policy, as well as those departments responsible for fiscal policy.

The variety of practices with the EU and the USA will be described below, and we shall point out countries with higher or lower levels of disclosure

Amongst the countries considered, the UK and Ireland appear to have the most detailed disclosure regulations. In the UK disclosure requirements were first introduced because employees were permitted to defer tax on pension saving, giving them a fiscal advantage relative to other forms of saving. In order to qualify for this special tax regime pension schemes have to demonstrate that they are set up in a particular way (discussed in Section 4). This could require, for example, depositing the Trust Deed and Rules (or articles and memorandum) setting up the scheme with the relevant authority, but beyond this there was little intervention. The requirement for ongoing information started in the UK when the government introduced state earnings related pensions and permitted occupational pension schemes providing an acceptable level of benefit to contract out from their obligation to the state. Effectively, the employer, through the medium of the pension scheme, assumed the State's obligation to provide the salary related component of state benefit, in return for a reduction in the National Insurance contributions that had to be paid on behalf of eligible employees.

Not all employers chose to contract out of the state scheme, but those who did were effectively acting as the State's agent in the provision of benefit, and so the government felt it was reasonable to require additional disclosure. Contracted out pension schemes had to present annual accounts to the pension scheme regulator (then the SFO, now OPRA) and undergo an actuarial valuation at least every 5 (now reduced to 3) years. The actuary had to certify that the scheme had sufficient assets to meet its contracted out liabilities and would continue to be able to do so for at least 5 years.

The 1985 Social Security Act extended disclosure requirements in the UK, and these have been supplemented in subsequent legislation. In particular, it extended the obligation to submit accounts to the regulator to schemes that were not contracted out, and extended and formalised the obligation to provide information to scheme members, which previously had been quite limited. Currently, pension schemes are required to disclose information about eligibility, the calculation of contributions, the type and level of benefits, the Trust Deed and Rules, the accounts and the results of the actuarial valuation. This is achieved in most schemes through the production of an annual report, which summarises most of the information required, and an annual benefit statement. The Trustees' duty is to disclose all scheme documents (including the annual report and the actuarial valuation) to those entitled to ask for any basic information about the scheme, that is, the current members, prospective members, beneficiaries⁴ and recognised trade unions representing any members or prospective members.

⁴ Beneficiary is someone (other than a member) who is entitled to payment of benefits under the scheme. This does not include someone who has yet to become entitled to benefit and could be someone other than the spouse.

Pension arrangements in Ireland are similar to those in the UK, and trustees are responsible for disclosing a comprehensive range of information. Disclosure of information about the scheme to members is compulsory and in particular includes:

- i) a statement, which must be provided within six weeks of joining, with information about the scheme, including the method of calculating contributions and benefits as well as the rights of early leavers;
- ii) an individual benefit statement, at least annually, including the estimated transfer value or refund of contributions;
- iii) an annual trustees' report, including plan accounts, an actuarial certificate and a statement on investment policy.

Whilst both countries provide a lot of information about the plan there still appears to be a low level of knowledge about pensions (OFT, 1997), so the question arises as to whether this information is presented in a way that is accessible to a layperson. However, despite the potential difficulties in enabling specialised financial information to be understood by lay audiences, it is important that the information is available. Pension scheme members must be told what their pension entitlements are, to enable them to form realistic expectations about the size of retirement income and to adjust their financial decisions accordingly. The communication of relevant information about the scheme is a significant factor that enables them to do this. Even so, in some EU countries, such as Portugal, Italy, Sweden and Greece, there is little requirement to disclose information to members. For example:

- In Portugal the only disclosure requirement is the publication of the pension scheme's constitution in the official State Gazette.
- In Italy, it is only compulsory to report annually to the supervisory board and the government, but there is no prescribed disclosure of information to scheme members.
- In Sweden the requirement to disclose information about the pension scheme is limited to information about unfunded liabilities.

Before assigning these countries to a Hall of Shame, it should be noted that they have very different modes of pension provision to that found in the UK and Ireland. In particular, both Portugal and Italy have state schemes that provide a high replacement ratio at all levels of income, and consequently have very low levels of supplementary provision that would apply only to fairly select groups of employees. In Sweden state provision is quite high, whilst supplementary pension scheme membership is compulsory and supported by government backed insurance schemes.

In most other countries some financial information about the scheme is regularly given to members. These requirements, and the requirements to disclose information to regulators is summarised below:

Austria

A financial statement of the plan must be completed within six months of the fiscal year end, while information about investments and risk pooling must be disclosed to pension scheme members as well as to the supervisors. A pension scheme's reporting and disclosure obligations are monitored by internal and external actuaries.

Belgium

Members of occupational pension schemes must be informed at least once a year of their vested rights, as stated in the law and Royal Decrees. Effectively members are informed of their cash equivalent benefit. In addition, accounts must be provided to the general meeting of the Pension Fund, at least annually, although this meeting need not include members or beneficiaries.

Denmark

Danish supplementary schemes are almost universally defined contribution, and regulations state that a statement of the present value of pension obligation to be sent annually to policyholders, pension beneficiaries and to the Financial Supervisory Authority.

Finland

The sponsoring employer is obliged to disclose the basis on which the assets of the fund have been valued and the scheme funding level to the Ministry of Social Affairs, along with regular reports.

France

Financial statements are available to members. Retirement indemnities may not be provided on the balance sheet but have to be disclosed in the notes. Further, the scheme is obliged to disclose the amount of unprovided pension commitment. The Evin Law (1990) specifically stated that information about the scheme should be disclosed to all members as a measure to protect employee benefits.

Germany

Members of pension and support funds are normally provided with information about the financial status of the fund and with plan documentation outlining the benefits. However, this is not compulsory. The regulation of Pensionskassen and the presence of insolvency insurance for book reserved pension arrangements are felt to have replaced the need for disclosure to members, because of the level of security they should provide.

With regards to book reserve schemes, prior to 1987 the sponsoring employer was not obliged to fully disclose the pension liabilities in the financial statement if it had not taken maximum tax deductions in the past. Since the fiscal year 1987 the employer has to disclose any tax-deductible amounts not previously allocated for tax purposes in the financial statements. In any case when the liability calculated according to tax rules on the balance sheet appears to be lower than its actuarial value then the difference has to be disclosed in the notes.

Luxembourg

Each employee affiliated to a pension plan is entitled not only to a copy of the pension plan rules but also, at least once a year, to written information on the benefits at due date. Members must also be told of the different options available on withdrawal and be told how to evaluate these choices. The employer has to notify the

employee representatives prior to the introduction, modification or termination of the plan.

At implementation, or in the event of any modification, defined benefit pension schemes must disclose information regarding unfunded liabilities and the actuarial method used to assess the liability, together with its consequences on financing. Book reserve schemes must state that the scheme is affiliated with an authorised insolvency insurance institution.

The Netherlands

Automatic disclosure to members is limited, but some information will be provided if beneficiaries request it. Scheme information is available at the Insurance Control Board after the 1st of October of the year that follows the reporting year. This report has to be audited by an accountant and it covers whether the pension fund complies with the Pensions and Savings Fund Act and if the interests of the pension fund members and former members have been safeguarded.

Portugal

As mentioned above, there is no statutory need for public disclosure of a defined benefit pension scheme's position but the constitution of the scheme is published in the official State Gazette. All technical calculations are presented to the competent authorities. Members of Defined Contribution schemes receive annual benefit statements.

Spain

Disclosure levels in Spain are also basic. A certificate of contributions paid during the calendar year is provided to members, together with the value of their vested rights. Since 1990 an accounting rule was issued forcing the employer to reflect pension costs as they accrue.

Sweden

Disclosure to pension scheme members it is not legally required, as discussed above. However, if the unprovided pension obligation is not provided for in the balance sheet then the amount has to be accounted for as a contingent liability.

USA

ERISA prescribes that pension schemes must provide their members with a summary of the annual Trustees' report, with outline information about the plan and its administration, and giving information on members' rights to receive benefit and the status of the individual member's benefit entitlement. Other relevant documents must be made available on demand. There are also comprehensive regulations covering the process of notification and employer has to complete when the pension scheme is to be terminated. If a plan is less than 90% funded then the plan's sponsor must notify the participants annually.

There are various features that seem to contribute to the level of disclosure found in each country:

- Each country requires that sufficient information is deposited with the regulator in order for it to satisfy its duties under the law. Those countries with relatively little regulation tend, therefore, to have low levels of disclosure.
- Another formative feature seems to be the way, and extent to which, members are represented. Where there are high levels of employee representation, those representatives will be recipients of relatively large amounts of information, and it might be that this is considered sufficient protection for the membership.
- As we mentioned above, differences in levels of disclosure, particularly disclosure to members, appear to be partly explained by the extent to which people have to rely on occupational pension schemes to supplement the retirement income provided by the State.
- A fourth factor is the arrangements made for securing pension scheme benefits in the event of employer insolvency. Disclosure is significantly higher in the UK and Ireland, where members have to rely on investment markets to provide security, than in countries where there are insolvency insurance schemes.

Pension scheme disclosure to members can be roughly distinguished in three levels: *high* (in UK, Ireland and the USA), *basic-financial* (in Belgium, Finland, Denmark, France, the Netherlands, Luxembourg, Austria and Germany) and *low* (in Portugal, Spain, Italy, Sweden, and Greece). Members are only likely to have an opportunity to understand and keep up with their employer's pension scheme development in the countries with high disclosure levels. Where supplementary provision is rare because of high levels of state provision it is perhaps reasonable that schemes are only lightly regulated. However, assuming disclosure can be replaced by alternative security measures only increases the opaque nature of pension scheme investment. This could lead to misunderstanding about pension scheme security, the size of benefit entitlement and the cost of providing benefits. It is also worthwhile to encourage disclosure, particularly of benefit amounts, since this is a fundamental starting point of communication between the employer, the administrative board and the scheme members, which could lead to a greater appreciation of the benefits the scheme provides.

When the payment of pension benefits in the event of the employers' bankruptcy are secured through insolvency insurance, it is important to disclose both the annual cost of the insurance premium and the assessment method applied. Information on the benefits paid and the existing liabilities should also be provided in order to increase the level of communication about the financial strength of the pension scheme between employer and employee.

3. Funding

The main feature of defined benefit pension schemes is that a set of rules specifies the benefits promised in the event of various contingencies, and the contributions to be paid (by the employer and possibly the members) are determined in relation to these benefits. In the UK, the USA and Ireland, which have very similar pension arrangements, the

contribution rate is specified by the scheme actuary as part of the regular valuation process. However, this is not always the case.

Occupational pension schemes in the EU and USA are financed in several ways, which can be simplified into three types:

- i) Funded schemes accumulate a body of assets that represent some proportion of the liabilities of the scheme. The assets are legally separated from those of the sponsoring employer. Brown (1997) considers a scheme 'funded' if its assets represent more than 2 years' outgo, but this is a somewhat arbitrary measure. Defined contribution schemes are necessarily funded, and the fund represents 100% of the liabilities. In defined benefit schemes, the percentage of the liabilities funded depends on several factors and, crucially, on the definition of the term 'liabilities'. This is discussed later. The contribution required by a scheme would usually depend on the basis and valuation method used, which will determine the relationship between the assets and the liabilities.
- ii) Book reserve schemes are 'funded' through a reserve set aside within the employer's accounts. In the absence of other provision (such as insolvency insurance), the members' benefits in a book reserved pension scheme are likely to be less secure than those of an otherwise equivalent funded pension scheme, since there is no protection in the event of an employer's insolvency.
- iii) Pay As You Go (PAYG) pension provision operates by paying each year's benefit outgo out of the same year's contribution income. Typically PAYG schemes carry a small reserve, which, to be consistent with Brown's definition of funded schemes would be for less than two years' outgo. Contributions will vary according to benefit needs. Although most state schemes are financed in this way, only France operates occupational schemes on a PAYG basis.

The risks to which each of these types of finance are exposed are similar, although the 'exposures' can be very different.

In defined benefit pension schemes, the employer usually bears most of the risk of unanticipated experience, such as poor investment performance or a drop in recruitment, while the employee bears the potential risk of catastrophic changes in the employer's finances or of fraud. Funded schemes should mitigate the risk of shortfall due to employer insolvency, since the assets are legally separate from the employer. However, if the level of funding has been insufficient in some sense, then pension scheme members are only secure to the extent that the assets cover the cost of securing their benefits. This could happen for a number of reasons, including

- Deliberate underfunding, since in theory, provided the employer remains solvent the assets are not required unless the scheme becomes super mature.
- Bad luck, such as an unanticipated fall in investment markets.
- Fraud, such as non payment of contributions by the employer.

Governments have introduced regulations to attempt to control these risks. This section discusses how the first of these operates. Investment controls are widely discussed elsewhere (for example, Davies, 1995), and fraud is considered in section 4.

Although book reserve and PAYG pension schemes theoretically face similar risks, since they have no pool of assets the risk management must be approached in different ways. These are considered in section 3.3.

3.1 The calculation

Because of the risks discussed above, nearly all countries in the EU and USA require funded defined benefit pension schemes to meet certain minimum funding criteria. Governments have intervened in this matter to mitigate the conflict of interest between the sponsoring employer and the pension scheme member. The conflict arises because, the employer and the trustees differ in respect of their priorities on setting up a pension funding plan (Loades, 1992). Whilst the employer is most interested in a funding plan which leads to a smooth and predictable future cash flow, the Trustees desire a funding plan that ensures benefits will be paid, even in the event of the scheme being wound up.

The funding criterion is usually expressed as a ratio of assets to liabilities. A particular basis and/or calculation method is either prescribed or recommended, but the calculation would usually take place in conjunction with the usual actuarial valuation, and this process is discussed here.

3.1.1. The Actuarial Valuation

Regular actuarial valuations can enable scheme members to have more confidence in the security of their scheme. The actuarial valuation involves a detailed analysis of the scheme's current financial position. It has three main purposes:

- i) to provide information to interested parties, including members and regulators;
- ii) to adjust the current set of actuarial assumptions, if necessary;
- iii) to set the recommended contribution rate.

The results of the actuarial valuation are intended to keep the scheme continuing in a sound financial position, even in response to any potential deterioration in experience in the future, with the least possible distortion of the employer's cash-flows.

The scheme's liability can be expressed as a real-valued function characterised by the economic and demographic parameters used in the actuarial and financial management of the pension scheme. The key economic parameters are

- the rate of salary growth assumed
- the rates of return assumed available from investments
- the rate of inflation.

The key demographic parameters are

- mortality rates,
- withdrawal rates
- the age profile, weighted by service and salary, of all scheme members.

Since the scheme is a long term arrangement for protecting against various future contingencies, the true value of the scheme parameters cannot be known for certain and thus the prior commitment to funding gives rise to the problem of parameter uncertainty.

In theory, how to determine a reasonable set of assumptions is one of the most important problems in actuarial applications. However, in practice, provided any error is small, differences between assumptions and experience will emerge and can be dealt with at subsequent valuations.

The reported financial strength of a pension scheme will vary according to the assumptions and the methods used for assessing the scheme's assets and liabilities on the valuation date⁵. There are two distinct methods that are commonly used: a going-concern valuation and a discontinuance valuation. The former would allow for the future accrual of benefit and for future salary growth, whereas the latter would be based on accrual and salary at the valuation date. We will sometimes distinguish between two types of discontinuance valuation: a wind-up valuation, where the scheme is closed and the liabilities bought out with an insurance company; and a run-off valuation, where the scheme is closed but the Trustees continue to administer the fund and the benefits.

Any conflict of interest between the employer and trustees can be partly controlled by the choice of valuation method. A going-concern method, which allows for future salary growth, should produce a more stable contribution rate than a discontinuance valuation method. This is because it spreads the cost of accrual more evenly over members' working lifetimes. If the basis used is not overly optimistic (for example, a 'best estimate' basis as recommended in the Guidance Notes of the Institute and Faculty of Actuaries in the UK), and the employer is financially solvent, then the security concerns of the Trustees should also be met. If the Trustees view the employer's future with doubt, then it could be more secure (in the short term) to move to a discontinuance valuation method.

Based on the valuation result, the actuary is able to recommend any necessary changes to the contributions paid by the employer and employees (that is, to set the recommended contribution rate) in order to prevent the discrepancy between the scheme's assets and liabilities diverging excessively.

The winding-up valuation method can be viewed as a strict supervisory approach to the scheme valuation, which is primarily concerned with meeting the statutory requirements for assessing the security of the scheme on a short-term perspective, rather than with controlling the pace of funding over the long-term. Hence, there may be a divergence between short-term security requirements and the long-term funding plan, particularly when investment performance is highly volatile. For example, if the scheme has suffered from poor investment performance, the employer will have to make up the investment loss (either from an unexpected rise in the regular costs over a permitted short period, or from an immediate cash intake in order to satisfy the statutory measures of security). Having to meet the requirements of a wind up basis could reduce the actuary's freedom to establish a long-term funding scheme and, at the same time, place restrictions on investment policy. However, under certain economic climates, a wind up basis could be preferable to the scheme's trustees and beneficiaries.

⁵ The actual financial strength of the scheme at the valuation date is unknown, and unaffected, by the process of valuation.

A run-off valuation method can be considered as an intermediate between the going concern and wind-up valuation methods. However, it is much closer to the wind up method since the scheme is expected to continue as a closed fund, so that matching the assets and liabilities by size and term would still be of vital importance to the future security of the scheme. Hence, both the funding plan and investment policy would have to be reviewed in the light of any estimated mismatch.

3.1.2. Valuation of Assets

In practice, there are three methods for valuing assets: discounted cash-flow method, market value method and book value method. The first method attempts to make allowance for the future income stream expected from the current assets, the market value method focuses on the current market value of the assets and the book value method totally ignores the current and future market situations but depends only on the original purchase price of each investment. They are described in Booth et al (1998).

Having established ways of valuing the assets and liabilities, it is possible to discuss what funding levels can represent.

3.2 Measures of the scheme's security

The value of the scheme's assets relative to its liabilities at the valuation date is of vital importance to its security. However, we have to consider what is the most appropriate asset and liability value to consider. Broadly, we can distinguish two types of security measure: one based on the scheme's funding level as a going concern, and the other based on a discontinuance funding level. As before we can divide discontinuance funding into two types: a run off funding level and a wind up funding level. In the strict sense of measuring solvency at the valuation date, the wind up funding level would be the most appropriate measure of security.

A review of the development of the Minimum Funding Requirement (MFR) in the UK will be useful to illustrate the difficulties in adopting a statutory funding test.

3.2.1. The MFR in the UK

Until 1997 there was no requirement that defined benefit schemes should be funded up to a specific funding level, apart from the requirement that contracted out schemes certify coverage of GMP liabilities. However, after several pension schemes in Robert Maxwell's group of companies were shown to be insolvent, allegedly due to his handling of their assets, the Government instituted a wide ranging consultation process to improve the security of pension scheme members. One proposal considered was a Minimum Solvency Requirement (MSR). This test would have compared the value of a pension scheme's wind up liabilities⁶, calculated using a life office basis (that is, broadly based on bond yields) with the market value of the assets. If the MSR was greater than 100% then the liabilities in question could be purchased with a life office and would then, due to the

⁶ The accrued liabilities, allowing for Limited Price Indexation between the valuation date and retirement.

level of regulation in the insurance industry, be considered secure. However, since the valuation bases typically used to value pension scheme liabilities are not based on bond yields, this approach could add to the cost of providing a scheme. In addition, since the typical pension scheme's assets are more broadly invested, with large exposures to equity markets, the problem of meeting a MSR from one valuation to the next could be extreme. This illustrates the conflict that can be caused by operating a short term test of solvency on an organisation that is required to meet long term liabilities.

The Pension Law Review Committee (PLRC) discussed the difficulty of operating a MSR and, by way of compromise, proposed a Minimum 'Funding' Requirement (MFR) instead (Goode, 1992), which was formally introduced in the Pension Act 1995. The MFR stipulated that the value of the assets of the scheme should not be less than the amount of the liabilities of the scheme, broadly calculated on a run-off basis⁷. In particular, it was not necessary to use a life office basis to calculate the liabilities of younger members. Thus, the MFR was a weaker test than the MSR would have been.

The result has been that schemes apparently over 100% funded on an MFR basis are not able to cover 100% of their members' benefits when they have to wind up. Moreover, because the statutory basis was set with regard to market conditions in 1997, changes in market conditions mean that schemes that met MFR requirements then, might be unable to do so now. The arrangement has been heavily criticised, because it adds to the expense of administering defined benefit pension schemes and does not deliver the hoped for security (see, for example, the NAPF submission to Myners review on Institutional Investment). The Government is currently consulting as to how an improved measure of security might be devised.

If the MFR valuation reveals that a pension scheme is underfunded (that is, assets less than 100% of the MFR), the action required depends on the severity of the underfunding. If the funding level is greater than 90% of the MFR, then the deficiency must be made up within 5 years⁸. If there is a 'serious deficiency', defined as when the market value of the assets is less than 90% of the MFR, the employer must reduce the deficiency to within 10% of the MFR within one year. Trustees have a legal obligation to ensure that their employers meet the requirements of the MFR regulations. If they do not, the Trustees must report the matter to the Occupational Pensions Regulatory Authority (OPRA) and the scheme members within 14 days, otherwise they can become liable to fines.

The MFR enters further difficulties once a scheme is wound up and the Trustees attempt to secure benefits. The provisions of the Pension Act and Regulation (1995) states that, where a scheme is winding-up, priority should be given to securing the current pensioners in payment and any dependant's pensions which might be awarded later in respect of those pensioners. If a scheme is no more than 100% funded on the MFR basis, it is likely

⁷ The methods of assets and liabilities valuations and the actuarial assumptions set out in regulations are referred to in Greenwood and Keogh (1997).

⁸ But note

- i) the required contributions must be made no slower than evenly over the 5 year period
- ii) there are transitional arrangements in place until 2002.

that younger members will receive less than the value of their accrued rights. This scaling down will be exacerbated since the MFR valuation will have included these rights using an equity linked basis, whereas an insurance company will value the deferred benefits using a more cautious approach, further reducing the amount of benefit to be paid.

Now we will look at funding requirements elsewhere in the EU and the USA.

3.2.2. Minimum Funding Requirements in the EU and the USA

Minimum funding requirements are only applicable to funded defined benefit pension schemes. Defined contribution schemes, by their nature, are always 100% funded (unless due to fraud if, for example, the employer has not forwarded contributions to the scheme) and schemes without separately identifiable assets (such as book reserve or PAYG schemes) are necessarily 0% funded. Usually book reserve or PAYG schemes have alternative security measures in place and these are discussed later. The countries with a MFR are listed in Table 2. We have included countries where defined benefit pension schemes are supervised similarly to insurance companies, since this implicitly involves financing liabilities on a reasonably conservative basis, together with a solvency margin.

Table 2
Minimum Funding Requirements

Country	MFR Calculation Method	Basis	Amortisation
Austria	None ^(a)		
Belgium	<ul style="list-style-type: none"> • ABO⁹, assets quasi-market value • Pension Funds regulated as insurance companies 	7%	Immediate
Denmark	None ^(b)		
Finland	Mutual insurance within pooled scheme		
France	Mutual insurance within pooled scheme		
Germany	Pensionskassen regulated as insurance companies		
Greece	None		
Ireland	IBO	Run off	3½ years
Italy	None		
Luxembourg	Newly introduced and awaiting basis		
Netherlands	<ul style="list-style-type: none"> • ABO • Greater of book or market value of bonds • Market value of equity and property 	4% real	
Portugal	<ul style="list-style-type: none"> • ABO • Assets at market value 	4.5%	Immediate
Spain	PBO with 4% margin	6%	10 years
Sweden	None ^(c)		
UK	<ul style="list-style-type: none"> • IBO • Assets market value 	Run off	5, or 1 year
USA	<ul style="list-style-type: none"> • ABO • Assets market value 	Market	10 years

^(a) Mostly book reserves

^(b) Defined contribution provision

^(c) Effectively liabilities are insured

It is important that all the aspects of a minimum funding regime are considered together. For example, whilst some calculation methods appear more demanding than others, all else being equal, if there is complete freedom over the choice of basis this need not be the case. Spain, for example, is the only country to specify an MFR target of 100% of the Projected Benefit Obligation. However, although the calculation method prescribed in the Netherlands is the ABO, the rate of discount prescribed (4%) is a real rate of interest so that some salary growth at least is allowed for.

In the UK pension schemes experience further difficulty in reconciling their long term and short term funding strategies since the benefits they provide on wind up are relatively close in value to the ongoing benefits. This has occurred over the past 15 years, since successive governments have prescribed that benefit increases in deferment and payment, which previously might have been granted on a discretionary basis, must be guaranteed.

⁹ See Appendix for definitions of ABO, IBO and PBO.

In the USA, on the other hand, vested benefits are not entitled to any revaluation and so there is a reasonable margin between the ongoing and wind up funding targets¹⁰.

Whilst it is relatively straightforward to understand which combination of method and basis is likely to give the highest funding target, it is less straightforward to conclude which is the appropriate funding level for a statutory test. The PBO, all else being equal, should provide extra security in the short term, as well as in the long run since it should enable the scheme to withstand increased costs due to scheme maturity. On the other hand, prescribing the PBO as a short term target runs the risk of overfunding the scheme, which could lead the Tax and Accounting authorities to impose strict rules in order to reduce the surplus.

In particular, the benefits assumed payable in the course of a PBO valuation are not those likely to be due, should a scheme be wound up. It seems inappropriate to specify, as a minimum funding target, a set of liabilities based on the most optimistic, going concern circumstances. At the same time, using the PBO as a minimum funding target may prompt scheme members to develop false expectations to being entitled to pension benefits including an allowance for future salary growth in the event that the scheme closes (Cooper, 2000).

The most appropriate target appears to be one based on the benefits the scheme rules' stipulate should be paid in the event of the scheme being wound up. These are effectively the 'vested' benefits of members. Thus, in the UK and the US, for example, there is a match between the minimum funding target and the wind up liabilities, whereas in Spain, for example, there is not. However, if we consider insurance company regulation, a solvency margin is always added to the technical reserves, in order to protect against adverse experience. In a similar way it might be appropriate to set a minimum funding target at a level greater than 100% of the vested liabilities. It could also be appropriate to adopt some of the lessons of risk based capital, where the size of the solvency margin depends, in some sense, on the underlying risk. Thus, for example, if the assets underlying a scheme are volatile relative to the wind up liabilities, it might be appropriate to require a greater solvency margin than if the scheme is invested heavily in the fixed interest market. Although the funding consequence might be equivalent to being 100% funded on a bonds basis, regardless of the underlying assets, Trustees and sponsoring employers would be left with greater investment freedoms and might thus be better able to reconcile the longer term funding aims of the scheme.

This type of 'sliding funding scale' could reduce the problems experienced by younger scheme members in the UK, discussed in section 3.2.1. A heavier weighting to equity (or whatever the Trustees believe is the appropriate asset) in the valuation basis would be compensated for by a higher solvency margin, in which case younger members' benefits would be less likely to be reduced should the scheme be wound up.

Another reason for taking a holistic approach to the calculation of the minimum funding target is that, regardless of the apparent fairness of the calculation basis and method, if

¹⁰ Except that the Internal Revenue permit a maximum funding level of 150% the ABO.

deficits can be amortised over a long period, the members' security is still not protected. For example, until 1987 pension schemes in the USA had 30 years over which to fund any deficit, which will have considerably diluted pension scheme members' security. Even now the USA have one of the longest amortisation period of all countries considered¹¹. The UK appears to take a pragmatic approach, requiring that 'serious deficiency' is financed with a year, but giving up to 5 years for less serious deficiency. Many continental EU countries require that a deficiency is met immediately, which could be an onerous obligation, particularly for a small employer. Indeed, particularly where provision is voluntary, such a requirement might be a disincentive to employers to set up or continue defined benefit pension schemes. A measure to improve security, could thus result in undermining the welfare of its intended beneficiaries.

On the other hand, if the period of amortisation is too long, it scarcely seems worth administering a minimum funding target, and raises the problem of what action should be taken when the scheme is wound up without having addressed its funding deficiency. This is discussed in section 3.3.

3.2.3. Conclusion

Statutory minimum funding targets seem a relatively common regulation, although there is no real consistency in their operation. Most countries base the benefit calculation on vested benefits, but, since there is little consistency of vesting throughout the EU and the USA, this still leads to a variety of calculations. Basing statutory minimum funding levels on a short term target can increase the volatility of contribution rates, which in turn might undermine the willingness of employers to provide defined benefit schemes. However, several countries have experienced the dis-benefits of permitting inadequate funding, and it is possible to imagine positive benefits emerging from a system that worked well. For example, members' confidence in their employer's scheme might be increased.

Minimum funding should be perceived as a positive measure that can secure benchmark funding of a pension scheme and, if well managed, could replace or reduce the need for insolvency insurance. The experience in the USA suggests that the alternative is not possible, that is, the introduction of insolvency insurance does not remove the need for minimum funding standards.

3.3 Insolvency and other forms of Insurance

As we mentioned, minimum funding targets can only sensibly be applied to funded schemes. Schemes that are financed in different ways, that is book reserve and PAYG schemes, require different strategies in order to secure benefits in the event of employer insolvency.

¹¹ Financing regulations in the USA provide an example where tax and security regulations are in conflict. Some severely underfunded schemes are unable to pay sufficient contributions to make up their deficit under MFR regulations, without falling foul of maximum contribution regulations.

3.3.1. Insolvency Insurance

The most obvious means of providing security is through insolvency insurance. Book reserve schemes are found largely in Austria, Germany and Luxembourg¹², and the latter two countries prescribe the use of insolvency insurance. Austrian firms are required to set aside assets in their balance sheet, up to at least 50% of the scheme liabilities, that pension scheme members have priority for in the event of bankruptcy. This could be viewed as a (very) weak form of funding.

Some countries with funded pension schemes also have insolvency insurance. The PBGC in the USA has already been mentioned; another example is Sweden, although insolvency insurance is only required to the extent that the funded scheme loans assets back to the employer. Various ways of providing insolvency insurance, and their advantages and disadvantages, are discussed in more detail elsewhere (for example, Black, et al, 1999, and Cooper, 2000).

Invariably, the extent of any guarantee provided under insolvency insurance is limited. The maximum benefit the PBGC will pay in 2000 is \$38,659 and in Germany, in 1999, the maximum benefit was reduced from three times the social security ceiling to 1½ times the ceiling (DM 161,280 in 2000). The limit acts to control the extent of any cross subsidy in the insurance arrangement, but also reduces the security afforded to members.

None of the schemes in the EU or the USA charge premiums on a market related basis¹³. This has two consequences.

Firstly, employers can select against the insurer. For example, in the USA where the insurance provided by the PBGC covers the unfunded liability, it could be rational for employers to choose to underfund their pension scheme. Instead they might invest in the company, knowing that the members' benefits will be secured. In Germany, this form of anti-selection is controlled since there is no fund, but employers might feel less compunction to operate responsibly, since their employees' pension rights are protected by insolvency insurance.

Secondly, particularly for book reserved schemes, the costs of providing pensions will emerge in a different way, since the funding discipline is different. The premium paid to the Pensionssicherungsverein (PSV) in Germany is effectively financed on a PAYG basis, where each year's premium is related to the recent costs of the PSV and shared proportionately to liabilities amongst the participating schemes. Thus the costs are driven by economic circumstances, rising during a recession and falling during an economic boom. This could make the arrangement vulnerable to the demographic and economic experience expected in the first half of the 21st century.

¹² Interestingly, in other countries, book reserve schemes are either explicitly forbidden, or discouraged through the medium of tax legislation.

¹³ Although the Swedish scheme takes into account an employer's credit worthiness when deciding whether or not to offer cover.

The Pension Scheme Compensation Board (PCB) in the UK was set up to meet the unfunded liabilities of schemes whose sponsoring employer become bankrupt whilst the scheme is underfunded due to fraud. It is financed by a levy imposed on the pensions industry, according to the needs of the PCB. So far (September 2000), the PCB have only paid out claims amounting to £38,164 and, apart from an initial levy, have not had to call on pension schemes for additional finance. By limiting coverage to fraud, the risk of moral hazard is reduced, relative to that faced by the PBGC, for example.

The difficulty faced by those insuring employer's risk of insolvency has been considered by a working party of the Faculty and Institute of Actuaries (Black, et al, 1998). Insolvency insurance seems to work adequately in the EU. However, in Germany the amounts involved are less than they would be in the UK or USA, since they are underpinned by relatively substantial state pensions, and in Finland and Sweden supplementary pension provision is compulsory. In the USA there are concerns that the PBGC is exposed to substantial risks and used as a means of subsidising declining industry (Weaver, 1997). In the UK, where the recent consultation documents produced by the Government and the Faculty and Institute of Actuaries (Pensions Board, 2000) discuss the idea, no-one is a willing sponsor. The concern is that, if compulsory insolvency insurance were introduced, the additional cost would encourage further movement away from defined benefit pension provision.

3.3.2. Mutual Insurance

Most formal insolvency insurance arrangements for pension schemes act similarly to mutual insurance. That is, the cost is spread over the pension scheme community, rather than being met through risk based premiums. In the USA the PBGC has introduced some risk sharing, but a significant part of the premium is still fixed per plan participant. However, in this section we distinguish between these formal arrangements and the informal insurance that exists in France and, to a lesser extent, the Netherlands.

Whilst the modes of pension provision in France and the Netherlands are very different, the majority of the membership in both countries are in industry or sector wide schemes. A consequence of this is that there is a greater degree of separation between the management of the scheme and the sponsoring employers. In France most employees are covered by one (or both) of two occupational pension schemes, AGIRC or ARRCO, which cover employees from a variety of industries. The schemes offer similar benefits, but cover different salary levels, financed on a Pay as You Go basis. If a company becomes bankrupt, its employees remain in their scheme and the cost of paying their accrued benefits will be met by the remaining, contributing, employers.

A similar arrangement occurs in the sector wide schemes in the Netherlands, although the benefits are provided on a funded basis. Effectively, employers are grouping together to provide themselves with mutual insurance¹⁴. However, whilst it seems as though

¹⁴ Note that, since the statutory minimum funding target in the Netherlands is effectively the PBO, the risk to remaining employers' long term funding costs of a sponsoring employer's bankruptcy should be minimal.

employers have reached a high degree of accord with one another, in reality they might have little choice. In France it is compulsory to provide occupational pensions and virtually all employers, apart from the largest, do so through schemes that cover a variety of industries or sectors. In the Netherlands, it is difficult for employers not to join a sector wide scheme, where one is available, and so, effectively, employers have no choice in the matter¹⁵.

As we discuss later, one of the reasons French pension schemes are provided largely by umbrella organisations is because of the vulnerability of providing retirement incomes through PAYG financing. Indeed, schemes that were previously operated outside the main two systems have recently moved within the fold precisely because they were becoming unable to provide their pensioners with their expected pensions from a declining wage base (Reynaud, 1997). In addition, should either of these systems become temporarily unable to finance their pensions, the Government has the power to transfer tax revenue to their funds. Thus, similarly to the claims for the PBGC, the system operates as a subsidy from new industry to declining industry. Whilst cross subsidy is not necessarily undesirable, its consequences can be unfortunate, particularly when the costs incurred are disguised.

3.3.3. Debt on the employer

In the USA, if a pension scheme is underfunded the deficiency must be placed on the company's balance sheet and stand as a primary debt in the event of bankruptcy. In theory this should make it difficult for the employer to access funds in the market place, since the rights of the lender would rank behind those of the scheme. This provision was introduced to assist the PBGC in meeting the unfunded liabilities of the schemes that became claims. Experience suggests, however, that despite the high ranking of the debt the PBGC is not recovering much more than 10 cents in every dollar (PBGC, 1999).

By contrast, in the UK, whilst any unpaid contributions rank ahead of lenders rights (since they are treated as deferred pay), the unfunded liability ranks alongside that of other creditors. This dilutes the value of the debt, as well as delaying repayment. In addition, the pension scheme liabilities might exceed the value of the company itself: sometimes it might be impossible for the scheme to recoup its debt.

Prioritising pension scheme debt has other consequences apart from theoretically increasing members' security. In particular, it dilutes the security of the employer's other lenders, who might therefore choose not to lend, or only to do so at higher rates: improving security for one group can only be achieved at a cost to another group.

4. The Governance of Occupational Pension Schemes

Occupational pension schemes have not developed in a vacuum, but with reference to existing economic, social and cultural forces. This can be seen superficially since, in

¹⁵ The ECJ case C-219/97 *Maatschappij Drijvende Bokken BV v. Stichting Pensioenfonds voor de Vervoer-en Havenbedrijven*.

countries where the state pension provides adequate income replacement in retirement there is less demand for occupational plans. However, local influences go deeper than this and have affected how pension schemes were established, and how they are financed and managed.

Within the EU and the USA, although there are similarly mature economic markets, a rough distinction can be made between the UK and USA on the one hand, and other major EU countries on the other. Employers in the UK and the USA would like to operate with as little governmental intervention as possible and business communities maintain a strong belief in the efficiency of a free market. In both countries the variety of employment contracts has increased to include more temporary and part-time work positions, while market makers discourage regulation and flexible investment strategies are encouraged. In contrast, Germany, for example, represents a social market (Hutton, 1996) with strong bonds between the public and financial institutions. The Bundesbank acts as a guarantor of price stability and as a careful social partner in its own right, concerned with larger economic and social objectives.

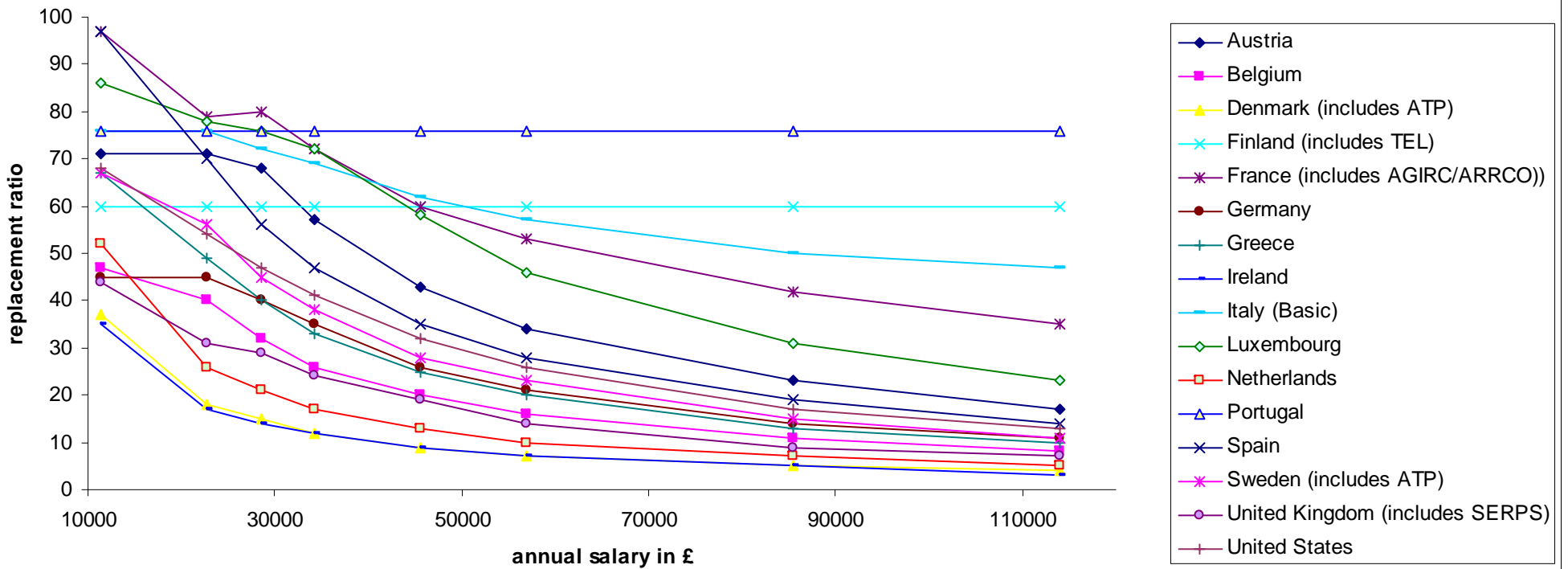
A free market society accepts socio-economic differences between individuals in the belief that competition will eventually smooth consumption patterns, while the social market society appears less flexible and impartial, but accepts less disparity in outcome. A pertinent example of these differences can be seen in the level of state support for retirement benefits. Chart 4.1 shows the replacement ratios of the countries under discussion. It is easy to see that the USA and the UK in particular, have low replacement ratios relative to most continental countries.

However, whilst it is possible to identify countries in continental EU that regulate supplementary pensions as, or more, heavily as the UK and USA, there are also countries with extremely light regulation. As has been mentioned already, these tend to be those countries with high (state) replacement ratios. Indeed, we argue that whilst the tendency in the UK and USA might be toward light regulation, the special circumstances of providing for retirement combined with the low level of state provision has resulted in quite robust regulatory structures.

Usually occupational pension schemes have to register with the particular country's Tax, Accounting authorities as well as a Pension Supervisory Board (or equivalent). The general models of establishment are partly a result of the funding method chosen.

Chart 4.1

retirement income from state and compulsory pensions - single man



4.1 Separate Funds

There are three common ways of establishing and regulating pension schemes that have their assets invested separately from the employer. The so-called 'Anglo-Saxon' model, which is found in Ireland and UK, establishes pension schemes under Trust Law. Employer and employee contributions accumulate in a trust fund managed by a board of trustees which delegates the investment of the trust fund either to investment manager(s) or to insurance companies, with fiduciary rights. The Trustees are obliged by law to act to the benefit of the beneficiaries. They are not expected to be experts themselves in investment or auditing, for example, but they appoint experts such as fund managers, actuaries and administrators whose performance is usually monitored by consultants also employed by the trustees. The pension scheme is established as a separate legal entity from the employer, which should encourage independent decision-making. However, in the UK the practice has been to appoint trustees from amongst the senior management of the employer. The 1995 Pensions Act established that the members should be represented by 1/3rd of the trustee board¹⁶ so as to increase the employee's involvement, and hence understanding and knowledge, in the pension scheme's well being.

Both in the UK and the USA pension schemes control assets amounting to a significant proportion of the respective stock markets. The law controlling trustees' actions is far weaker than that controlling the actions of the managers and directors of corporations, even though the assets they control may be more significant. For example, Trustees in the UK cannot be held financially liable for their mistakes.

In contrast, in the Netherlands, for example, supplementary pension schemes are established similarly to companies, with a Board of Directors taking the role of Trustees in the UK.

A third way of establishing pension schemes separately from the sponsoring employer is to consider them as providers of insurance, regulating them as insurance companies. This type of establishment is rare and the only examples within the EU are Pensionskassen (pension funds) in Germany and some Pension Funds in Belgium. Since the schemes regularly have to comply with asset, liability and solvency rules the pensions are secure, in the sense that there is a high certainty that vested benefits will be paid. However, the degree and type of regulation increases the costs of providing these schemes and only the large employers seem able to afford them. Pensionskassen only cover a minority of employees and Belgian Pension Funds are being replaced by Defined Contribution schemes.

Schemes funded and managed similarly to insurance companies are different from schemes that invest through insurance companies. The latter are generally established under Trust or Company Law, and the insurance contracts represent the investments chosen. Examples of countries where second-tier pension provisions are offered through insurance companies are Italy and Greece. For example, in Italy the law governing pension schemes stipulates that they are run as separate legal entities called 'Fondo

¹⁶ Although it fell short of prescribing member representation.

Pensione', to which both employer and employee contribute, but the majority are directly insured by Italian life insurance companies. In Greece, where there is no prescribed method of establishment, usually supplementary pensions are financed through deposit administration contracts with insurance companies.

The pattern of separate establishment and separate funding is found in several countries, namely the USA, the UK, Sweden, Spain, Portugal, the Netherlands, Luxembourg (although only recently), Italy (since 1997), Ireland and Finland. In the EU the UK and Ireland are exceptions in allowing Trust Law to govern pension scheme operation.

4.1.1. The Netherlands

It is worth giving extra consideration to the operation of supplementary pension schemes in the Netherlands, since they have by far the highest coverage of employees in the EU (apart from France, see section 4.3).

Generally, pension schemes are consumers of financial services, which might be provided by insurance companies. However, in the Netherlands, Pension Funds can act as both providers and consumers.

Under Trust Law the lines of responsibility are clear: the Trustees must act in the best interests of the members and beneficiaries. In a company, the management is expected to act in the best interests of the shareholders. When the 'company' is a pension scheme, effectively the shareholders are the members, and so the relationship is similar to Trust Law. However, paid employees have a selfish interest: remaining in employment. If Pension Funds can provide services to groups apart from the scheme members, and this service is remunerated, a potential for conflict of interest between the members of the Pension Fund, and the members of the scheme buying a service from the Fund, is introduced.

It is also possible that corporate structures give rise to greater complexity, again since this complexity is self serving to the employee. This seems to occur in the USA, which, although operating under Trust Law, places a similar level of responsibility on the Trustees as company law might do. In particular, fiduciary responsibility in the USA rests with a 'prudent expert', which concentrates decision making power relative to the loose committee structure, including lay Trustees, found in the UK and Ireland.

4.1.2. Member representation

Another significant difference between the UK and Ireland on the one hand and continental EU on the other is the attitude toward member representation. In the former two countries, pension schemes appear to have been viewed as a benefit provided by employers and, as such, the employers retained control. Although the pension schemes are established under Trust Law, and so the welfare of the beneficiaries is the responsibility of the Trustees, it is probably true that, in the past, the Trustees acted in consort with the employer. For example, the employer might have had control over the

level of contribution paid, the level of funding adopted, and the investment strategy followed.

In those other EU countries where there is substantial supplementary pension provision, the cover provided to members appears to have a closer relation to welfare provided by the state. Thus, for example, there is often close state intervention in how and what benefits are provided, arrived at after tripartite discussion between employer groups, employee representatives and the government. Whilst Trustee bodies in the UK are still not compelled to have employee representation¹⁷, elsewhere in the EU it is the norm to have 50% or more of the management committees of the Pension Foundations filled by representatives of employee organisations.

The high level of employee representation and acceptance of state intervention has led to relatively stable provision in continental EU, although most of these countries face far worse demographic difficulties than the USA and the UK. The social contract extends through supplementary provision to include state provision also and benefit changes, for example, are usually only made after acceptance by all the 'stakeholders'. This has led to governments in Germany and Italy, for example, having to accept more moderate reform to state pensions than they had originally intended.

The experience in the UK has been different. Although those employers who continue to provide defined benefit pension schemes continue to increase benefits (NAPF, 1999), in addition to the benefit improvements imposed on them by the government, there seems to be some reluctance to accept member Trustees. In particular, far from encouraging a 'social contract', as more control is passed to the Trustees and the Trustees become more independent of the employer, there is a risk that employers might close their schemes. For example, one concern with the MFR is that financial control of the scheme is taken out of the employer's hands and given to the Trustees. Possibly as a consequence of the reluctance to involve employee groups in developing integrated retirement provision, past UK governments have been able to make quite significant reductions to state pension provision, without much difficulty or complaint.

The UK has also taken a different approach to employee representation on Trustee bodies than the practice in the EU. In the EU, representatives are usually drawn from bodies that represent employees, such as Trade Unions. However, in the UK they will be drawn directly from the scheme membership. This could represent a more direct form of democracy, since the member nominated Trustees should represent their constituents without distraction, and possible conflict of interest, from an intermediary group.

4.2 Book reserve schemes¹⁸

Book reserve schemes are normally controlled by the employer, but usually with government intervention. This could mean that employers have far greater control over schemes and a closer relationship with scheme beneficiaries. In addition, of course, the

¹⁷ From 2001 one third of the membership will have to be drawn from the membership.

¹⁸ For a full description of how book reserve schemes are financed, see Mason et al, 1994.

employer has control over the 'assets' of the scheme. The attractiveness of this feature is recognised in funded scheme provision, where most countries restrict the extent to which pension schemes are permitted to invest in the assets of a sponsoring employer. However, government and accounting regulations require that the employer has to show the reserve in the company's balance sheet and usually it is mandatory to have insolvency insurance to secure pensions against the employer's bankruptcy. Some companies, particularly the smaller ones, also purchase insurance policies to meet their future liabilities, although these are still treated as the employer's asset.

On the other hand, the employees' position appears to be less favourable. Relative to arrangements in the UK and the Netherlands, employees in book reserved schemes have less security. Vesting periods are long and, even where the employer has to purchase insolvency insurance, the size of the insured benefit is capped. Moreover, disclosure is relatively limited, since it is assumed that the need for disclosure is less because of the security provided by the insolvency insurance.

Although book reserve schemes appear to operate successfully in the some EU countries, in other countries their provision is forbidden (for example, Spain), or discouraged through the tax system (for example, the UK).

4.3 Pay as You Go

France seems to be unique in the EU, with respect to its mode of pension provision. The level of compulsion, and thus coverage, is high, and no other country uses PAYG financing for its supplementary pension provision.

Employers must be associated with an appropriate provider, and employees must join the appropriate scheme. Most are members of AGIRC or ACCRO, although some employment sectors have their own schemes. AGIRC and ARRCO are effectively administrations that operate the supplementary plans provided by employers, or groups of employers. Each supplementary plan might be governed by its own set of regulations, but in principle all members should get equivalent benefits for equivalent contributions.

Authority is shared equally between employers' and employees' representatives, who negotiate policies. The interpretation and terms of implementation of the agreements reached are the responsibility of joint committees, whose performance is monitored by management committees whose role is defined in statute. Members of committees are elected from amongst representative groups.

If a participating employer becomes bankrupt the benefits are secured through a mechanism of financial compensation between member institutions of the two umbrella bodies. In fact, historically the desire for 'co-ordination' was closely linked to the fact that the majority of supplementary plans had been established on a PAYG basis, which employers and employees recognised would become fragile if based on a restricted population.

During the 1990s French governments considered whether to alter the PAYG pension system and adopt instead either the Anglo-Saxon model of pension funds that accumulate outside the company's assets or the German model of book reserves on company balance sheets. The debate was fuelled by the increased longevity and declining birth rates experienced throughout the EU, and by insurance companies, who can see benefits to themselves in increased funding. However, France appears to have less confidence in financial markets than US and UK pension schemes, doubting their ability to guarantee over time the value of the invested funds. The debate has shown that the French public is deeply attached to its own system despite anxieties regarding its future (Reynaud, 1997).

5. Conclusion

The different approaches toward defined benefit pension provision can largely be understood by the historic and social circumstances in which the schemes developed. The book reserve method with insolvency insurance indicates a risk averse attitude, with a pessimistic view taken of investment markets and an acceptance of the employers' need for investment. In Germany, this can be understood from its socio-economic and cultural heritage. In the same way, the Anglo-Saxon model demonstrates greater faith in market mechanisms for allocating resources, compared with solely investing in the employer. The French system has also developed as a consequence of its past, with hierarchical division between workers, but a high degree of mutual support between employers, and an ultimate reliance on the government.

These differences have led to different levels of state provision, resulting in different needs for supplementary pensions. The level of regulation that has developed is, by and large, inversely correlated with the level of state provision in a country. We have argued that, where there is high state provision, this effectively acts as an insurance underpin to supplementary provision and so, to a certain extent, the development (or lack) of regulation follows rational patterns. However, it would be facile to argue that regulation throughout the EU is comparable in terms of the security it affords to supplementary pension scheme members and their beneficiaries.

Each system has different weaknesses and tensions. The system in the Netherlands appears most successful, since it has a high degree of coverage without the formal compulsion found in France, for example. However, there are likely to be tensions in schemes where the Fund acts as consumer and provider, and in industries where employers feel that the sector scheme might not meet their employees' needs. This might be particularly true in new and emerging industries.

It is unlikely to be feasible to 'harmonise' supplementary provision, particularly given the variety of state provision. In particular, there are potential financial and social strains in moving from a book reserved to a funded scheme (or vice versa), that it would not be worth addressing, assuming that members are relatively satisfied with their current arrangements. For members to be able to form this view, they need to be well informed about the risks and benefits inherent in their schemes, and this would require schemes in

many countries to increase levels of disclosure. We would suggest that a bare minimum disclosure to members should include

- Initially (when an employee joins the company) –
 - ◆ a scheme booklet, setting out eligibility conditions and including sufficient information to enable the (prospective) member to calculate their benefit entitlement under all probable contingencies and details of help or complaint lines;
 - ◆ names, contact details and positions of the Trustees;
 - ◆ names and employment details of any professional advisors and administrators;
 - ◆ a statement of the statutory funding level of the scheme or information about any insurance cover of book reserve schemes;
 - ◆ information about contributions paid to the scheme and premiums paid for insurance;
 - ◆ where the scheme is underfunded on a statutory basis, the expected time until the deficiency has been met.
- At least annually -
 - ◆ an annual statement setting out the members' accrued benefits, including those accrued in any state schemes, and any associated benefits, such as increases in deferment or payment;
 - ◆ a statement of the statutory funding level of the scheme, or the cover provided by insurance;
 - ◆ an indication of what the funding level, or insurance, means in terms of the security of the benefits listed on the statement;
 - ◆ information about contributions paid to the scheme and premiums paid for insurance cover;
 - ◆ where the scheme is underfunded on a statutory basis, the expected time until the deficiency has been met;
 - ◆ information about any changes made to the scheme, or to any insurance cover, throughout the year;
 - ◆ names, contact details and positions of the Trustees;
 - ◆ names and employment details of any professional advisors and administrators;
 - ◆ a report covering investment information;
 - ◆ a summary revenue account and balance sheet;
 - ◆ details of other sources of information available, such as the accounts, the valuation report and any submissions made to the regulators.

There should also be a process of consultation with employees when changes are proposed to the scheme.

Further, the differences in approach to vesting need to be investigated further. The imposition of two year vesting and statutory revaluation of deferred pensions has considerably improved the security of UK employees' benefits (Cooper, 1997). However, it has reduced employers' flexibility considerably in terms of financing in the MFR environment. By maintaining ten-year vesting in Germany, employers are able to control their scheme costs far more than UK employers. For example, it is only necessary to purchase insolvency insurance for vested employees. Whilst differences in scheme governance might have only marginal effects on an individual member's security, we feel vesting must have significant consequences.

The UK has a successful defined benefit occupational pension system and those people with access to schemes can expect a reasonable income in retirement. However, over 50% of employees are not active members of occupational pension schemes and these individuals are disproportionately in lower income groups. They have to rely on an inadequate state pension system. Efforts by the state to enhance the security of occupational systems should take into account the way costs are currently distributed and ensure that they do not distort the distribution of resources amongst employees and pensioners even further.

From this report we see that there are a variety of ways of providing secure retirement pensions. For example, some countries have relatively costly state systems, with high benefit levels, and choose not to impose heavy regulatory costs on supplementary schemes, whilst those with less state provision generally impose heavier regulatory burdens. However, no country's supplementary pension provision provides the same level of security as a conventional life insurance policy. Insurance, because of its level of regulation, could be regarded as the 'gold standard' of financial security. There is a possibility that future generations will view the current debate about pension scheme security as we view the alchemist's search for the philosopher's stone.

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Appendix

Accrued Benefit Obligation

Calculates the liabilities based on service and salaries at the valuation date.

Indexed Benefit Obligation

Calculates the liabilities based on service and salaries at the valuation date, but allowing for indexation of the benefit between the valuation date and retirement.

Projected Benefit Obligation

Calculates the liabilities based on service at the valuation date, and salaries projected to the date the benefit is assumed to become payable.

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