International Social Security Association

Seminar for Social Security Actuaries and Statisticians: Actuarial Aspects of Pension Reform

Moscow, Russian Federation, 3-5 July 2002

Risk management and regulation of defined contribution schemes

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ISSA/ACT/SEM/02/IV(a)

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In many countries multi-pillar pension systems are being introduced, which include, as one component, privately managed defined contribution pension schemes. These arrangements are frequently mandatory and can be regarded as substituting for part of the social security system. There is clear public interest in trying to ensure that they deliver a good quality of benefits to participants.

Elsewhere provision of complementary pension schemes is voluntary, with employers often encouraged to set up occupational pension schemes and individuals either required or encouraged to belong to them. Those who do not have access to an occupational pension scheme are usually able to save through personal pension arrangements. Personal pensions are nearly always defined contribution in nature. In some countries occupational pension schemes are also normally defined contribution. Even in those countries where defined benefit occupational pension schemes are common there is a trend towards the establishment of defined contribution arrangements, often replacing defined benefit schemes. In some countries there is no general tradition of occupational pension schemes and pension arrangements are mainly open funds provided by financial institutions, operating on a defined contribution basis.

Risk management of defined contribution schemes

Defined contribution schemes offer a flexible mechanism for saving for retirement, enabling the members to share in investment returns. In principle they are well-designed to be able to cope with those who change jobs and with those members who have irregular or intermittent employment. In some cases a minimum level of contributions is mandatory, but it will usually be possible to make additional voluntary contributions, so as to target the retirement savings to the desired level. However, defined contribution schemes potentially involve considerable risk for individual members. Risks include:

- **market risk**: the value of the investments in the individual account may fluctuate and could suffer significant falls in value in adverse market conditions;
- **economic risk**: real rates of returns on investments may prove unsatisfactory as a result of difficult economic conditions or mismanagement of the economy, for example because of inflation or poor economic growth rates;
- **default risk**: investments made on behalf of the pension scheme members may default or lose value as a result of financial problems within the issuing company;

- **hedging or mismatching risk**: the investment managers may expose the members to the impact of unhedged positions on options and other derivative instruments or might invest in instruments with an unsuitable risk or durational profile with respect to the interests of the participants;
- **management risk**: the managers of the pension scheme may prove incompetent or even criminally negligent in the management of the investments, or otherwise in the management of the scheme;
- **interest rate risk**: the amount of annuity which can be purchased with the accumulated savings in the individual account will depend critically on interest rates at the time of conversion of the accumulated sum to an annuity;
- **longevity risk**: improvements in average life expectancy among the population of actual and prospective annuitants will be factored into the price of annuities and hence will directly affect the amount of annuity which can be purchased. To the extent that members are permitted to draw down on their accounts and not be required to purchase annuities, the risk of long life of the individual member falls directly on the member and he or she runs the risk of exhausting their savings too early or leaving an excessive balance on their death;
- **operational risk**: the managers of the scheme may fail to exercise adequate operational controls, resulting in loss of information about the individual's accumulated contributions. This could also arise because of catastrophic computer failure, fire, flooding or other natural hazard. Operational risk may affect the performance of the pension manager in many other ways;
- **insolvency risk**: the pension provider company or management company may experience insolvency. The impact of this on affiliates will depend on the legal structure of the pension scheme;
- **expense risk**: the level of expenses of administration, or deductions to generate profits for the pension management company, may be or become too high, leading to an inequitable charge on the savings of the individual members;
- **fiscal risk**: the government may change the rules for the taxation of pension fund investments, reducing the effective rate of return on the pension fund;
- **regulatory risk**: regulators may fail to identify incipient problems with a pension management company or may decide to withdraw the company's authorization;
- **political risk**: the government may interfere in the operation of the pension system, sequester assets, reduce contribution requirements, or direct investments towards social or political objectives, without regard to whether the returns are economic.

Regulation of pension schemes is usually set in place with a view to reducing these risks to individual members, although some types of risk are inherent in a defined contribution system and will not disappear, however effective the regulation. Regulation may also have other objectives, in terms of maintaining a strong and competitive industry of pension providers, contributing towards certain aspects of national economic policy, or reducing potential fiscal costs of covering minimum pension guarantees or means-tested welfare benefits.

Regulation may be highly prescriptive in form and seek to constrain directly the operations of the pension funds. Prescriptive regulation of investments is relatively common. Regulation may alternatively seek to forestall regulatory problems by focussing on ensuring that the management of the pension provider companies have in place their own risk management processes, so as to minimize the risk that regulatory action may become necessary.

Regulation of defined contribution schemes

A variety of different ways can be considered in which regulation might seek to achieve greater protection for members of defined contribution schemes. First, there could be protection from misrepresentation or mis-selling in persuading individuals to join a defined contribution pension arrangement, since the average person finds it difficult to understand pension matters. Second, there might be protection against failure to fulfill promises, for example because of the mismanagement or insolvency of the institution managing the pension fund or of the fund itself. Third, there could be protection against loss or diminution of pension rights, resulting from below average investment performance, or because of excessive charges. Fourth, there might be protection against unfair discrimination or inequitable treatment. And fifth, there could be protection against using up the pension fund assets too quickly, for example by requiring the purchase of an annuity or a structured form of programmed withdrawal.

Pension schemes are governed by their own contractual terms or legal documentation but, in order to provide additional protection, many countries have put in place an extensive amount of legislation to govern the behaviour of complementary pension schemes. A further question is the extent to which compliance is monitored by an active system of supervision. In the following sections we discuss the interests of the regulator in the organizational structure and practical operation of pension schemes and some of the implications for regulation and supervision.

The Insurance Committee of the OECD developed a set of 15 principles for the regulation of private occupational pensions schemes, which were adopted in 2001 by the recently established International Network of Pension Fund Regulators and Supervisors. These are set out for information in Annex 1.

Structure of pension schemes

It is essential to create a suitable legal structure for the delivery of pension benefits. Benefits could be provided directly by employers, in the same way as wages or salary. However, the need for member security and the importance of controlling the use of tax privileges normally point to specific legal structures being used for the provision of pension benefits.

One solution is to require all pensions business to be carried out by insurance companies, which already have their own regulatory framework and supervisory processes. This provides a structure which is clearly at arm's length from the employer, but there may be regulatory concerns of contagion between the pensions business and other types of insurance business. It might be regarded as unsatisfactory, from a public policy viewpoint, to expose the pensions business to the possible risks of financial difficulties arising in other classes of insurance business within the same commercial insurance companies.

On the other hand, insurance companies have the right expertise for managing pensions business, both contractually and in terms of the investment requirements of the business, and they are ideally suited for bearing the longevity risks associated with payment of life annuities after pensions have come into payment. Indeed they can to some extent hedge this risk against other types of life insurance business, for which the liabilities become less expensive as life expectancy increases. Accumulating investment funds for pensions business can be required to be segregated from other investments, by a structure of internal

unit-linked funds with separate assets, accounting and unit-pricing. Separate accounting can also be put is place for the pensions annuity business.

Pensions business carried on by insurance companies used to be common in a number of countries and, although it has to some extent given ground to other forms of pension provision, it still plays an important role in respect of open pension schemes for individuals and pension schemes for small businesses.

An alternative to the insurance company structure is to permit the establishment of specialized mutual associations or mutual benefit funds, authorized to provide pension benefits and controlled by the members. Participation in the corporate governance and financing of such mutual benefit funds may be permitted for the employers of members, but if this were allowed to be substantial, they might end up playing too dominant role in directing the affairs of the fund. Mutual benefit funds sometimes present problems for the maintenance of good corporate governance, since they do not have the same shareholder accountability requirements as proprietary insurance companies. However, as with mutual insurance companies, which also exist in many countries, corporate governance structures similar to those of proprietary companies can be established, with accountability to the members, although it is not easy in practice to get the members to take their responsibilities seriously as the proxy owners of the business.

Mutual benefit funds have been re-established in Hungary as a vehicle for pension provision. Friendly societies in the United Kingdom and fraternals in North America have similar characteristics and may be permitted to carry on certain types of pension business.

An increasingly common structure for the provision of complementary pensions is to authorize specialist commercial investment funds, set up on a proprietary basis, which are open to participation by anyone who wishes to join. These funds are usually open funds, as the economics of the operation points towards trying to increase the number of affiliates as much as possible. However, there is no reason in principle why such a fund should not restrict itself to particular categories of members, or even be established to provide pensions for the employees of a single employer, as what might be termed a “captive” commercial pension fund.

Commercial pension funds have been used in the pension reforms of many countries in South and Central America and now in countries such as Poland, Hungary, Latvia and Croatia. The usual structure is to establish commercial management companies, which are proprietary companies with shareholders and subject to regulation and supervision by a pension fund regulatory agency. Each management company then establishes one or more pension funds, which are segregated and ring-fenced investment funds, with assets clearly separate from the management company’s own funds. The assets of the investment funds are, in effect, the assets of the members who have invested their contributions in the fund (often referred to as affiliates).

However, the affiliates do not have any direct beneficial ownership of the assets of the pension fund. Instead, there is maintained on their behalf an individual account of their interest in the fund, in which their contributions (and any made on their behalf by an employer, or in some cases the government) are accumulated. The individual account consists of units in the pooled investment fund operated by the pension fund administrator, with the value of the units changing as the values of the underlying assets change. A fully unitized approach is usually the most transparent way of passing changes in the value of the underlying assets on to the affiliates’ individual accounts. However, it is possible to devise a

structure which is more similar to a traditional deposit account with a savings bank, in which interest is added to the individual accounts on a daily or less frequent periodic basis. Since the value of the underlying investments can go down as well as up, the interest added may sometimes need to be negative.

A further possible structure is to permit individual employers to establish their own pension fund, separate from the employer's business, but with the employer still able to exercise some control. In the United Kingdom, the United States, Canada, and other common law countries, as well as in the Netherlands, this is done by means of trust funds. Trustees are appointed, whose task is to manage the investments of the trust fund and administer the trust, having regard to all the participants in the trust, which includes all classes of beneficiaries as well as contributors (including the employer). The trustees have a fiduciary duty – a duty built on mutual trust – which they must personally exercise to ensure that the trust is administered in accordance with the trust deed and the scheme rules (and any national legislation or regulatory requirements). This type of structure is frequently used for defined benefit occupational pension schemes, but it is also suitable for defined contribution schemes sponsored by individual employers or groups of employers or all the employers operating in a particular industry.

Some countries which do not have a tradition of trust law have achieved a similar type of structure through the use of foundations, which are also often used for educational or charitable purposes. The benefit of using an existing legal structure such as a trust or a foundation is that there is already a body of law and practice in place for handling such structures. A disadvantage is that the pre-existing body of law may not be suitable in every respect for adaptation to use as a vehicle for the provision of complementary pensions. An alternative may be to enact legislation to establish a specialized legal entity with properties similar to those of a trust, which is specifically designed for use in connection with the provision of pension benefits.

Authorisation and licensing of pension funds

In most countries it is the responsibility of the pension fund regulator to authorize the establishment of new pension schemes. This is clearly appropriate and necessary in respect of open pension funds which are intending to market their services to members of the public or to employers. Similar principles should apply whether the pension funds are specialized commercial vehicles, mutual benefit funds or contracts offered by insurance companies. In order to have in place an orderly and transparent process for applying for and obtaining authorisation to establish a new open pension fund, the regulator should lay down a specific set of requirements to be fulfilled by any potential applicant.

In addition to demonstrating how it is proposed to meet the prudential and market conduct regulatory requirements of the regulator, a new pension fund applying for authorisation may also have to demonstrate compliance with the requirements of the taxation authorities, in order to qualify for advantageous taxation treatment. From a practical perspective, it may be possible for the regulator to act as the agent of the tax authorities in determining whether these additional requirements have been met.

Alternatively, authorisation may have to be a two-stage process, with approval having to be sought separately from the taxation authorities as well as from the regulator. In some jurisdictions there could even be a three-stage process, as separate authorisation may be required from the prudential regulators and the market conduct regulators (the latter in

respect of the proposed arrangements for distribution and marketing, product and commission disclosures, and arrangements for training and testing the competence of salespersons).

The authorisation and licensing arrangements for occupational pension schemes, operated by single employers or groups of employers, may be somewhat different. A practical consideration might be that there could potentially be a very large number of such schemes, particularly if they are set up by individual employers, and the task of individually authorizing them could be a significant one. In some countries, such as the United Kingdom, the authorisation process is largely confined to satisfying the taxation authorities that the requirements have been met for favourable tax treatment.

Whilst the final decision on whether or not to authorize a proposed pension scheme must lie with the regulator, it would often be considered appropriate to have an appeals process for applicants to follow if they consider that they have unreasonably been denied authorisation. If the regulator is permitted to withhold authorisation for reasons unconnected with the completeness and acceptability of the application, for example to limit the number of pension schemes competing in the market, then the parameters of the licensing framework should be made clear to potential entrants from the start.

Corporate governance and management structures

Although the regulator will want to monitor various aspects of the pension scheme's activities, a first level of assurance is provided if the regulator can be assured of a good quality of corporate governance and management within the pension scheme's own structures. This is considered further in a subsequent section.

For a corporate entity offering pension products to the general public or to employers, the governing body is the Board of Directors. A common regulatory requirement now is for the Directors to be "fit and proper" persons to hold positions as Directors. This is interpreted as having demonstrable qualities of integrity, honesty and responsibility, as well as having a blameless past record of business dealings and prior management roles or directorships. It can also be given a wider connotation to include the skills and experience of the Directors as being appropriate to the entity of which they are being appointed to the Board, and indeed that the Board as a whole has an appropriate mix of relevant experience and expertise.

Under the Board of Directors there will be a management structure and the regulators will want to be satisfied that the members of the senior management team are also "fit and proper" in all the senses described above. For senior managers the relevance of experience and appropriate skills will be even greater than for Directors. In order to ensure that the whole organization is well-managed and operating efficiently, standards of competence may also be set for lower levels in the organization, and particularly for key technical roles. Good corporate governance includes having strong personnel management structures and an emphasis on training and development and maintenance of skills throughout the organization.

Supervision of the continuing effectiveness of the corporate management structures will often include monitoring whether there is "sound and prudent management". Since it is impossible for an external regulator to monitor all management decisions and operational effectiveness, supervision will usually concentrate on whether appropriate systems and controls are in place. Sound corporate governance will include a well-developed process for

identifying the risks which affect the organization and might prevent it from achieving its objectives or might adversely impact upon its affiliates. Risk management procedures should then be put in place to monitor the risks which could have a significant impact on the organization, in particular those which have a medium to high likelihood of occurrence, and strategies should be implemented to counter the incidence of risk factors or the consequences of risks emerging.

For occupational pension schemes, the key to good corporate governance will be the effectiveness of the Board of Trustees or equivalent governing body. Since trustees are usually lay individuals rather than professionals, with a number of them drawn from the membership of the scheme itself, it would not be realistic for the regulator to impose “fit and proper” requirements in as formal a way as for a commercial entity. It is reasonable, however, for the regulator to have the power to disqualify particular individuals from acting as trustees, based on their previous performance in such a role, or because of the history of their personal or business dealings. Some regulators require trustees to be given appropriate training to improve their capability to perform the role. They may also be formally required to take professional advice in different areas, such as investment management, and to appoint professional advisers on a continuing basis, such as actuaries and auditors.

An important issue concerns the degree of independence of the governing body of the scheme from the sponsoring company, where the scheme is established to provide pension benefits for the employees of the company. This is related to the legal structure, as in some cases there will be almost total independence, whereas in others the employer will exercise a considerable degree of control. It is important to establish an appropriate balance of responsibility within the system and for it to be clear who is accountable to whom. If the employer is underwriting the finances of the scheme, for example by meeting the balance of its costs, the level of contributions from employees being fixed, then proper accountability to the employer is essential. In all cases it is desirable for there to be accountability to the members, through some degree of member participation in the governing body and through disclosure requirements.

Requirements to disclose relevant information to members (and to the regulator) may be laid down in the regulatory framework. These will usually include preparing an annual report to distribute or make available to members, including the audited accounts, or at least a summary of them, and a report or statement from the actuary. In the case of corporate entities, whether proprietary companies or mutuals, there will usually be a requirement to hold an annual general meeting, at which the owners of the business (shareholders in the case of a proprietary company, members in the case of a mutual) can hold the management accountable for their actions. Trustees of occupational pension schemes are not necessarily required to hold an annual meeting, but are commonly required to issue an annual report. Accountability to the members of the pension scheme and to the company sponsoring the scheme is usually deemed to be achieved through representation of the members and the company on the Board of Trustees itself

Management of investments

The investment of assets is a key activity in all funded pension schemes. In defined contribution schemes, the benefits ultimately payable to the members or affiliates depend directly on the investment performance of the fund.

Regulation of pension schemes often focuses to a significant extent on the investment activity. Regulation may cover the types of investment in which the schemes may invest, the processes involved in making investment decisions, the transparency to members or affiliates of the investment policy adopted and the persons or firms who carry out the investment.

As with many other aspects of pension scheme regulation, it is possible to take a more or less interventionist approach. In some countries pension funds are required to invest a minimum proportion of assets in certain categories of asset. There may be a limited number of permitted categories of assets, restrictions to avoid concentrations of investment in particular types of investment or with particular counter-parties, and bans or restrictions on the use of more speculative investments. Self-investment, that is investment in the company sponsoring the pension scheme, or in related businesses, may be banned or severely limited.

Such an approach may be thought to be too rigid for occupational pension schemes, given the extent to which the fulfillment of the pension promise is in any case in the hands of the sponsoring company. It has also been argued persuasively that excessive investment controls lead to sub-optimal investment allocation decisions. It is certainly difficult to operate a system of detailed controls effectively in an environment where there are many different types of pension scheme, with varying characteristics.

An alternative approach is to leave a considerable amount of discretion to those responsible for managing the fund, whether it be the board of directors or the trustees, within the framework of a “prudent person” rule. This may imply laying down general requirements of prudence, setting out investment principles (of security, liquidity, diversification, yield and appropriateness to match liabilities, for example), imposing a requirement to take investment advice from a qualified or registered professional, and requiring the trustees or board of directors to take personal fiduciary responsibility for the investment of the assets in the interests of members and beneficiaries.

Accountability may be strengthened by requiring the governing body of the scheme to formulate and make public a statement of investment principles, and to publish in the annual report information about the investment strategy adopted and a review of investment performance against pre-set benchmarks.

Safeguards may be thought desirable on the physical custodianship of investments and on who can buy, sell or lend them. This is one of the areas where there is considerable scope for things to go wrong, not only as a result of poor investment but also as a result of misappropriation or misdirection of assets, reflecting fraudulent or criminal activity. Regulators may impose a requirement that an independent custodian be appointed to hold the title to the investments to reduce the risk of malpractice.

Other aspects of defined contribution schemes

With defined contribution pension schemes it might appear that, apart from the legal structure, corporate governance requirements and investment management, there is little to regulate. A minimum contribution level may be imposed under mandatory defined contribution systems which form an essential part of the basic social security structure. Maximum contribution levels may be imposed by the tax authorities.

An important potential area for regulation is the charges and expense deductions made under the scheme. Deductions made from the affiliates' individual accounts can severely affect the accumulated balance in the account at retirement and can be formulated in many different ways. In principle it might be expected that competition between alternative pension schemes in the market would help to drive down the level of expense deductions. However, experience in a number of countries has shown that competition is rarely effective in that way, because of limited shopping around by potential affiliates and because pension funds do not see it as in their interests to undercut the rest of the market with lower charges in order to gain market share. In fact their best strategy for gaining market share may be to have higher expense deductions and offer higher commissions to agents who sell their product.

Expense deductions may be made at the start of the contract, on a continuing basis throughout the lifetime of the contract, or on exit, on converting the accumulated individual account into annuity or on transferring the balance to another pension arrangement. Initial deductions may be fixed amounts per contract, percentage deductions from the premium, or differential buying and selling prices on units in the unitized fund (technically known as the bid/offer spread, as in mutual funds). Continuing charges may also be fixed amounts, for example each month or each year, or charges based on a percentage of the current market value of the individual account, again payable each month or each year. Exit charges might take the form of a percentage deduction on withdrawing the balance in the individual account before normal retirement age, or a charge for purchasing an annuity.

The regulator might take the approach of restricting the types of charges which can be levied or limiting the level of particular allowable charges. Alternatively, they could insist on disclosure in a form which would render the effect of the charges more transparent, for example by requiring an illustration of the projected build-up of the individual account on certain stylized assumptions, with and without the charges being levied, or requiring a figure to be quoted for the effective reduction in yield on the individual account over a number of years as a result of the combined charges.

Rules might be imposed on the form in which the benefits can be taken from a defined contributions scheme. For example, the investment is often required to be "locked in" up to retirement age, ensuring that it cannot be realized for cash prior to that date or assigned as security for a loan. The proceeds at retirement age might be required to be taken in pension form, with only a limited portion (or none at all) as a lump sum. Regulations could insist that the annuity should incorporate a survivor's benefit (for example, at half the level of the annuity of the member), be calculated on a unisex basis, be increased on a regular basis in line with movements in the Consumer Price Index or else include a fixed level of annual increase.

There could also be rules regarding the marketing of defined contribution open pension schemes to the general public, covering issues such as the training and competence of sales agents, required disclosures about investment policy, commission and other charges and the types of projections of future benefits which are permitted.

Reserving requirements

Appropriate reserving and solvency requirements will clearly depend on the structure of the pension fund and the nature of the contractual promise to affiliates. Where the promise is defined by the value of the assets held in the fund, the technical provisions will be equal to

the value of the relevant assets. It is important to have consistency between the value of the assets and the liabilities, so as not to imply a surplus or deficit which is wholly spurious. There may, however, be a need for additional technical provisions. This will often be the case where there are guarantees on the amounts ultimately payable to affiliates or to provide for the expenses necessary to continue the business in order to pay the contracted benefits. The need for such provisions should be carefully considered in the light of relevant accounting standards and according to the legal structure and nature of the commitments. The necessary reserves might be needed in the pension fund management company, where this is a separate legal entity and responsibility for meeting any guarantees rests on that company rather than on the pension fund itself. Care should be taken not to permit expense and commission deductions all to be taken into income in the year in which they are received, if they are in fact intended to cover all future expenses involved in administering the contract.

Solvency margins, or prescribed levels of capital or "own funds", should be required to be maintained, according to the nature of the risks, in order to ensure a high probability that the entity can meet its commitments in all circumstances.

The risks of pension products being missold is particularly acute where individuals have to make choices between alternative routes to pension provision or alternative products.

Taxation

There should be appropriate provisions in the law regarding the taxation treatment of different pension vehicles. In principle there should be provisions to cover the taxation treatment of employees' and employers' contributions, of the investment income and capital gains (and losses) of the fund, and of the benefit payments. It is common for the tax provisions to offer an incentive to sponsoring companies and employees to establish pension arrangements in an approved form or forms. This will typically involve making contributions a deductible expense for tax purposes, at least up to a certain level, and allowing full or partial exemption from tax on investment income and capital gains.

In order for pension schemes to qualify for favourable tax treatment, certain requirements may be imposed on the form of the pension arrangement, the type of benefits which may be provided and the level of contributions which may be made to the scheme. Investment restrictions could be imposed as a condition of approval.

Security of members' rights

A major concern of regulators is to safeguard the security of members' accrued rights as far as possible in all circumstances. With defined contribution schemes this implies concentrating on the suitability and risk profile of the assets.

Since the rights of members of a defined contribution scheme are generally determined by the assets held in the pension fund, regulators are usually concerned to enforce a legal structure which protects those assets from erosion or removal by unscrupulous or incompetent pension fund managers. A first line of defense will often be controls on the managers themselves, first of all to ensure that they are "fit and proper" persons to be managing a pension fund and secondly to require them to have in place good systems of internal control and risk management. Use of independent custodians to hold the title to the

assets may reduce the risks of misappropriation of assets by the managers or controllers of the scheme.

Extreme forms of abuse or misconduct by scheme managers are generally rare. However, in many ways equally serious for affiliates is where the investment performance of the managers is poor. This may not be a matter for regulatory intervention as such, since variability in investment outcomes is an inevitable consequence of a diversified pension system. In some systems there are penalties for underperformance, or a requirement for pension funds to underwrite returns, either in absolute terms, or relative to the average market experience

Annuity companies

Many defined contribution pension scheme systems require affiliates to take their savings in the form of a life annuity (or at least offer this as one of the options available). Annuities offer the most satisfactory means for individual affiliates to insure against longevity risk and market risk, enabling them to have a reliable income stream for as long as they live.

In order to ensure that annuitization really does reduce risk for the affiliates, the annuity market needs to be well-regulated to make sure that the companies are able to deliver on their contractual promises. According to the legal framework annuities may be written by ordinary insurance companies or perhaps by specialized pension annuity companies. Normally this aspect of the business will be kept quite separate from the accumulation phrase. Whether ordinary insurance companies or specialized companies, the principles of regulation should be similar to those applying in the insurance industry, with technical reserves being established to cover the future commitments of the company under all existing contracts. A solvency margin should also be required.

Reserving for annuities requires careful consideration of the way in which life expectancy may develop in the future. With the passage of time it is clear that estimates of future mortality rates may change – usually getting lower, which increases the size of the necessary reserves. To forestall this as far as possible, mortality rates used for this purpose should always include an element of projection into the future and not be too rigidly based on past experience.

Another key element in the reserving basis for annuities is the rate of interest. The assumed rate needs to be fully supported by the returns on assets held to back the reserves. In principle risk management of an annuity portfolio requires careful attention to be paid to the appropriateness of the assets to generate the cash-flows required to guarantee payment of the annuities. If there is a mismatch, for example because bonds of sufficient duration are not available in the market, extra resources will need to be maintained, either in the form of higher technical provisions or through higher solvency margin.

Scheme discontinuance

The regulator needs to have in place mechanisms for handling the situation where a scheme is discontinued for the purposes of further contributions, for example if the sponsoring company goes out of business or simply decides to close the scheme in respect of future service. As already indicated, the essential principle should be that rights already acquired by members are secure. In the case of a defined contribution scheme, the accrued entitlement is to the value of the investments standing to the individual account of the

member, made up of the proceeds from the investment, up to that point, of the member's own contributions and the contributions of the employer on the member's behalf. In the case of open funds, there will usually be regulatory powers to close a scheme to new business if particular criteria are not met. In some environments this will generally result in the old scheme being run off as a closed fund, and further contributions having to be made to a different scheme. In other environments a scheme closing to new business is required to close down altogether and to arrange the transfer of the existing assets to an ongoing pension scheme.

Compensation schemes

Compensation arrangements differ considerably from country to country. If such a scheme is felt to be desirable, consideration needs to be given to its scope and who should be covered. Compensation would normally be limited to accrued liabilities, but the question arises as to whether it should cover deficiencies arising from any source, or only specific circumstances such as fraud, misappropriation of assets or negligence by the sponsoring company or by the scheme’s governing body or managers. A compensation scheme covering the possible results of poor investment performance, high inflation or other aspects of scheme experience proving to be less favourable than expected has much potential for abuse and could prove very expensive to operate in circumstances where many pension schemes were suffering, for example, from systemically poor investment returns.

With a defined contribution scheme the benefits are determined by the value of the assets, so that in principle a deficiency cannot arise. There would be dangers in having any arrangement to compensate for poor investment performance, but compensation might be available to cover misappropriation of assets by scheme managers. A commercial pension fund management company could become insolvent, or unable to meet financial requirements laid down by the regulator. Most countries with this type of commercial pension fund would require the assets of the ring-fenced fund to be transferred to another manager if such a circumstance were to arise.

A first port of call in the event of any shortfall of an occupational pension scheme might reasonably be the sponsoring company, through imposing a debt on the business, as envisaged above. The cost of any further compensation payments might be met through a mutual insurance arrangement, under which all eligible pension funds would pay regular premiums to cover themselves against the possibility of a deficiency arising in the future, with the premium perhaps being assessed having some regard to their actual level of funding and risk of insolvency. Another possibility is for the cost of any compensation payments to be financed as they arise by means of a levy imposed on all eligible schemes. In this case the premiums could be related to the size of schemes but it is unlikely that they would be otherwise related to the underlying risks. There is a further possibility that the government could be involved in underwriting the compensation scheme, particularly to cover a situation of catastrophic losses throughout the whole pensions industry.

A compensation fund, or some form of insolvency insurance, is highly desirable when pension liabilities can be backed by book reserves, loan-backs to employers or self-investment. With insurance-based or externally funded systems, a compensation fund may be attractive as a safety net but is not essential. Compensation could reasonably be limited to cases where there has been fraud or misappropriation of assets. A more important first line of defense is an adequate system of supervision of scheme solvency and other prudential controls.

Supervision and control

Up to this point we have focused largely on aspects of pension schemes which can be constrained or controlled by provisions in the law or other appropriate regulatory requirements. The remaining issue is to consider how closely pension schemes should be monitored to ensure compliance with these requirements.

At one end of the spectrum is the view that detailed supervision by a central body is not appropriate for occupational pension schemes, in view of the contractual nature of the relationship between employees and employers. Given this philosophy, a number of steps can be taken to try to provide safeguards for members. The first might be a requirement for pension funds to be subject to independent audit on a regular basis and for the report of the auditors to be made available to the members. Each scheme can be required to appoint an actuary and to receive regular advice, although this is more generally the case for defined benefit schemes. Regular disclosure to members might cover a variety of aspects: the arrangements for managing the scheme, the investment policy, statements of individual members' accrued rights, who to go to in order to make a complaint, and so on.

Some countries have established a formal complaints procedure, through which members can pursue any problems which they may have with their pension arrangements, leading to the possibility of arbitration, conciliation or even in some cases the imposition of a solution on the pension scheme in question by a quasi-judicial figure such as a pensions ombudsman.

Many countries consider it necessary to have a more centralized system of supervision, since the complementary schemes are expected to a greater or lesser extent to substitute for a formal social security scheme, and the protection of the interests of members should be given high priority. This is particularly so in respect of open pension schemes. There is also a public interest in ensuring that any tax privileges are not abused. A more comprehensive level of supervision would require pension schemes to be registered and subject to some form of authorization, as discussed in an earlier section.

Once authorized, registered pension schemes might be expected to provide information on a regular basis to the supervisory authority, perhaps annually, with information to include at least the following:

- membership numbers and details of changes in membership;
- changes in composition of the governing body;
- audited accounts;
- lists of investments held at the year end;
- information on investment performance;
- information on charges.

The supervisory body would be expected to undertake some financial monitoring, to ensure that all aspects of the law were being complied with and that there were no indications of any malpractice or impending financial difficulties. Such monitoring could be carried out primarily on the basis of the formal annual returns, but might be supplemented by periodic visits to meet the pension scheme managers, administrators and actuaries, and possible external inspection or audit from time to time.

Supervision should include the regular monitoring of the adequacy of technical provisions, maintenance of sufficient capital, and the suitability and adequacy of assets. This should ideally be based on a dynamic approach, rather than simply on a static balance sheet assessment. The pension fund should be able to demonstrate its future viability over a range of possible adverse scenarios, by means of dynamic financial analysis models. Normally pension funds should be required to employ or consult an actuary to carry out such work and to recommend appropriate levels of technical provisions and capital.

The supervisor might want to be satisfied that the sponsoring company is paying over contributions in a timely way to the pension scheme, especially where they have been deducted from employees' own salaries, but also to ensure that employer's contributions are paid regularly and in accordance with the scheme rules or funding plan. The supervisor would also be concerned to establish that the governing body of the scheme had appointed professional advisers as necessary and that it was fulfilling its responsibilities in preparing an annual report, drawing up accounts and having them audited, and having an actuarial valuation carried out wherever appropriate.

The supervisor would also need to be equipped with powers to take action in circumstances where there was failure to comply with the law or where the financial situation appeared unsatisfactory. The main sanction might be the possibility of withdrawing the authorization to carry on operating as a pension scheme, with the assets and liabilities being handed over to a centralized discontinuance fund, or the assets used to purchase equivalent benefits with an insurance company. Depending on the circumstances, fines could be imposed and the supervisor could have powers to remove managers, directors or trustees, and ban them from filling such positions in the future.

Risk management of defined contribution schemes by scheme managers

Whilst regulation and supervision of pension schemes may be regarded as essential in order to create the right structure and discipline in the management of pension schemes, there is an increasing tendency for regulators to see the first line of defense as requiring the pension schemes themselves to have in place good risk management structures. This is not only true for pension schemes and provider companies but is often seen as an essential part of the good corporate governance of all companies, especially companies which are publicly quoted.

Good corporate governance usually begins with having a strong Board of Directors, with a powerful Audit Committee advised by internal or external auditors. The Board should be required to certify annually that it has carried out a thorough analysis of all the risks to which the organization is subject and that it has set in place adequate systems and controls to monitor and manage risk in all its forms.

The Basel Committee for Banking Supervision has placed particularly heavy emphasis on the need to manage and control operational risk in the institutions with which it is concerned. Their so-called ten commandments are set out in Annex 2. In the case of defined contribution schemes, operational risk can be seen to be particularly evident in issues such as:

- failure in collection of contributions or transmission to investment funds;
- misallocation of income to individual accounts;

- loss of administrative records;
- breakdown of administrative processes;
- computer failure;
- fraud.

A key area of risk for defined contribution pension funds is in relation to the investments. In effect this risk is usually passed on to the affiliates, but the reputation of the pension fund managers depends fundamentally on the investment performance they achieve. There may also be direct financial consequences of poor investment results for the managers in some systems, where the pension fund managers are required to guarantee a minimum return, either in absolute terms or relative to the performance of other pension funds.

Pension scheme managers need to exercise effective risk controls on the investment processes, both at the strategic and tactical levels. A clear investment strategy needs to be developed and documented. In many jurisdictions this will need to be communicated to current and potential affiliates and compliance of the investment managers with a benchmark corresponding to the agreed strategy should be regularly monitored. Investment performance should be kept under regular review, and, although short-term performance will always be of interest, monitoring should relate to periods of reasonable length.

Managers should set criteria for measuring acceptable investment concentration, exposure to counterparty risk, default risk and ranges for the share of the fund which may be invested in particular asset types, currencies, etc. Systems should be in place to ensure that compliance with such guidelines can be regularly monitored.

Defined contribution pension schemes are not usually exposed directly to insolvency, in the sense of assets being inadequate to meet the liabilities, since the value of the affiliates' interest in the fund is usually determined by the value of the assets. The pension fund, or for the pension fund administrator company or management company, may, however, be subject to the possibility of insolvency risk if required to offer underpinning guaranteed rates of return, minimum pensions corresponding to the amount saved by affiliates, or if there is a requirement to maintain the rate of return within a range of returns relative to other pension funds in the market. Where such a risk exists, the pension fund management company will need to monitor carefully its potential exposure to the risk, and take such risk mitigation measures as are appropriate and possible. These may include hedging any guarantee, or adopting investment policies which reduce the exposure of the fund to costs arising from the guarantee. Where the guarantee is relative to the performance of other pension funds in the market, risk management will include careful monitoring of the investment strategies adopted by other pension funds, so as to avoid taking too exposed a position with investments very different from the competitors.

Another area of potential risk for the pension fund management company is the level of costs incurred, especially if the charges which can be levied on affiliates' contributions are capped or limited. Careful monitoring and control of costs should always be a key management responsibility, requiring effective information flows and accurate cost allocation processes. A high level of risk is associated with inadequate or inaccurate cost allocation procedures.

High quality accounting information is essential for good management. The principles of internal management accounts may need to differ from the principles of published or regulatory accounts, of the latter do not provide the disciplines necessary for the exercise of

proper risk management. Ideally, the regulatory requirements should coincide with what is needed for effective management and should create the appropriate incentives for good risk management behaviour. However, sometimes pension fund accounting required under local regulations may not be in accordance with international accounting standards. Key factors to watch with defined contribution pension schemes will be the provisions made for expenses and for guarantees. Where the possibility of levying further charges is limited in respect of invested funds (as, for example, when the charges are levied up front as commission charges on the contributions), provisions should normally be set up in the accounts for the future expenses of administering the accrued individual accounts. Potential costs of meeting future guarantees may also need to be recognized in specific provisions.

Specific risk management processes will be needed for pension schemes which are permitted to make periodic pension payments, especially if guarantees are being offered in relation to longevity, in other words pensions are paid for as long as the affiliates in question live (and possibly also surviving partners or other family members). This requires careful monitoring and management of mortality risk, in order to ensure that an adequate charge is made for conversion of accumulated assets to pension form and to maintain prudent provisions in respect of all liabilities to pay pensions for life, having regard to the potential for mortality rates to improve over time. Separate consideration will also need to be given to investment risk in relation to annuity payments, since the existence of a specific liability profile necessitates a corresponding investment strategy for the assets backing these liabilities, so as to maximize the alignment of cashflows from the investments with the cashflows needed to meet the liability payments and reduce the exposure to interest rate risk, if income needs to be reinvested, or market risk if assets need to be sold to meet liability cashflows.

Other risk management considerations will include the maintenance of an adequate level of staffing, with suitable qualifications and experience, in order to be able to administer the operations efficiently and successfully. There will be risks involved in offering too generous a compensation package to staff and managers, as this will put pressure on costs, but there could equally be risks from offering too mean a compensation package, since this may lead to poor quality staff being recruited or retained. Recruiting sufficient staff of the right calibre, training them, motivating them and creating incentives for their behaviours to be consistent with achieving management objectives, should be a key concern of management. Failure to achieve such personnel policy objectives could entail significant risk to the organization. Specific risks could arise from rigid, restrictive or inefficient working practices, inability to modernize, inflexible labour agreements, over-generous remuneration or fringe benefits and from under- or over-staffing. There can also be dangers from an obsolescent workforce if technical skills are not constantly updated to keep pace with technological advances and changes in the working environment.

Pension funds are particularly subject to political risk, particularly arising from changes to legislation or regulatory requirements. It is difficult to control for such risks, since changes will often not be readily foreseeable. However, effective risk management will include careful monitoring of developments in the political, regulatory and fiscal spheres which could give rise to changes with a potentially adverse impact on the pension fund or on the value of affiliates' accounts. Advanced warning of potential changes may enable risk mitigation measures to be implemented.

For open funds operating in a competitive market environment, reputational risk can be of fundamental importance. Success in attracting and retaining affiliates will depend on the ability of the organization to remain attractive.

Balancing conflicting objectives

It is clear from the many aspects covered in this short paper that there are an enormous number of areas where regulation might be considered to be in the public interest regarding the operation of complementary pension schemes. However, in many countries there is a strong desire to encourage the development of pension schemes in order to relieve the pressure on social security schemes. There are also perceived potential economic advantages in stimulating the development of pension schemes in order to increase the level of investment in the economy and improve the savings ratio. A balance has to be struck, therefore, between having a heavy regulatory regime with a view to providing protection to members, and regulating with a light touch to encourage the development of pension schemes.

The dilemma for legislators is that pension schemes offer considerable potential for abuse. If they are eligible for tax advantages, employers and employees may seek to use them to avoid the payment of tax. Pension providers may also promise benefits through the pension scheme and then effectively renege on those promises, by mismanagement of the scheme or poor investment policies. There is therefore a public interest in ensuring some minimum level of security for pension fund members and encouraging good practice in a number of areas.

A supervisory body of some sort will nevertheless be needed in order to set standards, to exercise general oversight of the process, to be available to respond to concerns expressed by those closely involved in the running of schemes, and to take action to intervene in the affairs of a pension scheme if necessary. These tasks may be able to be combined with those which might be the concern of the taxation authorities. Alternatively, the latter might operate their own supervisory regime to ensure compliance with their rules and requirements.

Where there are open pension schemes operating competitively, supervision should be similar to that applied to other financial institutions offering retail financial products, both in respect of prudential standards and market conduct.

Where pensions are available by a variety of alternative routes, it is desirable to have some consistency of tax treatment and also to ensure that the regulatory requirements are not too inconsistent.

One way in which supervision can be kept at a proportionate and not too intrusive level is by taking advantage of a variety of specialists within the company, who, either by virtue of membership of a profession or otherwise through demonstrating appropriate competencies and ethical standards, can be relied upon to undertake particular tasks. Such professionals may include the actuary, the external independent auditor and the investment manager. Specific responsibilities can be placed on such individuals to "blow the whistle" to the regulator in the event that all is not well in the pension fund, either because of a failure to comply with regulations, or because fraud or mismanagement is suspected, or because an adverse financial situation may be developing.

Risks are inherent in the operation of a defined contributions pension system. These can be looked at as risks from the affiliate's point of view, risks from the pension fund or pension company's point of view and risks from a regulatory or governmental perspective. In some respects there is a commonality of interest, and this makes it more likely that efforts will be made to mitigate the risks. Areas of danger might be where one party's downside risk is an opportunity for another party. It is clear, however, that risk cannot be entirely eliminated, so both regulators and managers need to focus their efforts on risk identification, mitigation and management.

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Annex 1

OECD principles for the regulation of private occupational pensions schemes

The recently established International Network of Pension Fund Regulators and Supervisors has adopted a set of 15 principles, prepared by the OECD Insurance Committee, for the regulation of private occupational pensions schemes. These can be summarized as follows:

Principle No. 1: Adequate regulatory framework
An adequate regulatory framework should be enforced in a comprehensive, dynamic and flexible way in order to ensure the protection of pension plan beneficiaries, the soundness of pension funds and the stability of the economy as a whole. This framework should not, however, create excessive burdens on pension markets, institutions or employers.

Principle No. 2: Appropriate regulation of financial markets
The development of advance-funded pension systems should go hand in hand with a strengthening of the financial market infrastructure and regulatory framework.

Principle No. 3: Rights of the beneficiaries
Non-discriminatory access should be granted to private pension schemes. Regulation should aim at avoiding exclusions based on age, salary, gender, and so on. It should promote the protection of vested rights and a proper entitlement process. Policies for indexation policies should be encouraged. Portability of pensions rights is essential to promote labour mobility. Mechanisms for the protection of early leavers should be encouraged.

Principle No. 4: Adequacy of private schemes
Proper assessment of adequacy of private schemes should be promoted. Adequacy should be evaluated taking into account the various sources of retirement income.

Principle No. 5: Regulatory system and separation
An institutional and functional system of adequate legal, accounting, technical, financial and managerial criteria should apply to pension funds and plans, but without creating excessive administrative burdens. The pension fund must be legally separated from the sponsor.

Principle No. 6: Funding
Private schemes should be funded. While full-funding exists by definition for most defined contribution plans, other types of plans should be subject to minimum funding rules or other mechanisms to ensure adequate funding of pension liabilities. Private unfunded pay-as-you-go schemes at individual company level should be prohibited.

Principle No. 7: Calculation techniques
Appropriate calculation methods for asset valuation and funding the liabilities, including actuarial techniques, must be set up and based on transparent and comparable standards. Increased reliance on modern and effective risk management, industry-wide risk management standards for pension funds and other institutions involved in the provision of retirement income should be promoted. The development of asset liability management techniques should be given proper consideration.

Principle No. 8: Supervisory structures
Effective supervision of pension funds and plans must be set up, focusing on legal compliance, financial control, actuarial examination and supervision of managers. Supervisory bodies should be endowed with appropriate regulatory and supervisory powers over individual plans, in order to prevent mis-selling arising from irregularities in the distribution and charging methods.

Principle No. 9: Self-supervision
Self-regulation and self-supervision should be encouraged. The role of independent actuaries, custodian services and internal independent supervisory boards should be promoted within an appropriate regulatory framework.

Principle No. 10: Fair competition
Regulation should promote a level playing field between the different operators and take account of the usefulness of a functional approach. Fair competition should benefit consumers and allow for the development of adequate private pensions markets.

Principle No. 11: Investment
Investment by pension funds should be adequately regulated. Self-investment should be limited, unless appropriate safeguards exist. Liberalisation of investment abroad by pension funds should be promoted, subject to prudent management principles.

Principle No. 12: Insurance mechanisms
The need for insolvency insurance and/or guarantee schemes has to be properly evaluated. These mechanisms may be recommended in some cases but in an adequate framework. Recourse to insurance mechanisms (group and reinsurance) may be promoted.

Principle No. 13: Winding-up
Proper winding-up mechanisms should be put in place. Arrangements should be put in place to ensure that contributions owed to the fund by the employer are paid in the event of his insolvency.

Principle No. 14: Disclosure and education
Appropriate disclosure and education should be promoted as regards respective cost and benefit characteristics of pension schemes, especially when individual choice is offered. Beneficiaries should be educated on misuse of retirement benefits and adequate preservation of their rights. Disclosure of fee structures, plan performance and benefit modalities should be especially promoted in the case of pension plans that offer individual choice.

Principle No. 15: Corporate governance
The corporate governance role and capacity of pension funds should be considered. This includes: the role of guidelines for governance activities; the impact of shareholder activism by pension funds on corporate behaviour; and the governance of pension funds themselves and the role of trustees.

Annex 2

Sound principles for the management and supervision of operational risk - paper issued by the Basel Committee on 20 December 2001

1. The Board of Directors and senior management is responsible for approving the establishment and review of the framework for managing operational risk and establishing the organization's operational risk strategy.

2. Senior management are responsible for implementing the operational risk strategy consistently throughout the entire organization and developing policies, processes and procedures for all products, activities, processes and systems.

3. Information, communication and escalation flows must be established to maintain and oversee the effectiveness of the operational risk management framework and management performance.

4. Operational risks inherent to all current activities, processes and systems and new products, should be identified.

5. The processes necessary for measuring operational risk should be established.

6. Systems to monitor operational risk exposures and loss events by major business lines should be implemented.

7. Policies, processes and procedures to control or mitigate operational risks should be in place, together with cost/benefit analyses of alternative risk limitation and control strategies.

8. Supervisors should require banks to have an effective system in place to identify, measure, monitor and control operational risks.

9. Supervisors should conduct (directly or indirectly) regular independent evaluations of the above principles and ensure that effective reporting mechanisms are in place.

10. Sufficient public disclosure should be made to allow market participants to assess an organization's operational risk exposure and the quality of its operational risk management.