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PRINCIPLES FOR INVESTMENT REGULATION OF PENSION  
FUNDS AND LIFE INSURANCE COMPANIES

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**Insurance and Private Pensions Unit  
Financial Affairs Division  
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# Principles for Investment Regulation of Pensions Funds and Life Insurance Companies

## ***Reasons for regulation of pensions and life insurance.***

In common with other financial institutions, pension schemes<sup>1</sup> and life insurance companies are subject to regulation. While the aims and intensity of regulation of private pension schemes and life insurance companies vary from country to country, two key features can be identified<sup>2</sup>: consumer/investor protection and macro-economic considerations. This article considers the main aspects of existing regulation and highlights areas in which change would be desirable.

## Consumer/investor protection

Through private pensions and life insurance contracts, individuals accumulate sizeable amounts of long-term saving. Because of the size of this saving and its long-term nature, governments have considered it particularly important to have in place some formal system for regulating enterprises which supply these financial services. Pension schemes and life insurance companies may not be able to deliver on their contractual promises for a variety of reasons, including the incompetence and dishonesty of their management. Moreover, experience also shows that many individuals are not sufficiently able to make well-informed choices about these long term saving products nor are they able to assess the long-term security of suppliers. For company pension schemes, where there is in effect a monopoly supplier i.e. the employer, there is an additional regulation concern.

## Macro-economic considerations

Pension schemes and life insurance companies are sometimes regulated for wider macro-economic reasons. Two important areas of their impact are on capital markets and labour markets. Because funded pension schemes and life insurance companies represent an important proportion of both the stock and flow of long-term national savings, some governments have sought from time to time to influence the direction of its investment into capital markets. This direction of the flow of investment has taken various forms: a) to stimulate a particular segment of the domestic capital market, such as investment in small, unquoted companies or to discourage overstimulation in the real estate market; b) to encourage the flow of investable funds into government securities and into projects favoured by the government; or c) to seek to ensure that national savings are invested in the domestic economy and not invested overseas<sup>3</sup>.

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<sup>1</sup> In the article, the more general term pension scheme (occupational pension scheme) will be used. Pension fund will be confined in its use to a pension scheme that is funded in contrast to pension schemes that are to be financed on a pay-as-you-go basis or on a book reserve basis. Moreover, pension schemes are of two main types: (a) those which are set up and managed by an employer (sponsor), which will be called self-administered pension schemes; and (b) those that are set up and managed by life insurance companies (or other approved suppliers), which will be referred to as group pensions.

<sup>2</sup> See E. P. Davies '*Pension Funds: Retirement Security and Capital Markets- an International Perspective*', Oxford University Press, 1995, pp. 91-125; and G.M. Dickinson 'Regulation of the Investment Policies of Insurance Companies in the OECD' in *Policy Issues in Insurance*, OECD, Paris, 1993, pp.205 - 255.

<sup>3</sup> For a more detailed discussion on this issue, see European Bank for Reconstruction and Development, 'Mobilising household savings: life insurance and pension funds' in *Transitional Report 1996: Infrastructure and Savings.*, London, 1996, pp. 87-100.

Governments have in recent years been under both domestic and international political pressure not to interfere too much into the operation of capital markets. Moreover, as capital markets have developed, the need for such involvement has decreased.

For pension schemes, there has been some government concern that they do not unduly inhibit job mobility. Pension schemes, especially defined benefit schemes, can have the effect of locking-in employees within firms, when a more flexible labour market would be more in the wider economic interest. This regulatory concern has a more narrow focus. It has been primarily concerned with ensuring that the pension assets are legally owned by employees (vesting rights) and that there is adequate portability of pension assets within the system, so that individuals can transfer assets from one pension scheme to another as they change employment, without undue costs associated with the transfer.

It should be recognised that pension schemes and life insurance companies do not have distinct areas of activity. This is because life insurance companies play a significant role in supplying retirement saving products. Life insurance companies not only supply personal pensions but also group pension schemes. At one extreme, life insurance companies, acting only as investment managers, manage the assets of pension funds; this in effect is an outsourcing of the investment function by the trustees of a self-administered pension scheme to the insurance company. At the other extreme, life insurance companies provide group pensions in a more intensive package of services including investment, administration and actuarial services.

Hence, when considering the extent of private pension provision in a given country, one must consider not only self-administered pension funds but also pensions supplied by life insurance companies (and other approved suppliers), both on a personal and on a group basis.

In addition to pensions, life insurance companies offer a wide range of other insurance and saving products which are not directly related to retirement provision. Hence, the nature of the financial liabilities of life insurance companies are more complex than those of pension schemes, due to this greater product diversity and to the various guarantees within the contracts supplied. It is the nature of these contractual promises, including these embedded guarantees, that determine the risks within the financial liabilities of life insurance companies. These risks within the financial liabilities in turn influence investment choice. As regulation seeks to set limits on the risks taken by life insurance companies in their financial asset allocation, they must take into account, if they are to be effective, the nature of the associated contractual liabilities.

### Key aspects of policyholder protection

From the perspective of a member of a pension scheme or policyholder of a life insurance, the regulation of self-administered pension schemes and life insurance companies has two main aspects. Firstly, it is to ensure, with an acceptably high probability, that suppliers of pensions or life insurance will be able to deliver on their contractual promises. Such regulation focuses mainly on assessing the future financial solvency of self-administered pension schemes and life insurance companies and having in place a back-stop system in the event of insolvency. Secondly, regulation has a wider purpose which is to ensure that the suppliers of pensions and life insurance products meet the 'reasonable expectations' of the beneficiaries. The latter concern is to ensure that products offered meet acceptable standards, that they are sold fairly and that the investment performance is adequate.

General framework for analysing the risks facing self-administered pension schemes and life insurance companies.

Because of the overlapping of long-term savings products which are supplied by life insurance companies and by self-administered pension schemes, it is important to have a general framework within which to

assess the risks faced by each of these institutions. The following analysis focuses on the delivery of contractual arrangements and ignores the wider set of issues such as adequacy of benefits, adequacy of investment performance and other aspects associated with meeting the 'reasonable expectations' of consumers.

In its simplest form, the supplier of life insurance or pensions products agrees in exchange for a series of contingent financial receipts to deliver a series of contingent financial payments over the defined period of time in the future. The contingent financial payments may embody one or more of the following four types of guarantees: (i) mortality risks, the risk of early death (for life insurance cover) and the risk of longevity (for annuities); (ii) guaranteed minimum rates of interest (rates of return) on invested funds; (iii) capital value guarantees on accumulated savings on the transfer of pension assets or on life insurance policy cancellation; and (iv) and the risk that the future administrative and other expenses may be higher than expected

Where the financial payments from the supplier are pre-determined, and financial receipts from consumers are also pre-determined, the supplier is implicitly guaranteeing all the risk elements in the contract. This is the case for defined benefit pension schemes and for non-profit term life insurance and for non-profit annuity contracts. On the other hand, for defined contribution pension schemes and for most life insurance contracts, there is no overriding guarantee and hence some of the above types of risk are covered while others are not.

Life insurance companies invariably in their contracts assume mortality risks but whether they provide other guarantees listed above depends on the type of product. In the case of linked-life policies, there are no guaranteed minimum rates of return since all of the investment risks are borne by the consumer. In other insurance contracts, including some types of insured pension plans, there may be a minimum rate of return that is guaranteed. Capital value guarantees on the non-continuation of policies, known as surrender values, can also exist. In some countries there is a regulatory requirement for insurance companies to offer minimum guaranteed surrender values, while in others there is a market practice of offering them, which competition reinforces. Guaranteed surrender values are in effect embedded put options which are held by the consumer which they can exercise against the insurance company. Insurance companies often have built into their prices or contractual arrangements estimates of future expenses associated with administration or legal costs. If expenses are higher than expected, the insurer must cover these.

### Contrasting life insurance companies and self-administered pension schemes

Life insurance companies, being separate corporate entities, have a clear arms-length relationship between themselves and their consumers. The higher the level of the guarantees in their contracts, the higher the potential level of insolvency risk that they face. For self-administered pension schemes there is less of a separation. The employer (sponsor) of the pension scheme acts as the ultimate financial guarantor, with any deficit being covered. Hence, the security of self-administered pension schemes depends in the last analysis on the potential bankruptcy of the employer (sponsor).

Clearly, the degree of risk facing the consumer/investor in a self-administered pension scheme will depend on the level of funding<sup>4</sup>. All contracts offered by life insurance companies are funded. In the case of self-administered pension schemes, they can be fully, partly funded or unfunded. To the extent that a scheme is fully funded, the risk to the pension member is less, providing that the financial assets to meet future liabilities are kept separate from the employer (sponsor), the level of self-investment is low and the investment portfolio is not too risky. Even though it is not technically an insurance company, a self-administered pension scheme can be viewed as an in-house or 'captive' life insurance company which supplies a single product to a defined set of customers, i.e. the members of the scheme. Because of this

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<sup>4</sup> See OECD *Private Pension Systems and Policy Issues*, Private Pensions Series No 1, Paris, 2000.

ultimate financial dependence on the parent organisation, regulation of self-administered pension schemes has a different emphasis than for life insurance companies.

### Investment risk in the context of contractual liabilities

It is clear that in looking at the investment risk facing a pension fund or a life insurance company, attention must be given to the nature of the guarantees which are embodied in their financial liabilities. Thus one key issue in assessing the investment risks of an insurance company or pension fund is the extent to which the financial assets held are consistent with the nature of the risks within these financial liabilities. This means that the investment risks facing an institutional investor do not depend solely on the risk characteristics of financial assets and on the degree of portfolio diversification.

### The nature of the contractual liabilities of life insurance and pension schemes

The financial liabilities of life insurance companies and self-administered pension schemes are long-term in nature, with pension funds having the longer duration. In addition, the net cashflows of a pension fund or of a life insurance company are usually strongly positive and with future liabilities being reasonably predictable. This combination of the long-term nature of liabilities and reasonably predictable cash flows means that these financial institutions have a relatively low precautionary liquidity preference. Hence, the investments which are held against these financial liabilities can possess a fairly high price volatility and/or low marketability in the short term: there is only a low probability that assets may have to be sold quickly to meet contractual payments.

However, some precautionary liquidity preference can exist. For life insurance companies, this can arise if a large proportion of business contains high guaranteed surrender values or policyholders are offered the option to borrow against these surrender values at rates of interest which are lower than the prevailing or expected market rates. Where there are no guaranteed surrender values or where the guaranteed values are low relative to the accumulated assets, then the liquidity of financial asset holding will tend to be low. Capital guarantees for pension schemes, particularly for defined benefit schemes, can arise on account of vesting and portability rights and this can introduce some concern with liquidity preference in asset holdings.

On the other hand, for a mature life insurance company and pension fund, where the financial receipts have are more closely balanced through time with the financial payments, the concern for liquidity preference increases. This is because cash inflows from investment returns must more closely match the time pattern of cash outflows.

### Explicit and implicit guarantees

Pension funds are primarily concerned with ensuring that the accumulating assets maintain their purchasing power. Where pensions are defined benefits and these benefits are mainly linked to final salary, this concern with inflation risk is contractual. But even where there is no such contractual concern, as in the case of defined contribution schemes or where defined benefits are based on average rather than final salaries, there is a moral requirement to ensure that the rate of return on assets at least keep up with inflation, in particular wage inflation. Hence, investment in long-dated, index-linked bonds or investments which are likely to be correlated with inflation over time, such as company shares, possess low investment risk. Conversely, investments which have a low potential correlation with inflation are more risky.

As pension schemes mature, the outflow in the form of retirement payments increases relative to the cash inflow from the pension contributions, and therefore the need to hedge against inflation risk is reduced, although there will be always some concern with ensuring that pensions payments keep up with inflation.

Hence, there will be some switching out of low inflation risk investments, such as shares, into bonds which can be more closely matched to these cash payments.

Life insurance liabilities are, as noted above, more complex. To the extent that the contracts supplied by life insurance companies are pension contracts, the above arguments apply. However, other types of life insurance contracts are not as concerned with inflation risk. For example, non-profit whole-life and non-profit term life insurances or annuities have been sold with implicit guaranteed rates of interest (i.e. minimum nominal rates of return). In such cases, life insurance companies must consider the interest rate risk characteristics in their asset allocation. Thus duration matching or immunisation of assets and liabilities will feature more prominently in a prudent investment policy.

For other contracts offered by life insurance companies, such as linked-life contracts, the investments are chosen by the policyholder and the risks are taken by the policyholder. In these cases, investment policy is unconstrained by the financial liabilities.

In conclusion, in determining what is a risky investment portfolio for a life insurance company or pension fund, attention must be paid to the particular nature of the liabilities and it is important for governments to recognise this in framing their investment regulations.

### Investment of the capital base or surplus

In addition to the financial assets held against these financial liabilities, insurance companies and pension funds hold financial assets which represent the investment of their capital base or surplus. The purpose of the capital base of a life insurance company is to finance future growth and to cover the uncertainties in the contractual liabilities and hence it can be invested in a less constrained way than the investment of policyholder funds. Similarly, the surplus in a pension fund represents the excess of assets held over its accrued liabilities. The surplus of a pension fund often is less than the capital base of a life insurer, since the employer (sponsor) of the pension scheme will not usually wish to tie up too much of its own capital in the pension fund when it could use this more profitably within its commercial operations. Indeed, legislation imposes minimum capital requirements on life insurance companies as part of their overall solvency assessment, while there is usually no statutory minimum capital surplus for pension funds, because of the ultimate guarantee from the employer (sponsor) to make good any shortfall in assets. Moreover, the capital base of a life insurance company or surplus of a pension fund will have an independent impact on the degree of risk tolerance. Not only can the investments held against the capital funds or surplus be invested in a less constrained way, the relative size of the capital to the total liabilities also introduces an additional risk tolerance in the investment of funds covering the liabilities, since the large capital or surplus can absorb a higher level of risk.

### Valuation issues in determining the capital base or surplus

Since capital or surplus is, by definition, the difference between the value of the assets and value of the contractual liabilities, how one values assets and liabilities will determine the relative size of the capital or surplus. If conservative valuation bases are used, i.e. assets are valued less than their realistic values, or liabilities are valued more than their realistic values, then the apparent size of the capital base is less than it really is. Any regulation of the investment of the funds which represent these contractual liabilities will thus have a more constraining effect<sup>5</sup>.

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<sup>5</sup> See G.M. Dickinson, Note 1 above, pp. 225

## Regulation of investment policies of pension funds and life insurance companies

To varying degrees, governments in most countries regulate investment policy of life insurance and pension funds. In life insurance, the regulatory constraints are more common and stronger, reflecting a greater solvency concern for life insurance companies. Historically, the regulation of the investment policies of insurance companies has been in operation for a longer period of time than for pension funds. The degree of regulation over pension fund investment also depends on statutory funding requirements. Where there is a system of book reserves, pay-as-you-go systems or only a partial funding, the investment regulation in such countries will perforce be somewhat lower. As noted above, life insurance companies are by nature fully funded and hence there is a more universal regulation of their investment policies.

## Quantitative restrictions on asset choice and prudent man rules

In the past, investment regulations have tended to be specified within legislation either within Insurance Acts or Pension Acts within individual countries. In many countries, investment regulations grew out of the principle of capital certainty, i.e. that the investment would not lose their capital value in nominal terms<sup>6</sup>. This concern with capital certainty reflected in a strong emphasis placed in investment regulations on the default risk of particular classes of financial asset and on ensuring that investment portfolios were adequately diversified. Liquidity risk considerations, i.e. the potential marketability of investments and/or the potential price volatility of investments also featured within the regulation and can be considered as an extension to the principle of capital certainty. More discussion on the types of investment regulations that exist and how they are applied will be covered later in this article.

Prudent-man rules are general guidelines within which investment policy should take place. They are qualitative in nature, and hence are open to differences in interpretation, making their enforceability more difficult. They also demand closer liaison between the regulatory authority and the financial institution concerned, including more detailed disclosure on investment holdings. But, on the other hand, prudent-man rules are less constraining on financial asset choice, thus allowing investment policy to change with changing liabilities and changing capital market conditions. It is because of the dynamics of life and pension markets and of capital markets that there has been a gradual move in investment regulation in many countries towards prudent-man guidelines, particularly for pension funds. This is evident within the European Union, both for the Pensions and the Insurance Directives. Such considerations are also a feature of regulatory systems in the United States and Canada.

Prudent-man rules have been subject to change over time. With the development of asset-liability management models, one has seen recent amendments to prudent-man rules to explicitly state that investment policy should take into account the nature of contractual liabilities<sup>7</sup>. In addition, they also state the need to earn an adequate rate of return. This recognises that consumer welfare is not just concerned with the solvency of suppliers; life insurance and pension fund investments represent the long-term saving of consumers and so a balance has to be struck between taking an acceptable level of investment risk, on the one hand, and earning a high investment return, on the other.

Investment regulations do not always neatly divide between prudent-man rules, on the one hand, and quantitative restrictions on the other. One finds both in operation in some countries. Prudent-man rules provide the overall guidelines, but they are reinforced with quantitative restrictions. For example, such a

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<sup>6</sup> For a discussion on why investment risk was historically defined as capital certainty and the case for changing this definition, see J. B.H. Pegler, 'The actuarial principles of investment', *Journal of the Institute of Actuaries*, (Vol. 74, 1948) pp. 179- 202.

<sup>7</sup> For a good non-technical discussion of the nature of investment risk in the context of asset-liability models, see M. Smink and R. van der Meer, 'Life Insurance Asset-Liability Management: an International Survey', *The Geneva Papers on Risk and Insurance*. (Jan, 1997),pp. 128 - 142.

mixed system can currently be found in the life insurance legislation in countries within the European Union, as they have had to incorporate these requirements from the Third Life Insurance Directives<sup>8</sup>. Indeed, prudent-man rules have often been introduced in order to allow further liberalisation of quantitative restrictions.

It is possible to classify the types of restrictions on investment choice into certain categories<sup>9</sup>. Firstly, it is common to find lists of approved classes of financial assets that can be held. These approved or admissible investments are those which are considered to have 'acceptable' levels of default and liquidity risk. Some countries have more restrictive lists of approved investments than others. There has been a general trend in recent years in most OECD countries for regulations to be liberalised, with more classes of financial assets to be permitted.

Secondly, there are maximum percentages of 'total' investments that can be held in a given class of investment. These maximum limits are on the classes of investment which are deemed to have higher levels of default or liquidity risk. Hence, it is common to find maxima on unquoted securities, on low quality corporate bonds and on certain classes of foreign investments. In a few countries, there are minima on classes of investment possessing low risk, usually government securities or high quality bonds; however, there has been a general move away in recent years from these minima.

Maximum percentages on classes of investment have a double purpose in risk reduction: (a) they seek to restrict holdings in classes of investment which are deemed to be risky; and (b) they are set to ensure adequate diversification of the investment portfolio as a whole.

Thirdly, there are investment regulations which place a maximum limit on the proportion of 'total' investments that can be held in a single investment. These maxima usually apply to investments in the securities of one company or in one piece of real estate. The purpose of these maxima are again to ensure adequate portfolio diversification.

Maximum limits on investments are also found in the investments of funded pension schemes. One common maximum is the level of self-investment, i.e. the reinvestment by a pension fund back in the parent company or its subsidiaries, either in terms of the purchase of shares or loans. These maxima on self-investment have a wider purpose than just ensuring adequate portfolio diversification. From the standpoint of the employee, if the company were to go bankrupt, there would be a loss of employment income as well as pension entitlements.

Fourthly, investment regulations can put restrictions on the maturity or duration matching of assets and liabilities. It is rare to find, either in insurance or in pensions legislation, prescribed maturity matching requirements for assets and liabilities. This is because it is difficult to detail within legislation such a complex requirement. Nevertheless, even though it is not specified formally within the legislation, it is a recognised duty of regulators to monitor any significant mismatching of assets and liabilities, since such mismatching is a central aspect of the investment risks faced by life insurance companies and by pension funds. The assessment and monitoring of adequate maturity matching can be carried out in a more systematic way for life insurance than for pension funds. This is because life insurance companies are fully funded and hence the assessment of asset/liability positions can be analysed, whereas defined benefit

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<sup>8</sup> Council Directive 92/96/EEC, OJ, No. L 360, 10.11.92, pp. 12-15 (Articles 20-22)

<sup>9</sup> For details of the investment regulations of insurance companies in 23 OECD countries, based on a survey of insurance supervisory authorities in these countries, see G. M. Dickinson and E. Dinenis, 'Investment Regulations of Insurance companies across the OECD' in *Policy Issues in Insurance: Investment, Taxation and Insolvency*, OECD, Paris, 1996, pp. 139-168. For details of the regulation of pension fund investment across 16 OECD countries, see E.P. Davis "Regulation of Pension Fund Assets", *Institutional Investors and the New Financial Landscape*, OECD, Paris, 1998, pp. 365-397



pension schemes may not be required to be fully funded. Pension regulation may simply require a level of funding at a minimum statutory level, which is less than the contractual promises by the employer (sponsor).

Fifthly, it is common to find in legislation some currency matching requirements for assets and liabilities, i.e. a minimum percentage of assets should be invested in the same currency (currencies) as the liabilities will be paid. These currency matching requirements are independent of foreign investment limits which are part of investment risk considerations. They are concerned with currency risk, namely that the currency in which the investments are held may have depreciated at the date when the liabilities have to be paid. However, it should be recognised that for pension funds and life insurance companies, because of the long term nature of their liabilities, currency matching is only in practice an issue well into the future.

Sixthly, there are regulations on the use of financial derivatives in asset management. With the development of fixed interest, equity and currency derivatives, most regulatory systems have recently been adapted to accommodate their use, but under close guidelines. It is recognised that derivatives are a useful way of hedging investment risks, both in respect of hedging against a rising stock or bond market when investing new funds or by hedging against falling market prices for assets already held. Strict restrictions are placed on insurance companies and pension funds on the use of derivatives for trading or more speculative purposes. The writing of options contracts is especially restricted because there is no limit on potential losses. Supervisory authorities have also regulations on the credit worthiness of suppliers of over-the-counter derivatives and on ensuring adequately diversified sources of supply.

### ***Application of investment regulations***

Analysis of the investment regulations of life insurance companies reveals that there are significant differences in how they are applied<sup>10</sup>. Indeed, the degree of constraint which regulation actually imposes on asset choice in practice depends to a large degree on how it is applied. The major issues in application are: a) the treatment of the investment of the capital base; b) whether the application is applied directly or indirectly; and c) the accounting and actuarial valuation bases that are required to be employed in the application of any quantitative restrictions.

### **Regulatory treatment of the investment of the capital base**

In most OECD countries, the investment regulations do not extend to the investment of the capital base of a life insurance company or to the surplus of a pension fund. They only relate to the investment of the funds that constitute the contractual liabilities to life policyholders or to pension members. In the past, quantitative limits often applied to the total investments or total assets. But there has been a general shift in the regulatory practice in more recent times to exclude those financial assets which represent the capital base or surplus. The reason for this is that the capital base plays a longer term risk absorption role and for life insurance is used to finance future growth. Moreover, for a life insurance company a significant part of the capital base of a life company, excluding mutual life insurance companies, belongs to shareholders and they would not wish management to hold too much capital, if it were not earning an acceptable rate of return. The same argument applies to the surplus of a pension fund. In a pension fund, some or all of the surplus belongs to the employer (sponsor) and hence if its investment is constrained so that a lower than acceptable rate of return is earned, well below the cost of capital for the company, this would tend to create a disincentive to hold surpluses in the pension fund. In both cases, such investment constraints would weaken the security to pension members and policyholders, since there would be less surplus held within pension funds and less capital within life insurance companies.

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<sup>10</sup> For a detailed discussion of bases used by insurance supervisors in applying these regulations across the OECD, see G. M. Dickinson and E. Dinenis, *op.cit.*, pp. 151-168.

## Direct or indirect application of investment regulations

For the most part, investment regulations are direct constraints on asset choice. In other words, a life insurance company or a pension fund cannot invest above the maxima specified, whether the maxima are applied to classes of investment or to investment in a single asset. However, there are certain countries, such as the UK, Ireland and Australia, where the application is more indirect. Here, the insurance company or pension fund can invest above the maxima, but it cannot count these assets which are held above the maxima as admissible assets in any solvency assessment. Such indirect restriction recognises the fact that an insurance company or pension fund can absorb more investment risk if it has a larger capital base or surplus.

Significant differences exist between countries in how these quantitative restrictions are applied. Accounting bases used to value investments can vary widely. If the valuation system is based on the lower of market or book value of investments, a given maximum imposes a greater constraint than if the valuation basis is based on market values only. In certain countries, valuation is based on the lowest ever value, as in the case in Germany. In such cases this poses an even greater constraint on investment choice. Similarly, how policyholder liabilities are required to be valued can also have a constraining influence. If the valuation of liabilities is carried out on a very conservative basis, this has the effect of further constraining investment choice compared to a valuation basis on a more realistic basis. Moreover, some countries required liabilities to be valued gross of reinsurance, while other countries require valuation on a net of reinsurance basis. Valuation bases that are required by the regulation to be used can play a significant factor in determining the degree to which a particular quantitative limit or currency matching requirement affects investment policy or not.

## Areas for regulatory reappraisal

The article concludes by discussing some areas where the current regulation of the investment of pension funds and life insurance companies should be reconsidered.

## Quantitative restrictions versus prudent-man rules

As noted above, there has in recent years been some change in emphasis in the investment regulations of pension funds and life insurance companies away from detailed quantitative restrictions on asset choice towards more general guidelines, commonly referred to as prudent-man rules. These prudent-man rules are more widely used for pension fund investment. This is because quantitative restrictions on pension funds investment, when they exist, vary in their intensity, in part because countries differ in the extent to which funding is required and for defined benefit schemes because the ultimate financial guarantee rests with the employer (sponsor).

There are limits to the effectiveness of quantitative restrictions on asset choice. This is because investment restrictions, such as a maxima on asset classes or on holdings in individual investments are concerned solely with risk characteristics of the investments themselves. They cannot capture the risks associated with mismatching of assets and liabilities, in particular the risks embedded in the liabilities due to the contractual guarantees. Hence, the risk of mismatching is often carried out by regulatory authorities as part of their broader monitoring of solvency risk of suppliers. It is easier to define rules for the currency mismatching of assets and liabilities and hence one finds these included in most regulatory systems. The appropriateness of these currency matching requirements is discussed later in this paper. While prudent-man rules do allow for this greater flexibility, which is to be encouraged, they are somewhat imprecise. It is difficult for regulatory authorities to decide on whether the investment policies of a life insurance company or a pension fund meet these general prudent-man rules.

If prudent-man rules are to be developed further as a general regulatory framework for investment, there need to be changes. Firstly, there must be more precise and detailed guidelines of what prudent-man rules

mean for particular types of institutional investor. There should be different emphasis for life insurance companies compared to pension funds. This is because the nature of the liabilities of life insurance companies differ from those of pension funds due to the different types of contractual guarantees they have been offered.

Investment regulation should not be viewed in isolation from wider solvency considerations, since they represent only one aspect of consumer protection. In order to be more effective there is a growing recognition that there needs to be a change in emphasis in the solvency assessment system so that it is not exclusively left to government. Some of the responsibility for regulation can be carried by professionals, particularly actuaries, accountants and lawyers, within life insurance companies and pension funds or by professionals within independent firms.

### More flexible application of quantitative restrictions

There is still a case for some forms of quantitative restrictions on asset choice as an additional safeguard to prudent-man rules. But if these quantitative restrictions should not be too restrictive. Quantitative restrictions must also be set having regard to wider consumer welfare concerns, which in life insurance and pensions means that they do not prevent investment policy from achieving adequate rates of return. One problem with quantitative restrictions is that they have tended to change infrequently, not keeping up with changes in the product characteristics and capital market conditions. Maxima on given classes of investment are more restrictive and there is a case for these maxima to be removed and replaced by prudent-man rules. On the other hand, maxima on single investment could be retained, providing they are set at a reasonable level and providing there is flexibility in their application. For pension funds, self-investment is a special case of these maxima in a single investment. It is clear that limits on self-investment are tied up with the wider issue of the required level of funding. Self-investment has the effect of undoing an existing funding arrangement.

### Need to reconsider currency matching regulations

In most countries, the investment of life insurance funds and pension funds is often subject to some form of restriction on the level of their overseas investments<sup>11</sup>. We assume in the analysis below that all of the insurance company or pension scheme liabilities arise from contracts written in the domestic currency. We also assume that exchange controls regulations, which have a wider economic purpose, do not exist.

Currency matching rules for life insurance companies and for pension funds are set to ensure that foreign currency risk is reduced. The concern is that if the assets are invested overseas they may have depreciated in terms of the pension or life insurance contracts which are payable in the domestic currency. For example, in the European Union, there is an 80% currency matching rule for life insurance companies and for pension schemes. These currency matching rules need to be reconsidered because they can impose an undue restriction on the ability of life insurance companies and pension funds to invest internationally, both to earn higher rates of return and to secure better diversification of investment risk. With the introduction of the euro from January 1999, and the locking of national exchange rates within the euro-zone countries, there has been much greater flexibility in the regulation of non-domestic investment within these countries. During the last two years, the investment portfolios of European pension funds and life insurance companies have readjusted significantly to these new regulatory and capital market environments.

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<sup>11</sup> A discussion of the economic basis for the bias towards investing in a domestic currency, see M. Beenstock, 'A Theory of Home Country Preferences' *Weltwirtschaftliches Archiv*. (Issue 122, 1986), pp. 223-232.

The currency matching rules also tend to require that matching is maintained at all times, even though the currency risk in reality will only arise many years in the future when payments have to be made under the pension or life insurance contract. Such investment regulations also inhibit pension funds and life insurance companies from investing abroad and in the future switching back into domestic currency before the contracts become payable.

These currency matching requirements in respect of life insurance companies assume the worse scenario of what would happen if a life insurance company gets in financial difficulties. The commercial reality is that even if an insurance company becomes insolvent, its liabilities would usually be acquired by another insurance company and hence there would be time for any currency mismatch to be realigned before payments are due. For defined benefit pension schemes, this currency matching requirement is even less strong, because of the existence of the financial guarantee afforded by the sponsor company.

It should be recognised that currency matching rules are essentially concerned with solvency risk of the supplier. A separate question is what is the currency risk facing life policyholders or pension members. If currency matching requirements force life insurance companies and pension funds to hold too high proportion of these long term savings in domestic currency, this may itself impose a currency risk on savers. This is because life policyholders and pension members will deploy the future income from these savings in part for the purchase of foreign-produced goods and services. Investing too much in a domestic currency imposes a currency risk on the policyholders and pension members, i.e. that the domestic currency in which the investments are held may have depreciated against the portfolio of currencies that can be expected to be used to purchase these foreign goods and services in the future. As the world economy becomes more international and there is greater mobility of labour, individuals are likely to consume more foreign-produced goods and services in the future than they do at the present time.

There is also a more fundamental issue in relation to the investment in foreign securities. When one is investing in the shares of multinational corporations which are quoted on a domestic capital market, one is indirectly investing overseas, since a multinational has, and will continue to have, a part of its profits from non-domestic sources. Hence life insurance and pension funds are exposed to currency risks when they purchase shares of multinational companies on a domestic stock exchange, as well as when they purchase investments on a foreign stock exchange. Hence regulations which restrict foreign investment can only be partially effective, because they can only relate to investment on foreign stock markets. Such regulation is further undermined by the fact that large multinationals increasingly have their shares listed on more than one stock exchange<sup>12</sup>. In respect of investment in international bonds and in money market instruments, however, there is less of a problem of definition, since the currency risk is more transparent.

Because of the above factors, there is a case for a rethinking of currency matching regulations. There should be more flexibility in currency matching requirements: a) because they can inhibit both investment performance and risk diversification; b) because the time-scale of the currency risk does not require an on-going currency matched position; and c) because the degree of currency risk associated with the investment in company shares is far from clear-cut.

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<sup>12</sup> This has become a much more obvious issue within Europe since 1999, when the shares of most major European-based multinational firms have become priced and traded on European stock exchanges in the Euro.