Occupational Pension Schemes in Ireland – A Review of Risk and Investment Strategies

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Abstract 1/5/03

The pensions industry is a multi – billion euro industry world wide. As at December 2002, Irish pension fund assets under management (not including the Government Pension reserve Fund) were of the order of 50,618.5m. Euro. Recent stock market performances coupled with a number of high – profile corporate failures have focussed attention on the vulnerabilities of funded pension systems. This paper looks at the role of funded occupational pension schemes in Ireland and specifically at the risks inherent in both the investment strategies of these schemes and the institutional structure of pension fund provision. It questions whether pension funds by embracing these risks are serving the objectives of the individual beneficiaries of the schemes, the trustees and the sponsor companies.

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Focus of paper

This paper looks at the role of occupational funded pension schemes in Ireland, in the provision of pensions. It specifically looks at the risks associated with these schemes, from institutional risk to investment strategy risk. Most academic discussion of risk focuses on market risk, in particular risk from equity investment. This paper however argues that risk also flows from the institutional structure of pension fund provision. The paper concludes that the "secure investment" tag, traditionally associated with pension scheme arrangements may be too simplistic due to a variety of risk factors.

Introduction

The forecast increase in the cost of old age pension provision and possible future difficulties in funding pensions in many countries, is at this stage well documented. "Rapid demographic transitions caused by rising life expectancy and declining fertility mean that the proportion of old people in the general population is growing rapidly" (World Bank-1994 –Foreword). Changing labour markets, in particular reduced participation in the labour force by males over 50 (Disney, 1996 p. 193, p. 225) due to early retirement and/or disability also contributes to the dependency ratio. In most developing countries, an informal system whereby children care for their aged parents and income transfers flow between generations in both directions, is still the mainstay of provision in old age. But in many countries, economic development has resulted in the informal arrangements giving way to formal market arrangements and to varying degrees, mandatory government programmes (World Bank, 1994, ch.2).

The widely referred to report by the World Bank (1994) "Averting the Old Age Crisis – Policies to Protect the old and Promote growth", identifies in its overview, three functions of old age security systems – redistribution, saving and insurance. The study suggests that financial security for the old and economic growth would be better served if Governments developed three systems or "pillars" of old age security; a publicly managed system with mandatory participation and a limited goal of reducing poverty among the old (social security pension), a privately managed mandatory savings system (a pension plan either a personal savings or occupational plan), and voluntary savings (a personal savings or occupational pension plan). One of these policies, the development of privately managed funded pensions, has also been advocated by Governments, the European Commission and the pensions industry in many countries, including Ireland.

In developed countries and most low and middle- income countries, Governments have developed formal pension arrangements to some degree. Key to the type and nature of each system is Government policy on a number of policy issues viz:

- Whether primary reliance should be on voluntary or mandatory mechanisms;
- The replacement rates built into the design of social security and private pension benefits;
- The balance to be attained between poverty alleviation and redistribution, saving and income smoothing.
- What elements of insurance should be provided.
- How the system should be financed – funded or on a pay as you go basis.
- Should the system be managed publicly or privately.

The current pattern across Europe and the US is summarised in the Table (1) below:

Table 1

Ireland	Social security old age contributory and non – contributory pension. Voluntary employer provided occupational pension arrangements – largely defined benefit. Private personal pensions also available.
UK.	Low level of State pension, complemented by voluntary employer provided, defined benefit funded system. Private personal pensions also available.
Sweden	Minimum State pension, complemented by publicly managed mandatory defined contribution system. Also large and unified voluntary occupational pension and personal pensions sector.
Norway	Flat rate State pension complemented by mandatory earnings related defined benefit public pension for entire workforce. Fairly large voluntary occupational pension and personal pension sector.
Denmark	Means tested basic pension. Mandatory small flat – rate contributory pension in the private sector. Large fragmented occupational and personal pensions sector.
Netherlands	Transition from a mandatory public scheme to a voluntary privatised one.
France	Compulsory defined benefit pay as you go system.
USA	Compulsory three tier plan for all federal employees – basic social security, a defined benefit plan and a defined contribution plan. In the private sector defined contribution plans (401(k)) are by far the most popular

Source: Reynard et al. eds, (1996 p.16-23, p.40-48, p.127-136, p.154-162, p221-231), Hughes and Stewart,eds, (2000 p.147-160,p.180-192)

Currently about one in every four persons and more than one third of the working age population in OECD countries are covered by an occupational pension. In Ireland, coverage of those in employment, aged 20 to 65 stands at approximately 50% (CSO) and is increasing. The pensions industry is a multi–billion euro industry world wide. As at

December 2002, assets managed on behalf of Irish pension funds stood at 50,618.5 million euro (IAPF, 2003)).

As at December 2000, there were 86,348 pension schemes registered with the Irish Pension Board with a total membership of 629,801. Of this, 180,690 individuals were members of defined contribution schemes while there were 449,111 members of defined benefit schemes. The trend however is towards defined contribution schemes with a significant number of one- member schemes being registered during 2000. Table (2) gives more information on the members of occupational pension schemes.

Table 2 Members of Occupational Pension Schemes Supervised by the Pensions Board

year	Members of all pension schemes[a] '000	D.B. Only '000	D.C. Only '000	Pension fund assets[b] Euro Billion	Assets as % of GDP	Total at work[c] '000	Estimated pension coverage per cent
2000	630	449	181	53.9	66	1710	36.8
1995	478	405	78	20.8	50	1239	38.6

Source: Connell, P. and Stewart, J. (forthcoming).

Notes
a - This data refers to occupational pension schemes and includes both public sector PAYG schemes as well as funded or partly funded schemes. The data relates to members of pension schemes monitored by the Pensions Board. Source: Various issues of Annual Report of the Pensions Board.
b - Source: Shane Whelan, (2001) Irish pensions Funds: Size Growth and Composition of Assets, Dublin: Shane F. Whelan & Co.
c - C.S.O. Quarterly National Household Survey Sept- Nov. 2000, Feb. 2001 and 1995 National Labour Force Survey, 1996.

Occupational Pension Schemes – Structure and Regulatory Framework.

Occupational pension schemes are privately managed pension schemes offered by employers to some or all employees as part of an overall remuneration package. Often facilitated by tax concessions and regulated by Governments, their objective is to provide a targeted level of income on retirement in most situations complementing social security.

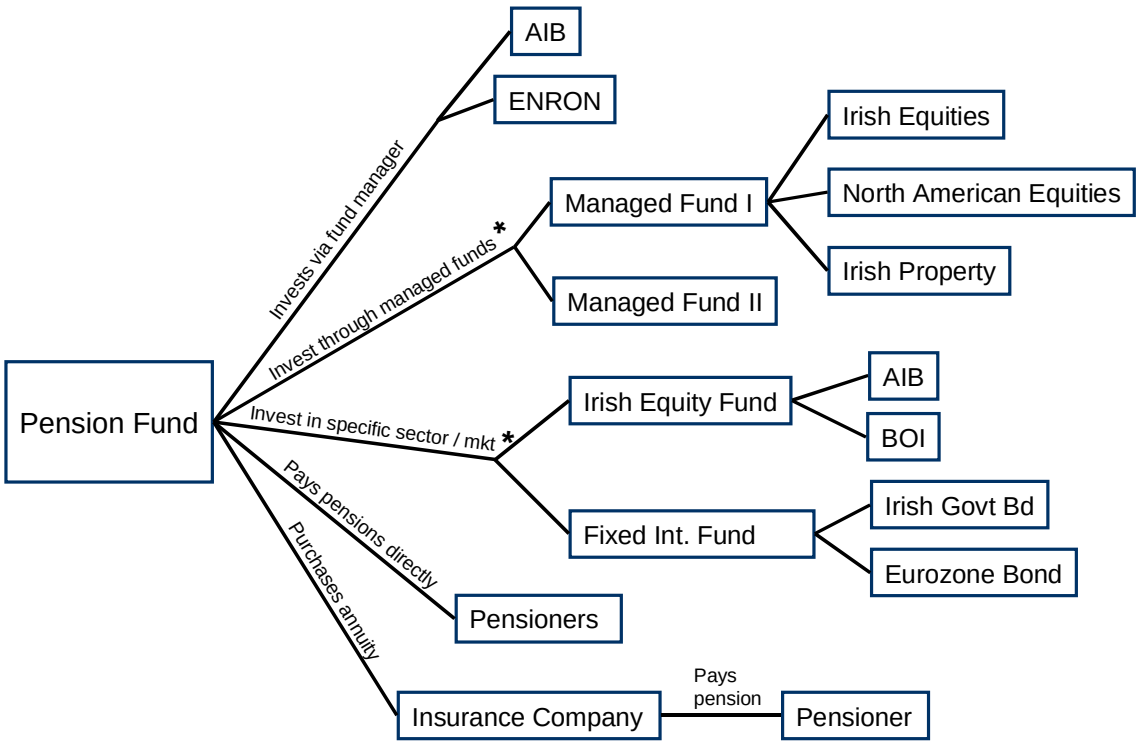
Occupational pension schemes in Ireland are mainly set up as trusts. Accordingly, they are primarily governed by Trust law. However this is supplemented by the Pensions Act 1990, and the Pensions Amendment Act, 1996. In addition, occupational pension schemes are subject to employment law, tax law, insurance law, social welfare law and more recently family law.

Many schemes invest their funds and provide benefits through some form of insurance contract. At a minimum, certain contingencies, e.g. death or disability of members are

insured by the pension scheme. The standard type of investment structure used is either a unit –linked insurance contract or a with profit contract. In the unit linked arrangement, the scheme would buy units in one of the investment funds of the insurance company e.g. the Irish Equity fund, the fixed interest fund or perhaps a managed fund incorporating a broad mix of assets. The value of the scheme's units would fluctuate with the value of the underlying fund. The assets in the underlying fund remain the property of the insurance company, the scheme's assets are the units it holds in the fund. A with profit contract will to some extent guarantee a benefit at retirement equivalent to a specified rate of return. Where investment performance exceeds the rate guaranteed, the insurance company may declare an additional bonus, assuming assets invested earn above this minimum rate. However, in 2002 and so far in 2003 many with profit contracts have either not declared an additional bonus, or reduced projected payouts.(Prudential, Norwich Union, Standard Life, Legal & General and Scottish Widows.).

The pension scheme could however manage it's funds itself and not go the insurance route. Typically, in this situation, the scheme would place its funds with one or more fund managers having agreed in advance, investment strategies and key performance indicators.
Accordingly the investment route might be represented as in Figure (1).

Figure (1)
Cash flows for pension



*** May incorporate an insurance contract**

RISK FACTORS

Institutional Risk

Pension contracts are long term, a contract written now may not be exercised for 40 years and last for a further 20 years. For many pension contracts risk is merely a function of investment policy, but for those pension contracts that involve indirect investment via an insurance company or a fund manager(s) or indeed where the members pension is funded by the purchase of an annuity, there are other third party risks. For instance, the outcome of a contract taken out with an insurance company is in no small part dependant on the continued existence of that company's business (albeit in perhaps a different legal form). It is difficult for those entering contracts with an insurance company to know the nature of other contracts which may (in distress situations) take precedence in the distribution of investment returns (as in the Equitable Life Case), or whether contracts are written based on assumptions about longevity which are false (as in the Britannic Insurance case (Guardian Newspapers, 7/1/03). Insurance companies are also exposed to uncertainty where the statistical distribution of outcomes is not known. Indeed given uncertainty the long run survival of insurance companies is puzzling. Profitable insurance contracts cannot be written for something that is certain, but equally so for an event that is uncertain.

While pension fund trustees may consider direct investment using a selected fund manager or a number of fund managers a more "hands on" approach which gives them greater involvement and control, counter-party risks remain. Consider the situation where the primary fund manager invests scheme monies in a fund operated by yet another third party fund manager (e.g. an Irish fund manager might invest in Far East equities via a Far East equity fund operated by an overseas fund manager). The pension scheme now has in addition to the counter – party risk associated with the primary fund manager, the risk associated with this additional third party.

Many schemes whilst using the direct investment approach, fund members pensions on retirement by purchase of an annuity rather than paying the pension directly out of the scheme. Until the difficulties of Equitable Life the inherent risk in this for the members would have been seen as theoretical only. That view is changing.

Perhaps the greatest risk, which scheme trustees have to contend with, is likely to arise from the quality of management in both the primary insurance/fund management providers and the various sub- providers. It is very difficult to judge the nature of these risks but they nonetheless exist.

Investment Strategies:

As at end 2001, the portfolio of assets invested in by pension funds was as shown in Table (3). This table shows that little more than 25% of the total funds under management were invested in fixed interest stocks and cash instruments. Less than 10% was invested in property whilst over 60% was invested on the stock market. Given recent financial history – three years of falling stock markets and market volatility stock market investments have proved very risky. It would be interesting to survey pension fund members on what their preferred investment choice would be – the low risk return with little or no surprises (pleasant or unpleasant) on retirement, or stock market speculation with the consequent highs and lows that this entails. It is probably fair to say that few employees, if they thought about it, would be happy to invest as much as 60% of their pension contributions in the stock market and increase the risk of being seriously under provided for at a time when their earnings capacity is nil or at best very vulnerable. Pension funds are concerned with retirement income provision, based on a set of pre-defined criteria including projected returns on capital invested. They should not be concerned primarily with speculation. It is puzzling therefore why their underlying investment strategies, incorporate practices which could potentially diminish even the original capital amounts invested?

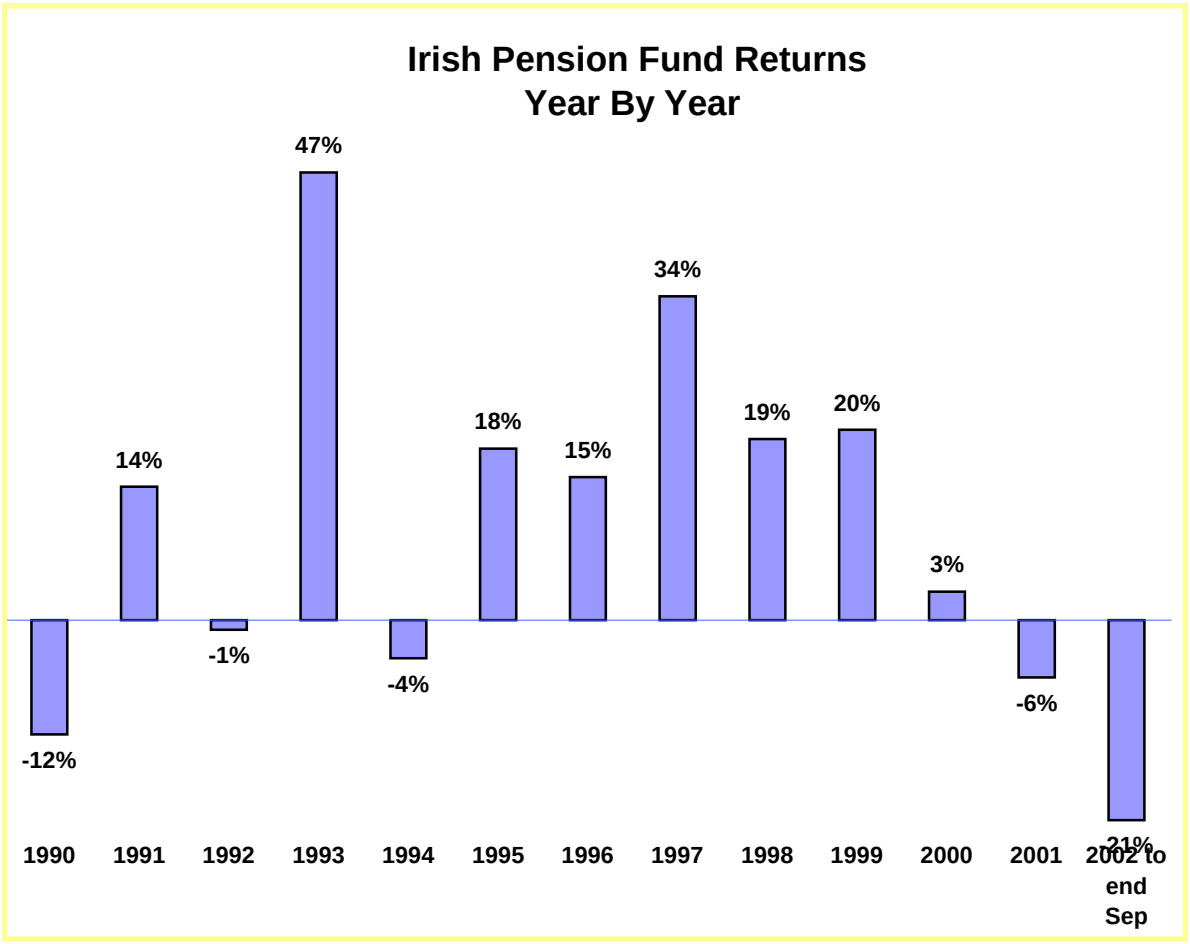
Table (3)
Asset Portfolios by Irish pension Funds

Asset Type	Market Value –euro millions	%
Asset Distribution by Sector		
Irish		
Fixed Interest – Government.	1,989.8	3.9
Fixed Interest – Corporate	299.2	0.6
Indexed Linked	137.8	0.3
Equities – quoted	7,862.6	15.5
Equities – unquoted	96.5	0.2
Property	4,318.6	8.5
Forestry	163.3	0.3
Cash and cash instruments	967.5	1.9
Other	364.2	0.7
Total	**16.199.5**	**32.0**
Non – Irish – Eurozone ex Ireland		
Fixed Interest – Government	6,729.3	13.3
Fixed Interest – Corporate	729.4	1.4
Equities	7615.2	15.0
Property	28.4	0.1
Cash and cash instruments	520.2	1.0
Other	89.7	0.2
Total	**15,712.2**	**31.0**
Non Irish – World ex Eurozone		
Fixed Interest – Government	924.5	1.8
Fixed Interest – Corporate	191.7	0.4
Equities – UK	4,312.8	8.5
Equities US	8,240.8	16.3
Equities Europe – Ex Eurozone	1,560.2	3.1
Equities Pacific Basin (ex Japan)	1,488.9	2.9
Equities Japan	1,426.1	2.8
Equities other overseas	91.9	0.2
Property	113.9	0.2
Cash and struments	86.1	0.2
Other	270.1	0.5
Total	**18,706.9**	**37.0**
Overall Total	**50,618.5**	**100**

IAPF Asset Allocation survey.

Industry figures for pension fund performance over the period 1990 to 2002 are even more telling.

Figure (2)



Source: Mercer Investment Consulting.

This pattern clearly reflects the heavy weighting in riskier assets (particularly equities). For retirees in the mid – 90's this paid off, but not so in 2002. An annuity pension based on the value of the accumulated fund would be much larger in 1999 than currently. Consider the plight of a D.C. scheme retiree in 2002, who perhaps had made significant additional pension contributions (AVC's) in the 2 to three years prior to retirement.

The current situation is further exacerbated by the fact that during the three years 1999 to 2002 the cost of purchasing annuities rose by of the order of 25% due to falling interest rates. The inverse relationship one would have expected between equity values and interest rates failed to materialise, resulting in a simultaneous reduction in pension fund assets and an increase in pension fund liabilities. In the mid – 90's many DB schemes were experiencing pension surpluses. Reports are that currently, as many as 40% of these same schemes could be underfunded.

Industry figures for returns per asset category for the 5 and 10 years to end 2002 are as follows;

Table (4)
Returns for Different Asset Categories

Asset Category	5 years - % p.a.	10 years - % p.a.
Irish Equities	3.1	15
Eurozone Equities	-13.1 (over 3 years)	N/A
UK Equities	-1.2	10.5
North American Equities	-10.5	13.3
Japanese equities	-4.1	1.8
Pacific basin (ex Japan)	-5.4	7.3
Bonds	7.7	10.2
Property	18.5	15
Cash	4.2	5.7

Source: Mercer Investment Consulting.

Of the 50618.5m.Euro of pension fund monies under management, up to 4,500m is managed through the managed fund route i.e. where fund managers establish investment funds to invest in a mix of all asset categories and the pension funds buy units in these funds. The performance of the pension fund monies is therefore dependent on the performance of the managed fund. Table (4) shows in the 10 years to end 2002, the average return per annum for managed funds was 11.4, little over 1% greater than going the relatively more safer bond option. Over 5 years the managed fund % is 2.1 as compared with a bond % of 7.7. Over 3 years the comparison is –4.4% (managed fund), 7.5% (bonds). When one considers the importance of pension income security and absence of risk to the our retiring population, and taking into account that a secure bond return coupled with tax relief yields an attractive average annual return (taking average tax relief over the 10 year period of 30% p.a and a bond return of 10.2% p.a., the combined return exceeds 40%), it is hard, based on this experience to rationalise the enormous investment bias in favour of equities.

Many varying theories have been put forward as to what constitutes the optimum investment strategy for a pension fund. Most however agree that in this context, there are differences between D.C. schemes and D.B. schemes. Davis (1996,p.22) states that

> "When pursuing a strategy of significant investment in equities and property, given the risk of shortfall at least in the short term, there has to be a form of risk

shifting from old to young members of the plan. The young accept occasional under-funding for their future rights (when asset prices fall) in return for lower premia while the old continue to receive unchanged pensions".

Blake (1994b **Page numbers**) maintains that it makes sense for immature DB schemes to invest mainly in equities, for mature funds to invest in a mix of equities and bonds and funds which are winding up to invest mainly in bonds.

Tepper (1992 **page number**) however questions whether returns on equities are statistically independent from year to year. If they are, a long series of bad returns could lead to significant real losses from equities even over a long- term horizon relevant to pension funds. In the context of market performance between 2000 and 2002, this is not comforting.

Apart from asset returns the main variable in determining returns to contract beneficiaries (pension contracts and Life Insurance contracts) is the level of charges. Fund management is a multi – billion euro industry world wide. Fund management charges are calculated as a percentage of the funds under management rather than return generated. The current applicable rates in Ireland for a fund under 5 million Euro is of the order of 1%. For funds up to 30m. Euro the rate is of the order of ¾ of 1%. Fees for funds greater than this are negotiated individually. The layered investment system outlined in Table 1 has potential to increase these fees further – for example if the primary fund manager places a block of client funds in a third party investment fund, the pension fund faces two separate fund management charges. Evidence from the UK shows that charges, particularly for individual pension schemes can vary between 8 and 29 per cent of fund value (Office of Fair Trading, 1997, p. 74)

In the current market environment, and particularly given the proliferation of managed, index and consensus funds, it is likely that fund managers are coming under increasing pressure to demonstrate value added by them to the investment process.

WHO BEARS THE RISK?

Who bears what risk and the extent of that risk in a pension fund system, is a function of whether it is a defined benefit scheme or a defined contribution scheme. It is also a function of the institutional arrangements, which collect pension contributions and make eventual pension payments to pensioners. In a defined contribution plan, workers contributions are specified. Future benefits depend on future net rates of return, the duration of working and retirement periods and annuity prices on reaching retirement age. This investment, disability and longevity risk is borne by the worker. In defined benefit plans the pension formula is determined in advance although it may depend on years of employment and salary over a certain period (e.g. last three years of employment). In effect, the employer undertakes to pay members a pension related in some manner to career earnings. The member may or may not be required to contribute to the scheme depending on the scheme rules and provisions. The employer commits to

cover any shortfall in funding (becoming a very topical issue – e.g. BT has committed to providing Stg.1.6bn to cover its' pension deficit – likewise Chubb are planning to make additional contributions to it's scheme of up to Stg15m per year over a 15 year period,- F.T. 10/2/03) The principal risk to a member of a defined benefit scheme is that the sponsor- company may not pay pensions as envisioned in employment contracts. This could arise through fraud, as in the Maxwell case, or more likely through corporate failure, as in the Enron case (F.T. 3/2/01). Other risks can arise where the sponsoring employer though profitable and solvent is wound up in order to avoid additional payments into the fund (as in the case Maersk an international shipping group, F.T. 18/12/02). Effectively these sorts of risk arise because the employer does not contribute sufficient funds to an externally managed fund. There are also risks for the member if pensions are provided via an annuity, -the stream of pension payments (annuity payments) are dependent on the financial health of the annuity provider. Until the financial problems at Equitable Life (Guardian Newspapers, 13/1/2003), it was generally supposed that such payments streams were without risk.

What are the Likely Effects?

Data from the 1999/2000 Household Budget Survey shows that the current income of households headed by a retired person is largely made up of the State pension, even though there has been growth in the relative importance of occupational pensions over the period 1987 – 1999/00. Hence income of the currently retired are unlikely to have been affected by stock market falls. Future retirees are unlikely to be as fortunate.

Income from Pensions as a Proportion of Total Income Per cent

Sources of Pension Income	1987	1994/95	1999/00
All State Social Welfare Sources for ages 65-74	43	37	47.9
All State Social Welfare Sources for ages 75+	44	40.9	48.3
Occupational pensions for ages 65-74	15.7	20.8	23.5
Occupational Pensions for ages 75+	16.3	26.8	20.6

There were over 1000 households in the category 65-74 and over 500 in the category 75+ for all years examined. Source: Household Budget Surveys. Table taken from Coinnell and Stewart in Hughes and Stewart (ed.) (forthcoming)

For existing retired persons average disclosed income from other sources is modest, reflecting relatively low financial and other assets. Although this data is highly skewed as a small number of individuals have a large source of income from financial and other assets. The most important asset of elderly households is housing (85% of households headed by a person aged 75+ own their own house). Housing has increased dramatically in value over the last three years compared with a falling stock market. Thus the wealth of the current generation of retired persons has been largely protected by rising house prices. Housing will not continue to be a source of increased wealth to the same extent to future retired persons.

It is likely that the State Old Age Pension will remain the primary source of income to future retired persons. In most economies even though stock markets have fallen by up to 50% in some cases, GDP growth has remained low or static. Hence Government tax revenues and the ability to finance social welfare pensions (and pensions of public sector employees) has not been affected as adversely as private sector pension arrangements. Recently the **Society of Actuaries in Ireland** estimated that a person earning the average industrial wage in December 2002, would need to save 7% of their income for 40 years in order to obtain a pension of half their current earnings. However this accumulated sum will replace just 18% of current income, while the State Old Age Pension is assumed to replace 34% of current income. The estimated replacement rate of 18% from a private sector pension, is necessarily uncertain as it depends on future investment returns, management charges and tax regimes. Furthermore pension income from defined contribution type schemes may be fixed at the time of retirement, but the State Old Age Pension is likely to be adjusted in the future both for inflation and changes in living standards.

The private sector pension system is very important. A substantial fraction of the labour force is dependent on this system to deliver pension income. The pension system plays a key role in the allocation of savings. But the pension system also attracts considerable tax relief. But given the relatively low flows of income from occupational pension schemes compared with the State scheme the question must be asked are these tax expenditures good value for money? In a future investment

environment characterised by low returns and low interest rates, accumulating a lump sum over a 40 year period to fund a pension over 20 or more years which replaces half or two-thirds of pre-retirement earnings is likely to be beyond the resources of most people. In order to ensure the viability of a pension system (whether funded or unfunded) which can deliver pension income, there are likely to be changes to retirement ages and changes to allow various combinations of income from part time work and pension income - a development sometimes referred to as the 4th pillar. A recent UK **Green Paper** suggested pension reforms including tax changes, to encourage participation in the work force after the normal retirement age. Such policies are likely to become part of the solution to securing future incomes of retired persons in Ireland.

Conclusions:

Pension systems are subject to considerable risk and uncertainty as a function of both their investment policy and the institutional structure of pension fund provision. The increasing complexity of investment contracts and the use of multiple investment routes and financial intermediaries, whilst facilitating diversification of investment risk may increase both costs and counterparty risk(e.g. Equitable Life).

Irish Pension funds hold disproportionately high levels of equities, which could lead to crisis situations if falling equity markets persist. Industry figures over the period 1990 to 2002, suggest that bond returns were only marginally lower overall than returns from managed funds, for a fraction of the risk.

The degree to which pension funds particularly D.C. schemes should speculate at all is questionable (particularly where the work force is older), given the potential downside for individuals at a time when their income earning potential is at its most vulnerable. The combination of tax relief and a secure bond return might be regarded by many as more than acceptable particularly when viewed in the context of the current environment.

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Even though returns have on average been negative over the last three years, costs of managing all pension schemes have been positive, as they are partly determined by funds under management not fund performance. For example with the new PRSA scheme management charges can be as high as 5% of funds contributed and a further 1% of funds managed. Charges for what are described as 'non-standard' PRSAs can be even higher. Pension management charges can be even higher for individual schemes such as AVC schemes. It is easy to see that with falling or projected stationary equity markets, and low returns on Government debt, the main benefits to pension policy holders comes from the State through tax relief. Although as holders of equity linked Special Savings Accounts have discovered, even with a State contribution of 25% of the amount invested, returns may still be negative.