Local government pensions in England

Technical appendices to the Audit Commission information paper

audit commission

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Local government pensions in England

These technical appendices support the Audit Commission's information paper Local Government Pensions in England. The appendices give more information about the modelling and assumptions used in the main report. They also cover some of the issues discussed in the main report in more detail.

There are seven appendices.

- Appendix A reviews the relationship between local government pensions and the state benefits available to older people. It notes that any savings to the taxpayer from reductions in the level of local government pensions would be reduced by increases in state pension payments.
- Appendix B considers the impact of reductions in the local authority workforce on the ability of local government pension funds to maintain pensions in payment. It demonstrates how changes in the local government workforce will lead to pension funds maturing earlier, with consequences for their investment strategies.
- Appendix C reviews the impact of actuarial assumptions on the funding levels of local government pension funds. It demonstrates how some funds have made more prudent assumptions that others and the impact on their expected liabilities.
- Appendix D explains the modelling used in the main report to assess the current (2010) funding levels of pension funds and to estimate the impact of changing indexation from the Retail Price Index to the Consumer Price Index as announced in the June 2010 Budget.
- Appendix E reviews the approaches taken by local government pension funds to manage risks and returns on their investments.
- Appendix F reviews the impact of increased longevity and wider membership eligibility on the cost of local government pensions to members, employers, and taxpayers.

Appendix A Interaction of pensions with tax and benefits

Key points

- Reducing pensions in payment, or closing the Local Government Pension Scheme (LGPS) would not deliver the savings to the public purse that some commentators expect.
- Most LGPS pensions are small and any savings from reducing pension benefits must be set against long term increased eligibility for state benefits.
- Any savings to the LGPS would appear gradually over time as a reduction in employer pension contributions.

Introduction

1 The state guarantees a minimum income in retirement through pensions and other benefits. Government encourages saving for retirement through private pensions and occupational schemes like the LGPS. It is committed to automatic enrolment into pension schemes, although the way that this policy will be implemented is under review (Ref. 1). Occupational pensions are beneficial to employers as they can help to retain staff and maintain a stable workforce. A funded public service pension has assets that cushion employers, employees, and taxpayers against changes in the cost of paying pensions over time.

2 The interaction between an individual's financial circumstances in retirement and the tax and benefit system is complicated. Occupational pensions and other forms of saving for retirement give people greater financial independence, but they might not result in a much higher standard of living. This is especially the case for people with modest savings, who may find they are not much better off materially than people without savings. The latter will qualify for more means-tested benefits. Overall, a decline in savings or occupational pensions would result in increased state benefit costs in the future.

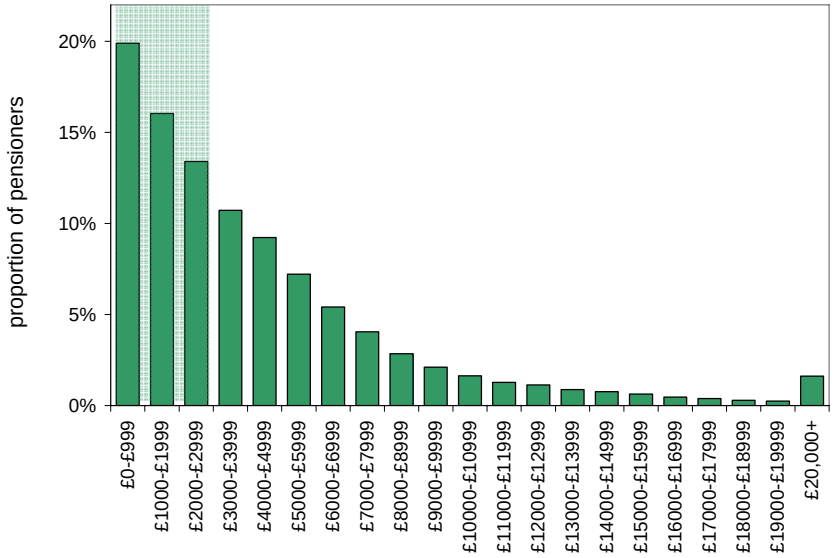
3 Any calculation of the full long-term cost of LGPS pensions to the taxpayer has to offset pension payments against the state benefits that would otherwise be available to retired local government employees.

Most LGPS members receive modest pensions

4 The total spending on LGPS pensions is substantial but most of the pensions are modest. LGPS funds paid out £5.6 billion in pension benefits in 2008/09 (Ref. 2) but the median pension was £3,045 a year.[i] In a typical LGPS fund, 50 per cent of pensions are below £3,000 and only 2 per cent are over £20,000 a year (Figure A1).

Figure A1: **Most LGPS members receive modest pensions**

Distribution of pensions in payment for a typical large LGPS fund



Source: Greater Manchester Pension Fund (80,000 pensioners)

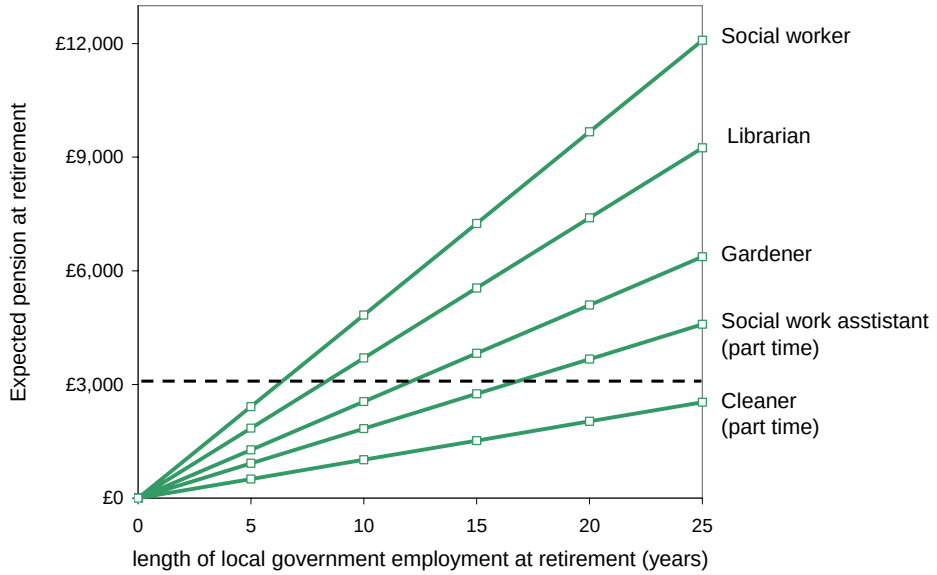
5 LGPS pensions are based on the final salary and length of service. Most members have relatively low incomes or have not built-up (accrued) substantial length of service in the scheme. Short careers, breaks in service, and part-time working all reduce members' ability to build their pension. Changes since 1986 to admit part-time workers and reduce the length of qualifying service (Ref. 3) and (Ref. 4) increased the number of small pensions. (Changes to the membership of the LGPS are discussed further in appendix F.) Figure A.2 illustrates how income levels and lengths of service influence pensions, based on the median salary of different occupations in 2008/09 (Ref. 5).[ii]

i Figure supplied by CLG, based on analysis by the Government Actuary's Department and HM Treasury.

ii The illustration covers the main pension and does not include other benefits, such as death benefits and dependents' benefits. Annual payments are reduced if a member chooses to take part of their pension as a lump sum.

Figure A2: **Career paths have a big impact on final pensions**

Expected pension for different occupations according to length of continuous service



Reducing pensions in payment will not pass through to savings to the taxpayer

6 If LGPS did not exist, local government employees would have built up entitlements to the additional state pensions under the various rules in place during their working lives.[i] These additional state pensions carry a cost to current taxpayers.

7 At the lower income levels local government pension payments must be offset against payments from a variety of means-tested benefits. Pension credit, council tax benefit and possibly housing benefit would all be an additional cost to current taxpayers.

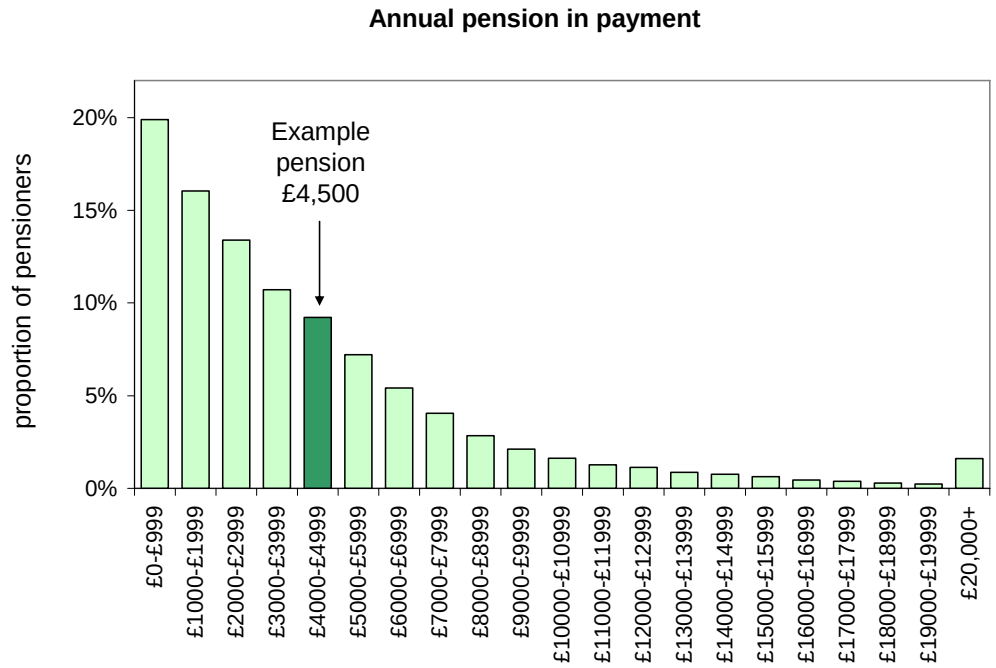
8 Eligibility for means-tested benefits depends on savings levels, other occupational or private pensions, home ownership, partner's income, and other factors. This makes it difficult to assess the exact impact of the LGPS on retirement costs. The overall picture, though, is that savings from reducing LGPS would be offset by increased spending in other areas.

i Someone retiring aged 65 at the end of 2009/10 could have built up entitlement under four different sets of rules: Graduated Retirement Benefit, State Earnings Related Pension Scheme (SERPS) pre-1988, SERPS post-1988, and State Second Pension up to their retirement. Each individual's additional state pension depends on the history of their employment earnings over their whole working life and the different rules that applied for each scheme. This appendix uses an indicative estimate. The calculation deals solely with costs to the state in retirement, but the employee, and their employers, would have made national insurance and tax payments during their working life.

9 The net cost to the taxpayer of providing LGPS pensions is lower than it appears, as other forms of government spending are avoided (Box A1).

Box A1 The net cost to the taxpayer of providing local government pensions is lower than the value of pensions paid

The net financial benefit of a typical £4,500 LGPS pension could be worth as little as £500 extra in disposable income, above the level of means-tested state benefits.



Source: GMPF data

	LGPS pension	State pension only	Difference
Income from pensions (£)	9,500	6,400	3,100
Rent paid (£)	3,600	3,600	0
Tax paid (£)	800	800	0
Benefits received (£)	3,000	5,600	2,600
Net Income (£)	8,100	7,600	500

Source: Audit Commission analysis (figures rounded to the nearest £100)

Assumptions

The calculations assume that both people are single, have no dependents and are not in receipt of any disability benefits. They are living in social housing and pay average rent and council tax. Their pensions include basic state pension, second state pension or LGPS pension. Benefits include Pension Credit, Housing Benefit and Council Tax Benefit: they are calculated using 2009/10 rates. The tax figure is for council tax only, no income tax is due.

10 Cutting pension benefits would reduce total liabilities but this may not translate directly into reduced public spending. Expressing savings as a reduction in pension liabilities overstates their impact because pension liabilities are not due for payment in the short term. The liabilities are the present value of a future stream of pension payments, rolled up. In addition, if pension benefits were reduced, there is an argument that many funds should use the opportunity to achieve a faster recovery in their funding level, instead of reducing employer contributions.

Appendix B Impact on cashflow of changing the size of the workforce

Key points

- Reductions in the council workforce will affect the long-term financial health of pension funds.
- LGPS funds, like all funded schemes, are relatively insensitive to the effect of changes in the workforce size. Reducing the workforce to 2004 levels over the next five years would not seriously affect funding levels or solvency.
- A reduced workforce, though, causes the scheme to mature more quickly. Some funds will need to review their investment strategy and adopt safer investments with lower returns.
- A reduced workforce means the future financial health of LGPS funds is more dependent on investment returns. Falling membership makes it more difficult to recover funding deficits, as the contributions from active members decline relative to the size of the shortfall.

Introduction

11 Councils expect to lose staff over the next few years (Ref. 6). The October 2010 Spending Review will make it easier to quantify the level of reductions. Reductions in the number of staff employed by councils do not always reduce the number of members of the pension scheme. Some reduction will come from staff transferred to contractors, who may remain in the LGPS.

12 The overall impact of workforce reductions on the LGPS can be modelled from published information from pension fund accounts. Forecasts of the results for individual funds would require a much more sophisticated model with detailed information on members, age, life expectancy and career patterns. The charts used in this appendix, therefore, are an overview of impacts across the whole LGPS in England.

Workforce reduction changes the balance between paying and pensioner members

13 Pension funds benefit from a growing workforce. The number of contributors is maintained at a relatively high level compared to the number of pensioners. This results in a positive cash flow and allows pension funds to invest in growth-seeking assets, without the risk of having to sell assets when market values are low. Two possible scenarios for changes to LGPS membership following the 2010 spending review are:

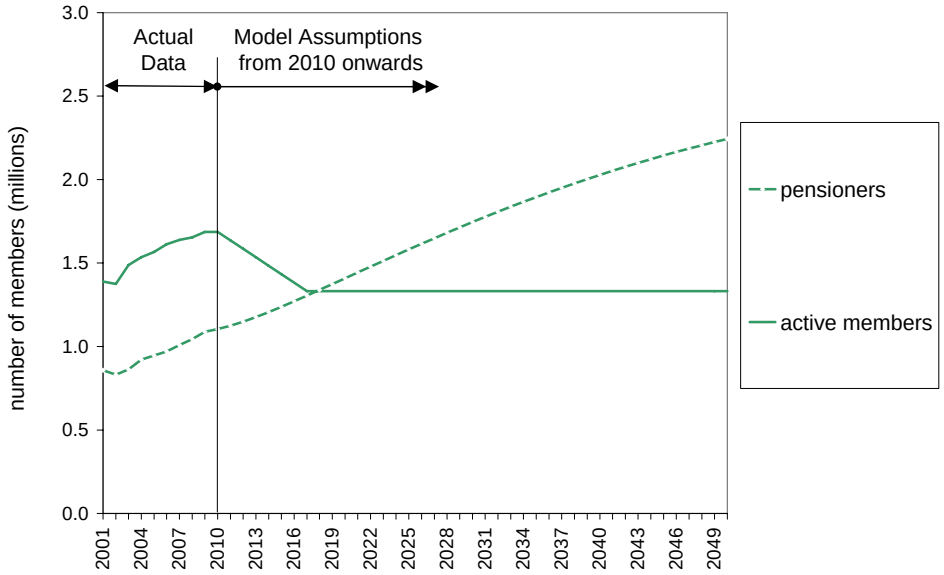
- an annual reduction of 3 per cent in staff numbers until 2016 when numbers are back to 2004 levels; and
- staff numbers frozen at the current level.

14 Figure B1 models the reduction in staff numbers through a recruitment freeze. The number of pensioners continues to rise for a long time after the workforce has stabilised. If the workforce reduction was achieved by early retirement, the number of pensioners would rise much more quickly.

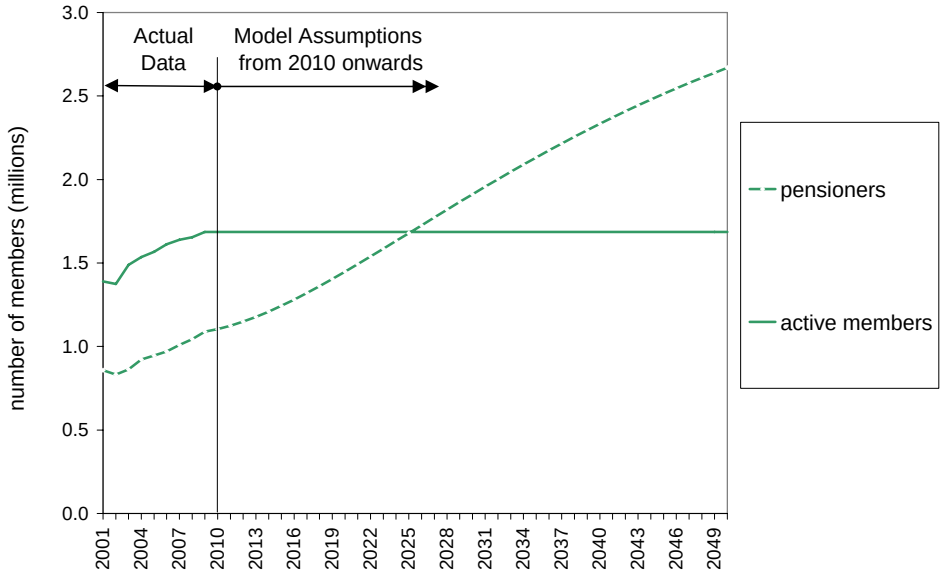
15 The number of pensioners eventually exceeds the active (paying) membership as people leave before retirement with a deferred pension.

Figure B1: **The number of pensioners continues to rise after the workforce has stabilised**

Pattern of membership over time with 15 per cent workforce reduction (scenario a)



Pattern of membership over time with no change to the workforce (scenario b)



Source: Audit Commission analysis

Reduced future liabilities mitigate the impact of workforce reduction on fund health

16 Two main measures of pension fund performance are:

- funding level (fund size as a proportion of past service liabilities); and
- cashflow (does the fund have sufficient cash to pay pensions as they are due).

17 There is an argument that a 100 per cent funding target is unnecessarily prudent for LGPS funds, and that solvency could be judged according to a wider range of measures (Ref. 7). Most LGPS funds are below the 100 per cent funding target, but this does not affect their ability to pay pensions. Most LGPS funds have a positive cash flow from employer and employee contributions alone.[i] (The cash paid into funds is more than the amount paid out in pensions). Investment returns are reinvested, which increases the asset base. Falling membership would reduce cashflow. The simulation model provides insight into some of the possible effects.

18 The financial health of a funded pension scheme depends on factors such as contribution rates, pay and price inflation, investment performance, as well as membership numbers. The impact of falling membership numbers also depends on the objective for the fund. Falling membership has less effect on the financial health of the fund if its objective is to maintain funding at its current level. If the aim is to increase funding levels to 100 per cent to recover past service deficits, falling membership has greater impact as fewer people make contributions into the fund relative to the size of the deficit.

i 74 out of the 79 LGPS funds in England had positive net income (excluding investments) in 2009.

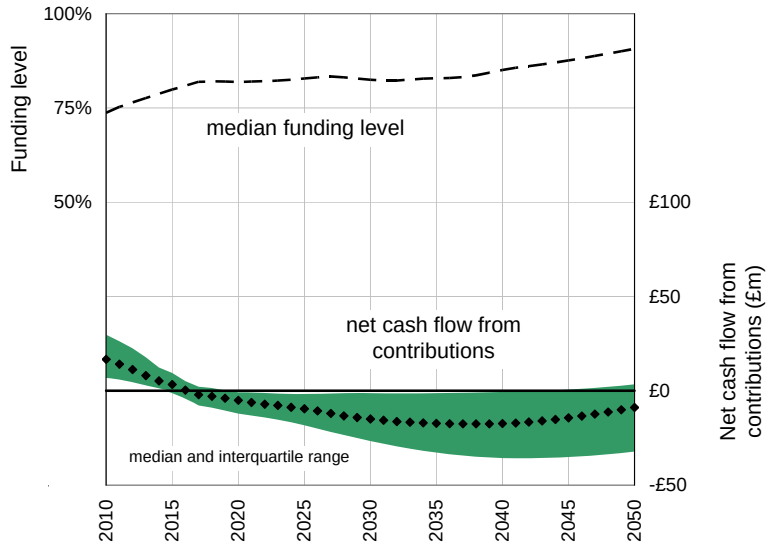
19 The simulation model tests the impact of changes in membership numbers, so all the other funding assumptions are held constant in the scenario shown in Figure B2. The funds will, in practice, adjust their contributions and funding assumptions: so the modelling is an illustration of possible impact not a prediction.

20 A declining workforce reduces cash flow into the fund in the short term, but a 20 per cent reduction in membership does not seriously affect the financial health of the funds in the simulation model (Figure B2). The funding level recovers to roughly the same extent in both scenarios. The reason that staff numbers have relatively little effect is because the loss of members immediately reduces the future liabilities that make up the majority of the cost of pension funding. The other component of the cost of pensions is funding to recover past service deficits. In these simulations employer contributions are maintained at 2007 levels: consequently there is a small increase in the median funding level but it does not recover to full funding.

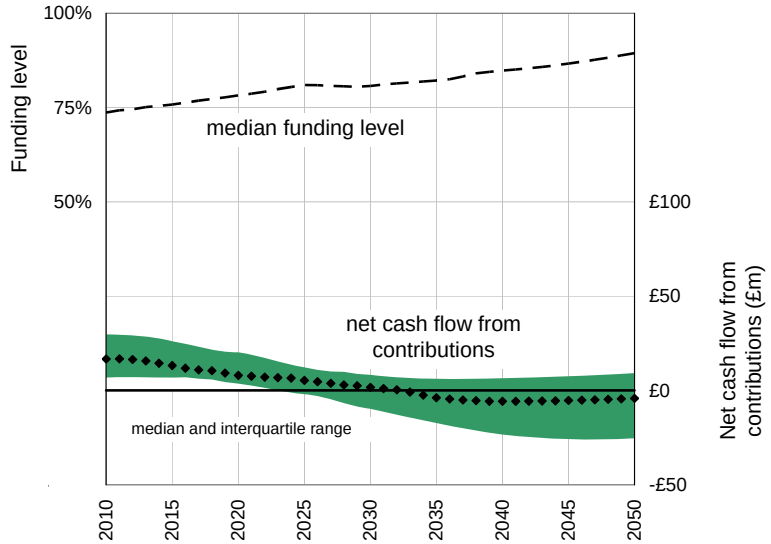
21 The cashflow of pension funds is affected by falling membership. Without additional income from investments, the net cash contributions are negative for most of the funds in scenario a (there is less impact in scenario b). The negative cash flows from contributions are offset by investment income from the funds' investments. If investments achieve their anticipated levels of return, the net asset value of funds will still increase, despite the cash outflow needed to pay pensions. Falling membership will have an impact on the maturity of the fund, with implications for the investment strategy.

Figure B2: **A 20 per cent reduction in membership does not seriously affect the financial health of funds**

a) with 3 per cent per annum reduction in workforce between 2010 and 2016



b) with workforce frozen after 2010



Source: Audit Commission analysis

Appendix C Impact of actuarial assumptions on pension scheme funding

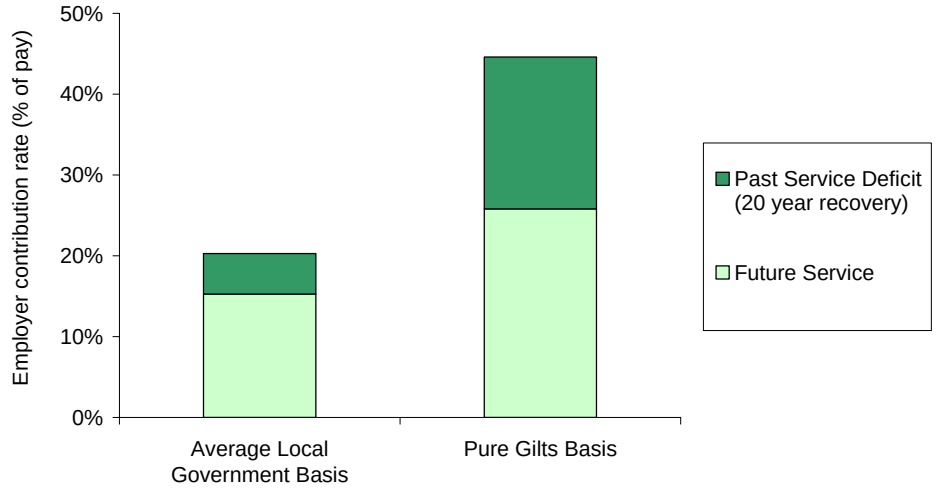
Key points

- Different actuarial assumptions had a significant effect on the range of funds' liabilities and funding levels in 2007 (up to 15 percentage points for some funds).
- There is no general pattern across the funds to suggest that the degree of prudence in the actuarial assumptions is related to the funding level.
- Pension funds shield employers from the full impact of low funding levels by using longer recovery periods, and other methods, to shift the deficit recovery further into the future.

Introduction

22 The funding position of LGPS funds is regularly reassessed to ensure enough money is set aside to meet the liabilities accrued by the members, and that contribution rates are set appropriately for different employers in the fund. The analysis in this appendix is based on the 2007 valuation results for the 79 LGPS funds in England. Figure C1 illustrates how the typical funding basis of LGPS funds affects the amount spent on pensions, compared with the spending that would be required using a risk-free funding basis.

Figure C1: **The impact of different methods for calculating pension costs Heading Aggregate cost of funding English LGPS pensions in 2007 using different funding bases**



Based on funding positions at 31 March 2007 and long-dated gilt yields of 4.5% a year

The 'risk free' approach assumes that all funds are invested in government bonds (gilts). Gilts are the asset class with the lowest risk and they also indicate the cost of borrowing for the public sector. If employers' contributions were set by reference to the returns available from investing in gilts, they would be much higher. Employer contribution rates are therefore sensitive to the assumed return on assets (Table C1).

LGPS funds typically hold small proportions of their assets in gilts. Most fund investments are in growth-seeking assets like equities. LGPS funding projections anticipate that equities will deliver higher returns than gilts over the long-term. This reduces the contributions that employers are asked to pay. But the returns are not guaranteed: there is significant volatility over time. This volatility is visible in regular changes to reported funding deficits or surpluses. Employer contributions are periodically adjusted to correct the long-term funding position compared with asset values. The true cost of pensions using the LGPS funding basis becomes clearer over time, as the level of contributions is adjusted in response to investment performance and other outcomes.

23 The technique of investing in growth-seeking assets is used in the LGPS and in private sector pension schemes to reduce the cost of pension contributions (Table C1). The funding basis of the LGPS is less conservative than private sector schemes, reflecting the strength of the employer's covenant in the public sector. The anticipated investment returns and life expectancy assumptions are slightly more conservative in private sector schemes and the deficit recovery period is much shorter.

Table C1 **Pension funds in both the public and private sector invest in growth-seeking assets to reduce the cost of pension contributions**

Typical assumptions used by pension schemes using different funding bases

	Typical private sector funding basis	Typical local government funding basis	Local government gilts funding basis
Investment return (pre-retirement)	5.6%	6.0%	4.5%
Investment return (post-retirement)	5.6%	6.0%	4.5%
Price inflation	3.0%	3.0%	3.0%
Pay inflation	4.5%	4.6%	4.5%
Life expectancy (male)	86.4 years	86.0 years	86.0 years
Life expectancy (female)	87.7 years	87.1 years	87.1 years
Recovery period (years)	7.5	20	20

Source: Audit Commission (based on information supplied by Hymans Robertson and PWC)

24 Funds are valued every three years. Fund managers, their advisors, and councillors have to balance the competing demands of prudence, affordability, stability, and stewardship for employers, employees, and local taxpayers. Both the investment strategy and investment return assumptions may be changed following the valuation.

25 The pension fund administering authorities have some flexibility in dealing with funding shortfalls. They can vary the period for addressing funding shortfalls: this can have a significant effect on contribution rates. In the 2007 valuations, most funds used a 20-25 year recovery period compared with the 6-10 years that is more typical for trust-based schemes in the private sector (Ref. 8).

26 The actuarial assumptions are an estimate of future long-term conditions that are inherently uncertain, but which are re-assessed every three years. There is almost no possibility that funds will run out of cash, but long term liabilities may be under- or over-estimated. This is not suggesting that pension fund authorities are acting improperly, but the revaluation process involves questions of judgement, and is not an exact science. There could be a bias towards making assumptions that reduce employer contributions, which is investigated below.

Testing actuarial assumptions

27 LGPS funds use actuarial valuations to make their funding decisions. The valuations use assumptions for investment returns, inflation and mortality. This appendix tests the impact of applying a standard set of assumptions to all 79 funds in place of the differing assumptions used by their actuarial advisers.[v]

28 The impact on employer contributions is calculated on using a common 20-year recovery period for all funds. This exercise tests the extent to which differing local assumptions affect funding levels and contribution rates, and identifies any obvious patterns in the results. Table C2 shows the range in assumptions used by different funds in 2007.

Table C2 **Range of long-term assumptions and management decisions used by different LGPS funds in 2007**

Analysis of 2007 actuarial valuation reports for English LGPS funds

		Lowest	Highest	Standardised
Investment return (pre-retirement)	Nominal	5.8%	7.6%	6.0%
	Real	2.0%	4.35%	3.0%
Investment return (post-retirement)	Nominal	4.9%	7.6%	6.0%
	Real	2.0%	4.2%	3.0%
Price inflation		2.8%	4.9%	3.0%
Pay inflation		3.4%	5.4%	4.5%
Life expectancy[vi]	Men	83.1 years	86.9 years	86.0 years
	Women	85.5 years	89.8 years	88.9 years
Recovery period		10 years	30 years	20 years

Source: Hymans Robertson

29 Standardised assumptions are used purely as a basis for comparison: they are not a recommendation for funds. Local assumptions used by pension funds should reflect investment strategies and other factors such as workforce characteristics. Many LGPS funds use more sophisticated probabilistic techniques to optimise their funding strategies. These methods test different strategies against a range of future scenarios, to estimate the likelihood of achieving the long term funding objective.

v All the 2007 valuations were carried out by four firms of actuaries, each with a different house style.

vi Figures relate to people retiring in normal health at age 65 in 2007.

Standard assumptions reveal patterns of variation

30 The standardised assumptions reveal material differences to the funding levels and employee contributions for most funds. There is little effect on the average figures for both funding level and contribution rates across all funds. The pattern of variation (shown in table C2) is skewed: more funds appear slightly less well-funded using standardised assumptions. The aggregate funding level does not change using the standardised assumptions. It appears that most funds (56 out of 79) would need higher contributions, but this is a quirk of the statistics: funds that would have to pay more are usually smaller than average.

31 The difference in funding level achieved by using standardised assumptions is a maximum of 23 percentage points (+8% / -15%). Excluding these outliers, most funds were affected by less than 15 percentage points (+5% / -9%). The corresponding impact on employer contributions for the outliers is up to 19 percentage points, but most funds were affected by less than 10 percentage points.

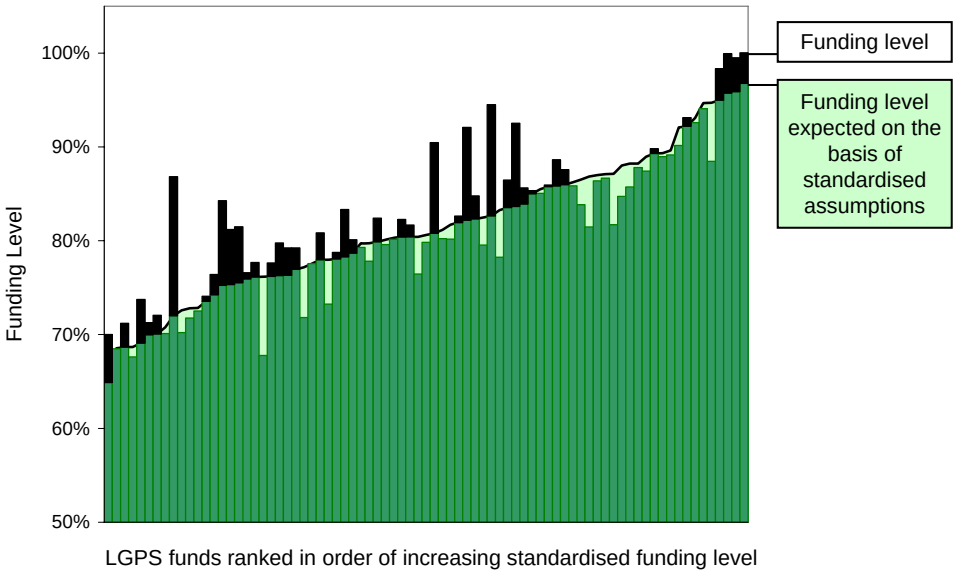
Table C2 **The impact on funding levels and employer contributions of using standardised actuarial assumptions**

	using standardised assumptions	
	funding levels would be	employer contributions would be
Median	-0.4%	+1.7% of pay
Range covering 95% of funds	+5% -9%	-2% of pay +7% of pay
Max/min	+8% -15%	-5% of pay +14% of pay

Source: Hymans Robertson modelling

32 Figure C2 shows the effect of using standardised actuarial assumptions on funding levels. Although published funding levels for many of the less well-funded schemes are well above their standardised figures, there is no consistent pattern to the data. Therefore there is nothing to suggest the calculation of funding levels is biased in any particular direction. Table C1 demonstrates that some funds are more cautious in their assumptions than others, but a well-funded scheme is no more or less likely to be more cautious than a poorly funded scheme. The 2007 figures are reliable overall and provide the basis for estimating 2010 funding levels in 2010 in Appendix D.

Figure C2 **Impact of standardised assumptions on funding levels**
Actual 2007 funding levels compared with standardised funding level



Source: Hymans Robertson modelling

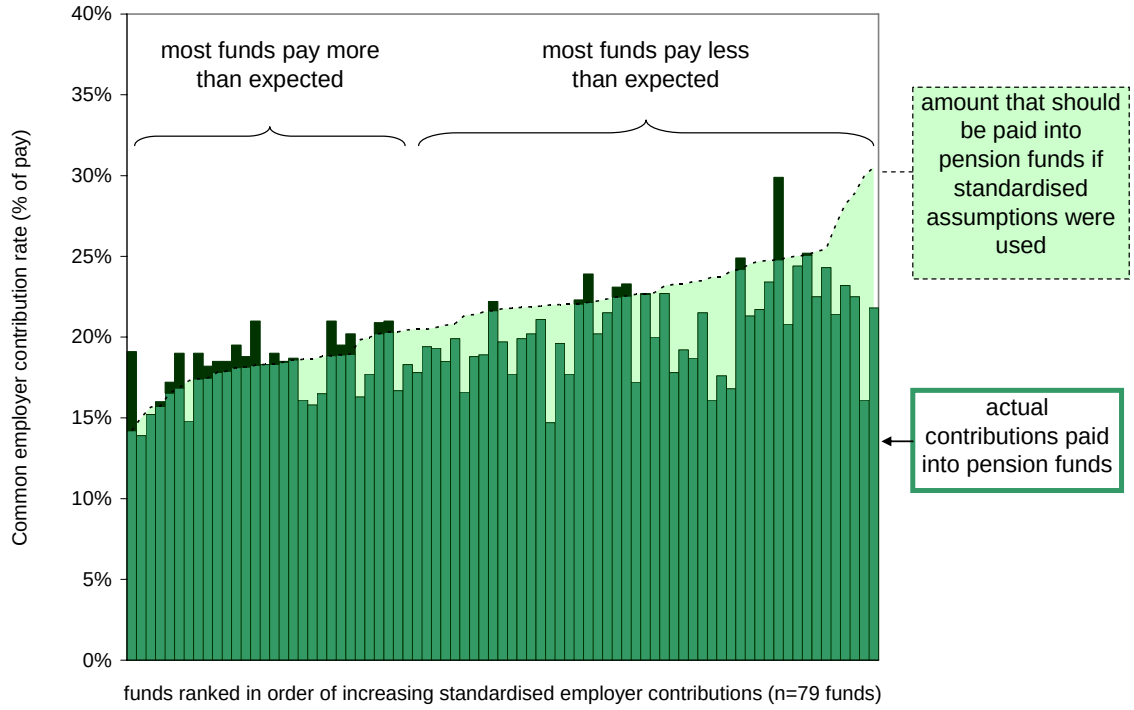
Impact on employer contributions

33 Figure C3 shows how employer contributions would change if all the English local authorities' funds used our standardised assumptions (based on a 20-year deficit recovery period). The rate of employer contributions is not directly proportional to the size of the funding deficit, which is assessed according to long-term assumptions. Employer contributions are influenced by the chosen recovery period and, occasionally, anticipated short-term investment outperformance. Standardised assumptions remove these influences.

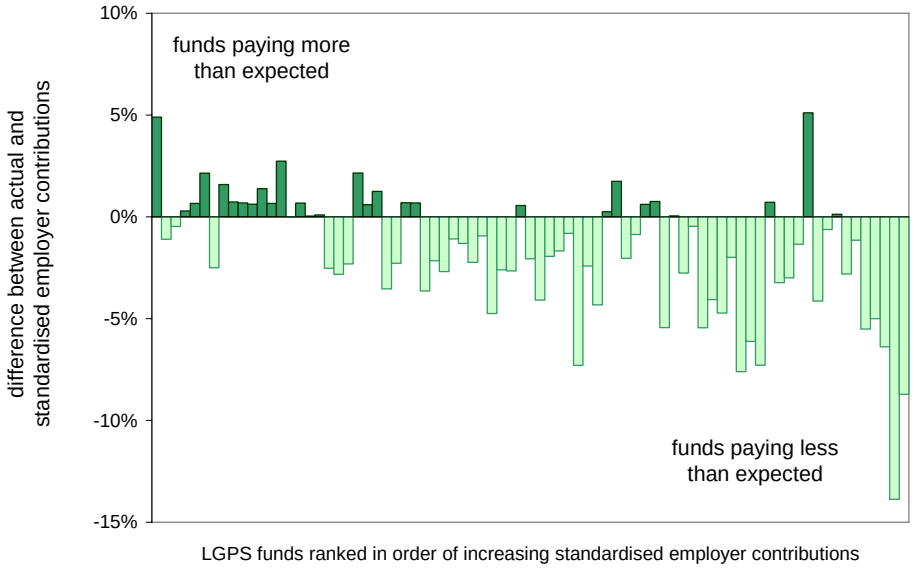
34 When the funds are ranked in order of increasing standardised contribution rates, the employer contribution rates are stabilised. A few of the funds with low standardised contribution rates are paying a bit more, enabling them to recover deficits more quickly. At the other end of the scale, funds with high standardised contribution rates are paying less than indicated by reference to the standardised assumptions, spreading their recovery over a longer period. This 'smoothing' is a normal part of the process for setting contribution rates. The employer contribution rate is sensitive to the recovery period and pension funds try to keep employer contributions stable over time.

Figure C3 **Pension funds stabilise employer contribution rates, to avoid employers facing sharp rises in contribution rates**

Actual contribution rates in 2007 compared with the rates expected using standardised assumptions



Difference between actual and standardised contributions



Source: Hymans Robertson modelling

Appendix D Modelling of 2010 funding position and its potential implications

Key points

- Pension funds have been affected by lower than expected investment returns since 2007, which have led to asset values in 2010 being on average 15 per cent lower than anticipated.
- The emergency budget in June 2010 announced changes to the basis for indexation of pensions in payment. This could reduce the value of pension liabilities by about 7 per cent, and improve funding levels by about 6 percentage points.[vii]
- We estimate the average (aggregate) funding level in 2010 will be 72 per cent, varying from 50 to 85 per cent for individual funds.

If the aggregate funding level is 72 per cent, and the target remains at 100 per cent, funds will need to take action in response to the decline in funding.

- Pension regulations require the impact on employers to be smoothed. Without smoothing, employer contributions would increase by an average of 5 per cent of pay. There would be significant variation around this figure for the different employers in each fund.
- The added cost of employer contributions for a typical council is likely to represent around one per cent of total spending on services.
- An alternative to increasing employer contributions is to seek higher investment returns[viii], which would entail higher risks. This strategy may be acceptable to some local authority employers but may not be suitable for all.

vii The actual impact will depend on actuaries' interpretations of the new rules. We have assumed the change will reduce the annual increase in pensions in payment and deferred pensions by 0.7 per cent.

viii Individual funds or employers cannot increase employee contributions, which are determined nationally.

Pension funding levels (2007–2010)

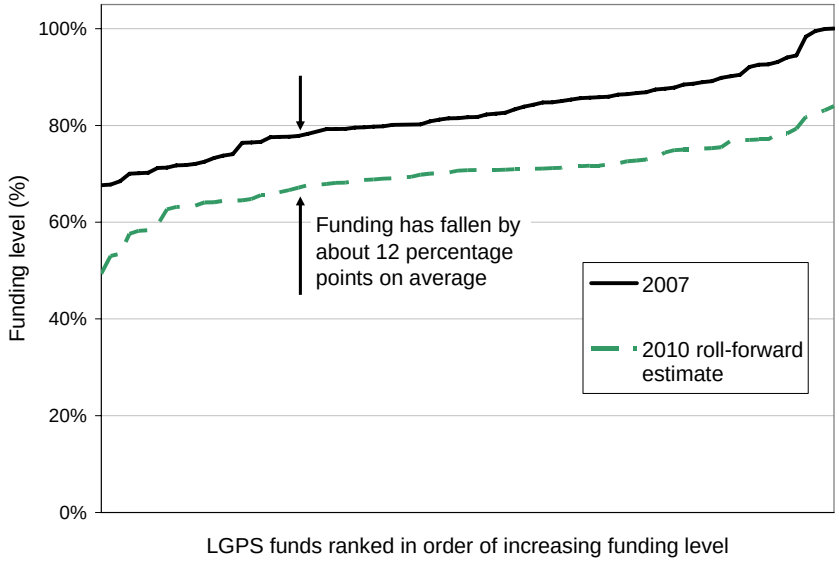
35 The cost of providing pensions represents a small part of total local government spending, but it is still a significant cost. In 2007, when the current contribution rates were determined, pension costs for employers averaged 18.5 per cent of pay. Around 30 per cent of gross local government revenue expenditure is spent on wages and salaries. We estimate councils' contributions to pensions are about 4 per cent of total spending, as not all pay is pensionable and not all employees are members.

36 In 2007 the average funding level was about 85 per cent. A roll-forward model suggests that funding levels have fallen to an average of about 72 per cent (see Figure D1). The estimate includes an allowance for the recent change to the method of indexation of pensions in payment announced in the June 2010 emergency budget.

37 The decline in funding levels is largely due to poor investment performance since 2007. Spring 2009 was a low point for LGPS pension scheme funding levels. All funds should have recovered ground since then, following the recovery in equity markets and rise in long-term interest rates after the end of quantitative easing. The picture varies for different funds and there is a wide spread of funding levels between the most and least well-funded (see table D1).

Figure D1 **Pension funding levels will have fallen by about 12 per cent since 2007**

Distribution of pension scheme funding levels for 79 LGPS funds in England



Source: Hymans Robertson modelling

Table D1 **There is a wide spread of funding levels among LGPS funds**

	2007 funding level	2010 funding level (estimate)
Lowest funded	68%	50%
Highest funded	100%	85%
Average	84%	72%

Source: Hymans Robertson modelling

Notes:

- The estimate for 2010 is based on individual fund data, using the same assumptions for life expectancy and investment return as funds used in 2007 to value their liabilities.
- The change to CPI indexation is likely to reduce price inflation by 0.7 percentage points, which would improve the funding position by about 6 per cent on average.
- To estimate asset values, actual fund returns have been used for 01/04/07 to 31/03/09 and estimated returns for 2009/10, checked against actual returns for a sample of funds.

Impact on employers

38 Changes to pension funding levels do not translate directly into revised contribution rates for employers (each pension fund has many different employers admitted to it). This is because the deficit could be recovered in different ways, over different periods of time, and because the regulations require pension fund administering authorities to smooth the impact. The analysis in this appendix considers two alternatives:

- increasing employer contributions using the same recovery period as in 2007; and
- changing the investment return while keeping employer contributions the same as in 2007.

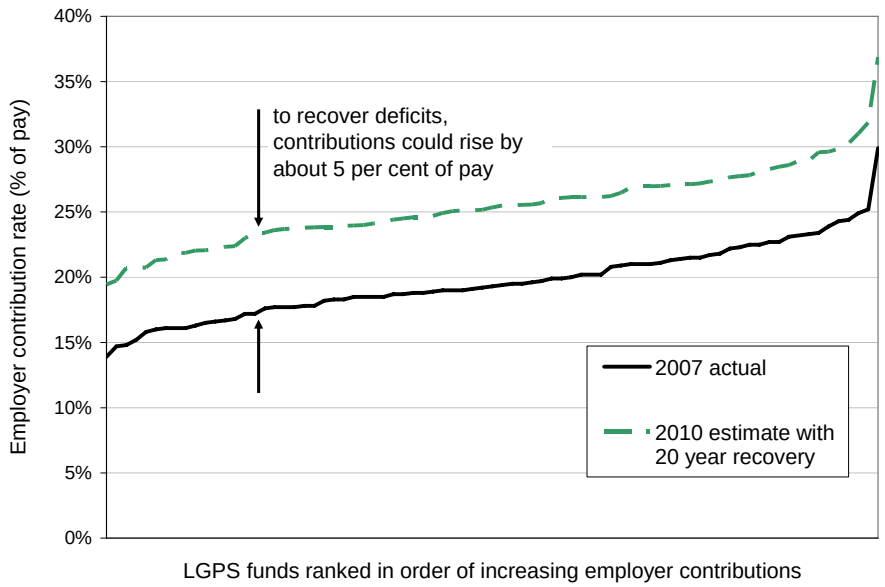
The required increases are large, but they are less than half the amount that would have been required if the valuation was done in 2009. The actual increase could vary from these estimates (see Box D1 for an outline of possible source of error in the model).

Increasing employer contributions

39 Figure D2 shows the impact on funds of changes since 2007. If there was no smoothing, the employer contributions would have to increase by 5 per cent on average. Smoothing means that any increase would be phased in gradually from 2010/11. Table D2 shows the range of employer contributions required.

Figure D2 **Pension contributions could increase by about 5 per cent without smoothing**

Contribution rates for LGPS funds in 2010 (estimated) and 2007 (actual)



Source: Hymans Robertson modelling

Targeting higher investment returns

40 Higher investment returns are an alternative to increased employer contributions (but they carry more risk). Table D2 shows the investment returns required to have the same effect as increased employer contributions.

Table D2 **Funds could recover their deficits by higher employer contributions or higher investment returns**

	Method used to recover deficits over a 20 year period	
	Additional employer contributions (over 2007 figure)	Approximate increase in annual asset returns with no increase in cash contributions
Maximum	+10% of pay	+2.2% a year
Minimum	+2% of pay	+0.1% a year
Average	+5% of pay	+1.1% a year

Source: Hymans Robertson modelling

Box D1 Possible sources of error in the model

- Actual fund returns have been used for 1 April 2007 to 31 March 2009 but estimated returns have been used for 2009/10, checked against a sample of actual returns.
- Individual funds' investment strategies vary, and some funds have performed better than others since the low point in 2008/09.
- The estimate for 2010 assumes that each fund keeps the same assumptions for valuing its liabilities as in 2007, but administering authorities and their advisers might use different methods in 2010.
- The recent announcement of a change to the indexation of pensions in payment will affect pension funding levels, but the precise impact has yet to be determined. We have assumed that the change will affect the annual increase in pensions in payment and deferred pensions, and the Consumer Prices Index (CPI) will be 0.7 per cent lower than the Retail Price Index (RPI).
- The impact on individual employers will vary from the broad averages, particularly for private sector and community-based organisations, which may require a shorter recovery period.

How significant is pension funding on local authority finances?

41 Pension contributions represent about 4 per cent of total local government revenue spending. So a rise in pension contributions from 18 to 23 per cent of pay implies a rise of about 1 per cent in total spending. Because of the defined benefit structure, increased contributions to pension funds do not affect employee benefits, so there is no increase in take-home pay or retirement income for employees.

42 The recovery of pensions deficits would incur higher costs, more investment risk or longer time horizons. Higher costs could be managed in different ways, so it would be wrong to assume that a rise in council tax is unavoidable. But any extra cost would add pressure to council budgets.

Variation among different funds and different employers in the same fund

43 The impact on local authorities and other employers will vary because they have different characteristics and contribution rates. Most local authorities can manage the likely increase in contributions through their medium term financial plans. Other employers, such as voluntary organisations and private companies delivering services for councils, may face larger increases, and may also be less able to manage the effects.

Managing the impact of change

44 Modelling of changes since 2007 suggests that the funding position of LGPS funds varies markedly. Their strategies for deficit recovery will have to strike a careful balance between competing objectives. Funds still have the capacity to recover deficits, but the cost of increasing employer contributions could be prohibitive in some funds, and accepting higher risk may be impossible for some employers.

45 The degree of variability suggests that some employers pay a lot more than others for a similar package of benefits. (The exception to this is where high pensions costs are driven by higher than average pay rises). But the level of contributions does not necessarily reflect on the performance of the current fund administrators. There are many reasons why some funds have lower rates than others. For example, they may have been better managed in the past, they might have different workforce characteristics, make less prudent assumptions about the future or have benefited from good fortune with their investments.

Appendix E Approaches to investment risk

Key points

- Using probabilistic methods of valuation, the outcomes of the credit crunch were not beyond the expected bounds of probability.
- The stronger employer covenant of LGPS funds compared with private sector schemes could be used to greater advantage to target higher investment returns but this would mean accepting increased investment risk.
- The focus for investment could move more towards longer term risk management and return capture, and away from a short-term focus on 'measured risk'.[i]
- Derivatives play a small but increasing role in meeting long-term objectives, and LGPS funds need to be more confident in using a wide range of financial instruments.

Context

46 Public sector pension schemes in most countries are unfunded. Pensions are paid from current employee contributions and tax revenues. Some countries use sovereign wealth funds to wholly or partially fund public sector pensions.[ii] The funded local government pension scheme in England has its roots in individual council's schemes and government action to align the schemes under national, statutory, regulation. In theory, government could provide pensions for local government employees on an unfunded basis as they do for uniformed police and fire and rescue officers.

What are the risks we are focusing on?

47 Under the current system, the pension fund is a risk management mechanism that allows employers to manage their cash flows over the long term. The cash flow position of most LGPS funds is currently positive. They could pay pensions from current employee contributions and revenues. But there will be a net outflow of funds in future as schemes mature, and an

i Pension funds would not follow market indices so closely, so there would be periods when funds performed less well than the market overall.

ii Norway, New Zealand and Ireland are examples of countries with Sovereign Wealth Funds (SWFs). SWFs are funds in which balance of payments surpluses, typically from oil revenues and privatisations, are invested. Ireland's SWF was established in 2001 when it had a balance of trade surplus.

adequately funded scheme guards against the possibility that employers will not have enough money to pay pensions. Without the fund, employers would not be able to raise enough money from other budgets to pay the costs of pensions over and above employee contributions. Therefore keeping enough funds to cover future liabilities is a fundamental part of pension provision.

48 There is a question, though, about the optimum funding level. A partially funded local government pension scheme, although not ideal, could still manage risks effectively. It has been argued that funding targets could be determined locally (Ref 7). Local government employers are not exposed to the same risks as private employers because they are not likely to be wound up, so they could take a different view on pension funding.

Long term value investing

49 If local government's constitutional permanence is a valid reason to tolerate less than full funding, then it follows that LGPS funds could accept more investment risk in recovering their deficits. One approach is for LGPS funds to seek higher long-term investment returns by adopting value investment principles, which seek out undervalued unfashionable assets and hold them for a long time. This is a well-established approach and there are some features of LGPS funds that make it relevant. The strong cash flow position means that LGPS funds can invest in assets with low liquidity; LGPS funds can afford to take the long view on investments rather than focusing on avoiding the short term ups and downs of the market. Box E1 shows that the long-run rate of return on investments matters much more for the funding level of pension funds than short-term volatility.

50 The current situation with low funding levels presents LGPS funds with a dilemma: they need to build up funds at a time when many people have lost confidence in the finance industry, are wary of taking risks, and cash is likely to be tight. Regulations require performance to be monitored on a quarterly basis, which sends out a message to take a short-term view (although this might not be intended). It is generally accepted that fund performance should not be evaluated over short periods of time.[i] (Ref. 9). Private sector pension funds have to adopt a shorter term approach than LGPS funds because of the impact of pension deficits on the balance sheet, and because of the shorter recovery periods required. But a short-term approach to pension funding is not likely to achieve the returns necessary to recover from the current funding deficits.

51 LGPS funds already adopt value investment principles to some extent. They can reduce their exposure to equities when a given level of growth has been achieved, to lock in investment gains. But the current approach to investment by LGPS funds involves a mixture of different techniques and

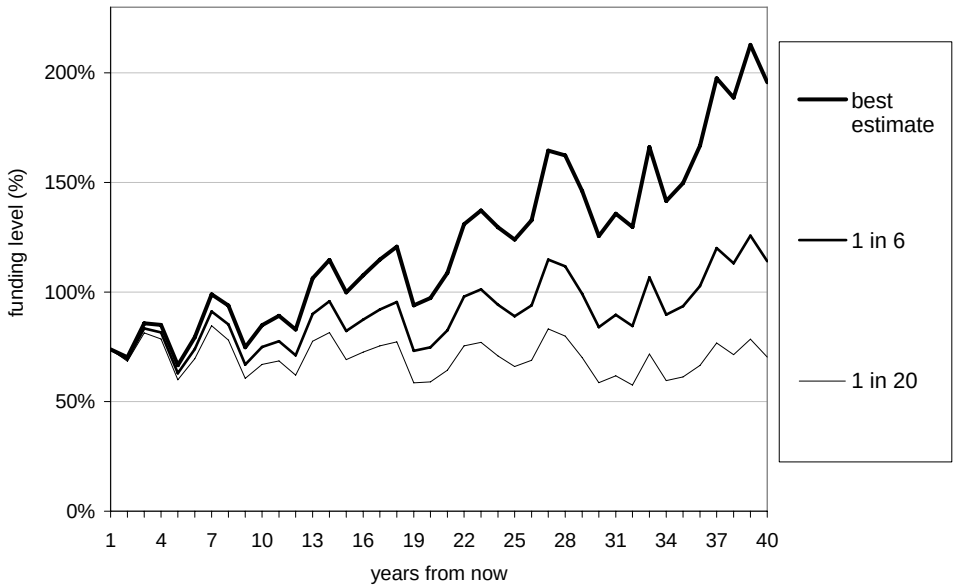
i "Although returns will be measured on a quarterly basis in accordance with the regulations, a longer time frame (typically three to seven years) should be used in order to assess the effectiveness of the fund management arrangements and review the continuing compatibility of the asset/liability profile."

practices that is difficult to characterise as a strategy. There are pressures for 'herd behaviour' with funds following each other. This is a rational position but it has not delivered the required rate of return during the difficult investment climate of the last decade.

Box E1 Short-term volatility is less important than long term gain

The chart shows the hypothetical development of a pension fund's funding level, with a constant level of contributions. The chart uses data for a typical LGPS fund, over a 40-year period. The underlying model assumes a typical asset allocation of 70 per cent in equities, with the balance invested in bonds, property and other asset classes. The starting position (75 per cent funded) is broadly in line with the modelled funding level for the LGPS from appendix D. The end position for the top line shows a best estimate outcome; the best estimate is the estimate with half of projected outcomes above and half below.

Hypothetical development of funding level over time for a typical LGPS fund



The second line represents a poor outcome on a normal distribution (there is a one in six chance of outcomes lower than this). There is a 5 per cent chance (one in 20) that outcomes would be worse than the third line. The funding level volatility is consistent across all the lines shown. This shows that, for a long term fund, it is the long-term return on fund assets rather than volatility of the funding position that matters.

Funding level volatility has some influence on behaviour. The reaction of councillors, stakeholders and others to surpluses and deficits is an important consideration. Actuaries have traditionally adjusted the contribution strategy to reflect surpluses or deficits in the funding position. Some actuaries argue that it would be better to stabilise employer contributions at a rate that was sustainable in the long term and then concentrate on achieving the required rate of return on assets, rather than worrying unnecessarily about short-term funding level volatility.

The principal assumptions behind the model are:

	Expected return (% per year)	Volatility (% per year)
Inflation	3.4	1.1
Equity (UK)	7.9	17.0
Equity (overseas)	7.6	21.0
Fixed interest gilts	4.7	10.0
Index-linked gilts	4.5	7.0
Corporate bonds (AA-rated)	5.5	12.0
Cash	4.8	0.8
Commercial property	5.8	14.0
Equity risk premium	3.0	

In the model the equity risk premium is defined as excess equity returns over the risk-free nominal yield at the 10-year maturity.

Has the credit crunch exposed problems in the system?

52 Actuarial valuations work on the basis of an assumed investment return, but they also take account of risk by including a probability-based projection of funding levels (often for the following ten years). Although the years immediately after the 2007 valuation were unusually poor by historical standards, the valuations at the low point in 2009 were not outside the bounds of probability predicted in 2007. In 2007 the actual performance in 2010 was assessed by funds as having a probability of about 5 per cent (or one chance in 20). While virtually no one can claim to have predicted the exact details of the credit crunch, its possibility was not unexpected. LGPS funds were not forced sellers of assets, and they have since recovered in value.

53 LGPS pension funds suffered from 'collateral damage' during the banking crisis. This was mainly from holding equity positions in failing and rescued banks as well as suffering from the general decline in equity markets. Most LGPS funds had no, or low, exposure to 'toxic' assets (some mortgage backed securities) and did not suffer large losses from the use of derivatives.[i] Derivatives are used by pension funds for a variety of purposes, including portfolio management and managing currency and interest rate risks. The use of derivatives is prohibited for council general finances in the UK[ii] and some local authorities outside the UK have suffered large losses through their use. The behaviour of financial markets following the credit crunch has not all been good news for LGPS funds: inflation expectations were raised, and this increased the cost of pension liabilities.

54 Responsibility for setting investment policy and managing the risks of derivative contracts lies with each of the 79 funds. The individual funds have a great deal of discretion. The role of external auditors is limited to forming and presenting an opinion on the valuation of derivatives and other assets. Most LGPS funds make limited use of derivative contracts (measured in comparison to the total fund value).[iii] The level of disclosure about derivative contracts in pension fund accounts is therefore low, and there is little public information about the risks being incurred. For conventional investments the current value is the maximum amount that can be lost, since the value cannot decline below zero. However, depending on the nature of the contract, it may be possible for some derivatives to incur losses many times their initial value. The limited scale of losses, despite the

i Examples of derivative contracts include swaps, futures contracts (including equity futures, bond futures and interest rate futures), options, and forward foreign exchange contracts.

ii A ruling by the House of Lords in 1991 following legal action by an Audit Commission-appointed auditor clarified that UK councils do not have the power to take out derivative contracts since they do not serve legitimate council functions.

iii Derivative contracts are valued and their total value must be reported in the pension fund accounts. More detailed reporting is required for any individual contracts worth more than five per cent of the fund value.

extreme nature of recent financial events, provides some assurance about the quality of risk management in LGPS funds.

55 Pension fund accounts suggest that LGPS funds are starting to use derivative contracts more widely and this trend may continue. Administering authorities should take a realistic view of their own capacity to identify and manage risks at the level required by derivatives. Administering authorities should consider the role of derivatives in a long-term investment strategy carefully. The cost of using of financial instruments to reduce short-term volatility may be greater than the benefits for a long-term investor.

A more differentiated approach

56 This short discussion on risk management has deliberately avoided talking about the detailed methods of reducing investment risk. It has focused instead on the fact that the LGPS is an unusual pension scheme, which demands its own type of investment strategy to make the most of the opportunities to solve the current issues. The economic downturn will have lowered the average funding level since 2007, and different funds will have different priorities as their funding positions have changed (table E1). The approach to risk management also needs to reflect the maturity of individual schemes, which is unlikely to have changed substantially over the short period since the credit crunch. But this situation may change over the longer term if membership numbers fall in future, following the economic downturn. The effect of declining membership is discussed in Appendix B.

Table E1 **Different funds have different priorities after the economic downturn**

Funding level	Nature of risk	Priorities for risk management
Low	Insufficient cash to pay pensions at some point in the future	Recover funding levels: ■ better control of wage costs; ■ additional employer contributions; ■ aggressive long-term investment strategy; ■ accept short-term fluctuations in funding level; and ■ national changes to benefit package required.
Medium	No cashflow problems but insufficient funds to meet all future liabilities	Maximise long-term investment return: ■ focus on asset allocation to achieve target level of return; and ■ lock in investment gains as they occur by switching investments.
High	No solvency problems but wish to avoid possibility of losses occurring in future and reduce short-term volatility.	De-risking: ■ matching assets to liabilities; and ■ use of hedging, swap controls etc.

Appendix F The impact of longevity and eligibility on pension costs

Key points

- Pension costs have risen because pensions are paid for longer, as members live longer in retirement, and because of the admission of part-time staff.
- Nearly three quarters of LGPS members are women, and 45 per cent of members work part-time.
- The benefit structure of the LGPS was not changed when part-timers were made eligible to join, and the scheme could be redesigned to better meet the needs of the present workforce.

Life expectancy

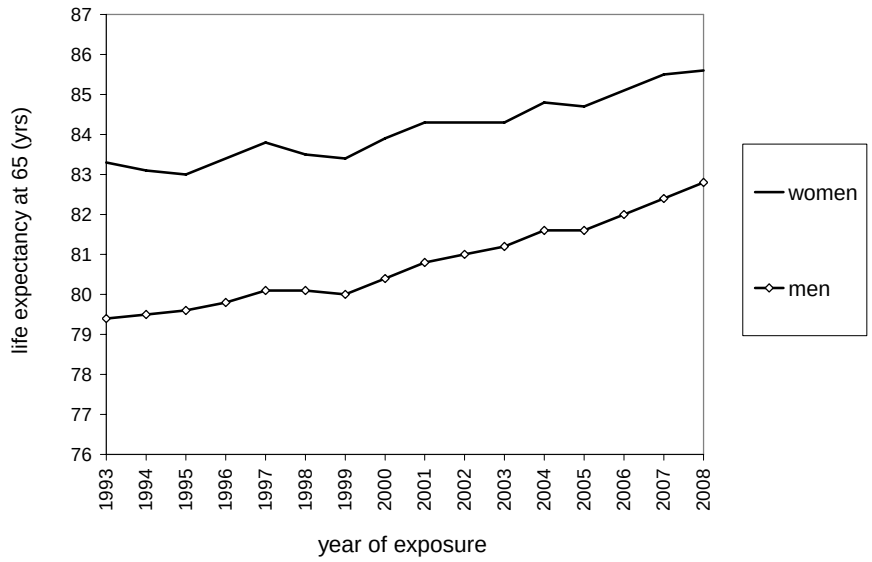
57 Life expectancy has increased in all developed countries. Japanese citizens aged 60 can expect to live to 85, the UK's 60-year olds can expect to live to 82. (Ref.10). Those extra three years make a significant difference. With a retirement age of 65, three years of extra pension payments would add nearly 20 per cent to long-term costs. Each fund uses figures for its own members, and these will vary from the population as a whole. In this appendix, data from Club Vita is used to review the impact of longevity on the LGPS since 1993.[i] Figure F1 shows changes to average life expectancies calculated from the observed pensioner death rates in 45 LGPS funds analysed by Club Vita.[ii]

i Death rates before 1993 are not shown as few funds have a complete set of computerised death records for earlier dates.

ii Club Vita is an information sharing and benchmarking club that collects and analyses longevity information from member pension funds.

Figure F1 **Improvement in life expectancy has added to the costs of pensions**

Life expectancy for men and women in the LGPS



Source: Club Vita analysis

58 Over the 15 years from 1993 to 2008, men's life expectancy rose from 79.4 years to 82.8 years: an increase of 3.4 years in 15 years (over 2 years a decade). There is a clear trend: life expectancy increased on all but one of the years. Women already had longer life expectancy, but it increased by more than 2 years over the same period. These are average figures, but they indicate a significant increase in pension fund costs over the same period.

Gender and working hours

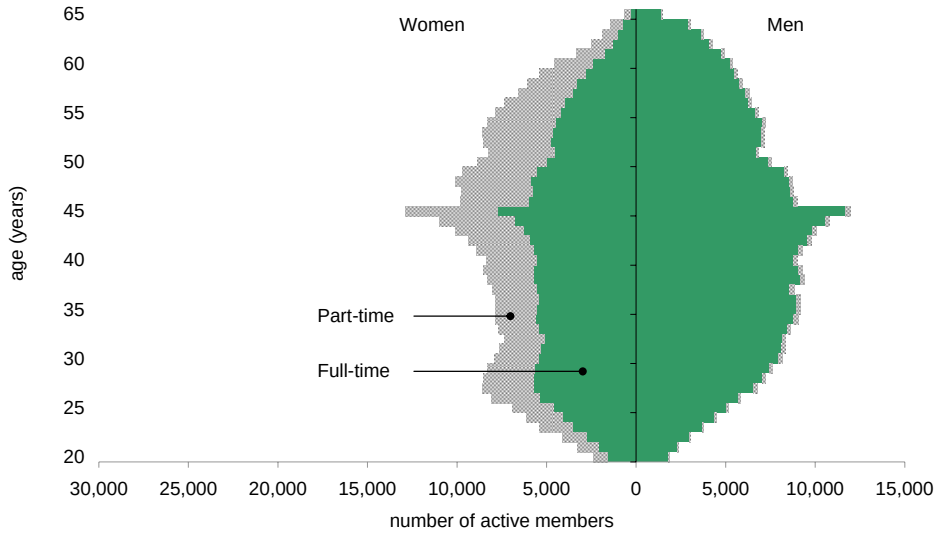
59 In 1992, the active membership of the LGPS was evenly divided between men and women. Part-timers had to work at least 15 hours a week to join and were twenty per cent of the membership.

60 Over the 15 years to 2007, the number of men in the LGPS hardly changed. But the number of women members has rapidly increased following the removal of the minimum hours requirement.[i] There number of part-time members tripled between 1993 and 2007 (Figure F2). By 2007, nearly half of all active LGPS members worked part-time. There were no attempts, though, to adjust pension benefits for other members to reduce the additional costs of employer contributions for the extra part-time members admitted to the scheme.

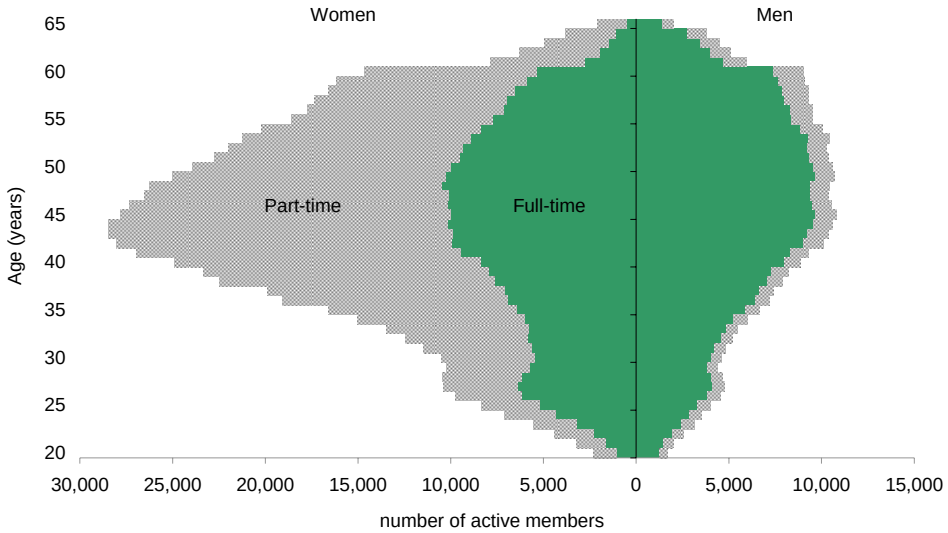
i In 1993, the 15 hour a week minimum for membership of the LGPS was removed following a European Court of Justice ruling (Barber v Guardian Royal Exchange Assurance Group [1990] ICR 616, ECJ case C-262/88) that occupational pensions were 'deferred pay' and therefore subject to the equal treatment laws of the European Union.

Figure F2 **Part-time membership has grown by a factor of three since 1992**

Number of active members by age, gender and work pattern in 1992



Number of active members by age, gender and work pattern in 2007



Source: Club Vita

61 The change in the rules to enable part-time staff to join the scheme had three main impacts.

- Pensions cost increased.
  - Increased cost to employers of providing pensions to people who were previously not eligible to join the scheme.
  - More women members, with slightly higher life expectancy than men.
  - Increase in administrative burden to deal with extra numbers and more complex employment patterns.
- The underlying maturation (the rising proportion of pensioners compared with employed members) of the scheme was masked.
- Funds were exposed to new risks as the range of career patterns increased.
  - Local government pensions were originally intended for people with long careers. The final salary benefit structure intentionally rewards long service and climbing the career ladder.
  - A new schedule of tiered contribution rates came into force in 2008, intended to reduce the disparity in pensions benefits between high and low earners. (Ref. 11)
  - The increased variety of people in the LGPS means that average figures conceal the extent of variation. References to 'average pension' can be misleading as the distribution is skewed (Appendix A). The eligibility rules have changed the membership, and there are dynamic effects as different cohorts of people pass through the system. Table F1 shows how membership of the LGPS has changed over the last two decades.

62 LGPS pensions are typically smaller than other public pensions, with around half of pensions in payment being below £3,000. This is partly due to the increasing number of retirees on small pensions (who previously would not have received a pension at all). Comparisons with other schemes would be more informative if the average pension for full-timers and part-timers was stated separately or converted to full-time equivalents (FTE).

Table F1 **The membership of the LGPS has changed significantly since 1992**

		1992		2007		Change
		(000s)	%	(000s)	%	(000s)
Men	Full-time	314	48	288	27	-26
	Part-time	8	1	42	4	34
	Total	322	49	330	31	8
Women	Full-time	207	32	301	28	94
	Part-time	124	19	443	41	319
	Total	331	51	744	69	413
All	Full-time	521	80	589	55	68
	Part-time	132	20	485	45	353
	Grand total	653	100	1,074	100	421

Source: Club Vita

Appendix G Performance comparisons of large and small LGPS funds

Key points

- The investment returns over the last 5-10 years have been volatile, and the difference between individual funds is small in comparison to the swings in the markets.
- There is little evidence to suggest a relationship between fund size and investment performance over the last eight years, either in higher investment returns or lower volatility. Although the largest funds have achieved slightly better results than average over this period, so too have some small funds.
- Overall, larger funds spend proportionately less on external management fees than do smaller funds.
- Overall, larger funds spend less on administration relative to the size of the scheme.

Is bigger necessarily better?

63 In theory, large pension funds have many advantages over smaller funds. They are more likely to have:

- a larger budget for investment and actuarial advice;
- more capacity to provide support and advice to pensions committees;
- more capacity to manage investments internally if required;
- greater likelihood of attracting specialists to executive and committee roles;
- lower fee rates for externally managed investments because of larger investment mandates; and
- economies of scale in pensions administration.

64 In practice, any difference in performance between small and large funds is not obvious. There is no general trend across the performance data because, although the largest funds achieved better than average returns in the period to the end of 2009, so too did some of the smallest funds. Given the volatility in investment returns and differences in individual strategies, it is difficult to find a general trend in relation to the size of the fund. It should also be borne in mind that the period up to the end of 2009 was very unusual in terms of investment performance. The extreme volatility in financial markets makes results more dependent on chance than they would have been in more stable times.

Risk and return

65 A further complication in comparing funds is the potential impact of investment strategies and the extent to which some funds adopt a more cautious approach. Analysis of LGPS funds, though, shows that most had assumed real rates of return for their investments of between 3 and 3.5 per cent, which is significantly higher than the 'risk-free' rate of return using a gilts basis. Large funds do not appear to have achieved substantially better results than small ones in terms of volatility. It is possible that some funds have benefited more than others from factors such as currency movements, which are not included in this analysis.

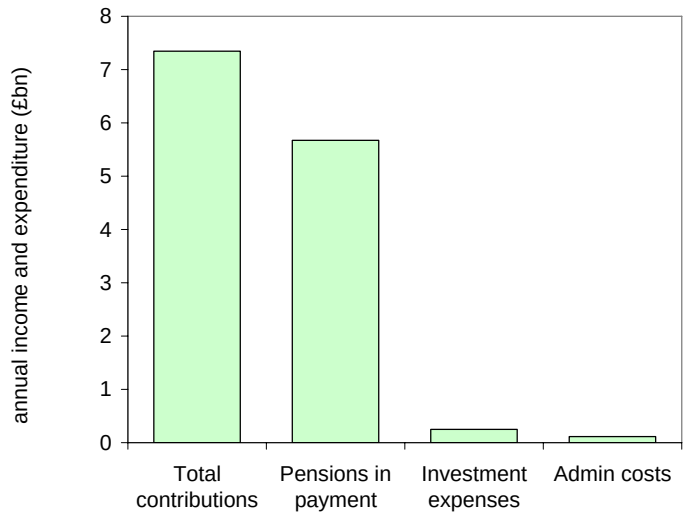
66 Although there are tangible benefits of being in a large fund, there is little appetite from smaller funds to merge. The reasons against merging are fundamentally about loss of control over the investment strategy and employer contribution rate. There are many different ways that pension funds could be restructured to preserve local control over investments. The present arrangements give the pension fund authority more influence over employer contributions than they would have as an employer body in a larger fund and allow more representation on pensions committees.

67 The analysis in this appendix uses statistics from pensions fund accounts on:

- administration costs;
- fund management expenses; and
- net investment returns.

68 Both administration and fund management costs represent a small part of the total income and expenditure of funds (see figure G1). Given the size of most LGPS funds, the potential gains or losses on financial markets would eclipse the costs of running the scheme. If there was a good chance that spending on additional investment management would achieve better results then the case is for increased fund management costs, not a decrease. The results from LGPS funds, however, do not show a correlation between the declared fund management expenses and investment returns at the aggregate fund level. This could be because of performance-related fees or where fees are deducted from the fund returns.

Figure G1 **Administration and fund management charges represent a small part of total expenditure on pensions**
Income and expenditure in English LGPS funds in 2008/09)



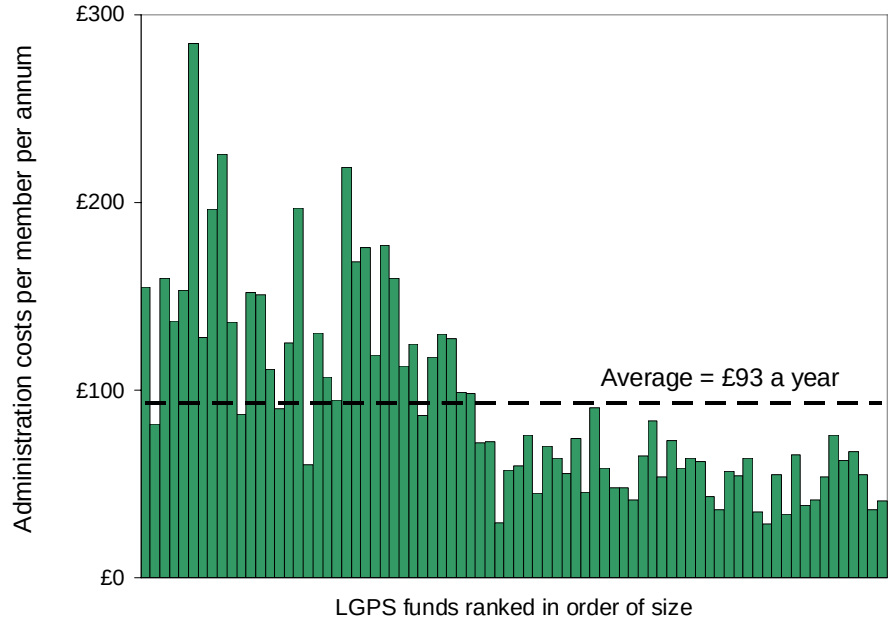
Source: Audit Commission analysis of pension fund accounts

Administration Costs[i]

69 Administration costs per scheme member are usually higher in small funds, most of which are in London (Ref. 12). The overall pattern suggests there are economies of scale in administering large funds (as there are in services such as payroll administration) (figure G2). The variation between funds of similar size suggests that administrative costs are affected by other factors. One factor that applies to all funds irrespective of size is the increasing trend towards the use of part-time and casual staff with short service. This leads to a disproportionate amount of time being spent on pensions administration compared with the value of the pension.

i Authorities charge the costs of pensions administration to the fund. This includes expenses such as actuaries' fees, staff salaries and other costs such as overheads. From 2008/09 onwards, new audit arrangements mean that the audit fee can also be included.

Figure G2 **Larger pension funds have lower administration costs**
Administration costs for English LGPS funds in 2008/09



Source: Audit Commission analysis of pension fund accounts

Investment management expenses

70 There is a clear relationship between the size of funds and management costs. Smaller investment mandates of any given type or asset class tend to have higher fee rates, as shown in the figures for investment management expenses declared on pension fund accounts.[i] Larger funds do, on average, achieve slightly lower rates for fund management than smaller funds, which may be due to the larger investment mandates. However there are a number of complicating factors that cloud the picture. Larger funds are more likely to manage more of their investments internally than small funds, and the type of management of external funds attracts different fee rates. Small differences in fee rates can have a significant effect the net returns over the long term. Funds that use performance-related fees would have paid slightly less because of recent poor investment returns. Table G.1 shows typical fee rates for various asset types to show the impact on net returns (assuming the target returns are achieved).

71 Investment management expenses include fees to investment managers, brokers, and for performance management, and so on. These must be shown separately from administration costs as required by CIPFA (Ref. 13). These expenses are deducted from investment income and gains to show the net return on investments. In some authorities, staff are shared

i The statistical relationship is difficult to illustrate on paper because it depends on multiple variables such as fund size and the number of external investment mandates.

between pensions and other services such as treasury management and costs are apportioned accordingly.

Table G1 **Active management attracts higher rate fees**

For a given size of fund, external management fees will depend on the asset class and management style

Asset category	Example fee basis	Percentage of gross returns after 10 years retained by investor (after fees)
Passive[i]	0.05%	99%
Active bonds	0.2%	97%
Active equity	0.5%	92%
Property	1%	84%
Hedge funds (target 8% gross return)	3% + 30% of gains	37%

Source: Hymans Robertson

Investment returns[ii]

72 The performance of funds over the last eight years is shown in figure G3. There is more year-to-year variation for funds as a whole than there is between different funds in the same year. This reflects the fact that all funds are subject to the same market pressures, and investment strategies of different funds produce similar results. It is not obvious from the chart, but many funds have swapped places in terms of relatively good and poor performance from year to year over the period. This reflects the fact that different investment strategies and fund manager approaches will pay off at different times.

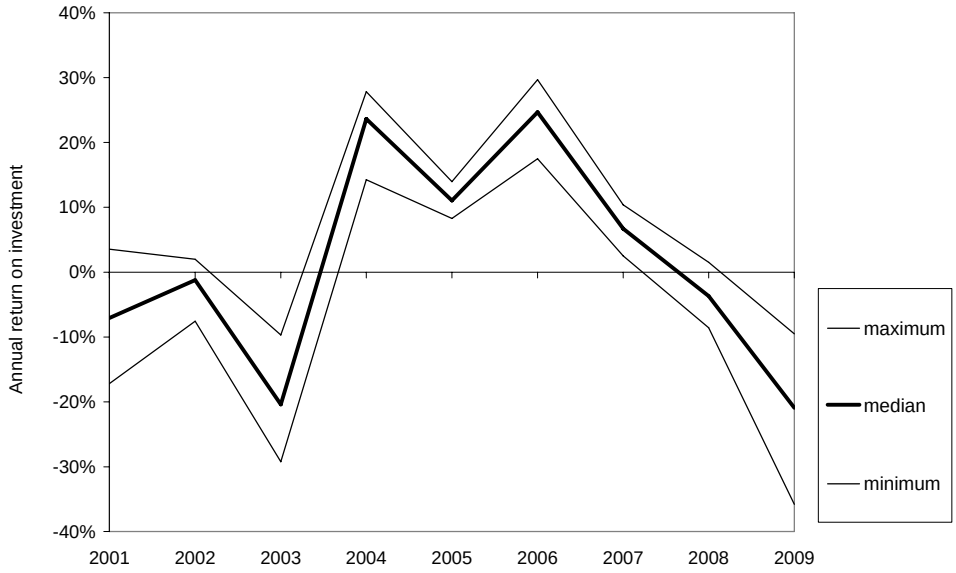
73 Funds diversify their assets to reduce risk, on the basis that different markets move at different times. This did not prove effective during the recent downturn because different markets (such as equities and bonds) moved in the same direction. The spread of annualised returns has increased during the two most recent downturns, reflecting the individual funds' exposure to risk. LGPS funds usually make small changes to asset allocations over time, although this can be an effective way to lock in gains when markets are high.

i Passive investment refers to funds that are managed to follow the market index.

ii The net return on investments is shown in the Pension Fund accounts. The net return is equal to the income from investments (eg share dividend payments) plus capital gains (losses) less investment management expenses.

Figure G3 **There is much more variation in year-to-year performance of all funds than there is between different funds in the same year**

Annual investment returns for English LGPS funds from 2001 to 2009)

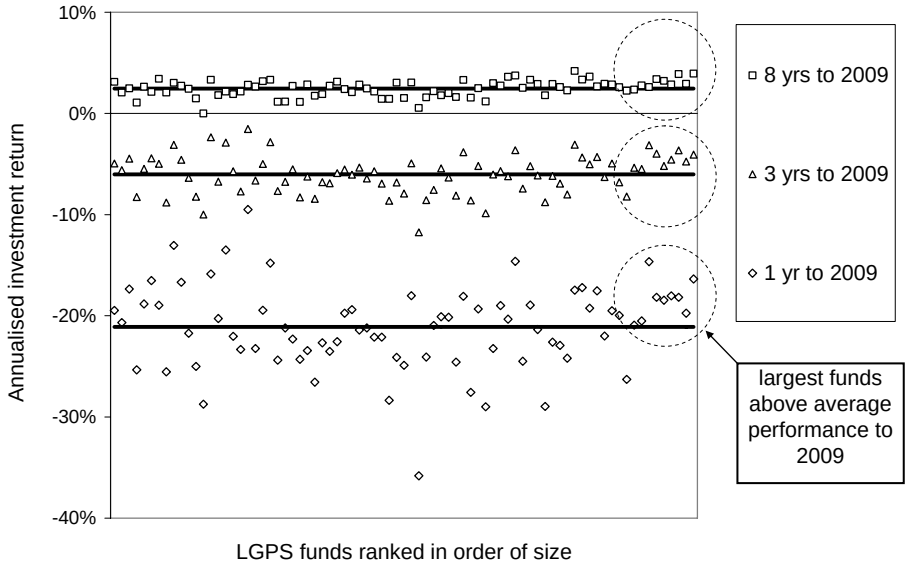


Source: Audit Commission analysis of pension fund accounts

74 Figure G.4 compares the performance of different funds over the same time period. The largest funds perform slightly better than average, although their performance over time follows broadly the same pattern as smaller funds. This is more a case of the large funds not doing as badly as some of the smaller ones for the period to 2009, which was a low point in the cycle. When the 2010 data becomes available it will be possible to compare the performance of LGPS funds with other long term investment funds.

Figure G4 **The returns to 2009 were disappointing for all funds although the largest funds achieved slightly above-average returns**

Annualised investment returns to 2009 for English LGPS funds



Source: Audit Commission analysis of pension fund accounts

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