How generous are public sector pensions?

Executive summary

- When comparing the relative generosity of public and private sector remuneration, and how this has changed over time, pensions are often ignored
- Coverage of defined benefit schemes is higher in the public sector than the private sector, and this gap is increasing
- Applying typical scheme rules, and allowing for differences in individuals’ life expectancy, marital status and pay growth, on average scheme membership is worth 4.7% of salary more in the public sector than the private sector. This is not solely due to scheme rule differences – for older workers more generous pay trajectories in the public sector are as important as more generous normal pension ages in explaining higher pension accrual

Many employees, particularly white collar workers and those in the public sector, are members of employer-provided defined benefit (DB) pension plans. These provide a pension based on number of years of scheme membership and a measure of salary usually based on the final year or an average of several final years of service. In this article we document differences in coverage of DB plans between those working in the public and the private sector, and also present estimates of the relative generosity of these schemes that arise not only due to differences in scheme rules but also allow for variation due to differences in pay growth and life expectancy. This gives an indication of the extent to which comparing just current pay misrepresents the true differences in remuneration between sectors. Coverage by DB pensions has also been declining in the private sector, to be replaced by (often less generous) defined contribution (DC) schemes – a trend which has not occurred in the public sector. Therefore, comparing changes in current pay over time in each sector is also likely to underestimate the extent to which remuneration in the public sector has become relatively more generous compared to that in the private sector.

Coverage of DB schemes by sector

Employer-provided DB pension plan coverage is much more extensive in the public sector than in the private sector. Data from the 2001 British Household Panel Survey reveals that 70% of employees aged between 20 and 59 in the public sector, and 30% of those in the same age range but in the private sector, were members of a DB scheme. Membership rates also vary by education and sex. Within both the public and private sector membership of DB schemes is higher among those with more education, and it is also higher among men than women. However overall membership rates of DB schemes among employees is very similar by sex as women are relatively more likely than men to work in the public sector than the private sector.

Trends in public and private sector membership by DB pension plans over the period 1978–79 to 2003–04 in the UK are shown in Figure 1. DB membership declined steadily in the private sector throughout most of the period whilst rising slightly since the mid 1990s in the public sector. Many private sector employers have taken advantage of the liberalisation of the ‘contracting-out’ rules in the late-1980s to shift towards DC pension plans in which the employee, at least formally, bears both all the investment risk during the accumulation phase and all the annuity rate risk at the point of withdrawal. Furthermore these figures understate the disparate underlying trends in coverage, especially in the 1980s, because several industries such as utility providers were privatised and such industries tended to have high levels of DB pension membership.

Figure 1. Membership of DB pension schemes has been declining in the private sector but growing in the public sector

Source: DWP Second Tier Pension Statistics.
www.dwp.gov.uk/asd/asd1/abtools/stpp_summary.xls
Differences in the value of DB schemes in the public and private sector

The value of membership of a DB pension arrangement depends on a number of factors. In addition to design features such as the accrual rate in the scheme and the age at which unreduced pension benefits can be drawn (the normal pension age), other important determinants of generosity include: years of service in the pension plan; the timing of pension membership relative to retirement; whether or not at the time of their death a member has a living husband, wife or civil partner who will continue to receive a stream of pension income; how pay varies with age; and the generosity of any early-retirement provisions such as those on the grounds of ill-health.

We focus on the value of prospective one-year accruals of pension rights as a percentage of current pay as the natural number to benchmark on, and for which accrued pension tenure is not a key determinant. This one-year accrual is defined as the difference between the expected value of accrued retirement benefits when a member of a DB pension arrangement dies, and the generosity of any early-retirement provisions such as those on the grounds of ill-health.

We assign the modal scheme rules to members of public and private sector arrangements. Therefore those in public sector arrangements are assumed to accrue a pension of 1/60th of final salary for each year of service from a normal pension age of 60, while those in the private sector are assumed to accrue a pension of 1/80th of final salary, plus a lump sum equal to 3/80th of final salary, for each year of service from a later normal pension age of 65. We assume that all pension members, and their partners, survive until their cohort specific life expectancy, which is also allowed to vary by age, sex and social class. We assume that schemes pay a 50% pension to surviving husbands, wives and civil partners. We do consider any scope for early retirement on full pension (for example due to ill health).

Finally for future pay growth we assume that there is economy-wide pay growth of 2% per year on top of inflation, and that individuals receive this plus a component (which can be positive or negative) that depends on their age, education and sector. This component is estimated from individual level data on earnings by age, education and sector over the period from 1994 to 2006. We find that allowing the profile of pay growth to vary by sector is potentially particularly important for male graduates. This is because, at the median, male graduates in the private sector received higher pay growth between ages 21 and 40 and lower pay growth between 40 and 59 than male graduates in the public sector. As a result, scheme rules (and other characteristics such as longevity and marital status) were the same, then pensions based on final salary would still be relatively more generous for male graduates aged 40 and over in the public sector than those in the private sector since the former could expect higher pay growth through to retirement.

Overall, we find that average (median) public sector pension accruals are 24.8% of salary compared to 20.1% of salary for private sector workers. Looking at differences in pension accrual as a share of earnings by sex and social class we find these range from 26.3% among women in the public sector in intermediate social class (which, for example, includes teachers) to 16.9% among men in the private sector in semi-skilled manual jobs. We find that one-period pension accruals as a share of earnings are higher in the public sector than in the private sector by a slightly larger amount for both men and women with higher levels of education, and men who left school at age 18, than it is for women who left school at age 18 and for both men and women who left school at 16.

The cumulative distribution function (cdf) of one period pension accrual as a fraction of current pay, differentiated by sector, is shown in Figure 2. Note that a few accruals are negative because some individuals receive below inflation pay increases. Overall it can be seen clearly that the public sector cdf lies to the right of the private sector cdf, confirming the finding that public sector pension arrangements are typically more generous than those in the private sector.

Figure 2. Accrual is typically higher in public sector defined benefit schemes than in private sector defined benefit schemes

www.ifs.org.uk/publications.php?publication_id=4051

This difference arises not just due to the lower normal pension age in public sector schemes but also due to differences in pay trajectories between individuals in the two sectors. For example, taking public sector workers aged 40 and over and applying private sector pension scheme rules and private sector earnings-profiles would reduce their estimated average pension accrual from 24.2% of salary to 18.1% of salary. However only around half of this reduction is from the change in scheme rules; the other half comes from applying a less generous trajectory for future pay growth. Therefore the story is not as simple as public sector pensions being more generous than private sector arrangements solely due to differences in the scheme rules.

Conclusion

Public sector workers are more likely to be covered by DB schemes as a share of earnings by sex and social class we find these range from 26.3% among women in the public sector in intermediate social class (which, for example, includes teachers) to 16.9% among men in the private sector in semi-skilled manual jobs. We find that one-period pension accruals as a share of earnings are higher in the public sector than in the private sector by a slightly larger amount for both men and women with higher levels of education, and men who left school at age 18, than it is for women who left school at age 18 and for both men and women who left school at 16.

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![Figure 2. Accrual is typically higher in public sector defined benefit schemes than in private sector defined benefit schemes](source: Disney, Emmerson and Tetlow (2007), What is a public sector pension worth?, Working Paper No. W17/07, London: Institute for Fiscal Studies)
plans than private sector workers and, as a percentage of salary, the incremental accruals of pension wealth for DB covered public sector workers on average exceed those for DB covered private sector workers. We estimate that one-period accruals in the public sector are, at the median, worth 4.7% of salary more in a public sector DB scheme than in a private sector DB scheme. Other factors – such as the extent of early retirement provisions and the amount of job security – may also be important, but these would likely increase rather than reduce this difference.

**Key messages:**
- Coverage of defined benefit schemes is higher in the public sector than in the private sector
- Over time the gap in coverage of defined benefit schemes between the public sector and the private sector is increasing
- Generosity of defined benefit schemes, in addition to the scheme rules, depends on a range of factors including life expectancy, the length and timing of pension tenure, wage growth, and marital status
- One-year accruals in defined benefit pension schemes are, on average, worth almost 5% of salary more in the public sector than in the private sector
- For older workers more generous pay trajectories are found to be as important as differences in scheme rules in explaining why, on average, defined benefit schemes are more valuable in the public sector than in the private sector

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**Insured defined benefit schemes – second class citizens?**

**Executive summary**
- Increasing move to contract–based DC provision, insurers heavily investing in internet based administration systems to attract new business. Is lack of investment for DB clients turning them into second class citizens?
- With the Morris Review promoting an open and competitive market for actuarial services, are insured DB schemes living on borrowed time?
- Trustees need to look beyond the one-stop service offered by insurance companies to ensure compliance with legislative requirements.

For small and medium sized employers the packaged insurance product was historically a cost effective means of providing defined benefit (DB) pensions for employees. However, the world has moved on; the increasing burden of legislation is placing pressure on the resources of both trustees and employers. With the Pensions Regulator issuing guidance on scheme funding and the distinct role of trustees and employers, all parties need to ensure they are receiving impartial advice. Is this possible where a single insurance company is providing all the scheme services?

The plight of smaller employers is well illustrated by figures available from the Pensions Regulator’s ‘Purple Book’. For schemes with between five and 99 members the average funding level was 81%. In comparison, the largest schemes, with membership in excess of 10,000 had an average funding level of 96%. Last year’s Association of Consulting Actuaries Survey, ‘Pension trends in smaller firms’, also painted a bleak picture, with 70% of smaller schemes closed to new entrants and over 40% closed to future accrual.

What are the problems facing small employers operating insured DB schemes and is there a solution? Schemes in this sector of the market are in a difficult position. Volatile funding rates, often characterised by liabilities being concentrated in a small number of senior employees, combined with the increasing cost of the risk-based Pension Protection Fund (PPF) levy, have left many employers questioning the wisdom of continuing any form of pension provision.