A Bankruptcy Foretold:

The UK's Implicit Pension Debt

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This paper argues that government debt levels should be calculated in line with generally accepted accounting practice. As earned pensions obligations are included under generally accepted accounting practice, any earned pensions obligations of the government should be counted as debt. The UK government's debt will therefore be much higher than the official figure which has profound implications for fiscal policy.

Introduction

In the Pre-Budget Report of November 2008, the Chancellor announced that the government plans to increase substantially the government's borrowing levels. In this context, it is essential that fiscal policy is based on a realistic assessment of the magnitude of public debt.

This paper argues that an accurate picture of government debt should include implicit pensions debt - the amount owed to citizens in the form of pensions promises. This debt is ignored in the official figures, yet it is so large that the proposed increases in borrowing appear almost insignificant by comparison.

The paper argues that government debt levels are very important and should be calculated in line with generally accepted accounting practice - which is official government policy. Generally accepted accounting practice includes earned pensions obligations as a balance sheet liability (i.e. a debt). Therefore any earned pensions obligations of the government should be counted as government debt.

The paper then goes on to estimate what the UK government's debt would be if implicit pension debt is included. This can be expected to be considerably higher than the official figure, but I argue that including implicit pensions debt is more realistic than ignoring it. This has profound implications for future taxation, inflation and general economic stability. The population's demography will worsen the situation.

The UK government's fiscal policy

Prior to the Pre-Budget Report, the official government policy in respect of debt was as follows:

> 'The UK Government has specified two key fiscal rules that accord with the principles. These are:
>
> • **the golden rule**: over the economic cycle, the Government will borrow only to invest and not to fund current spending; and

- **the sustainable investment rule**: public sector net debt as a proportion of GDP will be held over the economic cycle at a stable and prudent level.

The fiscal rules provide benchmarks against which the performance of fiscal policy can be judged. The Government will meet the golden rule if, on average over a complete economic cycle, the current budget is in balance or surplus. The Chancellor has stated that, other things equal, net debt will be maintained below 40% of GDP over the current economic cycle, in accordance with the sustainable investment rule.

In setting fiscal policy, the Government takes a deliberately cautious approach. This prudent approach is implemented, among other things, by basing public finance projections on cautious assumptions for a number of key variables including the economy's trend growth rate, levels of unemployment and oil and equity prices.'[1]

The government therefore believed that the level of debt is important and that they should be deliberately cautious.

The official government debt, as disclosed in ONS (2008), has, however, recently breached this figure - although the government argues that 'The reclassification of Northern Rock to the public sector will bring its assets and liabilities temporarily into the public finances. In line with the *Code for Fiscal Stability*, while Northern Rock remains in the public sector the Government will measure performance against the sustainable investment rule using figures excluding its impact' (p. 8) - i.e. Northern Rock is a temporary aberration and should be ignored for the sustainability rule. However, subsequent bank bailouts and the measures contained within the Pre-Budget Report cast doubt upon this interpretation.

Accounting for pensions

In the UK today, if you pay national insurance contributions for a number of years above a minimum threshold, you become entitled to a basic state pension on retirement. You may also be entitled to an additional pension, the level of which is linked to the contributions you pay. If you work for the government, you may accrue benefits in a public sector pension scheme. Many of these arrangements are not funded – they are financed on a pay-as-you-go (PAYG) basis with future benefits payable out of future government revenue.

These pension entitlements are future obligations that you have earned during your working life and are therefore a debt on the government. However at present they are not accounted for as such by the government.

The pension promises of the UK government are accounted on a cash basis. This is a method of accounting that records financial events based on cash flows and cash positions. Revenue is recognised when cash is received and expenses are recognised when cash is paid out. This method arose under an imagined scenario that the population's demography is stationary, which it is clearly not.

[1] HM Treasury website: www.hm-treasury.gov.uk/documents/uk_economy/fiscal_policy/ukecon_fisc_index.cfm

In the private sector, cash-basis accounting is generally not acceptable for entities that must make their financial statements publicly available. Most countries require companies to comply with the accruals basis of accounting. Cash-basis accounting is not considered to provide a true and fair view of the financial performance and position of an entity under the International Financial Reporting Standards (IFRS).

The generally accepted method for accounting in the private sector is accrual based accounting**,** which records financial events based on economic activity rather than financial activity. Under accrual accounting, revenue is recorded when it is earned and realised, regardless of when actual payment is received.

The Government Resources and Accounts Act (2000) states that the government is required '…in determining the form and content of WGA [Whole of Government Accounts] to aim to ensure that they present a true and fair view. They must also conform to generally accepted accounting practice modified only as necessary for the needs of the public sector.'

HM Treasury states on its website that 'Financial reporting by central government bodies should be based on generally accepted accounting practice (GAAP) adapted where appropriate to take account of the public sector context.'[2]

In other words, the government is required to prepare accounts in line with the private sector, albeit modified to deal with the public sector.

Principals for calculating and reporting pension scheme costs are set out in International Accounting Standard 19 (IAS19) for private sector entities and International Public Sector Accounting Standard 25 (IPSAS25) for the Public Sector. They essentially follow the same methodology. Quoting from IAS19,

> 'The standard requires an entity to:
>
> a) account not only for its legal obligations, but also any constructive obligation that arises from the entity's practices;
> ....
>
> d) attribute benefits to periods of service
>
> e) determine the discount rate by reference to market yields'

In other words, if the government were to conform to 'generally accepted accounting practice' pension benefits that have been accrued should be disclosed, even if they are not legal obligations.

The standards also prescribe that the present value of defined benefit obligation[3] must be reported on the balance sheet as a liability (i.e. a debt). The standards then set out the actuarial methodology to be used to calculate this liability.

[2] www.hm-treasury.gov.uk/documents/public_spending_reporting/frab/psr_reporting_statistics_frab_tor.cfm

A number of differences between pension liabilities and 'explicit' government debt have been identified by Holzmann et al (2001). These are that pensioners do not enter into the agreement voluntarily, there is no market for trading the pension promises, the return on government bonds is known, whereas the value of the pensions promise is hard to evaluate, the compulsory nature means there is some tax element involved and finally, it may be easier to renege on pension promises, not necessarily directly but through altering the formulae.

None of these differences are reasons per se that pension liabilities should not be measured and reported. Except for the last reason, they all imply that the pensions promise is difficult to evaluate. This does not mean that the calculation cannot be undertaken - as we have shown there are established guidelines for calculating these liabilities in practice. Possibly an argument for not including pensions promises could be made of the last point; the government can always withdraw the promise. This is not the case in the private sector, as companies are bound by law to meet pensions liabilities. Although the government is also bound by law, the lawmaker can always change the law. However, this argument runs into a number of problems.

Firstly, this is true of 'explicit' debt too - governments can and have defaulted on this. Secondly, pensioners may be able to challenge governments for changing the law. Thirdly, there is an obligation of the government to meet pensions promised by formulae. Booth (2008a) argues that the demographic make-up of the population means that the government is highly unlikely to reduce pensioner benefits. Indeed, it is more likely to increase benefits due to political capture by older voting blocks. Finally, it is in everyone's interests for citizens to know whether or not the government is so heavily indebted that it will be forced to renege on pension promises so that they can make alternative arrangements, i.e. the government should be obliged to publish this information even if they could get out of paying.

In conclusion, pension debt can and should be included in any reasonable definition of government debt.

Official UK government debt

The Office for National Statistics (ONS) (2008) states that the official current UK debt was £563.4 billion (37.9% of GDP) at the end of September 2008.

The ONS has decided to also include liabilities of the nationalised bank, Northern Rock and the Bank of England in the official figures. Including these liabilities, the debt is £645.3 billion (43.4% of GDP).

It has also been argued that the government has a number of 'hidden' liabilities; for example Private Finance Initiative (PFI) liabilities and Network Rail's debts. However,

[3] A defined benefit obligation is defined as an obligation that is not part of a defined contribution plan. A defined contribution plan is where contributions are paid into a separate entity which has no future claims to contributions in respect of these benefits.

these have been estimated by Newmark & Hammond (2006) at 'only' £25 billion and £18 billion respectively, which, as will be seen, are not significant.[4]

As a result of the financial crisis, the government has undertaken a number of emergency measures in an attempt to shore up the banking system. The Office for National Statistics (2008) includes:

- The Bank of England's Special Liquidity Scheme;
- Support for Bradford & Bingley
- Transfer of deposits in Icelandic-owned institutions;
- Plans to re-capitalise certain banks announced on 13 October;
- The government guarantee scheme for new lending between banks.

Some or all of these may result in significant extra liabilities for the government. These should and are likely to result in extra government debt levels, but at the time of writing this paper the levels are unknowable, therefore the current estimate of government debt is likely to be an underestimate.

In conclusion I shall use the government's soon to be official estimate of net debt of **£645.3bn** (43.4% of GDP). As a percentage of GDP, this puts Britain a respectable 50th in a ranking of countries.[5]

Measuring implicit pensions debt

Holzman et al (2001) identify three methods of measuring implicit pensions debt:

1. *Accrued to date liabilities (ADL):* the present value of earned or accrued pensions to be paid in the future. Future contributions and accruals are not included.
2. *Closed-system liability (CSL):* the current pension arrangements continue their existence until the last contributor dies. Future benefits and contributions for current members are allowed but benefits for new entrants are not valued.
3. *Open-system liabilities (OSL):* the present value of contributions and pensions of new workers under current rules are valued. Normally, a time period is chosen and the methodology applied over that period.

Each of these systems is valid depending on the circumstances. CSL and OSL are more appropriate when considering the effect of reforms. However, as the purpose of this paper is to assess the level of debt, ADL is the closest to an actual debt calculation and is in line with the way liabilities are calculated for private-sector entities under existing accounting regulations. It is also conservative, if conservative is defined as resulting in a lower level of debt – though it would of course be conservative to overstate debt. ADL will give a lower level of debt than the other calculation methods, which include elements of future expenditure.

[4] Although some commentators suggest that PFI liabilities could be £100bn (http://burningourmoney.blogspot.com/2008/02/real-national-debt.html) , but I will give the government the benefit of the doubt.

[5] https://www.cia.gov/library/publications/the-world-factbook/rankorder/2186rank.html

The ADL principle is that obligations are included that have been accrued or earned. This can be illustrated by thinking about non-pension benefits. For example, although the government is almost certain to spend a similar amount on the NHS next year as it does this year, this is a future expenditure not a debt. In contrast, last year's budget deficit is now an obligation to pay government debt holders. Similarly, on an accruals basis future national insurance contributions are not current government assets but payments for future pensions accruals.

Using ADL, we can outline simple principles over what to include as part of the debt: past pensions accruals should be included where entitlements have been earned. Future pensions accruals are not included. Future benefit payments are not included where there is no clear link with past accrual. This gives us the tools to assess which state pension obligations should be included in a debt calculation. In selecting potential obligations I have also been ultra-conservative, i.e. if there is any doubt over a benefit's inclusion, I have excluded it (again, defining conservative as under-stating the debt).

The potential sources of implicit pensions debt:

- Public sector pension schemes operated on a PAYG basis
- National Insurance Fund (Basic State and Additional Pension)
- Other future pensions (such as the Pensions Credit)

Public sector pension schemes

I shall only deal with public sector pension schemes briefly, as these have been discussed extensively in a previous IEA publication, Record (2006), and its update Record (2008), to which I refer the reader.

There are six unfunded pension schemes for public sector employees, namely NHS, teachers, armed forces, civil services, police and fire-fighters.[6] Most of these schemes were set up by an act of law in the nineteenth century. The current total membership of the schemes is approximately 5 million people. These schemes are defined benefit, meaning that members receive a pension when they retire based on a formula dependent on the number of years they have contributed to the schemes and their salary before they retire (O'Connel and Silver (2005))

These are occupational pension schemes similar to those found in the private sector – the main difference being that they are unfunded. As we have seen, both the private sector International Accounting Standard 19 (IAS19) and the public sector International Public Sector Accounting Standard 25 (IPSAS25) are unequivocal that these should be included as debt and specify a method for their calculation.

[6] There are also a number of quasi-government schemes and the local government scheme. Whilst these can be large and be backed by an implicit or explicit guarantee, as they are all funded the order of magnitude of liabilities will not be significant for this analysis.

The government's estimate of the liabilities as at 31 March 2007 was £835 billion. Record (2008) estimates that the true figure should have been £1,071 billion, the difference being that Record uses market interest rates, as prescribed by the International Public Sector Accounting Standards Board, and more realistic salary and mortality assumptions.

I estimate the liability as at 30 September 2008:

	£bn
Liability at 31 March 2007 (government estimate):	835
Assumed Interest cost (at 1.8% per annum):	23
Actual inflation[7] (at 6.8%):	57
Assumed salary increases[8] (1.5% per annum):	9
Government estimate updated to 30 September 2008:	924
Adjusting interest rate assumption:[9]	1,107
Adjusting other assumptions:[10]	1,261

Therefore the public sector pension liabilities are approximately **£1,261bn (85% GDP)** as at 30 September 2008.

National Insurance Fund

The *National Insurance Fund* represents the funds of the National Insurance Scheme, set up following the Beveridge Report after World War II. Contributions are paid into the fund by employers and employees, and the fund pays out benefits such as pension benefits, widows' benefits, maternity allowance and jobseekers' allowance on a pay-as-you-go (PAYG) basis.[11]

The benefit component of the system is a number of contributory benefits - these are where the claimant's previous contribution record determines the availability and amount of the benefit paid. The benefits provided are weekly income benefits and some lump sum benefits to participants upon death, retirement, unemployment, maternity and disability.

The funds are separate from government revenue. Contributions are not considered taxes because they are not directly available for general expenditure by the government.

We shall now consider which of the benefits payable from the National Insurance Fund should be included as part of the debt.

[7] RPI between 31 March 2007 and 30 September 2008 from www.statistics.gov.uk
[8] Assuming 50% of the liabilities are from active members
[9] FTSE UK Government Bond Index Linked Gilts (over 15 year, 5% inflation) yields were 0.85% as at 30 September 2008. Using Record's methodology, liabilities are 924 * (1 + (20.8(1.8%-0.85%)) (Record (2008))
[10] Using Record's uplift of 13.9% (Record (2008))
[11] http://www.seniorsnetwork.co.uk/npc/b34NInsurance.pdf

Basic State Pension

The *State Pension* was first introduced on 1 January 1909. The foundation of a universal contribution-related basic State Pension was laid out in the 1940s. People who meet the contribution conditions get a flat rate basic pension at the standard rate. If the conditions are only partly met, the basic pension is paid pro rata. To get the minimum basic pension payable (25 per cent) a person normally needs 10 or 11 qualifying years. A proportion of earnings above a threshold are paid as contributions (PPI, 2008).

A person builds up an entitlement by paying National Insurance Contributions to receive a pension. If they do so for less than the maximum period, they receive a smaller pension. It is therefore an accrued pension and past accruals are an obligation or debt for the government.

Additional pensions

There are effectively 3 types of additional earnings-related pensions:

1. Graduated Retirement Benefit (GRB)
2. State Earnings Related Pension Scheme (SERPS)
3. State Second Pension (S2P)

Graduated Retirement Benefit (GRB)

The Graduated Retirement Benefit (GRB) was a compulsory scheme introduced in April 1961 through the National Insurance Act 1959. It was discontinued from April 1975 (PPI, 2008).

'Only' 72,000[12] people currently receive a GRB pensions and this number will decline as the scheme has been discontinued. The GRB has therefore been ignored in the analysis that follows, as it is not material to overall debt levels.

State Earnings Related Pension Scheme (SERPS)

SERPS was introduced in 1978 as a replacement for the Graduated Retirement Benefit. It was established under the Social Security Pensions Act (1975) and was funded through National Insurance contributions on a pay-as-you-go basis. Subsequent changes have reduced the amount individuals can accrue through SERPS contributions, and from 2002/3 SERPS was replaced with State Second Pension (PPI, 2008).

SERPS is effectively a defined benefit scheme in that contributions are based on salary (between a lower and upper earnings limit). Benefits are paid based on the contributing salaries increased in line with earnings up to retirement. Pensions are then increased with inflation post retirement. As there is a clear linkage between

[12] DWP Tabulation Tool

past earnings and future pension, past SERPS accrual should be included as part of the debt.

State Second Pension

The State Second Pension (S2P) is a compulsory scheme introduced in 2002 as a replacement for SERPS under the Child Support, Pensions and Social Security Act (2000). The aim of S2P is to target greater resources at the lower-paid than SERPS did, and to provide pension benefits for some carers and individuals with a long-term disability.

S2P operates in a similar way to SERPS. It is funded through National Insurance Contributions on a pay-as-you-go basis. The pension is payable from state pension age and is taxable. Most employees are members of S2P, and earn S2P pension for any periods of employment. S2P is similar to SERPS, although benefit calculations are more complex (PPI, 2008).

Like S2P, SERPS is a defined benefit scheme and past accruals should therefore be treated as debt.

Other National Insurance Fund benefits

There are a number of other benefits that the National Insurance Fund pays, namely incapacity benefit, widows' benefits, maternity allowance, guardian's allowance, jobseekers' allowance and the Christmas bonus. As it is not obvious that these have been accrued, I shall exclude these under the principle of ultra-conservatism.

Other pensions benefits

There are a number of benefits which are paid directly by the government, such as the Pensions Credit and the winter fuel allowance. Again, as it is not obvious that these have been accrued, I shall exclude these from the debt calculation.

Calculating the liabilities

I have divided the calculation into 2 sections:

1. Current pensioners
2. Future pensioners

The data used were downloaded from the Department of Work and Pensions' website. I have calculated the liability as at 30 September 2008; although there is a slight difference between this date and the data date, the difference should not be material.

Current pensioners

The data give the number of pensioners and the amount of pensions currently being paid split by age and sex. These include the various categories of basic state pensions and additional pensions. All of these pensions in payment receive increases in line with inflation and hence have the same characteristics. To calculate a liability figure I have therefore applied a pensions annuity to the total annual expenditure.

The total annual expenditure is £57.5bn[13] resulting in a liability of **£970bn (65% of GDP)** as at 30 September 2008.

The calculation is based on a real interest rate assumption of 0.85%,[14] and a standard actuarial mortality table.[15] In the calculation, a single annuity for a 74 year old (the weighted average age of the pensioner population) was applied separately for males and females; and the value of a spouse's pension in respect of additional pensions were added. In this calculation, there is an implicit assumption that pensions will remain linked to inflation. If the proposed linkage with earnings comes to fruition, this figure will be much higher.

Future pensioners

Future pensioners are made up of recipients of Basic State Pensions (BSP) and Additional Pensions (AP). The Additional Pension in turn consists of a SERPS pension and a S2P pension (I have ignored the GRB as it is non-material).

I have calculated the liability for future pensioners based upon the 2004 update of the Government Actuary's Department's (GAD) *Quinquennial Review of the National Insurance Fund* (GAD (2004) – reproduced in the Appendix). GAD produced a number of projections. In line with the ultra-conservative principle, I have chosen the one most favourable to the government.

Using the GAD projections and population projections, I have estimated the accrued liabilities in respect of future pensions to be **£911bn (61% GDP)** in respect of BSP and **£348bn (23% GDP)** in respect of AP.

The calculation

GAD's projection in 2004/05 prices has been adjusted to 2008 prices and proportioned so that the projected 2008 expenditure matches the actual current expenditure of £57.5 billion. This gives total pension payments in future years (Table 1).

[13] This is simply the product of the average pension and the number of pensioners.
[14] FTSE UK Government Bond Index Linked Gilts (over 15 year, 5% inflation) yields were 0.85% as at 30 September 2008.
[15] PMA92 Medium cohort.

Table 1: Adjustment to Government Actuary's Department National Insurance Fund Projections (£ billion)

	2010-11	2020-21	2030-31	2040-41	2050-51	2060-61
GAD Projections[16] – basic pension	46.01	51.13	61.83	68.07	69.29	71.70
GAD Projections – additional pension	11.33	16.25	22.81	29.98	42.07	59.67
Adjusted projection[17] – basic pension	48.59	54.00	65.30	71.89	73.18	75.72
Adjusted projection – additional pension	11.97	17.16	24.09	31.66	44.43	63.02

To calculate the total accrued liability we need to find the expenditure in future years from benefits already accrued. This is split into a number of stages:

1. The number of people retiring in each future year is estimated using GAD's population projections.

2. The expenditure for new retirees in each future year is calculated. The total pension expenditure in any year is taken from Table 1 – this is made up of new retirees in that year and existing pensioners. So to calculate the expenditure in respect of new retirees, the expenditure from existing retirees must be removed. Firstly dividing the total pension expenditure by the number of people over pensionable age gives the average pension per person of all people receiving a pension in each year. The number of existing pensioners in any year will be the total number of pensioners in the previous year less the number who have died. The expenditure on new retirees is therefore the total expenditure less the product of the number of existing pensioners and the average pension for that year.

3. The liability for each cohort of future pensioners is estimated. The expenditure calculated in (2) is turned into a liability figure by multiplying by an annuity.[18]

4. The proportion of the total liability, which has already been accrued, is calculated. This is achieved by assuming a 35-year working life and that accrual is on a straight line basis, i.e. the liability of someone retiring in 20 years is fifteen[19] thirty-fifths of

[16] GAD projections are in 2004/05 prices.
[17] Projection has been adjusted to current (2008/09) prices and expenditure.
[18] Assuming retirement is at age 65, I have used an interest rate of 0.85% and PMA92 Medium cohort, and assumed a 45/55 male/female split in line with current pensioners.
[19] 35 minus 20.

the liability of new pensioners in 2028. To calculate the total liability, each future cohort is discounted to 2008 at 0.85% and summed.

Table 2: Summary table as at 30 September 2008[20]

Source	Debt (£bn)	Debt (% GDP)
Official debt (including Northern Rock)	645	43
Public sector pensions	1,261	85
Current pensioners	970	65
Future BSP	911	61
Future AP	348	23
Less current NIF balance[21]	(38)	(3)
Total	**4,097**	**276**

Is this really debt?

Table 2 shows that the total government debt is not hovering around 40% of GDP but actually should be £4.1 trillion or 276% of GDP – equivalent to £70,000 per person in the UK. This means that on the ranking table of countries' debt, as a proportion of GDP, Britain is not a respectable 50th, but would displace Zimbabwe, which currently tops the table. The UK's only consolation is that many other countries with relatively old populations and generous PAYG schemes (most of Europe, North America and Japan) also have large undisclosed implicit pensions debt and would also overtake Zimbabwe.[22]

This figure is staggeringly high. Surely it is wrong? There are several possible objections: the above calculations are wrong, the government pension liabilities are not really debt, and the total debt number might be large, but it is a meaningless number. These will now be addressed.

'The calculation is wrong'

There are three parts to the calculation. The 'official' debt figure is calculated by the Office of National Statistics and therefore could not be more credible. For public sector pension liabilities the analysis uses Neil Record's calculation, which has received widespread publicity and has not, to my knowledge, been seriously questioned. The third part of the calculation is my estimate of National Insurance Fund liabilities. This calculation is only an approximation, and I am therefore confident that it is indeed wrong. However, the exact figure is of much less importance than the overall conclusion - if the argument is correct and implicit pensions debt should be included in the overall debt figure, than the UK government's debt will be around 270% of GDP, not 40% of GDP.

[20] Figures may not sum exactly due to rounding.
[21] NAO (2008).
[22] Which is unlikely to have a large implicit pensions debt.

The above analysis has also been ultra-conservative and excluded many benefits that could be included in the debt figure. GAD's most conservative projection has been used and no estimate has been made of the likely increase in government borrowing due to the current financial crisis. It is therefore possible that the figure is an actually an underestimate.

As a reality check, other people have undertaken this calculation for a number of countries, although not recently in the UK to my knowledge. For example an OECD estimate for the UK of implicit pension debt in 2001 was 156% of GDP[23] (compared with the 274% calculated here – remembering that real interest rates have reduced which significantly increases liabilities). A more recent study by Werding (2006) estimates Germany's implicit pensions debt to be 291% of GDP.

'Pension liabilities are not really debt'

There are a number of possible arguments as to why accrued pension liabilities are not debt. A debt is something that is owed by the government. If a watertight argument can be made the accrued pension rights are not owed by the government, then they need not be included as a debt. I outline below some potential arguments.

'Pension rights are not owed by the government'

The government takes money from people (pension contributions in respect of public sector workers and national insurance contributions in respect of everyone) and publishes information on the level of benefits available in respect of those contributions. An individual can (relatively) easily calculate how much is owed to them in respect of rights built up, using the published formulae. These rights are typically protected by Acts of Parliament.

'The government can easily default or evade paying pensions'

Many of the pension rights are enshrined in law, set out in a series of Acts, Orders and Regulations (Social Security Agency (2005)), so it would be difficult for the government to repeal the legislation, especially for accrued rights. Moreover, even in the best of circumstances it will be politically highly damaging for a government to default on payment to its most vulnerable citizens. This has been borne out in practice – Holzmann et al (2001) find that there are few recorded cases of governments defaulting on pension promises.

Beyond explicitly defaulting, a government can more subtly renege on pension promises by altering the benefit level paid. In the past it has done this, for example by breaking the link between increases in basic state pension and salary.

[23] Quoted in Holzman et al (2001)

However, except in an emergency, the possibility of the government reducing pension benefit levels is becoming less likely. Indeed, Booth (2008a) argues that we are seeing political parties bidding for the 'grey' vote by proposing ever more generous retirement benefits.

Even if we accept the possibility that governments can renege or amend pensions commitments, this does not mean that it is not a 'debt'. We could use the same argument on official debt – i.e. governments have often defaulted on official debts. A tried and tested way for governments to reduce official debt is through inflation (for bonds denominated in nominal terms) – a strategy not possible for pensions, which are mostly inflation-linked.

'The value of pension commitments is uncertain'

Official government debt is predominantly in the form of bonds. These payments are pre-defined (although payments from inflation-linked bonds depend on future inflation levels). The bonds are tradable, so that the market value of the bonds is known at any given time.

In contrast, the amount of future pensions payments is unknown: in the case of public sector pensions, the level of the pension depends on future salaries; the basic state pension depends on inflation (and other changes to the level); and the additional pension is dependent on the method of revaluation, for example national average earnings. As the pension benefits are not tradable, an unambiguous market price is not knowable.

Uncertainty over the value of pension benefits does not equate to setting their value to zero. Private sector accounting standards have established methodologies for producing comparable costs.

'Future pensions payments can be met by future tax revenue'

This is a statement of what happens, but does not mean that debt levels can be ignored. The same argument could be applied to explicit debt – i.e. it will be met by future revenue.

This represents an attitude grown up with young populations (i.e. where the support ratio – the proportion of workers to non-workers is high) and significant economic growth. However, we know for certain that the support ratio will reduce in future, and just because the economy has grown in the past does not mean that it will continue to do so in the future (especially as we are entering a period of high debt, ageing population and potential resource constraints).

In conclusion, pensions obligations represent a real debt, which is recognised as such in private sector accounts.

Implications

The real national debt might be 276% of GDP, but is this important?

The debt the government carries represents the level of transfer to future generations – it will have to be paid off out of the government's future tax revenue and is many times larger than the official figure. The debt is a structural feature of pay as you go pensions. It is a genuine burden that a given generation has thrown onto other generations.

The debt will become a severe burden because of the country's deteriorating demographics. The population has effectively promised itself a pension without setting aside a capital fund in the hope that, in the future, there will be enough taxpayers. We are at serious risk should the demographics deteriorate further as there will be fewer taxpayers to pay for an increasingly large outlay. Unfortunately, this is exactly what is projected to happen. Booth (2008b) calculates that the proportion of the population over 55 will rise from 35% today to 50% by 2050 – we are passing on an increasing debt burden to a smaller proportion of workers.

Although ratings agencies do not calculate implicit debt, Kraemer et al (2005) look at the effect of ageing and social security systems on countries' solvency. The UK's structural budget deficit is likely to increase to 10% of GDP by 2050. And the trend of growing indebtedness will cause the UK's rating to drop from AAA currently to 'speculative' by 2035. From a UK perspective, the only consolation is that other countries face worse problems: Germany, France and the USA are all likely to reach a 'speculative' rating before 2030.

A debt level of 40% implies that the UK's fiscal position is relatively stable. One of 276% implies that if the situation deteriorates, as it inevitably will due to unfavourable demographics, the government is effectively bankrupt.

Acknowledging this fact should seriously constrain the government's actions. For example, with the current official (40%) debt level the government could argue that it is justified to boost demand by increasing spending and reducing taxes – as it is planning to do now. With the real debt level nearly seven times as high, this course of action might seem reckless.

Going forward, if the government acknowledges its true debt level, it will have to behave as any highly indebted person, institution or government does – with extreme prudence and the introduction of austerity measures; it will be forced to cut spending, increase taxes, possibly print money, and almost certainly look to break its pensions promises. While none of these options are at all appetising, the situation will keep on getting worse the longer the government delays paying off or reducing its debt. The options available will decline with time, and those that are left will be increasingly painful.

References

Booth, P (2008a) 'The impossibility of progress – a public choice analysis of state pension provision' in *Pension Provision: Government Failure Around the World*, London: Institute of Economic Affairs.

Booth, P (2008b) 'The young held to ransom – a public choice analysis of the UK state pension system', *Economic Affairs*, 28, 1, 4-10.

Clayton, J (2000) *The Global Debt Bomb*, Armonk, NY: M. E. Sharpe

GAD (2004) *Update of the Government Actuary's Quinquennial Review of the National Insurance Fund as at April 2000*, London: Government Actuary's Department.

Holzmann, R., R. Palacios and A. Zviniene (2001) *Implicit Pension Debt: Issues, Measurement and Scope in International Perspective*, World Bank Pensions Reform Primer.

International Accounting Standard 19 (2004) International Accounting Standards Committee Foundation

International Public Sector Accounting Standard 25 (2008) International Public Sector Accounting Standards Board

IASB International Accounting Standard 1

Kraemer, M., J. Chambers and B. Merino (2005), *In the Long Run, We Are All Debt: Ageing Societies and Sovereign Ratings*, Credit Ratings: Ratings Criteria (Report of 18-March-2005), London: Standard & Poors.

NAO (National Audit Office) (2008) *National Insurance Fund Accounts 2006-2007*, London: National Audit Office.

Newmark, B. and S. Hammond (2006) *Simply Red: The True State of the Public Finances*, London: Centre for Policy Studies.

ONS (Office for National Statistics) (2008) *Public Sector Finances September 2008*, First Release, 20 October 2008, London: Office for National Statistics.

O'Connel, A. and N. Silver (2005) *Occupational pension provision in the public sector*, London: Pensions Policy Institute.

PPI (Pensions Policy Institute) (2008) *The Pensions Primer – First Tier Provision*, London: Pensions Policy Institute.

PPI (Pensions Policy Institute) (2008a) *The Pensions Primer – Second Tier Provision*, London: Pensions Policy Institute.

Record, N. (2006) *Sir Humphrey's Legacy: Facing Up to the Cost of Public Sector Pensions*, London: Institute of Economic Affairs.

Record, N. (2008) *Sir Humphrey's Legacy: An Update*, London: Institute of Economic Affairs.

Social Security Agency (2005) *A Guide to State Pensions*, Belfast: Social Security Agency.

Werding, M. (2006) *Implicit Pension Debt and the Role of Pensions for Human Capital Accumulation: An Assessment fro Germany*, Institute for Economic Development.

Data sources

DWP Tabulation Tool
http://www.dwp.gov.uk/asd/statistics.asp

GAD Projections database
http://www.gad.gov.uk/Demography_Data/Population/Index.asp

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Appendix: Government Actuary's Department National Insurance Fund Projections

Table 3: Projected expenditure from the National Insurance Fund with price uprating and 1.5% per annum real earnings growth (£ billion in 2004/05 prices)

	2004-05	2010-11	2020-21	2030-31	2040-41	2050-51	2060-61
Retirement pension:							
- basic	41.24	46.01	51.13	61.83	68.07	69.29	71.70
- additional[4]	7.42	11.33	16.25	22.81	29.98	42.07	59.67
Incapacity Benefit	6.78	6.71	8.22	8.41	8.23	8.60	8.31
Bereavement benefits	0.95	0.54	0.40	0.31	0.27	0.27	0.26
Jobseeker's Allowance	0.50	0.52	0.54	0.53	0.53	0.52	0.52
Other benefits	0.51	0.59	0.63	0.66	0.71	0.76	0.82
Other outgo	0.29	0.32	0.37	0.43	0.50	0.58	0.67
Expenses	1.32	1.44	1.68	1.95	2.26	2.62	3.04
Total expenditure	**59.02**	**67.46**	**79.21**	**96.92**	**110.53**	**124.72**	**144.99**

Key words

Implicit pensions debt, government debt, sustainable investment rule, accrued-to-date liabilities.