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A Bankruptcy Foretold 2010: Post-Financial-Crisis Update

Nick Silver

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

Introduction

In November 2008, the IEA published *A Bankruptcy Foretold: The UK's Implicit Pension Debt* (Silver, 2008). It argued that implicit pension debt should be included in the UK's overall public sector balance sheet. I estimated that, if this were the case, the UK government's debt would be £4,097 billion or 276% of GDP. However, the calculation was undertaken before the effects of the financial crisis and the bank bailouts could be included. This paper updates my 2008 study, allowing for the effects of the crisis as well as for other developments in the fiscal situation.

A key focus is implicit pension debt – the amount owed by the government to its own citizens in the form of pension promises. This debt is ignored in all official figures, yet pensions promises involve a very real obligation that is imposed on the following generation. It is so large that the recent levels of debt increases will appear almost insignificant by comparison.

Silver (2008) argued that government debt levels were important and should be calculated in line with generally accepted accounting practice - which was government policy at that time. 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 a government debt.

At the time, the government had two fiscal rules, the golden rule and the sustainability rule. I argued the government had clearly breached these rules.

The details of the new government's policies with regard to fiscal rules and so on are not yet known. However, public debt levels and fiscal probity are a clear priority:

'The Government believes that it is the most vulnerable who are most at risk from the debt crisis, and that it is deeply unfair that the Government could have to spend more on debt interest payments than on schools. So we need immediate action to tackle the deficit in a fair and responsible way, ensure that taxpayers' money is spent responsibly, and get the public finances back on track.' (HM Government, 2010)

Recently, the UK's solvency position has been questioned, with the world's largest bond investor advising his clients to avoid UK debt as it is 'resting on a

bed of nitroglycerine' (*Guardian*, 2010). A realistic assessment of the UK's debt has perhaps never been more important.

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 known as the Second State Pension. If you work for the government, you may also accrue benefits in a public sector pension scheme. These arrangements are not generally 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 incurred by the government and are therefore a debt on the government. At present, however, they are not accounted for as such.

Pension accounting by the UK government is conducted 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.

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.'¹

¹ http://www.hm-treasury.gov.uk/documents/public_spending_reporting/frab/psr_reporting_statistics_frab_tor.cfm

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

Some argue that private sector accounting principles are not appropriate for government because government always has access to cash to meet its obligations. It is able to tax, borrow and print money in a way that the private sector is not. As such, the relevant government borrowing figure, it is argued, is the cash that needs to be raised from the markets in a given year. Whether this is true is debatable. However, accounts are prepared for many purposes. One such purpose is to reveal the burden of debt that is being passed to the next generation – i.e. the extent to which the current generation is consuming beyond its means. Proper accruals-based accounts are more effective in doing that.

Principles 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 obligations² 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.

A number of differences between pension liabilities and ‘explicit’ government debt have been identified by Holzman et al (2001): 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 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: but this does not mean that the best estimate should not be found. Furthermore, the last reason is invalid where pensions are provided as part of a contract of employment. It can be

² 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.

argued that although the government is 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 that change the law. Thirdly, there is an obligation of the government to meet pensions promised by formulae. Booth (2008a) also 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 citizens' interests 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. The government should therefore be obliged to publish this information even if it could choose not to pay pensions at some time in the future. *Indeed, if the government believes that state pension promises do not count as debt because they can renege on them, then they should tell prospective pensioners about the risks explicitly.*

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 (2010) states that the official current UK debt was £772bn (53.8% of GDP) at the end of April 2010, excluding the allowance for financial interventions.

As a percentage of GDP, this puts Britain 22nd in a ranking of countries³ (compared with 50th in 2008).

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

As such, I shall use the official estimate of net debt of £772bn (53.8% of GDP) as at end April 2010 for the explicit government debt.

Impact of the financial crisis

The Office for National Statistics (ONS) currently publish two sets of figures for the government debt. The figure quoted above excludes financial interventions in relation to the troubled banking sector. Partially including them gives a debt of £893.4bn (62.1% of GDP). This arises from including the liabilities of Northern Rock and Bradford and Bingley.

³ <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2186rank.html>

⁴ Although some commentators suggest that PFI liabilities could be £100bn (see: <http://burningourmoney.blogspot.com/2008/02/real-national-debt.html>), but this is not the general view.

The ONS intends to include the liabilities from Lloyds Banking Group and The Royal Bank of Scotland, but these have not yet been added as the ONS has not yet been able to compute the relevant figures for these large and complex organisations. The effect of accounting for these institutions is expected to be an extra debt of £1.5 trillion (Kellaway, 2009).

This paper aims to produce a realistic estimate of the government's effective debt. By including the full liabilities of the banks, the ONS is probably overstating the actual debt figure – the banks have assets as well as liabilities, but the debt figure only includes the liabilities. ONS recognise this stating that '...a more representative measure is public sector net worth, which records the value of assets, both financial and non-financial, and nets off the value of liabilities. However, this measure is also not without problems in times of financial crisis...' (Kellaway, 2009).

However, by nationalising the banks, the government has taken on some obligations, for example if the banks' assets did under-perform the government would have to meet the liabilities. Neither of the figures that ONS publishes captures this obligation. Including the full liabilities overstates the total debt figure whilst the statistic with the financial interventions stripped out make no allowances for the governments' underwriting obligation.

The actual cost of the intervention is effectively an actuarial calculation – it is the product of the probability of losses arising from the banks' assets and the magnitude of those losses. To accurately estimate this figure would require a detailed assessment of all the banks' assets. However, this paper is interested in assessing the order of magnitude of the government's debt, not the exact amount. To do this, I propose to apply the tier one capital adequacy ratio – that is the amount the banks are supposed to hold as capital to give them a buffer against losses – to the overall liability figure. This would give a liability figure of £60bn.⁵

Similarly, the government has taken on a number of other guarantees, such as the asset protection scheme, to the tune of £330bn, which are classed as 'contingent liabilities' and not included in the overall debt figure until capital transfers arise (Kellaway, 2009). Again, using the capital adequacy ratio would give liabilities from this source of £13bn.

I shall therefore estimate the liabilities from the financial interventions as £73bn (5% of GDP) as at end April 2010.

Measuring implicit pensions debt

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

⁵ Applying the tier 1 capital ratio of 4% to £1.5 trillion.

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 should be noted that ADL will generally give a lower level of debt than the other calculation methods, which include elements of future expenditure.

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 – and the expenditure will benefit next year's taxpayers. In contrast, last year's budget deficit is now an obligation to pay government debt holders and relates to past activity. Similarly, on an accruals basis future national insurance contributions are not current government assets but payments for future pension accruals. The ADL represents the promises that current and past workers have been promised in past years but which have simply not yet been paid in cash terms.

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; and future benefits payments are not included where there is no clear link with past accrual. This gives us the tools to assess which state pensions obligations should be included in a debt calculation. In selecting potential obligations I will also be ultra-conservative, i.e. if there is any doubt over a benefit's inclusion, I have excluded it (defining conservative as under-stating the debt - if the government were being conservative they would do the opposite).

The potential sources of implicit pensions debt are:

1. Public sector pension schemes operated on a PAYG basis
2. National Insurance Fund (Basic State and Additional Pension)
3. 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 - most recently in Record (2009).

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 five 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'Connell 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.

For this element of national debt, I shall use Record's 2009 estimate updated to allow for interest and inflation. This gives £1,179bn⁷ (82% of GDP) as at end of April 2010.

National Insurance Fund

The National Insurance Fund represents the funds of the National Insurance Scheme, set up by 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.⁸

The benefit component of the system includes a number of contributory benefits: these arise from 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.

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.

⁷ Record (2009) quotes a figure of £1.1 trillion as at 31 December 2008. I have increased that at 4.3%, which is the yield on 15 year government bonds as at 4 August 2009.

(<http://markets.ft.com/ft/markets/reports/FTReport.asp?dockkey=FTSEG-040809>). The bond yield approximately allows for the interest cost and the increase in benefits due to inflation, but not the increased in accrued liabilities, so the figure is probably an underestimate.

⁸ <http://www.seniorsnetwork.co.uk/npc/b34NInsurance.pdf>

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.

Basic State Pension

The state pension was introduced on 1st January 1909. The foundation of a universal contribution-related basic state pension was laid out in the 1940s. There are two main types of state pension: contributory and non-contributory. The contributory state pension consists of any combination of a Basic Pension (BP), Additional Pension (AP) or Graduated Retirement Benefit (GRB). Non-contributory pension consists of a Basic Pension plus any Graduated Retirement Benefit that is due.

People who meet the contribution conditions receive a flat rate basic pension at the standard rate. If the conditions are only partly met, the basic pension is paid pro rata. To obtain the minimum basic pension payable (25 per cent) a person normally needs 10 or 11 qualifying years. A proportion of earnings above a threshold is paid as contributions (PPI, 2008a).

A person builds up an entitlement by paying National Insurance Contributions to receive a pension, if they do so for less than the maximum number of years, 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 three 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, 2008a).

Only 72,000⁹ people currently receive a GRB pensions and this number will decline as the scheme has been discontinued, so I have excluded the GRB as it is not material to overall debt levels.

⁹ DWP Tabulation Tool

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 2002/2003, SERPS was replaced with the State Second Pension (PPI, 2008b).

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 average earnings growth up to retirement. Pensions are then increased with inflation post retirement. As there is a clear linkage between past earnings and future pension, and past promises have not generally been (and probably could not be) reneged upon, 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. 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, 2008b).

Like S2P, SERPS is a defined benefit scheme which makes specific promises 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 and jobseeker's allowance. As it is not obvious that these have been accrued and they could be reformed and changed at any time at the discretion of the government, 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, these have not been accrued and the government does not have formal obligations, so 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 April 2010. Although there is a slight difference between this date and the data date, the difference should not be material.

Current pensioners

The data in Appendix A 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 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 rate to the total annual expenditure.

The total annual expenditure is £66 billion¹⁰ resulting in a total liability of £1,120bn (78% of GDP) as at April 2010.

The calculation is based on a real interest rate assumption of 0.67%,¹¹ and a standard actuarial mortality table.¹² 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 was 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. Indeed, the new government has promised to increase pensions in line with the higher of earnings, prices and 2.5%. This would make the liability much bigger, will lead it to grow over time and considerably increases the risk for the government if there is a period of deflation.

Future pensioners

Benefits for future pensioners are made up of Basic State Pensions and Additional Pensions. 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 Appendix B). GAD produced a number of projections. In line with the ultra-conservative

¹⁰ This is simply the product of the average pension and the number of pensioners.

¹¹ FTSE UK Government Bond Index Linked Gilts (over 15 year, 5% inflation) yields were 0.67% as at 28 April 2010.

¹² PMA92 Medium cohort.

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 £1,211bn (84% of GDP) in respect of BSP and £467bn (33% of GDP) in respect of AP.

GAD's projection in 2004/05 prices has been adjusted to 2010 prices and proportioned so that the projected 2010 expenditure matches the actual current expenditure of £66bn. This gives total pension payments in future years (Table 1):

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

	2010-11	2020-21	2030-31	2040-41	2050-51
GAD Projections ¹³ – basic pension	46.01	51.13	61.83	68.07	69.29
GAD Projections – additional pension	11.33	16.25	22.81	29.98	42.07
Adjusted projection ¹⁴ – basic pension	55.77	61.98	74.95	82.51	83.99
Adjusted projection – additional pension	13.73	19.70	27.65	36.34	51.0

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 known – 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 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.

¹³ GAD projections are in 2004/05 prices.

¹⁴ Projection has been adjusted to current (2010/11) prices and expenditure.

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.¹⁵
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 15/35¹⁶ of the liability of new pensioners in 2030. To calculate the total liability, each future cohort is discounted to 2010 at 0.67% and summed.

Table 2 Summary table

Source	Debt as at April 2010 in £bn (% GDP)	Debt as at September 2008 in £bn (% GDP) ¹⁷
Official debt	772 (54%) ¹⁸	645 (43%) ¹⁹
Allowance for financial interventions	73 (5%)	N/A
Public sector pensions	1,179 (82%)	1,261 (85%)
Current pensioners	1,120 (78%)	970 (65%)
Future BSP	1,211 (84%)	911 (61%)
Future AP	467 (33%)	348 (23%)
Less current NIF balance ²⁰	-51 (4%)	-38(-3%)
Total	4,771 (333%)	4,097 (276%)

The UK's total debt has therefore increased by £674 billion since December 2008 from £4.1 trillion to £4.8 trillion. If the full liabilities of the banks are included as has been proposed by ONS, this would mean that the full debt could be as much as £6.3 trillion (437% of GDP).

Is this really debt?

Table 2 shows that total government debt is not hovering around 50% of GDP but actually should be £4.8trn or 333% GDP – equivalent to about £78,000 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.²¹

¹⁵ 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.

¹⁶ 35 – 20.

¹⁷ From Silver (2008).

¹⁸ This excludes financial interventions.

¹⁹ This includes the full liabilities from Northern Rock.

²⁰ NAO (2010).

²¹ Which is unlikely to have a large implicit pensions debt.

This figure is staggeringly high. Surely it is wrong? There are three possible objections: my 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.

I will deal with these in turn.

My 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. With regard to public sector pension liabilities, I have simply used 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 not accurate. There is also uncertainty over the impact of financial interventions into the figure. However, unlike the ONS, who accurately calculate the constituents but have omitted the largest component of the debt, my calculation is robust in its order of magnitude - if my argument is correct and implicit pensions debt should be included in the overall debt figure, then the UK government's debt will be over 300% of GDP, not around 50% of GDP. The biggest uncertainty relates to future BSP and future AP which sum to about 100% of GDP. It is possible that these amounts have been over or under-estimated by 20% or 25%. This would only make a difference to the overall debt figure of about one tenth. This is trivial when it is considered that a realistic estimate of total government debt is about six times the government's estimate. In addition, I have also been ultra-conservative and excluded many benefits that could be included in the debt figure and I have used GAD's most conservative projection. It is therefore most likely that my figure is actually an underestimate.

As a reality check, other people have undertaken this calculation for a number of countries. For example an OECD estimate for the UK of implicit pension debt in 2001 was 156% of GDP²² (compared with 300% today – 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% GDP. Inter-generational models (which use different methodologies) applied by CESifo have indicated a total debt of about 500% of national income for the UK. There are specific reasons why my estimate is lower than theirs, but this other work certainly suggests that my own estimates are plausible.

Pension liabilities are not really debt

There are a number of possible arguments given for not counting accrued pension liabilities as government debt. A government debt is a specific financial promise made by the government to the holder of a debt instrument.

²² Quoted in Holzman et al (2001).

If a watertight argument can be made that 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.

Argument: Pension rights are not owed by the government

Answer: 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.

Argument: The government can easily default or evade paying pensions

Answer: 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. Holzman 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. If it intends to do so in the future, it should explicitly warn prospective pensioners. This tactic could only be used to reduce pensions at the margin and could not realistically be used with regard to SERPs/S2P or public sector pensions already accrued.

Furthermore, except in an emergency, the possibility of the government reducing pension benefit level 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 resort not possible for pensions, which are mostly inflation linked.

Argument: The value of pension commitments is uncertain

Answer: 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;

in the case of the basic state pension, 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 methods for producing comparable costs.

Argument: Future pension payments can be met by future tax revenue

Answer: This is a statement of how obligations are financed, but does not mean that debt levels can be ignored or are not a measure of the obligations that the current generation of taxpayers are imposing on the next. The same argument could be applied to explicit debt – i.e. it will be met by future revenue. This attitude is representative of opinion in nations that have young populations (i.e. where the support ratio – the proportion of workers to non-workers is high) and high 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 resource constraints).

In conclusion, pensions obligations represent a real debt, which is recognised as such in private sector accounts. Pensions are, indeed, a promise made by the government to a specific group of people. In that respect they are debt.

Implications

The real national debt might be over 300% 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 PAYG pensions and is a genuine burden that a given generation has thrown onto future generations.

It will become a larger burden because of the country's deteriorating demographics. The population has promised pensions without setting aside a capital fund to meet those payments in the hope that, in the future, there will be enough taxpayers to meet the costs. We are at serious risk, should the demographics deteriorate further, that there will be fewer tax payers to pay for an increasingly large burden. 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. If no policy action is taken, the ageing of the population will cause the UK's

official debt to increase to 150% of GDP by 2050, and cause deficits to increase to 10% of GDP by that time. This, in turn, will cause the UK's rating to drop from AAA currently to 'speculative' by 2035 unless there is a significant increase in taxes. From a UK perspective, the only consolation is that other countries face worse problems: the debts of Germany, France and the USA will deteriorate to over 200% GDP by 2050, and they will all reach a 'speculative' rating before 2030.

A debt level of 50% of GDP implies that the UK's fiscal position is relatively stable. One of over 300% implies that if the situation deteriorates, as it inevitably will due to unfavourable demographics, the government is effectively bankrupt and will be unable to meet the pensions it has promised as well as servicing existing explicit debt.

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 to pay off its debts, and almost certainly look to reduce its pensions promises. None of these options looks particularly appetising. These are not policy prescriptions that will be forced on us only if we accept the implicit pensions debt is 'real', but by the reality of the situation that we find ourselves in from sweeping this debt under the carpet for so long. In relation to actions being undertaken by the current government, what should be done? The following policy proposals would both help to reduce the accumulation of implicit and explicit debt and make the situation transparent to all taxpayers:

- The Office for Budget Responsibility (OBR) should compile figures showing the implicit and explicit debt and level of government borrowing every year. These should be calculated according to the principles discussed above.
- Explicit borrowing should be eliminated by the mid point of the cycle as defined by the OBR.
- All public sector pension liabilities should be financed up front and funded with index-linked gilts or non-government assets.
- The state pension age should rapidly be increased to 70.
- The linking of state pensions to earnings and the minimum 2.5% increase should be abandoned.
- There should be moves to ensure that anybody who wishes to opt out of both the Basic State Pension and S2P receives a fair return of National Insurance Contributions to invest in a private fund. The contracting out principle which was emasculated by the last government should be restored and radically extended.

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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