

Addressing the pension deficits of regulated utilities

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Framing the issues

- Funding open and closed pension schemes
- Regulatory obligations
 - TUPE regulations mean that pension liabilities fall on the business rather than the company
 - Ability of companies to finance their businesses
 - Hence, the customer is the ultimate guarantor
- Role of the Pension Protection Fund
 - Should utilities pay the pension levy?

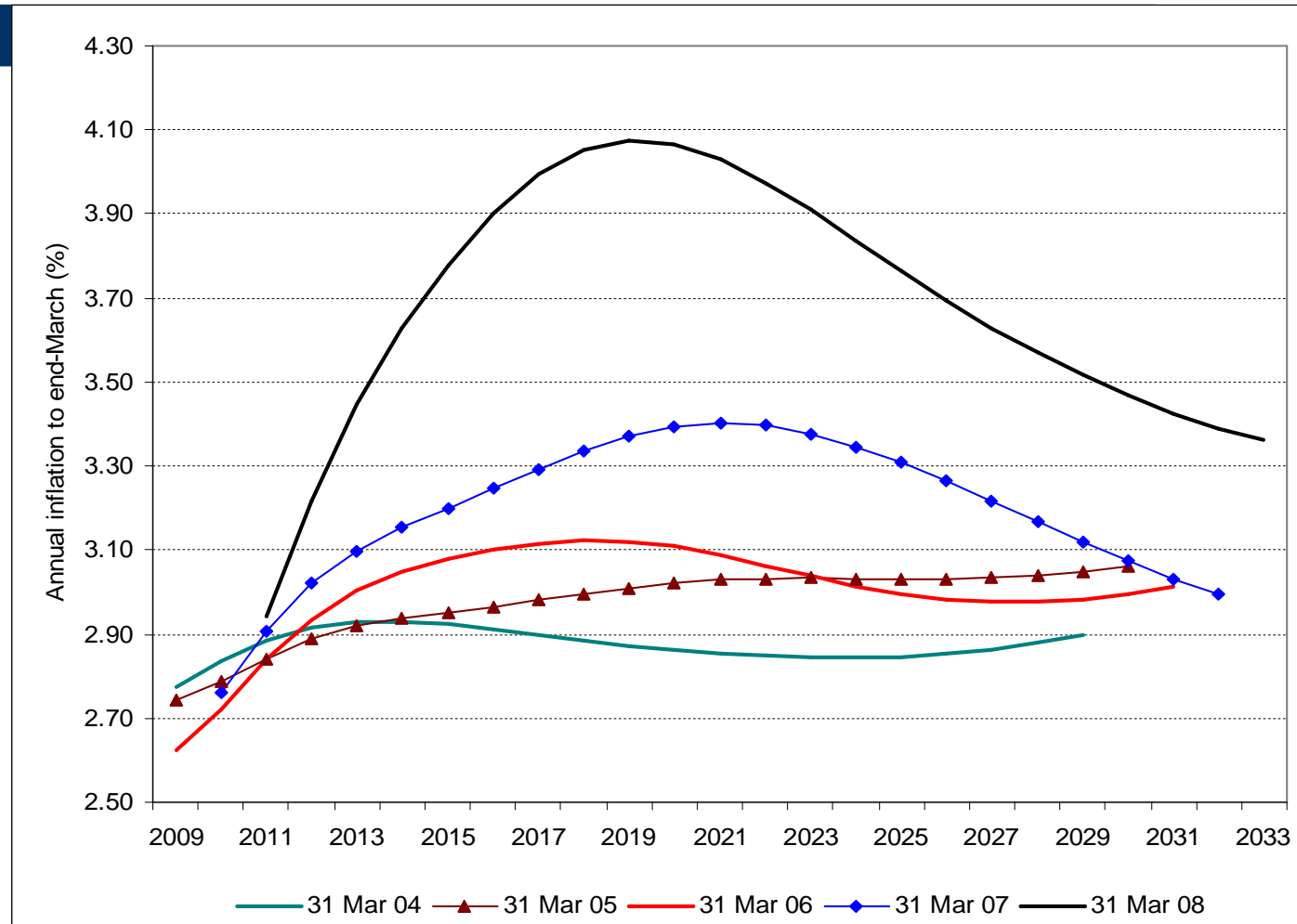
Measuring DB pension liabilities

- Pensions as deferred compensation
 - Purchase of a deferred index-linked annuity
 - Independent of future wages
 - Cost of salary increase = extra pay + pension top-up
 - No reason why the employee should be expected to bear any investment risk
- Model vs market valuation
 - What does it cost to fund the annuity?
 - What payment would an insurer require?

Recent pension assumptions

- FRS17 that assumptions should reflect expectations over the life of a pension fund
- In practice, the inflation, discount rates & real returns have tracked current values
 - Median inflation: 2005 - 2.8%; 2008 - 3.5%
 - Reliance upon bond yields & implied inflation - strong evidence suggests that liquidity problems have distorted implied inflation calculations
 - Policy suggests long term RPI inflation ~ 2.9%

Implied inflation from bond yields



Discount rates & investment returns

- FRS 17 reliance upon corporate bond yields is highly misleading – liquidity/risk premia
- Real risk-free return ~ 1%
- Median real discount rate: 2008 – 2.9%
- Returns on gilts & equities not consistent with measures of the equity risk premium
 - Do pension funds under-perform the market?

Range of pension assumptions

Year	Median	Inter-quartile range	10th percentile	90th percentile
A. Expected rate of inflation				
2004	2.80	0.30	2.50	2.90
2005	2.80	0.15	2.60	2.90
2006	2.90	0.25	2.50	3.00
2007	3.10	0.20	2.90	3.20
2008	3.50	0.20	3.30	3.70
B. Expected real discount rate				
2004	2.70	0.30	2.60	3.00
2005	2.50	0.15	2.45	2.80
2006	2.10	0.20	1.90	2.25
2007	2.20	0.20	2.10	2.40
2008	2.90	0.80	2.40	3.40
C. Expected real return on equities				
2004	5.10	0.70	4.25	5.60
2005	4.95	0.50	4.40	5.60
2006	4.80	0.60	4.20	6.20
2007	4.90	0.82	4.30	5.70
2008	4.60	0.70	4.00	5.40

Reported assets & liabilities (£ million)

Year	Assets				Liabilities
	Equities	Gilts	Other	Total	
2004	39,791	13,643	7,097	60,531	72,529
2005	42,220	13,593	11,110	66,923	78,685
2006	52,078	15,816	12,957	80,851	91,600
2007	48,967	21,369	15,601	85,937	93,775
2008	41,263	27,060	17,146	85,468	87,526

Recalculating pension liabilities

- Discount rate – 1% in real terms
- Standardised life expectancy at 65
- Single peaked payment profile
 - Truncated normal distribution
 - Peak either 20 years after scheme was closed or in 2029 (equivalent to closure in 2008)

Results of recalculating liabilities (£ million at 2008 prices)

	Assets	Reported liabilities under FRS17	Recalculated liabilities using Variant A		Recalculated liabilities using Variant B	
			Truncated normal	Negative binomial	Truncated normal	Negative binomial
2004	69,575	83,367	115,952	112,853	119,729	115,393
2005	74,525	87,623	117,843	115,059	121,776	117,998
2006	87,977	99,674	120,614	118,747	123,127	120,833
2007	89,147	97,277	118,913	117,862	121,492	120,314
2008	85,468	87,526	119,184	117,809	123,204	121,812

Assets & liabilities by fund status (£ million at 2008 prices)

	Assets	Reported liabilities under FRS17		Recalculated liabilities using Variant B		Deficit as % of assets
		Liabilities	Deficit	Liabilities	Deficit	
Closed to new members						
2004	31,747	36,772	5,025	50,281	18,534	58%
2005	31,172	35,509	4,340	47,235	16,063	52%
2006	42,358	45,773	3,416	55,662	13,304	31%
2007	44,527	45,774	1,399	56,662	12,135	27%
2008	44,424	43,523	1,562	60,183	15,758	35%
Open to new members						
2004	37,829	46,595	8,904	69,448	31,619	84%
2005	43,353	52,114	8,929	74,541	31,188	72%
2006	45,619	53,901	8,555	67,465	21,846	48%
2007	44,620	51,503	7,314	64,830	20,211	45%
2008	41,044	44,002	3,885	63,021	21,978	54%

Assets & liabilities by sector (£ million in 2008)

	Assets	Reported liabilities under FRS17		Recalculated liabilities using Variant B		Deficit as % of assets
		Liabilities	Deficit	Liabilities	Deficit	
Communications	38,922	40,693	2,927	57,858	18,936	49%
Electricity	13,576	13,682	759	19,227	5,650	42%
Gas	13,428	12,615	44	16,778	3,350	25%
Transport	11,489	12,252	1,224	17,532	6,043	53%
Water	8,053	8,283	494	11,810	3,757	47%
Total	85,468	87,526	5,447	123,204	37,736	44%

Impact of changes in asset values from March 2008 to March 2009 (£ million)

	Assets		Recalculated liabilities	Pension deficit	
	2008	2009	2008	2008	2009
Communications	38,922	31,579	57,858	18,936	26,279
Electricity	13,576	11,647	19,227	5,650	7,579
Gas	13,428	11,453	16,778	3,350	5,325
Transport	11,489	9,126	17,532	6,043	8,406
Water	8,053	6,461	11,810	3,757	5,349
Total	85,468	70,266	123,204	37,736	52,938

Future contributions

- Current service costs in accounts are too low
 - Discount rates are too high
 - Failure to treat salary increases properly
- Assumption that pension deficits go to zero over 10 years
- Additional contributions ~ 9% of revenues for all utilities on March 2008 basis, but ~12.5% on March 2009 basis

Pension services cost, contribution & revenues in 2008 (£ million)

	Service costs	Values for year		End-of-year
		Contributions	Regulated revenues	Pension deficit
Communications	931	1,146	12,247	18,936
Electricity	129	256	6,438	5,650
Gas	103	269	3,829	3,350
Transport	533	438	11,707	6,043
Water	182	225	10,119	3,757
Total	1,878	2,333	44,340	37,736

Additional contributions required to eliminate pension deficits (£ million, 2008)

	Actual pension contributions in 2007-08	Additional contributions required to cover service costs and eliminate pension deficit		Regulated revenues in 2007-08	Additional contributions as % of regulated revenues in 2007-08	
		2008 deficit	March 2009 deficit		2008 deficit	March 2009 deficit
Communications	1,146	2,153	2,927	12,247	17.6%	23.9%
Electricity	256	324	480	6,438	5.0%	7.5%
Gas	269	229	437	3,829	6.0%	11.4%
Transport	438	945	1,194	11,707	8.1%	10.2%
Water	225	426	594	10,119	4.2%	5.9%
Total	2,333	4,077	5,632	44,340	9.2%	12.7%

Composition of pension assets (£ million, 2008)

	Values of total pension assets			% shares of total pension assets		
	Equities	Gilts	Corporate bonds	Equities	Gilts	Corporate bonds
Communications	18,973	11,519	2,847	48.7%	29.6%	7.3%
Electricity	5,990	5,614	837	44.1%	41.4%	6.2%
Gas	4,740	3,997	3,406	35.3%	29.8%	25.4%
Transport	5,717	3,064	0	61.1%	32.8%	0.0%
Water	4,553	2,373	492	56.5%	29.5%	6.1%
Total	39,974	26,569	7,584	48.0%	31.9%	9.1%

Final thoughts

- Regulators cannot rely upon FRS17 accounts when assessing pension liabilities
- Significant tariff increases or government support will be required to deal with the existing deficits in utility pension funds
- Pension funds should reduce the risks implied by their investment strategies
- For open schemes: shift to average salary??