EXTERNAL REPORTING BOARD
Te Kāwai Ārahi Pūrongo Mōwaho

NZ ACCOUNTING STANDARDS BOARD

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Dear Michael

Defined benefit obligation

Further to recent discussions between New Zealand constituents and yourself regarding possible diverging practice in how an entity calculates its obligation under a defined benefit plan, the attachments to this letter set out further detail and explanation of the issue.

At this point, the attachment discussing the issue is in draft form so that you can consider whether further information and/or clarification is required.

Thank you in anticipation for considering our request to include this matter on the IFRS Interpretations Committee agenda.

Yours sincerely

Michele Embling
Chairman

The issue

The issue relates to how an entity should calculate its obligation under a defined benefit plan.

IAS 19.67 requires an entity to calculate its defined benefit obligation (DBO) by using the projected unit credit method. The actuarial assumptions to be used are the entity's best estimates of the variables that will determine the ultimate cost to the entity of providing post-employment benefits (IAS19.76). Defined benefit obligations are discounted at a rate determined by reference to high quality corporate, or governments bonds (IAS 19.83).

One of the variables that determines the ultimate cost to the entity of providing post-employment benefits is future taxes paid by the plan on the investment earnings of the plan. Up until the present, the methodology used by the actuarial profession in our jurisdiction to allow for this tax is to use a net of tax discount rate.

This approach has been questioned, partly as a result of practice overseas and partly as a result of amendments to IAS 19 in 2011 relating to taxes payable by defined benefit plans.

As a result of this uncertainty, it seems likely that diversity of practice will emerge. The effect of allowing or not allowing for future tax paid by the plan on the investment earnings of the plan normally has a material impact on the entity's balance sheet.

The specific aspect of the methodology that is being questioned is whether future taxes paid by the plan on investment earnings of the plan should be allowed for when determining the entity's obligations under the plan, i.e. whether the discount rate should be pre or post tax. It is not clear to us whether IAS 19 is prescriptive in this regard.

Current practice

A TTE (Taxed, Taxed, Exempt) regime is operated in our jurisdiction. That is, the entity gets a deduction for contributions made to the plan; the plan pays tax on contributions received and on investment income earned; but the plan does not get a deduction for benefits paid. We believe that it is this difference in tax treatment that has led to the uncertainty.

The standard makes it clear that the discount rate used should be independent of the investments held by the plan, if any (IAS 19.BC130). It also states that the rate should be determined by reference to yields on high quality corporate bonds or, where there is no deep market for such bonds, government bonds. In our jurisdiction, there is agreement that there is no deep market in high quality corporate bonds and government bond rates are used.

It seems to us, that if the principles in the standard are applied, a fully funded plan invested in government bonds of appropriate duration should result in a zero net balance on the balance sheet of the sponsor, and no future impact in the sponsor's income statement (in respect of past service).

Taking a very simplified example:

- The plan must pay a single benefit that amounts to $70 cash a year into perpetuity.
- The plan holds sufficient assets to fund those benefits.
- The pre-tax, risk free interest rate is 10%.
- Tax on investment income is 30%.

If the plan is designed to be fully funded and to invest solely in matched risk-free assets, the investments must be sufficient to generate $70 of tax paid investment income each year. That is, gross investment income of $100, less tax of $30, leaving $70 to pay the annual benefit (non-deductible for tax purposes).

This implies that $1,000 of risk-free assets is required.

If a pre-tax, risk-free discount rate (10% in this example) is used to discount the benefits payable of $70pa in perpetuity, the resulting defined benefit obligation would be $700. This would result in a plan surplus of $300 (being the assets of $1,000, less the defined benefit obligation of $700) being shown on the entity's balance sheet. This implies the entity could be repaid $300 and still have a fully funded scheme. Clearly this is incorrect, as the resulting $700 of risk-free assets would only generate $49pa of after tax cash, which is insufficient to pay the $70pa of cash benefits.

If a post-tax, risk-free discount rate (7%) is used to value the defined benefit obligation of $70pa in perpetuity, the resulting defined benefit obligation would be $1,000. This would exactly match the $1,000 of assets and therefore the scheme would be fully funded – neither in surplus, nor in deficit.

These results imply that the post-tax, risk-free discount rate, as currently used, is appropriate. This effectively incorporates into the measurement of the defined benefit obligation the tax payable on future investment income used to fund the benefits ($30pa in perpetuity - $300 in total). However, some are questioning whether this approach is appropriate or permitted under IAS 19.

To illustrate how defined obligations are calculated in more detail, we attach a slightly more complex worked example.

We also set out below the two divergent interpretations of IAS 19 in relation to this issue.

Emerging divergent interpretations

View A – post-tax discount rate is appropriate

Future tax payments on investment income affect the cost to the entity of providing benefits earned by employees

The intent of IAS 19 is that the net defined benefit liability / asset is equivalent to the amount owed by an entity to or from the plan (BC75 and BC84). A plan that is fully funded by risk-free investments should show a zero net defined benefit obligation. As illustrated by the examples, this outcome is only achieved when tax paid by the plan on the plan's investment income is taken into account in calculating the defined benefit obligation, being part of the ultimate cost of providing benefits.

Calculation of the defined benefit obligation is not affected by the funding status of the plan

Fundamentally, the measurement of the defined benefit obligation should be independent of the funding status of the plan. The examples show that the calculation of the defined benefit obligation is the same regardless of whether the plan is funded or unfunded. In an unfunded situation, the defined benefit obligation should represent the amount that an entity would need to pay to settle the obligation at balance date. Before grossing up for tax on contributions payable, this equates to the cash that the plan would need to invest in risk-free assets now such that the after tax return on those assets is sufficient to fund the benefits payable. The calculation of this obligation is exactly the same as the calculation of the defined benefit obligation in a funded situation.

Non-recognition of future tax payments is not a valid reason for a net defined benefit asset

If the cost of future investment tax payments by the plan is not allowed for in calculating the defined benefit obligation, the net defined benefit liability will be understated /the net defined benefit asset will be overstated by the present value of the expected future investment tax payments. For example, if the cost of future investment tax payments is not allowed for, a plan that is fully funded by risk free investments will show a surplus equal to the present value of the expected future investment tax payments rather than a zero net balance. This implies that the entity could be repaid an amount equating to the present value of the expected future tax payments (or receive an equivalent reduction in future contributions) and still have a fully funded scheme (IAS 19.65). Clearly this is incorrect as any refund or reduction in future contributions would leave the plan with assets that are insufficient to generate the after tax returns required to fund the benefits payable.

Use of a post-tax discount rate is not precluded by IAS 19

Discounting the expected benefits payable at a post-tax discount rate is one way of including expected future investment tax payments as part of the ultimate cost of providing benefits. IAS 19 is silent on whether the discount rate should be pre or post-tax, simply requiring that the rate used to discount defined benefit obligations shall be determined *by reference to* [emphasis added] high quality corporate bonds, or governments bonds (IAS 19.83). The use of the term 'by reference to' implies that the use a proxy for a risk-free rate adjusted for tax is not precluded by the standard.

The asymmetry in the tax treatment of investment income received and benefits paid by defined benefit plans (i.e. the former is taxable but the latter is not deductible) is a specific feature of schemes in our jurisdiction that supports the use of a post-tax discount rate. A pre-tax rate is appropriate for other long-term provisions under IAS 37, as there is no plan, with its own tax obligations, separate to the entity.

However, even under an interpretation that the use of a post-tax discount rate is precluded, the same measurement outcome could be achieved by discounting the expected benefits payable plus the tax payable on required future risk-free investment returns at a pre-tax discount rate.

Clearly, tax payable by the plan on investment returns should be included in the determination of the return on plan assets. The critical question, however, is whether the expected future investment tax payments of the plan should also be taken into account in determining the ultimate cost of providing benefits. For the reasons noted above, they should.

View B – pre-tax discount rate is appropriate

Amendments in IAS 19 revised clarify that investment tax is not an actuarial assumption that determines the ultimate cost of providing post-employment benefits

IAS 19 as revised in 2011 is clear that taxes relating to contributions and benefits should be taken into account in determining the ultimate cost of providing benefits (IAS 19.76(b)(iv)). Furthermore, the return on plan assets includes any tax payable by the plan itself other than tax included in the measurement of the present value of the defined benefit obligation (IAS 19.8). The standard is therefore clear that tax on investment income (which is not a tax relating to contributions or benefits) should be taken into account in determining the return on plan assets but not the defined benefit obligation.

This is reinforced by the Basis for Conclusions. BC122 reinforces that the standard requires an entity to estimate the ultimate cost of providing long-term employee benefits. However, only taxes on contributions and benefits payable are mentioned in this context. Therefore, the inclusion of expected future investment tax payments in the measurement of the defined benefit obligation is inconsistent with the requirements of IAS 19.

IAS 19 requires the use of a pre-tax discount rate

IAS 19 requires that the rate used to discount defined benefit obligations shall be determined by reference to high quality corporate bonds, or governments bonds (IAS 19.83). The requirements of the standard do not make mention of, and therefore, do not envisage, any adjustments to this rate.

Furthermore, the use of a pre-tax discount rate is consistent with the accounting for other long term provisions, which are discounted using a pre-tax discount rate under IAS 37 (IAS 37.47).

Conclusion

As the examples demonstrate, under the tax regime in our jurisdiction, using a pre-tax discount rate produces a result that appears to be contrary to the objectives and principles of IAS 19, and to misrepresent economic reality. In addition, we believe allowing for future taxes to be paid by the plan by means of a post tax discount rate is not contrary to the requirements of IAS 19. We therefore believe the current practice of using a post-tax discount rate is the correct approach and should continue to be applied in our, and similar, jurisdictions. We emphasise that this does not necessarily mean that the use of a post-tax discount rate is appropriate in other jurisdictions with different tax regimes.

We request that the Interpretation Committee consider this issue and determine:

- which approach should be applied in our jurisdiction, given our tax regime, to achieve the objectives of IAS 19
- whether the approach of using a post-tax discount rate here is consistent with the wording of IAS 19 (notwithstanding the fact that in other jurisdictions it may be appropriate to use a pre-tax discount rate)
- if not, what changes should be made to ensure the appropriate approach is clear and adopted consistently by any jurisdiction operating under its own specific tax regime.

Reasons for IFRIC to address the issue

Is the issue widespread and practical?

The issue affects the measurement of the defined benefit obligation by all entities with defined benefit plans in our jurisdiction. Any other jurisdictions that have similar tax regimes may also face this issue.

Does the issue involve significantly divergent interpretations (either emerging or already existing in practice)?

Using a pre or post tax discount rate is a fundamental variable in the computation of defined benefit obligations and typically has a material impact on the entity's balance sheet. Within our jurisdiction, divergence may emerge if this issue is not resolved.

Would financial reporting be improved through elimination of the diversity?

The values of defined benefit obligations determined using pre or post tax discount rates are significantly different (up to 30% in our jurisdiction). A single approach would therefore improve financial reporting.

Is the issue sufficiently narrow in scope to be capable of interpretation within the confines of IFRSs and the Framework for the Preparation and Presentation of Financial Statements*, but not so narrow that it is inefficient to apply the interpretation process?*

The issue raised in this agenda request is specific and narrow in scope.

If the issue relates to a current or planned IASB project, is there a pressing need for guidance sooner than would be expected from the IASB project?

Not aware of any IASB project, therefore N/A.

Examples of the calculation of a defined benefit obligation (DBO)

The basic facts common to each of the scenarios are as follows.

The entity is party to a defined benefit scheme in which:

- All benefits have vested.
- The remaining benefits to be paid are $70 in 1 year's time and $70 in 2 years' time.
- The risk-free interest rate by reference to government bonds is 10% before tax.
- The tax rate is 30%.
- Contributions made by the entity to the plan are deductible by the entity.
- Contributions received by the plan are taxable.
- Investment income is taxable.
- There is no deduction for tax on benefits paid.

Scenario 1A (a post-tax discount rate is used)

In this scenario, the plan is wholly unfunded and the entity pays a contribution to the plan sufficient for the plan to pay the benefits at the date the plan is required to pay the benefits. This is a gross contribution of $100 at the end of years 1 and 2, net of withholding tax of $30.

The plan recognises a gross contribution received of $100 ($70 cash, plus a withholding tax credit of $30). The plan uses the $70 cash to pay the benefit and applies the $30 tax credit against its tax liability of $30 (on the $100 gross contribution received).

On Day 1, the current calculation of the DBO is as follows:

NPV of the future benefits ($70 at the end of each of the next 2 years) discounted at a post-tax rate of 7%	126.56
Less: Plan assets	nil
	126.56
Grossed up for future tax on contributions [IAS 19.76(b)(iv)]	54.24
DBO on balance sheet of the entity	180.80

As the entity will get a deduction when it makes its contribution to the plan, a deferred tax asset arises on the DBO amounting to $54.24 (being 30% of $180.80).

At the end of the year, the entity makes a gross contribution of $100 (net $70) and the plan uses this to pay the benefit of $70 at that date (journals 1 and 2).

Over the year, the interest unwind (at 7%) increases the NPV of the benefits by $8.86, which is grossed up [IAS 19.76(b)(iv)] by $3.80, making a total expense of $12.66 (journal 3). An additional deferred tax asset of $3.80 arises as a result (journal 4).

Similar journals are required in year 2.

At the end of 2 years, all benefits have been paid and the closing DBO is nil. The income statement of the entity reflects the imputed interest accrued to the DBO of $13.44 ($8.86 in year 1 and $4.58 in year 2).

Scenario 1B (a pre-tax discount rate is used)

In this scenario, the plan is wholly unfunded and the entity pays a contribution to the plan an amount sufficient for the plan to pay the benefit at the date the plan is required to pay the benefit. This is a gross contribution of $100 at the end of years 1 and 2, net of withholding tax of $30.

The plan recognises a gross contribution received of $100 ($70 cash, plus a withholding tax credit of $30). The plan uses the $70 cash to pay the benefit and applies the $30 tax credit against its tax liability of $30 (on the $100 gross contribution received).

On Day 1, the current calculation of the DBO is as follows:

NPV of the future benefits ($70 at the end of each of the next 2 years)	
discounted at a pre-tax rate of 10%	121.49
Less: Plan assets	nil
	121.49
Grossed up for future tax on contributions [IAS 19.76(b)(iv)]	52.07
DBO on balance sheet of the entity	173.56

As the entity will get a deduction when it makes its contribution to the plan, a deferred tax asset arises on the DBO amounting to $52.07 (being 30% of $173.55).

At the end of the year, the entity makes a gross contribution of $100 (net $70) and the plan uses this to pay the benefit of $70 at that date (journals 1 and 2).

Over the year, the interest unwind (at 10%) increases the NPV of the benefits by $12.15, which is grossed up [IAS 19.76(b)(iv)] by $5.21, making a total expense of $17.36 (journal 3). An additional deferred tax asset of $5.21 arises as a result (journal 4).

Similar journals are required in year 2.

At the end of 2 years, all benefits have been paid and the closing DBO is nil. The income statement of the entity reflects the imputed interest accrued to the DBO of $18.51 ($12.15 in year 1 and $6.36 in year 2).

Commentary on the difference between Scenarios 1A and 1B

The difference between these examples is that the DBO using a post-tax discount rate (Scenario 1A) is higher than when using a pre-tax rate (Scenario 1B). As a consequence, the subsequent expenses for Scenario 1A are lower than for Scenario 1B – obviously, the expenses previously recognised will have been higher for Scenario 1A.

In itself, this difference does not clearly illustrate whether the pre-tax or post-tax discount rate is appropriate. For this reason, we have developed Scenarios 2A and 2B.

Scenario 2A

In this scenario, a previously unfunded plan is fully funded by the entity making a gross contribution of $180.80, or $126.56 net of tax (journal A) (assume that these are invested in appropriate government bonds). A deferred tax asset has previously been recognised on the gross DBO liability, and this is released on payment of the contribution (journal B).

The Day 1, post funding position therefore shows NPV of future benefits of $126.56, using a post-tax discount rate of 7% (the same as in Scenario 1A). Against this, the entity nets off the plan assets, also of $126.56, resulting in a nil DBO on the entity's balance sheet.

At the end of year 1 the plan pays $70 of benefits out of its assets (journal 1); there is an increase in the amount of the NPV of benefits due to the interest accrual of $8.86 (at the post-tax rate of 7%) (journal 2); and the plan assets increase by $8.86 (gross income@10% of $12.66, less tax of $3.80) (journal 3).

As a result of these transactions, the plan has an NPV of future benefits of $65.42 ($70 in one year time discounted at a post-tax discount rate of 7%), and an equal amount of plan assets. This means that the entity still has a nil DBO, and nothing has had to be recognised in its income statement for the year.

The second year unwinds in a similar manner to year 1 with the result that the liability is fully extinguished at the end of year 2 and, again, nothing has had to be recognised in its income statement for the year.

Scenario 2B

In this scenario, a previously unfunded plan is fully funded by the entity making a gross contribution of $173.55, or $121.49 net of tax (journal A) (assume that these are invested in appropriate government bonds). A deferred tax asset has previously been recognised on the gross DBO liability, and this is released on payment of the contribution (journal B).

The Day 1, post funding position therefore shows NPV of future benefits of $121.49, using a pre-tax discount rate of 10% (the same as in Scenario 1B). Against this, the entity nets off the plan assets, also of $121.49, resulting in a nil DBO on the entity's balance sheet.

At the end of year 1 the plan pays $70 of benefits out of its assets (journal 1); there is an increase in the amount of the NPV of benefits due to the interest accrual of $12.15 (at the pre-tax rate of 10%) (journal 2); and the plan assets increase by $8.50 (gross income@10% of $12.15, less tax of $3.64) (journal 3).

At this point, if a balance were drawn (shown as the "Year 1 pre-funding" column in the spreadsheet), the plan would have an NPV of benefits of $63.64 ($70 in one year time discounted at a pre-tax discount rate of 10%), but plan assets of only $59.99 ($121.49 plus $8.50 less $70). In other words, it would be in a deficit, or partially funded, position. At this date, the deficit needs to be grossed up for the future tax on the contribution that will be required to eliminate the deficit (journal 4). To rectify the deficit and return the plan to a fully funded position, the entity must make a gross contribution of $5.20, or $3.64 net of tax (journal 5). Finally, the entity will receive a tax benefit of $1.56 as a result of the tax deduction for the contribution made (journal 6).

The net result for the entity is that it recognises an additional expense at the end of Year 1 of $3.64.

The second year unwinds in a similar manner to year 1. Again, the entity is required to make a contribution to the plan (this time $2.73 gross, or $1.91 net) to enable it to meet its obligation to pay $70 benefit at the end of year 2 (journal 5). The net expense the entity is required to recognise in Year 2 is $1.91.

Commentary on the difference between Scenarios 2A and 2B

In contrast to scenarios 1A and 1B, scenarios 2A and 2B demonstrate that, if a pre-tax discount rate is used to calculate the NPV of future benefits, a shortfall arises in each subsequent year. This shortfall results in an annual expense for the entity, even though the plan appears to be fully funded. [Please note that the differences identified in Scenario 2B are small, because the assumed duration is so short. In practice, the duration of the plan will be many years, and the differences will be larger. The extreme is a benefit perpetuity, which is illustrated in the body of the submission. In that case, the difference is $300 on a liability of $1,000.]

It is compelling to us that in scenario 2A the gross contribution to the plan of $180.80 ($126.56 net) on Day 1 completely extinguishes the entity's obligation to the plan, whereas this is not the case in scenario 2B.

Using a pre-tax discount rate produces a result that appears to be contrary to the objectives and principles of IAS 19, and to misrepresent economic reality.

Scenario 1A

Unfunded pension plan - future benefits discounted at a post-tax, risk-free rate

Pre-tax rate	10%
Tax rate	30%
Post tax rate	7%

Entity balance sheet	**Day 1**	Jnl 1	Jnl 2	Jnl 3	Jnl 4	**Year 1**
Equity	373.44					373.44
RE	-			- 12.66	3.80	- 8.86
	373.44					364.58
NPV of benefits	- 126.56	70.00		- 8.86		- 65.42
Plan assets	-					-
Net	- 126.56					- 65.42
Gross up	- 54.24	30.00		- 3.80	-	- 28.04
Total DBO	- 180.80	100.00	-	- 12.66	-	- 93.46
DTA	54.24		- 30.00		3.80	28.04
Current tax	-	- 30.00	30.00			-
Investments						-
Other net assets	500.00	- 70.00				430.00
	373.44					364.58
Comprehensive income statement						
Investment income						-
Tax on investment income						-
Deemed interest on DBO				- 12.66		- 12.66
Tax on deemed interest					3.80	3.80
						- 8.86

Entity balance sheet	**Year 1**	Jnl 1	Jnl 2	Jnl 3	Jnl 4	Jnl 5	**Year 2**
Equity	373.44						373.44
RE	- 8.86			- 6.54	1.96		- 13.44
	364.58						360.00
NPV of benefits	- 65.42	70.00		- 4.58			- 0.00
Plan assets	-						-
Net	- 65.42						- 0.00
Gross up	- 28.04	30.00		- 1.96	-		- 0.00
Total DBO	- 93.46	100.00	-	- 6.54	-		- 0.00
DTA	28.04		- 30.00		1.96		0.00
Current tax	-	- 30.00	30.00				-
Investments	-						-
Other net assets	430.00	- 70.00					360.00
	364.58						360.00
Comprehensive income statement							
Investment income							-
Tax on investment income							-
NPV of benefits				- 6.54			- 6.54
NPV of benefits					1.96		1.96
							- 4.58

Jnl 1	Payment of the contribution to the fund (gross $100, less contributions tax $30)
Jnl 2	Receipt of tax benefit on contribution to the plan
Jnl 3	Interest unwind on the DBO @ post-tax rate of 7% and the gross up effect
Jnl 4	Movement on deferred tax relating to change in carrying amount of the DBO due to discount unwind

Scenario 1B

Unfunded pension plan - future benefits discounted at a pre-tax, risk-free rate

Pre-tax rate	10%
Tax rate	30%
Post tax rate	7%

Entity balance sheet	**Day 1**	Jnl 1	Jnl 2	Jnl 3	Jnl 4			**Year 1**
Equity	378.51							378.51
RE	-			- 17.36	5.21			- 12.15
	378.51							366.36
NPV of benefits	- 121.49	70.00		- 12.15				- 63.64
Plan assets	-							-
Net	- 121.49							- 63.64
Gross up	- 52.07	30.00		- 5.21				- 27.27
Total DBO	- 173.55	100.00	-	- 17.36	-	-	-	- 90.91
DTA	52.07		- 30.00		5.21			27.27
Current tax	-	- 30.00	30.00					-
Investments								-
Other net assets	500.00	- 70.00						430.00
	378.51							366.36
Comprehensive income statement								
Actuarial catch-up								-
Tax on actuarial catch-up								-
Investment income								-
Tax on investment income								-
Deemed interest on DBO				- 17.36				- 17.36
Tax on deemed interest					5.21			5.21
								- 12.15

Entity balance sheet	**Year 1**	Jnl 1	Jnl 2	Jnl 3	Jnl 4			**Year 2**
Equity	378.51							378.51
RE	- 12.15			- 9.09	2.73			- 18.51
	366.36							360.00
NPV of benefits	- 63.64	70.00		- 6.36				- 0.00
Plan assets	-							-
Net	- 63.64							- 0.00
Gross up	- 27.27	30.00		- 2.73				- 0.00
Total DBO	- 90.91	100.00	-	- 9.09	-	-	-	- 0.00
DTA	27.27		- 30.00		2.73			0.00
Current tax	-	- 30.00	30.00					-
Investments	-							-
Other net assets	430.00	- 70.00						360.00
	366.36							360.00
Comprehensive income statement								
Actuarial catch-up								-
Tax on actuarial catch-up								-
Investment income								-
Tax on investment income								-
Deemed interest on DBO				- 9.09				- 9.09
Tax on deemed interest					2.73			2.73
								- 6.36

Jnl 1	Payment of the contribution to the fund (gross $100, less contributions tax $30)
Jnl 2	Receipt of tax benefit on contribution to the plan
Jnl 3	Interest unwind on the DBO @ pre-tax rate of 10% and the gross up effect
Jnl 4	Movement on deferred tax relating to change in carrying amount of the DBO due to discount unwind

Scenario 2A

Fully funded pension plan - future benefits discounted at a post-tax, risk-free rate

Pre-tax rate	10%
Tax rate	30%
Post tax rate	7%

Entity balance sheet	**Day 1 pre funding**	Jnl A	Jnl B	**Day 1 post funding**	Jnl 1	Jnl 2	Jnl 3	**Year 1**
Equity	373.44			373.44				373.44
RE	-			-		- 8.86	8.86	-
	373.44			373.44				373.44
NPV of benefits	- 126.56			- 126.56	70.00	- 8.86		- 65.42
Plan assets	-	126.56		126.56	- 70.00		8.86	65.42
Net	- 126.56			- 0.00				- 0.00
Gross up	- 54.24	54.24		- 0.00				- 0.00
Total DBO	- 180.80	180.80		- 0.00	-	- 8.86	8.86	- 0.00
DTA	54.24		- 54.24	0.00				0.00
Current tax	-	- 54.24	54.24	-				-
Investments				-				-
Other net assets	500.00	- 126.56		373.44				373.44
	373.44			373.44				373.44
Comprehensive income statement								
Actuarial catch-up						- 8.86	8.86	-
Contribution tax								-
								-
								-
								-

Entity balance sheet	**Year 1**	Jnl 1	Jnl 2	Jnl 3	**Year 2**
Equity	373.44				373.44
RE	-		- 4.58	4.58	-
	373.44				373.44
NPV of benefits	- 65.42	70.00	- 4.58		- 0.00
Plan assets	65.42	- 70.00		4.58	- 0.00
Net	- 0.00				- 0.00
Gross up	- 0.00				- 0.00
Total DBO	- 0.00	-	- 4.58	4.58	- 0.00
DTA	0.00				0.00
Current tax	-				-
Investments	-				-
Other net assets	373.44				373.44
	373.44				373.44
Comprehensive income statement					
Actuarial catch-up			- 4.58	4.58	-
Contribution tax					-
					-
					-
					-

Jnl A	Gross contibution of $180.80 made, including withholding tax of $54.24
Jnl B	Receipt of tax benefit on contribution to the plan
Jnl 1	Payment of benefits ($70) by the plan out of plan assets
Jnl 2	Interest unwind on the DBO @ post-tax rate of 7%
Jnl 3	Investment income received, net of tax

Scenario 2B

Fully funded pension plan - future benefits discounted at a pre-tax, risk-free rate

Pre-tax rate	10%
Tax rate	30%
Post tax rate	7%

Entity balance sheet	**Day 1 pre funding**	Jnl A	Jnl B	**Day 1 post funding**	Jnl 1	Jnl 2	Jnl 3	**Year 1 pre-funding**	Jnl 4	Jnl 5	Jnl 6	**Year 1**
Equity	378.51			378.51				378.51				378.51
RE	-			-		- 12.15	8.50	- 3.64	- 1.56		1.56	- 3.64
	378.51			378.51				374.87				374.87
NPV of benefits	- 121.49			- 121.49	70.00	- 12.15		- 63.64				- 63.64
Plan assets	-	121.49		121.49	- 70.00		8.50	59.99		3.64		63.64
Net	- 121.49			-				- 3.64				-
Gross up	- 52.07	52.07		-				-	- 1.56	1.56		-
Total DBO	- 173.55	173.55		-	-	- 12.15	8.50	- 3.64	- 1.56	5.21	-	-
DTA	52.07		- 52.07	-				-				-
Current tax	-	- 52.07	52.07	-				-		- 1.56	1.56	-
Investments				-				-				-
Other net assets	500.00	- 121.49		378.51				378.51		- 3.64		374.87
	378.51			378.51				374.87				374.87
Comprehensive income statement												
Actuarial catch-up						- 12.15	8.50	- 3.64				- 3.64
Contribution tax								-	- 1.56	-	1.56	-
								-				-
								-				-
								- 3.64				- 3.64

Entity balance sheet	**Year 1**	Jnl 1	Jnl 2	Jnl 3	**Year 2 pre-funding**	Jnl 4	Jnl 5	Jnl 6	**Year 2**
Equity	378.51				378.51				378.51
RE	- 3.64		- 6.36	4.45	- 5.55	- 0.82		0.82	- 5.55
	374.87				372.96				372.96
NPV of benefits	- 63.64	70.00	- 6.36		- 0.00				- 0.00
Plan assets	63.64	- 70.00		4.45	- 1.91		1.91		0.00
Net	-				- 1.91				-
Gross up	-				-	- 0.82	0.82		-
Total DBO	-	-	- 6.36	4.45	- 1.91	- 0.82	2.73	-	-
DTA	-				-				-
Current tax	-				-		- 0.82	0.82	-
Investments	-				-				-
Other net assets	374.87				374.87		- 1.91		372.96
	374.87				372.96				372.96
Comprehensive income statement									
Actuarial catch-up			- 6.36	4.45	- 1.91				- 1.91
Contribution tax					-	- 0.82	-	0.82	-
					-				-
					-				-
					- 1.91				- 1.91

Jnl A Gross contibution of $173.55 made, including withholding tax of $52.07
Jnl B Receipt of tax benefit on contribution to the plan

Jnl 1 Payment of benefits ($70) by the plan out of plan assets
Jnl 2 Interest unwind on the DBO @ pre-tax rate of 10%
Jnl 3 Investment income received, net of tax
Jnl 4 Gross-up of underfunding efore year-end top-up
Jnl 5 Extra contribution required to keep fully funded position
Jnl 6 Tax benefit on deductible contribution