Chapter B11 – STANDARD FOR INCLUSION OF TAXATION EFFECTS (NEW ZEALAND)

Purpose

The purpose of this standard is to ensure that tax calculations and any conventions or assumptions about the influence of taxation on reported value are documented and disclosed.

Scope

This standard applies to all valuations prepared according to these standards and guidelines.

Why include tax?

The inclusion of provision for tax cashflows may:

- Better explain variation in observed transaction evidence.
- Achieve articulation with the derivation of discount rates.
- Meet the needs of the client in an investment (rather than market) valuation.

The exclusion of explicit tax cashflows may:

- Adequately account for variation in observed transaction evidence.
- Allow for a simpler, more robust model.

Either way, the role of tax in the valuation must be documented and disclosed.

STANDARD B11.1 Presentation and disclosure

With respect to presentation and disclosure:

- **the valuation report should include detail of all tax conventions, calculations and assumptions;**
- **all sources should be cited; and**
- **valuers should seek instruction from the client as to an independent review of tax calculations. If the tax effects have been reviewed by a tax practitioner that fact should be stated.**

GUIDANCE NOTES ON WHETHER TO INCLUDE TAX

To model tax or not?	When a comparable sales approach is used for estimating market valuation the role of a discounted cash flow model is to adjust for differences between the forests for which transaction evidence is available and the target forest. In this context, a standardised, discounted cash flow model is essentially a predictive model with parameters, for example implied discount rate, estimated using transaction evidence. If an explicit representation of taxation helps to explain variation in the transaction evidence, then there is some justification for including taxation in the model. Otherwise, a simpler model may be sufficient and easier to manage.

GUIDANCE NOTES ON DEDUCTIBILITY OF EXPENSES

Sources of information	The deductibility of forestry expenses is legally enacted in the Income Tax Act. The key section that deals with the deductibility of forestry expenditure is Section DP 1. https://legislation.govt.nz/act/public/2007/0097/4.0/DLM1513976.html This section describes the type of expenditure that is immediately deductible. The other key section is DP 3 which describes the deductibility of expenditure on improvements to forestry land. This is the expenditure that is moving forests from an unimproved to improved state such as for roading or clearing of land to enable 1st rotation planting. https://legislation.govt.nz/act/public/2007/0097/4.0/DLM1513980.html These costs are generally capitalised and then depreciated. Such expenditure and the applicable depreciation rate are defined in more detail in Schedule 20, part G (Expenditure on farming, horticultural, aquaculture and forestry improvements). https://www.legislation.govt.nz/act/public/2007/0097/latest/DLM1523373.html
Pre-acquisition expenses	These are generally consultant's fees incurred prior to the purchase of the investment and are non-deductible as they are preliminary to the production of assessable income. If however a taxpayer already carrying on a forestry business incurs expenses on feasibility studies for further expansion, then there is a good argument that these are part of the operating expenses and are therefore deductible.
Land/timber acquisition	The acquisition costs and associated expenses of forestry land such as legal, valuation and surveying expenses are capital in nature and therefore non-deductible. If the land acquired includes a standing forest crop, the portion of the purchase price attributable to the crop is treated as the cost of timber and is deductible

from the ultimate gross proceeds of the sale. The cost of acquiring a forestry right is also treated as a cost of timber.

Land preparation

The costs of preparing and developing the land are depreciable.

A taxpayer carrying on a forestry business on land owned by them is also able to claim a deduction for expenditure incurred by any other taxpayer in preparing or developing the land. The deduction is claimed on a diminishing value basis based on the unamortised balance of the development expenditure incurred by the previous taxpayer. This concession is not available if the land is not owned by the taxpayer.

Expenditure on roading

There are four types of roading expenditure distinguishable for tax purposes:

a) Maintenance: Fully deductible if the road is not upgraded.

b) Metalled or sealed roads: Depreciable at 5% of diminished value.

c) Partially metalled or sealed roads, or unmetalled or unsealed roads: Depreciable at 20% of diminished value

d) Temporary access tracks i.e. constructed for a specific operational purpose and used for no longer than 12 months after construction: Fully deductible.

Tree planting & maintenance

Expenditure on planting and maintaining trees is fully deductible in the year of occurrence. Where agriculture is the principal business, expenditure is fully deductible in the year of occurrence provided they are planted for preventing or combating erosion of the land; or providing shelter to the land. Otherwise there is a limited deduction for the cost of planting or maintaining trees.

Operating expenses

Immediate deduction of certain operating expenses that are not otherwise deductible is allowed i.e.:

Rent, rates, insurance premiums, administrative overheads or other similar expenses, weed control (excluding releasing), pest control, disease control, fertiliser applications after planting, interest, repair and maintenance of plant machinery and equipment used in the business, and repair and maintenance of land improvements.

Cost of timber

The cost of timber is mainly the purchase cost of the crop, but it also includes legal expenses for the purchase of the crop or land, and the cost of roading, bridges and other infrastructural assets which are required for harvest.

For forests planted before 1 April 1991, most tree planting and maintenance expenditure was not deductible and is required to be carried forward as *Cost of Timber* until harvest

Post harvest expenditure

Expenses incurred in clearing land for replanting after harvest are deductible.

GUIDANCE NOTES ON TAXATION MODEL

Standard B11.1 Conventions

Conventions need to be developed when values are derived from discounted cash flow analysis calculated from post-tax cashflows:

Perspective

Crop value could be determined from the perspective of the purchaser in a transaction between a willing buyer / willing seller assuming the transaction is for the acquisition of forest (and associated) assets with settlement by a single payment at time of sale. However other perspectives are possible; for example, valuation could be from the perspective of the vendor or could assume the acquisition of shares in a forest owning company.

Tax residency

Is the purchaser assumed to be a New Zealand resident under New Zealand tax jurisdiction or some other tax residency? Whilst the asset-owning company may be an NZ resident, the beneficial ownership may be all or in-part offshore. The tax assumption of a NZ domestic tax resident could therefore be widened to include an additional layer of taxes for offshore investors in predominant capital markets such as the US, Europe and Australia.

Tax rate

Is tax calculated on taxable income at the corporate tax rate current at the date of valuation, or a trust tax rate or a personal tax rate?

Utilisation of tax losses

In generating tax cashflows is it assumed that the purchaser has sufficient assessable income to fully utilise any tax losses in the year they occur?

Timing of tax payments

Is it assumed that tax is payable/claimable in the period in which the liability/credit arises?

Funding

Is it assumed that the purchase is affected by equity funding. The interest tax shield effect, which recognises that the cost of debt servicing is tax deductible, would not be included if this was the convention adopted. Consequently, the availability of related party debt (such as promissory notes) as a form of tax advantaged equity funding could be adopted to ensure tax efficiency is embedded in the valuation.

Discount rate

Valuers should ensure the assumptions about funding and the modelling of post-tax cashflows are fully articulated to the derivation of the discount rate used in the valuation. For example, inclusion of the broader capital markets that often fund New Zealand forest acquisitions and the availability of related party debt as a form of tax-advantaged equity funding ensures tax efficiency. This should be

embedded in the market-based discount rate that is applied to post-tax cashflows.

Future changes

Is it assumed that there are no changes in tax law or rates in the future?

Perpetual ownership

Is it assumed that there is perpetual ownership after acquisition by the purchaser?

Determination of taxable income

Taxable income should generally be determined in accordance with the provisions of the Income Tax Act 2007 as they apply to forestry. Valuers should have specific regard to Sections DP1 and DP3 of the Act, which define the treatment of forest income, the deductibility of certain classes of expenditure and the depreciable and non-deductible nature of various classes of expenditure. Valuers should take advice on proper treatments.

Cost of bush

Provision should generally be included for cost of bush[1] arising on the purchase of the crop. Valuers should adopt a convention such that:

- the total cost of bush expensed does not exceed the estimated market value of the crop;
- the cost of bush expensed in any period does not exceed the estimated revenue on stump from the sale of timber in the period;
- the cost of bush is expensed against any production thinning incomes as well as clearfelling incomes.

[1] The expression 'cost of bush' means the same as the term 'cost of timber expense' which is used in the Income Tax Act 1994.

EXAMPLE POST-TAX NPV CALCULATION

Introduction

Once woodflows and cashflows have been generated, calculation of the NPV of the forest requires incorporation of:

- cost of land;
- taxation; and
- discounting at the selected discount rate.

Tax deductible costs

The tax deductibility of costs is a complex subject that should only be attempted by persons well versed in the relevant legislation. This example deals only with one method for treating the tax impact of tax on revenue and the write-off of the 'Cost of Bush' account that is created on purchase of a forest asset.

Example

This example is presented to illustrate the types of conventions that need to be considered in a post-tax NPV calculation. Note that the conventions adopted for this example will not apply to any particular case and are not presented as recommendations. Conventions adopted for this example are:

- the perspective of the purchaser in a transaction between a willing buyer/willing seller assuming the transaction is for the acquisition of the tree crop.
- the purchaser is assumed to be a New Zealand resident under New Zealand tax jurisdiction.
- Tax is calculated on taxable income at the corporate tax rate current at the date of valuation.
- The purchaser has sufficient assessable income to fully utilise any tax losses in the year they occur.
- Tax is payable/claimable in the period in which the liability/credit arises.
- The purchase is affected by equity funding.
- It is assumed that there are no changes in tax law or rates in the future.
- It is assumed that there is perpetual ownership after acquisition by the purchaser.

Refer to Table 11-1 and the footnotes to the table for a detailed explanation of the example. In brief:

- Land is assumed to be rented. Rental costs are included in the costs shown.
- Inclusion of the tax impact of the 'Cost of Bush' account created at the time of sale creates some circularity in calculations. The value that a potential purchaser might place on the forest is determined by the purchaser's likely tax liability, and yet that liability is in turn influenced by the purchase price. The post-tax valuation model employs an iterative procedure to handle the circularity. Using the cell references indicated in the attached example schedule, the SOLVER routine within Excel is used to make K40=C39, by adjusting cell E2. Alternatively set the cell K44 as =K40-C39 and use GOAL SEEK to solve for E2 that makes cell K44=0.

Some further complication is created by the fact that the tax 'shield' provided by the purchase price can only be carried forward for eventual offset at its historic value. Accordingly, the post-tax valuation model needs to recognise the erosive

effect of inflation on the real value of the 'Cost of Bush' account. The mechanism for dealing with inflation is covered in the notes below Table 11-1.

Table 11-1: Example of Post-Tax NPV Calculation

	A	B	C	D	E	F	G	H	I	J	K
1	REAL POST-TAX DISCOUNT RATE (a)				6.00%						
2	COST OF BUSH WRITE-OFF RATE (b)				10.20%						
3	INFLATION RATE (c)				2.00%						
4	TAX RATE (d)				28.00%						
5	Year	Revenue before tax (real)	Cost of Bush write-off	Deflated Cost of Bush write-off	Taxable Revenue (real)	Tax on Revenue	Post-tax Revenue (real)	Costs before tax (real)	Tax on costs	Costs post-tax (real)	Post-tax Cashflow (real
6	2025	0	0	0	0	0	0	49,776	13,937	35,839	-35,839
7	2026	0	0	0	0	0	0	49,776	13,937	35,839	-35,839
8	2027	0	0	0	0	0	0	49,776	13,937	35,839	-35,839
9	2028	0	0	0	0	0	0	49,776	13,937	35,839	-35,839
10	2029	0	0	0	0	0	0	49,776	13,937	35,839	-35,839
11	2030	15,910	9,421	8,533	7,377	2,066	13,844	49,776	13,937	35,839	-21,901
12	2031	22,872	12,195	10,829	12,043	3,372	19,500	49,618	13,893	35,725	-16,082
13	2032	33,338	16,007	13,935	19,403	5,433	27,905	49,389	13,829	35,560	-7,439
14	2033	276,853	119,703	102,165	174,688	48,913	227,940	49,058	13,736	35,322	194,433
15	2034	276,808	107,775	90,181	186,627	52,256	224,552	46,302	12,965	33,337	193,023
16	2035	306,553	107,479	88,171	218,382	61,147	245,406	43,546	12,193	31,353	216,025
17	2036	261,902	82,688	66,503	195,399	54,712	207,190	40,495	11,339	29,156	179,677
18	2037	257,440	73,191	57,711	199,729	55,924	201,516	37,888	10,609	27,279	175,798
19	2038	261,902	67,051	51,833	210,069	58,819	203,083	35,324	9,891	25,434	179,174
20	2039	259,448	59,813	45,331	214,117	59,953	199,495	32,717	9,161	23,557	177,380
21	2040	222,719	46,237	34,355	188,364	52,742	169,977	30,134	8,438	21,696	149,456
22	2041	239,834	44,836	32,660	207,174	58,009	181,825	27,916	7,817	20,100	162,922
23	2042	211,070	35,532	25,376	185,694	51,994	159,076	25,530	7,148	18,381	141,686
24	2043	223,611	33,898	23,734	199,877	55,966	167,645	23,428	6,560	16,868	151,763
25	2044	217,162	29,644	20,349	196,813	55,108	162,054	21,201	5,936	15,265	147,685
26	2045	189,560	23,302	15,681	173,879	48,686	140,874	19,039	5,331	13,708	127,896
27	2046	185,450	20,528	13,544	171,906	48,134	137,316	17,152	4,803	12,350	125,631
28	2047	168,428	16,789	10,860	157,568	44,119	124,309	15,306	4,286	11,020	113,849
29	2048	188,734	16,941	10,743	177,991	49,837	138,897	13,629	3,816	9,813	129,665
30	2049	160,796	12,997	8,081	152,715	42,760	118,036	11,750	3,290	8,460	110,034
31	2050	160,908	11,712	7,139	153,769	43,055	117,853	10,150	2,842	7,308	110,968
32	2051	157,449	10,320	6,167	151,282	42,359	115,090	8,548	2,394	6,155	109,317
33	2052	157,159	9,276	5,434	151,725	42,483	114,676	6,980	1,954	5,026	110,001
34	2053	160,105	8,509	4,888	155,217	43,461	116,644	5,417	1,517	3,900	113,073
35	2054	159,591	7,638	4,301	155,290	43,481	116,110	3,823	1,070	2,752	113,658
36	2055	163,318	7,039	3,886	159,432	44,641	118,677	2,233	625	1,608	117,351
37	2056	61,074	2,370	1,283	59,791	16,742	44,332	607	170	437	43,992
38	2057	0	0	0	0	0	0	0	0	0	0
39		Total:	1,102,763								

40	Example Formulae - Row 16			NPV:	8.00% 1,102,763
41	A16	2025			
42	B16	306,553			
43	C16	=B16/(1+E$2)^(A16-A$6)			
44	D16	=C16/(1+E$3)^(A16-A$6)		difference (K40-C39):	0
45	E16	=B16-D16			
46	F16	=E16*E$4			
47	G16	=B16-F16			Goal Seek cell K44 to 0
48	H16	43,546			by changing cell E2
49	I16	=H16*E$4			
50	J16	=H16-I16			
51	K16	=G16-J16			

Notes a) The derivation of the real discount rate to apply to post-tax cashflows is discussed in Chapter B10.

b) The 'Cost of Bush Write-Off Rate' provides a mechanism for writing off the purchase value of the tree crop against clearfelling revenues in order to determine taxable income.

Under current New Zealand legislation, the purchase cost of an immature tree crop cannot be immediately deducted from income from any other source for tax assessment purposes. Instead, the purchase price must be apportioned between the age-classes within the forest. Each such component of the price can only be deducted from the income arising from the age-class to which it relates.

For older stands, their share of the purchase price may only have to be carried forward briefly until the stand is clearfelled. Conversely, for younger stands, the purchase price may be carried for a lengthy period. Because the purchase price is recorded in historic terms, with no indexation for inflation, if there is inflation this will erode the effective deductibility. It is to allow for this effect that the 'Cost of Bush Write-Off' is deflated at the expected inflation rate over the life of the analysis.

An alternative approach would be to inflate all cashflows (other than the 'Cost of Bush Write-Off') and carry out the analysis in nominal terms using a discount rate that has been adjusted for inflation.

It will be evident that there is a circularity in the determination of the post-tax forest value. This is because it is necessary to have a first estimate of the forest value, in order to estimate the annual write-offs of the purchase price against tax. Because these write-offs affect the post-tax cashflows and therefore in turn the NPV of the forest, this revised value then affects the write-offs, and so on.

The circularity is accommodated in the selection of the 'Cost of Bush Write-Off Rate'. This is a rate determined iteratively (i.e. by a progressive refinement) in order to make the total amount written off and the tree crop value balance.

The formula by which the 'Cost of Bush Write-Off Rate' is applied is given in the example. It is in effect an NPV of the net harvest cashflows prior to taxation impacts. Highest values are attributed to the oldest stands, which will be felled first.

c) This is the anticipated inflation rate over the period to which the valuation applies.

d) This is the current company tax rate in New Zealand.

The formulae used in deriving the values in each column are as follows:

Column B

This is the total net harvest revenue obtained after harvesting-related costs have been deducted from total point of sale revenues.

Column C

This column is the discounted value of column B, with the 'Cost of Bush Write-Off Rate' as the discount rate.

Column D

Column C values are deflated at the inflation rate to calculate the real value of the 'Cost of Bush Write-Off'.

Column E

The taxable revenue is derived by subtracting column D ('Deflated Cost of Bush Write-off') from column B ('Revenue').

Column F

F = E * d

Column G

G = B – F

Column H

These are the forest costs.

Column I

These are the tax credits on the forest costs (I = H * d).

Column J

These are the forest costs after deduction of tax credits.

(J = H - I)

Column K

K = G - J

The real post-tax cashflow is discounted using the discount rate, (a) to give the crop value.

Revision History

Original Standard	Released in May 1999
Revision in August 2023	Main changes are: • Changing from a standard approach that adopted post-tax cashflows to making no preference about the inclusion or exclusion of tax, rather requiring that the role of tax in the valuation must be documented and disclosed. • Noting that an important consideration in whether or not to include taxation in the valuation cashflows is whether doing so may better explain the variation in observed transaction evidence. • Updating the sources of information, taxation conventions to be considered and the example.