Interim 2018 discount rate survey

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Abstract

A simplified discount rate survey was undertaken in December 2018 to clarify the effect of forest size on discount rate that was evident in the 2017 survey. Some 22 of the 23 forest valuers sent the survey provided a response. Results indicate that the discount rate used by valuers for large (>1000 ha) forests is lower than that used for small forests by 0.5 to 0.74 percentage points for New Zealand forests and 0.75 to 1.0 percentage points for Australian forests. All of the valuers who responded to the 2018 survey had also responded to the full 2017 survey. The average change in the discount rate that they are using is a reduction of 0.21 percentage points for New Zealand forests (21 responses) and 0.13 percentage points for Australian forests (five responses).

Introduction

Forest valuers have been surveyed every two years since 1997 about the discount rate used for forest valuation. The most recent survey was held in the last quarter of 2017. Results for transactions between late 2015 and 2017 showed that Implied Discount Rates (IDRs) for the four transactions of medium or large (>1,000 ha) forests were, on average, lower than for the 15 small forests (<1000 ha); 5.8% vs 7.2% for post-tax cashflows and 5.9% vs 8.4% for pre-tax cashflows (Manley, 2018). Although there was a clear effect of forest size on IDR, the survey had not clearly differentiated whether forest valuers used different discount rates depending on forest size. Consequently, a simplified discount rate survey was undertaken in December 2018 to clarify this.

Approach

Valuers were asked, 'When using the income (Expectation Value) approach, what (real) discount rate do you use to estimate the market value of a small tree crop or forest (<1000 ha) compared to a large tree crop or forest (> 1000 ha)?' The question was subdivided by:

- Country (New Zealand vs Australia)
- Type of cashflows (pre-tax vs post-tax)
- Number of rotations (current rotation vs multiple rotations).

The survey was sent to 23 forest valuers with responses received from 22 valuers.

Results

Forest valuers are using lower discount rates for large forests for all eight combinations of country, type of cashflow and number of rotations (Table 1). Distributions are presented in Figures 1 and 2 for the combinations that received a larger number of responses, i.e. current rotations for New Zealand forests. These graphically show the lower discount rates being used for large forests.

The most precise comparison is when responses are considered only from valuers providing a response for both discount rates in each comparison (Table 2). This indicates that the discount rate for large forests is lower by 0.5 to 0.74 percentage points for New Zealand forests and 0.75 to 1.0 percentage points for Australian forests.

It was also found (again when only paired responses are considered) that the discount rate used

Table 1: Discount rates being used to value small and large forests by combination of country, type of cashflow (pre-tax vs post-tax) and number of rotations (current rotation vs multiple rotations)

New Zealand	Discount applied to post-tax cashflows		Discount rate applied to pre-tax cashflows	
	Current rotation	Multiple rotations	Current rotation	Multiple rotations
Small forests (<1000 ha)	7.0 (11) 6 to 9	6.8 (3) 6 to 7.5	8.2 (17) 7 to 10	7.9 (7) 7 to 10
Large forests (>1000 ha)	6.2 (8) 5 to 7.5	6.3 (3) 6 to 7.5	7.5 (15) 6 to 9	7.2 (8) 6.2 to 8.5

Australia	Discount rate applied to post-tax cashflows		Discount rate applied to pre-tax cashflows	
	Current rotation	Multiple rotations	Current rotation	Multiple rotations
Small forests (<1000 ha)	7.9 (2) 7 to 8.5	7.6 (2) 7 to 8.5	8.9 (3) 7.5 to 11	8.1 (3) 7 to 9
Large forests (>1000 ha)	7.1 (2) 6.5 to 8.5	6.9 (2) 6 to 8.5	7.8 (6) 6 to 10	7.1 (6) 6 to 8.5

Note: The results presented for each cell are the average with the number of respondents in brackets. The second row contains the range across all respondents and some valuers provided a range of values

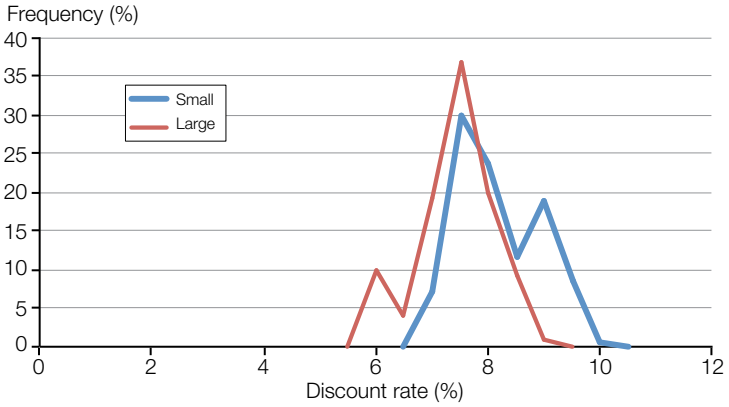

Figure 1: Distribution of discount rate for valuation of NZ forests using pre-tax cashflows for the current rotation. Frequency is for 0.5% units of discount rate

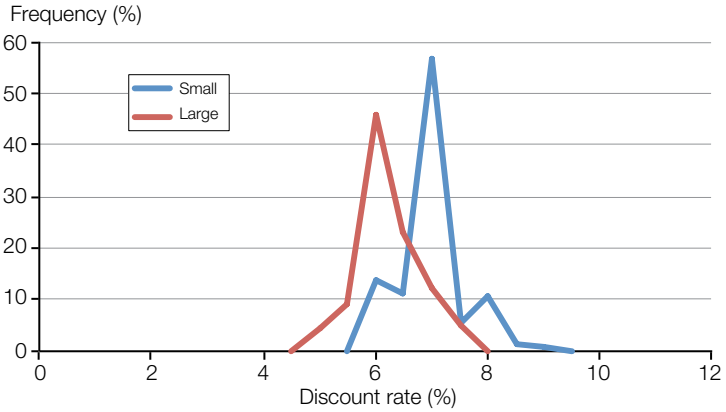

Figure 2: Distribution of discount rate for valuation of NZ forests using post-tax cashflows for the current rotation. Frequency is for 0.5% units of discount rate

for the current rotation was higher than that used for multiple rotations by 0.17 to 0.30 percentage points in New Zealand and 0.25 to 0.83 percentage points in Australia (Table 3). Table 1 shows that, for large New Zealand forests with post-tax cashflows, the current rotation discount rate of 6.2% is lower than the multiple rotation discount rate of 6.3%. However, when only the three valuers who provided a response for both current and multiple rotations are considered, the current rotation discount rate is 6.5% compared to the multiple rotation discount rate of 6.3%.

All 22 of the valuers who responded to the 2018 survey had also responded to the 2017 survey. Because the question asked in the 2018 survey was different from that asked in 2017, it was necessary to exercise judgement in comparing responses. Figure 3 gives the frequency distribution of the estimated change in discount rate from 2017 to 2018. The majority of valuers use the same discount rate or have reduced the discount rate by 0.25 to 0.5 percentage points. On average, they are using a discount rate that is 0.21 percentage points lower for New Zealand forests (21 responses) and 0.13 percentage points lower for Australian forests (five responses).

Table 2: Differentials in discount rate for forest size using paired comparisons from valuers who provided a response for both discount rates in a comparison. Differentials are calculated as discount rate for small forests minus discount rate for large forests

	Post-tax		Pre-tax	
NZ	**Current**	**Multiple**	**Current**	**Multiple**
Differential	0.74	0.50	0.51	0.63
Respondents	8	3	14	7
Australia				
Differential	0.75	0.75	0.83	1.00
Respondents	2	2	3	3

Table 3: Differentials in discount rate for rotations using paired comparisons from valuers who provided a response for both discount rates in a comparison. Differentials are calculated as discount rate for current rotation minus discount rate for multiple rotations

	Post-tax		Pre-tax	
NZ	**Small**	**Large**	**Small**	**Large**
Differential	0.17	0.17	0.25	0.30
Respondents	3	3	7	8
Australia				
Differential	0.25	0.25	0.83	0.69
Respondents	2	2	3	6

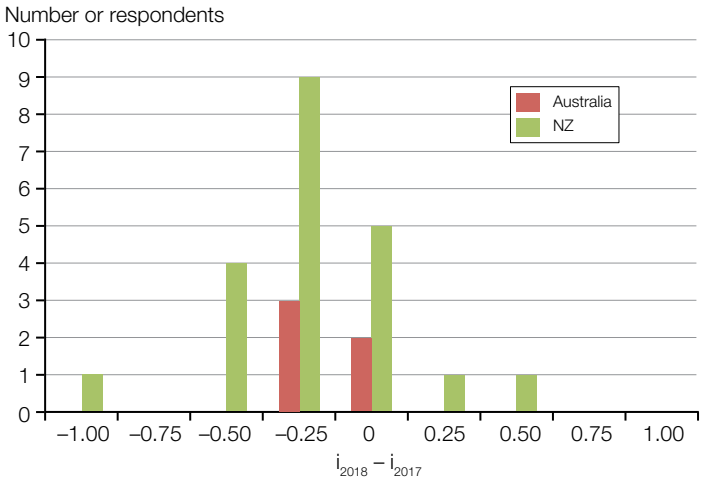

Figure 3: Frequency of change in discount rate between 2017 and 2018 (i2018 – i2017) for individual valuers

Reference

Manley, B. 2017. Discount Rates Used for Forest Valuation – Results of 2017 Survey. New Zealand *Journal of Forestry*, 63(2): 35–43.

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