

Chapter A7 – THE NATURE OF THE MARKETS FOR FORESTS

BACKGROUND

Introduction

Forest structure, functional purpose, proximity to log markets and carbon opportunities largely define the market segment in which a forest will transact. Structure may include size and age-class composition. Functional purpose will include species and silvicultural treatment and recognises that the focus of production may be for solidwood products, for pulp or bioenergy, for carbon sinks, biodiversity or other non-timber values, or a combination of these.

Categories of forest size and age-class attributes often recognised in transactions include:

- small forests nearing maturity;
- small forests comprising young age-classes;
- small to medium sized forests with confined age-class distributions; and
- medium to large forests with a spread of age-classes.

Each category suggests a different approach to their valuation. These are discussed below. Functional purpose can be an overlay to the categories. For example, different approaches may be applicable to a radiata pine forest producing logs for a range of products compared to a eucalypt forest producing logs for pulp or bioenergy.

Small forests, near to maturity

For this class of forest, market value is likely to be based on the currently saleable timber content together with carbon opportunities and liabilities. The standing stock value of the tree crop can be assessed by appraising the standing content by log grade and multiplying the resulting volumes by estimated net stumpage prices.

However, a need to apply further economic analysis is still present. The valuer should not only derive a value for the forest in its current condition (e.g. largely as mature growing stock), but also consider the value if the harvest were to be delayed. In estimating the value of the crop, the optimum economic rotation age needs to be determined. Factors that may be influential are:

- the rate of forest growth (including total volume, volume by log grade, wood quality and carbon stock);
- the availability of harvesting crews and market absorption capability;
- anticipated real movements in log prices and carbon prices;
- prospective movements in harvesting and transport costs;
- the opportunity to earn carbon units and any liability to surrender carbon units on harvest;
- the opportunity cost of occupying the land;
- any other holding costs that may be incurred; and



- the discount rate.

Three broad situations may exist:

- 1) the marginal rate of value growth over the forthcoming period is greater than the nominated discount rate, where there is then an economic motivation for a forest owner to delay harvesting;
- 2) the marginal rate of value growth is the same as the discount rate, where, in terms of economic principles, a forest owner would be indifferent as to the timing of harvest; and
- 3) the marginal rate of value growth is less than the discount rate, in which case it is economically sensible to harvest the crop in the near term.

Small forests, comprised of young age-classes

Small forests of young age are readily replaceable (or nearly so) by planting on adjacent bare land. The market value of the tree crop thus tends to be influenced by the land, planting and any overhead costs, and risk of failure expected for the replacement forest. Such costs can be compounded by an interest rate. The eligibility to earn future carbon units may be an important factor for valuation.

The mutual treatment of tax liability between vendor and purchaser (i.e., apportionment of value between land and tree crop) is likely to be a major valuation factor. For these forests there may be a carbon trading opportunity that also needs to be valued.

Small to medium sized forests, with a confined age class distribution

Features of these forests are:

- *No utilisation in close prospect.* For mid-rotation forests, the merchantable content may be uncertain. For some potential buyers, confidence in the purchase will be influenced by the evident quantity of merchantable material. The liquidity of the tree crop asset is likely limited as value is linked to a buyer who is prepared to wait for the economic maturity of the crop unless there is a carbon trading opportunity.
- *Importance of carbon status.* The eligibility to earn future carbon units may be an important factor for generating cashflows for funding the acquisition of the forest.
- *Mid-rotation forests may not be a bankable proposition.* That is, in the absence of the opportunity to earn carbon units, they may not be recognised by banks as a satisfactory form of collateral for lending – at least not to the level of the indicated crop value. Most banks have two types of requirement that mid-rotation forests may not be able to meet:
 - the time to maturity of the investment; and
 - the capacity to service the debt with regular interest payments.

Clearly, with mid-rotation forests having a confined age-class distribution, neither is likely to be readily practicable unless there is an opportunity to earn carbon. Nor is there any reassurance to a lender that in the event the investment fails, the resource has an immediately realisable stock value. In



order to meet the debt servicing requirements, other sources of income and collateral can assist securing a loan.

- *Taxation issues – limited opportunities for taxation efficiency through offsetting expenditure.* There is an asymmetry in the tax situations of the forest vendor and the purchaser. Under current legislation, the forest vendor is immediately liable to pay tax on the proceeds of the sale. Conversely, the purchaser cannot immediately claim the purchase price as a tax deduction. Instead the purchase value can only be offset against the eventual proceeds of selling the tree crop.

There is a statutory obligation for the seller and buyer to inform the Australian Taxation Office (ATO) or the New Zealand Inland Revenue Department (IRD) of the transaction price and apportion of value between land and trees.

In **Australia**, the sale of land is generally subject to capital gains tax and the tree crop sale is taxed as income. In **New Zealand**, the sale of land does not attract income tax but the sale of the tree crop does.

Medium to large forests, with a spread of age-classes

These forests are typically already in production. Consequently there is information available on realised yields, production costs and revenues. There is generally an intention to regulate yields in order to “smooth” harvest volumes.

THE FOREST VALUER’S APPROACH

Introduction

The forest valuer must:

- identify the potential universe of buyers for the forest that they are valuing;
- exercise discretion in the approach chosen for the varying forest categories.

Forest location can affect buyer interest to a significant degree. For example, a small forest with confined or mature age-classes located in a region with well-established log markets may offer attractive synergistic or strategic benefits to owners of other forests.

The Forest Valuation Standards require the valuer to consider, for all forests, the three most commonly recognised approaches: the sales comparison approach, the income approach, and the cost approach. However, one or more methods may be of low relevance for a specific forest, or alternatively a combination of methods applied under suitable weightings may be most appropriate.

The following guidelines are suggested:

Small forests, near to maturity

It is most likely that, unless there are carbon opportunities or liabilities, a purchaser will offer a price based primarily on standing stock value. In meeting professional responsibilities, however, it is necessary for the forest valuer to consider whether the proposed “maturity” does in fact correspond to economic maturity, i.e., the Forest Valuation Standards require the harvesting strategy (including rotation age) to reflect what an ‘economically rational’ owner would do.



**Small forests,
comprised of
young age-classes**

The market may be strongly influenced by cost with willing vendors' perceptions of value likely 'driven' by their recollection of what they have spent on the forest. In purchase negotiations, this may form a fairly incontrovertible base to the price for the tree crop. There may be more latitude in relation to the accepted return on investment. The cost approach is likely to be relevant for the tree crop component of these forests, with reconciliation to the income approach and any transaction information available. In using the cost approach it will be important to look ahead to transitioning to a discounted approach in order to avoid arbitrary transitions.

The carbon trading opportunity for these forests will typically be valued using the income approach.

**Small to medium
sized forests, with
a confined age-
class distribution**

The income and sales comparison approaches are likely to be most relevant for these forests in valuation of both the tree crop and the carbon trading opportunity. Given the narrow age-class, yield regulation may focus on harvesting close to the optimum economic rotation age taking both the tree crop and carbon into account.

**Medium to large
forests, with a
spread of age-
classes**

The income and sales comparison approaches are likely to be most relevant for these forests. As for all forests, application of the income approach requires an underlying management and harvesting strategy which is realistic for the forest (or tree crop) being valued. This strategy should reflect what an 'economically rational' owner would do taking into account wood supply commitments as well as logistical, marketing, social, political and environmental factors.

The scale and age-class distribution of these forests will require careful development of a yield regulation strategy. This strategy might include constraints to regulate the carbon stock for all or part of the estate.



Revision History

Original Standard

Released in May 1999

Revision in August 2023

Main changes are:

- Updating the features of forests that define the market segment in which a forest will transect.
- Removing the specific size classes for different categories of forests.
- Updating the description of the different market segment and specific valuation issues.
- Noting the importance of the carbon trading opportunity for different market segments.

