New Zealand Institute of Forestry (NZIF)

Te Pūtahi Ngāherehere o Aotearoa Inc.

NZIF Forest Valuation Working Party

Discussion Paper

How to recognise the opportunity cost of land in the valuation of a tree crop.

Proposal for a change to the NZIF Forest Valuation Standards.

Issued June 2007

This Discussion Paper is intended for those involved with forest valuation. It describes the challenges in recognising the cost of land in the valuation of a tree crop and includes a proposal to change Standard B12.1 of the NZIF Forest Valuation Standards.

Comments are invited on the issues raised in this Discussion Paper, particularly the proposed changes to the way that the opportunity cost of land is calculated. Feedback is sought by 31 August 2007.

Comments should be addressed to:

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If possible, respondents should send their comments in electronic form (preferably in Microsoft Word format).

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Scope of Discussion Paper

The purpose of Chapter B12 of the NZIF Forest Valuation Standards (FVS) is "to describe the method for establishing the market value of a tree crop". Standard B12.1 requires:

> *"The market value of a crop of trees shall be derived from transaction evidence where this is available and suitable in terms of reliability, comparability and volume of transactions.*
>
> *"Where transaction evidence is not available, market value shall be established using the Expectation Value approach…"*

When it comes to applying the Expectation Value approach two land tenure situations may be apparent:

- The land beneath the tree crop is rented[1].
- The land is freehold[2]

It is a tenet of economic theory that these two alternatives can be regarded as fundamentally similar. The freehold situation can be thought of as one where a rental is indeed owed by the tree-growing component of the venture for use of the land. It happens that because the tree crop owner and the land owner are one and the same, there is no need for an actual transfer of funds. Although the rent is notional, this jeopardises neither its validity nor its analytical utility. Both situations may therefore be considered as rental systems, but in the first the rent is an actual cost and the second it is notional.

The Forest Valuation Standards (May 1999) are consistent with such rental concepts. Its central recommendation regarding the treatment of land was that regardless of whether

[1] A sub-classification of the rental situation may distinguish such categories as leasehold , forestry right and forest licence. Rental arrangements may involve annual payments, rent deferred to the end of the rotation, rent paid as a lump sum in advance, or combinations of these.

[2] "Freehold" is the generally used terminology in New Zealand. Some other countries may more commonly use the term "fee simple".

there was an actual or notional rental, the derivation of tree crop value should consider a rent based on the Land Expectation Value (LEV).

Under the recommended approach neither the Land Market Value nor Market Rent were to be disregarded. If they differed from the LEV or its equivalent rental then the differential was to be reported.

This Discussion Paper presents a proposal to change the approach. This is primarily because of some practical difficulties with the LEV approach.

Background

Development of the current Standard

Prior to the development of the NZIF Forest Valuation Standards (1999) the commonly demonstrated practice involved applying a land cost based on the Land Market Value (LMV). Two methods were demonstrated; one was referred to as the "land in/land out" approach, while the second involved charging a land rental calculated as a percentage of LMV. The land in/land out approach can be readily applied as an equivalent annual rental. This, it can be demonstrated, is the land value multiplied by the discount rate.

The NZIF Forest Valuation Standards (FVS) were initiated at a time of high log prices, and it was not uncommon for the forestry Land Expectation Value (LEV) to be substantially higher than the LMV. In these circumstances, if either of the "traditional" approaches were applied they resulted in comparatively low land servicing charges. This then led to correspondingly higher tree crop values. The decision to plant a site was enough to capture the land use differential (LEV – LMV) into tree crop value.

In response to this situation the focus of the FVS was to refer instead to the opportunity cost of the land on which the crop is growing. The general rule adopted is that land rental should be based on LEV if ongoing forestry is the "highest and best" land use.

The Forest Valuation Standards in their current form recognise three situations.

- Where ongoing forestry is the individual "highest and best" land use then the opportunity cost of the land is the LEV. Annual land rental is calculated as LEV multiplied by the discount rate.
- Where ongoing forestry is compatible with a combination of land activities that together are "highest and best" then the opportunity cost of the land for tree growing is still the LEV. The excess of the LMV over the LEV can be regarded as the premium the land-owner has paid for the land for non-forestry purposes (e.g. lifestyle, investment, potential capital gain).
- Where forestry is not compatible with the highest and best use of the land then the opportunity cost of the land is LMV. Annual land rental is calculated as LMV multiplied by the discount rate.

Emerging difficulties

In more recent times, forest investment performance has weakened, with declines in log prices and increases in certain costs. Meanwhile land market values have climbed significantly. As a consequence, the LEVs for most forestry projects are less than LMVs. In some cases the LEVs are negative.

The prospect of applying negative LEVs is not viewed with any enthusiasm by those valuing tree crops, and this is unsurprising. At a simple level of rationalisation it is tantamount to a landowner paying a tree crop investor to use their land. This seems inherently unlikely. Taking a step back, and reviewing the situation from first principles, a negative LEV tells us that the forest investment is not capable of earning the selected discount rate. Therefore, even before concerns about the appropriate treatment of land arise, there are grounds for questioning whether there should be an ongoing investment in forestry at all.

There are of course reasons why a forest investor might continue to engage despite the troubling evidence of a negative LEV. An optimistic investor may see opportunities to compress costs and improve forest productivity. There may also be some confidence that future log prices will improve in real terms. Individually or together such measures may turn the LEV positive. They do however require conjecture, and unsubstantiated speculation is not something that valuers embrace.

The LEV relies not only on estimates of prices, productivity and costs. The discount rate is commonly the most influential parameter of all. The prevailing practice in selecting a rate is to refer to Implied Discount Rates (IDR). These are derived from forest transactions. This approach is not without some challenge, as the transaction market has been sporadic, less than populous, and some of the sales have been difficult to interpret.

It is significant that despite the currently poor economic fundamentals for forest investment most of the forest that is harvested in New Zealand each year is still being replanted. This presents a reminder that sales of forests are not the only evidence of forestry investment "transactions". Empirical evidence is also provided by each decision to plant or replant tree crops. The replanting activity may involve a very large number of individual business decisions, occurring each year. The apparent IRRs associated with these provide evidence of returns that are seemingly acceptable, at least to some investors[3].

At the time of writing there appears to be a marked difference between the IDRs demonstrated in forest transactions and the IRRs available from replanting. The most recent survey by Manley in 2005 suggests that the former are in excess of 8% real applied to post-tax cashflows. IRRs for new planting and replanting are more commonly found to

[3] It must be acknowledged that there may be influences favouring the perpetuation of an existing forest. These may include such factors as contractual obligations to replant, a requirement to maintain wood supply to associated processing facilities, or perhaps the high cost of converting the land to an alternative use. While such complications mean that the replanting investment decisions should be treated advisedly, they do not disqualify their role altogether.

lie in the order of 5-6%. There would clearly be a lower incidence of negative LEVs if the latter were to be used.

If credible justifications for using a lower discount rate can be found, these could see more LEVs becoming positive. In the process, though, another disconcerting feature of LEVs is reinforced; this is their pronounced sensitivity to the level of the discount rate. Any available means of either corroborating the LEV, or avoiding it becomes accordingly attractive.

Rentals Based on the LMV

With the LEV representing a source of potential difficulties, a first inclination may be to turn back to an LMV-based alternative.

As previously described, the land-in/land-out approach has historically been viewed as a convenient mechanism. It imposes an equivalent effect to charging the tree crop with an annual rental corresponding to the LMV multiplied by the discount rate. Neither of these factors is particularly safe in the current environment. Practitioners are well aware that discount rate evidence is not precise. Further, land values have been climbing steeply, and as later sections discuss, the basis for land value may not be confined to its operating income potential alone.

The consequences of recently high levels of both implied discount rates and LMVs are that the land in/land out approach has produced a very heavy effective rent burden. This has ironically come at a time when the fundamental performance of forestry investment has been at a low ebb.

For those entities that own the tree crop but rent the land beneath it, the land in/land out approach has in recent times been commonly found to produce anachronistic results. The derived rents are significantly higher than the actual rents.

For those entities who own both the tree crop and the land beneath it, there is some degree of buffering of the heightened rent. The increased land value – the very cause of the higher theoretical rent – provides offset to the reduced tree crop value. Viewed at the *forest* level (i.e tree crop plus land), the overall consequences of the higher land value and correspondingly higher rent may seem more tolerable.

The buffering effect with freehold land might make the situation more acceptable were it not for the reporting requirements now imposed by the new financial reporting standard, NZ IAS 41. This standard relates to biological assets, and most explicitly excludes land value. There is accordingly no means of avoiding the requirement to separately report the land and tree crop components of the forest asset. Further, NZ IAS 41 also requires that the year-on-year change in the tree crop value must be reported in the statement of financial performance. This is a more prominent treatment than previous standards required, and results in greater emphasis on movement in the tree crop value. The upshot is that there is an increased wariness of any procedures that lead to changed

apportionment of value between land and tree crop value and yet are not wholly defensible.

One of the factors leading to the high effective rentals under the land in/land out approach is the discount rate. An apparently simple expedient is to turn to a lower rate. Thus, if discount rates have been of the order of 8.0% real, a rate that provides more credible rental levels might be 5.0%.

The potential difficulty with such an approach is that once such a number is selected it may acquire a certain inertia to change. Once set at 5.0%, for instance, there may be a disinclination to move from this figure. If the land appreciation factors described later in this paper are given weight, then there are reasons why the percentage rate should creep; what is 5.0% this year should perhaps be 4.5% in two years time. However the very manner in which the rental percentages tend to be presented and applied is on the basis that they are relatively stable. To impose this perception, even inadvertently, may be a mistake.

The use of a rental percentage may also invite attempts at rationalisation and justification that are not inherently sound. There have for instance been arguments advanced that because land is a perpetual and durable asset, it is a "safe" investment and does not require as high a rate of return as other contributions to the tree crop investment. The proposition is unfortunately unsustainable in respect of the income-based component of the land's value under a land in/land out concept; i.e. the rate should reflect the risk in the underlying productive enterprise [4].

The conclusion with respect to LMV-based approaches is that they do not offer a convenient solution. The search for alternative approaches needs to look further.

Should crop and land value be separated?

One possible pathway to avoiding the potentially vexed issues of land values is to consider whether tree crop and land values need to be separated at all. It can be argued that as land and trees are inseparable until harvest they cannot and should not be valued as separate entities. With no need for separation, value calculation could be straightforward, as the combined asset value could be based on net cashflows projected in perpetuity. Alternatively, the combined value might be derived from:

- net projected cashflows for the remainder of the current rotation; plus
- a "terminal" value represented by the net present value of the eventual land sale. This would involve discounting the projected realisation from the expected time of sale to the present point in time. Such sale value would recognise the best alternative use for the land and any associated costs of rehabilitation.

[4] A lower rate of return is potentially explicable when the landowner receives an annual rental payment in the hand.

The primary objection to the combined value approach is that in New Zealand the ownership of crop and land are often separate, and the respective parties' interests require distinct identification. A further consideration is that the accounting standard (NZ IAS 41) requires the tree crop asset and the land asset to be separately reported.

Another limitation of this approach is that it ignores case (b) of the FVS. It does not consider the case where ongoing forestry is compatible with some other land uses (e.g. lifestyle, investment, potential capital gain). In this situation, the sum of the value of the crop and the value of land will be greater than the present value of the expected cashflows associated with the forest.

The nature of land

Land has some unique characteristics. It is a scarce resource that has a number of uses, not all of which are mutually exclusive. It provides both value in use and is a store of value. Wilson[5] (2006) refers to these components of value as economic value and intangible value. The economic value of commercial assets "is derived from their ability to generate cash income in the future". Intangible value "is derived from several sources including goodwill, scarcity of assets with similar characteristics, and emotions. The value of rural land arguably has always had a significant intangible value reflected as the price paid above the economic value".

In earlier analysis Wilson[6] (2004) observed that "It is clear that farm land is too expensive if the objective is to get an annual cash return on the investment close to the WACC. Rural land is not too expensive if the purchaser expects (and realises) an increase in revenue and/or an increase in the value of the asset." While "the net cash return on pastoral farming assets have been in the order of 2 to 3 % per annum..", rural land increased in value by 4.4% (real) in the 10 years to December 2003.

Wilson's review of farmland value behaviour leads to a useful conceptual framework. Within this, part of the land's value can be explained as the capitalised value of a future rental stream. This rent, as observed at the beginning of this note, may be an actual rent, or the notional economic rent. For commercial farmland such a rent can be expected to relate to the productive potential of the land. An example expression would be a rent set at $x per stock unit.

There may then be another fraction of land value that the market is prepared to bear. This becomes evident when land transactions occur. This component arises from the expectation that the land's value will continue to appreciate in real terms. Just who holds this expectation and with what conviction is clearly important. The viewpoints of competing land buyers are influential. Given the role of debt in most New Zealand land acquisitions the perceptions of banks may be more important still.

[5] National Bank Rural Report March 2006
[6] National Bank Rural Report March 2004

With the land value now attributed to two components - one supported by income and another by expected appreciation – the process need not stop there. As the earlier quotation identifies, land value may include other less tangible components. Among other things these might arise from aesthetic and spiritual rewards. Several components, then, may contribute to land value.

Highest and Best Use Issues

The Highest and Best Use concept has a long history within appraisal literature. One convenient definition of HBU is:

> *An appraisal term meaning the reasonable, probable, and permissible use that will support the highest present value, as of the effective date of the appraisal.*[7]

In recent times HBU has attracted greater prominence in the international forestry investment arena. Attention has centred on the opportunities to take land out of forestry because other more profitable applications have become evident. The archetypal examples in New Zealand are where plantations in the Central North Island are being replaced with dairy farms.

There are two noteworthy features of the cited definition. One is that it refers to permissible *use,* in the singular. This should not be taken to imply that "use" may not include a combination of activities that are mutually compatible. Thus one candidate for highest and best use might be using the land for grazing activity, while also holding it for capital gain. A rival activity might be using the land for growing a tree crop, while once again simultaneously holding it for long-term capital gain.

The other noteworthy aspect of the definition is the clear expression that the highest present value should be obtainable *at the date* of the appraisal. This distinguishes HBU proper from other capital appreciation that may arise because of some future developments presently unseen.

Compatible and Incompatible Activities

When identifying what land charge a tree crop should have to bear, it becomes important to consider what other activities the tree-growing is potentially precluding. A forest valuer might face the following hypothetical situations:

1. Forestry alone is the HBU and long term land appreciation is negligible.

2. Grazing alone is the HBU and long term land appreciation is negligible.

3. Long term land appreciation is evident and significant, and combined with forestry this represents the HBU.

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[7] Real Property Lexicon Working Group (2001.01.23), cited in the website of the Treasury Board of Canada, http://www.tbs-sct.gc.ca/rpm-gbi/lexicon-lexique

4. Long term land appreciation is evident and significant. Combined with grazing this represents the HBU.

5. Long term land appreciation is evident and significant. Although the subject land is currently occupied by a tree crop, there is the further prospect that an emerging land use (e.g. horticulture, or subdivision to a lifestyle block) may provide a better return than either forestry or broad-acre grazing.

6. Long term land appreciation is evident and significant. The subject land is currently occupied by a tree crop. But for the presence of the trees it could be immediately converted to dairy farming.

7. Forestry is the only permitted land use.

From a forest economics perspective the first case is comparatively straightforward. In a competitive and rational land market, the land market value will reflect what forest investors believe the tree crop can service. Should a perfect market prevail then in this situation LMV should be equivalent to LEV.

In the second case the consequences for forest valuation are also comparatively straightforward. The opportunity cost associated with using the land for growing trees is the cost of denying it to grazing. This opportunity cost is what the tree crop should be required to bear.

Before examining the third case it is worth considering the fourth. Wilson's observations would suggest that this situation, grazing in conjunction with capital appreciation, is widely demonstrated in New Zealand. A tree crop occupying this land can reasonably be required to meet the opportunity cost of the grazing activity, but this is only part of what underpins the land value. Provided that the tree growing does not impinge on the land's long term appreciation behaviour, then all that the tree crop needs to service is the grazing value.

This then provides the model for the third situation – forestry in combination with land appreciation. The tree crop does not have to service that part of the land's value that is attributable to ongoing appreciation; this aspect of the business is already looking after itself.

The fifth situation demonstrates the further issues that may require interpretation. The ongoing real appreciation observed in land values does not necessarily arise from some tangible, identifiable future land use. It may instead be just a general confidence that land availability is limited, and therefore its value will continue to rise as land-using activities become more productive. Equally, however, there may be indications of an alternative emerging HBU. The promise of such opportunity may be sufficiently strong that land buyers are prepared to speculate on it, and the land values arise accordingly. The question then arises as to what land value the tree crop should service?

Once again the test is whether the presence of the tree crop is actually precluding the HBU. If it is a prospective HBU that may not arise until the current tree crop is removed

then all the tree crop should have to bear is the opportunity cost of an immediately available HBU.

The sixth situation is comparatively straightforward. The opportunity cost of the land is using it for dairy farming. It is the returns to the land from dairy farming – whether as a notional or actual rent – that the tree crop should have to bear. This might be a substantially higher rental than the tree-growing normally bears. It conceivably imposes sufficient burden that in younger years of the rotation the tree crop has a negative NPV. It would then be economically rational to remove the tree crop at once, rather than continue with it. A little more complexity may enter the analysis with the need to recognise land conversion cost.

In the seventh situation some external fiat has demanded that the land remain in forestry. There cannot be an opportunity cost arising from an alternative land use, since any such opportunities are precluded. The charge to the tree crop will be the same as in situation three. In valuing the land, the land valuer can be expected to acknowledge the limitations on its use.

Reconciling LEV with HBU

As can be seen from the examples, an important consideration is the compatibility of the potential land activities for a particular area of land, i.e. all feasible active and passive activities inclusive of the highest and best activity. If tree-growing is not precluding another compatible land activity, then it should not have to pay that other activity's share of the economic rent.

It is not that LEV is an incorrect technique, rather it is the only way that land value in a single application can be analysed. The situation of multiple, compatible land activities requires a more complex analysis than a LEV analysis applied to single, discrete and mutually exclusive applications. Analysis should recognise the economic effects of all active and passive land activities and commencement and exit strategies.

Where the LEV of an activity is less than the LMV, the difference can only be due to other active (compatible) or passive (usually land holding) activities that the land market is recognising. To the extent that the LEV concept can be extended to the other activities, then the collective LEVs of all activities must axiomatically add up to the LMV.

The Target of Revision of the FVS

There is a need to review the FVS so that the cost of land is dealt with in a way that

- Has a theoretical basis.
- Is practical.
- Is consistent for different land tenures.
- Handles different log price (high/low) situations.
- Separates out the cost of land for forestry (i.e. value in use) from the cost incurred in holding land because of other perceived benefits (i.e. store of value).

The Proposed Approach

The value of a tree crop should be calculated using a land rental that is calculated as the opportunity cost of occupying the land with the current crop. This is no different from the principle adopted in the FVS, but what is proposed is a change in the practice.

It is proposed that ***the opportunity cost should be calculated as the market-based land rental.*** The estimation of a market-based land rental requires consideration of the attributes of the specific piece of land and its alternative land-uses.

Market rental is the rental that might be expected to be paid:

- on the date of the valuation;
- between a willing lessee and a willing lessor;
- in an arm's length transaction;
- after proper marketing;
- wherein the parties had acted knowledgeably, prudently and without compulsion.

A way in which the question can be most conveniently framed is, "What rental would result if land, in cutover state, was offered to the market?"

Draft of revised standard

STANDARD B12.1 Method of valuation	The market value of a crop of trees shall be derived from transaction evidence where this is available and suitable for the purpose in terms of reliability, comparability and volume of transactions. Where transaction evidence is not available, market value shall be established using the Expectation Value approach with crop value calculated as the present value of cashflows arising from the crop, the opportunity cost of land being included by a notional rent set equal to market rental. Where the valuation requires reporting of a land value it shall be reported as LMV. Where the Expectation Value approach is used, the discount rate shall be determined with reference to transaction information. The Expectation Value approach can be either estate-based or stand-based. However, in both cases, there needs to be an underlying management and harvesting strategy which is realistic for the forest being valued. This strategy should reflect what an "economically rational" owner would do taking into account wood supply commitments and logistical, marketing, social, political and environmental factors. The same approach shall be used for all land tenures to estimate Crop Value. In all cases the opportunity cost of land should be included using market rental. If the land is leased there may be a Land Tenure Differential when the actual land rental differs from the fair market rental. This Land Tenure Differential shall be reported separately from Crop Value as the Lessee's interest in the land or the Lessor's interest in the crop (as the case may be).

Rent and Tax

The land rental should be treated as being tax deductible when valuation is based on after-tax cashflows. It is assumed that the parties in the rental market set rentals with knowledge of the tax deductibility.

Leasehold or CFL land

On leasehold or CFL land the actual rentals paid should form the starting point in determining the market-based land rental. However if these rentals are materially different from market rentals then separate analysis is required to calculate:

Crop value (market rentals) = Crop value (actual rentals) ± Land tenure differential

Where the land tenure differential represents the Lessee's interest in the land or the Lessor's interest in the crop.

Discussion

Practical issues

The challenge with the proposed approach is the limited quantity of "pure" market evidence that is available.

In recent years a substantial proportion of the rentals agreed in New Zealand forestry have not been struck at the outset of a rotation. They have instead been set at the time that existing tree crops have been sold. In these circumstances, the purchasers of the tree crop have had little opportunity (and arguably not a strong motivation) to negotiate the rental levels. They have instead factored a rental set by the vendor into the price they have been prepared to offer for the tree crop.

With ongoing management of the purchased forests, the new owners have become increasingly mindful of the rental levels. Part of the extra attention arises as the current rotation is replanted. At this stage the matter of its affordability over the whole forthcoming rotation is most apparent.

In respect of the Crown Forest Licences (CFLs), the licensees took initial reassurance in the review mechanism. This sees "periodic" reviews of the rent at three year intervals and "general" reviews of the rental every nine years. Some of the CFL fees have been the subject of protracted and vigorous arbitration. It might be argued that this process should have led to rentals that were closer to market levels. The opinions of the protagonists have varied on this subject. Most would concede that the arbitration exercises have continued to raise questions at a faster rate than they have provided answers.

The perceived problems with the CFLs are not alleviated by the other cases of rental tenure. There are a large number of forestry leases throughout the country, but many of these have involved setting a rental mechanism at the outset of the venture and then making adjustments using indices. In other cases, payment for the use of the land is as a deferred rent, represented in a share of stumpage.

Despite the impurities, the use of market rentals does offer sufficient attraction that it is recommended as the most appropriate approach. Its advantages are:

- In principle it only reflects the commercial value a tenant is able to obtain from the land. Other simultaneous gains enjoyed by the landlord (such as land appreciation) are not included in the rent.
- As a "market rent" the charge need not be any set percentage of land market value.
- The rent is capable of reflecting and responding to the market's perception of forest profitability, and investors' expectations of returns on investment.
- Unlike the LEV, the rent is less prone to hypersensitive responses to the discount rate or log prices.

Augmenting the Rental Database

The scarcity of pure market evidence for forest land rentals does raise the question of whether other rental evidence has any possible relevance. It is suggested that grazing land rentals can usefully be introduced as a basis for comparison, provided that they are kept distinctly identified. They serve as a useful reference point on the basis that:

- They are empirical evidence.
- In New Zealand, broad-acre grazing activity is arguably the closest counterpart to forestry in terms of economic performance. If the rent levels were to be substantially different it would suggest that something was awry in the assembled evidence.
- Grazing rents can be expected to show some broadly similar behaviour to forest land rents in respect of several key site characteristics, including fertility and terrain.

If used to augment the forest land rental evidence, grazing rentals need to be adjusted to reflect land in a cutover state. Adjustments need to be made for factors such as:

- the presence of stumps,
- improvements,
- the rental term.

The most appropriate grazing land rentals would be those of a long duration. In contrast, if grazing is being presented as a potential HBU, then whatever tenure term provides the highest returns can form a legitimate comparison.

Revisiting Compatibility

Previous discussion has raised the prospect that forestry may be like grazing activity, and may be carried out without compromising long-term capital appreciation. To proud foresters, such assumptions might appear eminently defensible – indeed, there is more prospect that the land under forest will become available to future generations with more topsoil intact than would be the case after decades of grazing.

New Zealand's history, however has frequently demonstrated that prevailing land use policy and forestry may be uncomfortable bedfellows. At the time of writing both carbon sequestration issues and proposals to contain nitrate runoff have led to the suggestion that once the land has been planted in forest there may be regulatory impediments to any future conversion back to a deforested state. Such restrictions could lead to the land being assigned a lower value.

The very circumstances of a forest valuation suggest that a tree crop is already present. If a replanting obligation has been introduced then there is no avoiding it and the land is committed to an ongoing forestry use. The appropriate land charge should be based on the rental that a prudent forestry lessee would be prepared to pay (as in the earlier Situation 7). Other components of the land's value, such as those based on expectations of capital appreciation will warrant careful attention. Will the land be capable of attracting full market value if there are constraints on its future use? These limit the range of potential HBUs that might apply. It will fall to the land valuer to quantify the effect of such constraints.

Case Law

The following are some key definitions provided by case law that are relevant to the estimation of market rental. A more comprehensive account of case law examples is provided in Appendix 1.

The Market Rent:
"calls for the application of the familiar willing buyer/willing seller test. It requires the Valuers to enter the world of notional markets, populated by hypothetical Lessors and Lessees and assumes a notional letting on the same terms as the subject lease except for the amount of the rent." [Sextant Holdings: Richardson J in Court of Appeal judgment dated March 1993].

Prudent lessee test:
"the fair rent is what the lessee can reasonably be expected to offer, not what the lessor would like to receive". [Granadilla Ltd vs J G Berben: Blanchard J in Court of Appeal judgment dated March 1999].

Market evidence:
"the rent that would be agreed between reasonable parties, embodies the same idea as and is indeed a manifestation of the familiar willing vendor/willing purchaser test. The question is what figure would notionally be agreed upon by the parties, acting freely and adequately informed. Figures fixed by arbitration for rent reviews as between captive parties are not necessarily a reliable guide, since they do not represent the unfettered play of market forces, but rather the arbitrator's assessment (assuming that he has applied himself to the task correctly) of what market forces should produce. It is only a freely negotiated rent on a new letting that can confidently be taken to be truly comparable, providing of course that there are also sufficient similarities in site and otherwise." [Modick RC Ltd vs Mahoney: Cooke P in Court of Appeal judgment dated June 1991].

Highest and Best Use:
"Property is to be valued and rent to be set not merely by reference to the use to which it is being put at the time, but also by reference to the uses to which it is reasonably capable of being put in the future." [Sextant Holdings: Richardson J in Court of Appeal judgment dated March 1993].

Worked example

The following page provides an example of using the land rental approach in valuing a tree crop.

The example highlights the need for the forest valuer, in determining the market rental, to consult with the land valuer to ensure that there is consistency in the assessment of prevailing rentals and the determination of land market value.

Example

Assumptions	
[1] Assessment of market value of land by a Registered land valuer	$2500/ha
[2] Assessment of prevailing rentals for the same land	$110/ha/yr
[3] Discount rate	9.0%
[4] NPV of the tree crop, with the cashflows incorporating the rental	$7455/ha

Proposed report format		
	$/ha	$/ha
Tree crop value		7455
Land Value		
[5] Attributable to revenue earning activity	1222	
[6] Attributable to real capital appreciation expectations and other less tangible factors	1278	
		2500
[7] Forest Value		9955

Notes

[1] For illustrative purposes, it is assumed in this case that the land is equally attractive to either graziers or forest investors. In valuing the land the Registered Valuer can therefore turn with confidence to prevailing market evidence from recent transactions

[2] This assessment should ideally involve the input and endorsement of the Registered Valuer. This should then ensure that the professionals are talking in common terms.

[3] The discount rate is the Forester Valuer's assessment, based on such sources as IDRs and WACC/CAPM analysis.

[4] This value is obtained by deriving a projected net cashflow for the balance of the current rotation. The cashflow includes annual rental at the agreed level.

[5] This is the straightforward capitalisation of the rental, obtained by dividing the annual rental by the discount rate.

[6] This amount is obtained as the difference between the land market value, and the value attributable to revenue earning activity. Note that there is no expressed implication as to what discount rate might be for deriving the present value of the future anticipated gains. Nor is there any attempt to try to distinguish the value attributable to expectations of appreciation, and the value arising for other less tangible reasons (spiritual, amenity, recreational, strategic, etc)

[7] There might be some understandable preference to express this as Enterprise Value. This would provide a means of confirming that the combined value of the tree crop and land assets arises from the simultaneous business operations of at least two different but compatible activities - these are the operation of a commercial forest and the holding of the land for real capital appreciation.

APPENDIX 1

CASE LAW

(collated by Hugh Reynolds)

Sextant Holdings

This Court of Appeal judgment is dated March 1993. It arose from an appeal against the High Court decision relating to the fixing of "the fair annual rental of the land" while disregarding the value of any improvements on the land. In his award the Umpire concluded that the applicable test was what a prudent lessee would give as ground rent of the land for the second five-year term. The Court of Appeal upheld the award.

Richardson J held

The Market Rent: "calls for the application of the familiar willing buyer/willing seller test. It requires the Valuers to enter the world of notional markets, populated by hypothetical Lessors and Lessees and assumes a notional letting on the same terms as the subject lease except for the amount of the rent."

Highest and Best Use: "Property is to be valued and rent to be set not merely by reference to the use to which it is being put at the time, but also by reference to the uses to which it is reasonably capable of being put in the future. That is encapsulated in the highest and best use test adopted by the Umpire."

In clarifying the Prudent Lessee test Richardson J stated "like the hypothetical willing purchaser, the notional prudent Lessee is assumed to be a person of reasonable prudence who has informed himself or herself with regard to all the relevant facts affecting the property including its potentialities."

McKay J further stated "I do not regard the 'prudent Lessee' test as differing from the 'willing but not anxious Lessor and Lessee' test, but in either case it is a notional Lessee who must be considered, not the particular Lessee at the relevant date."

Modick RC Ltd v Mahoney

This Court of Appeal judgment dated June 1991 addressed a number of issues considered to be relevant and to be taken into account in the fixing of ground rentals. Evidence brought before the court indicated the Appellant's lease restricted the use of the premise to motor vehicle dealing and at the relevant date the industry had undergone change, while there were no freely negotiated rentals for new leases of premises for motor vehicle dealing.

Cooke P held

Market Evidence: "the rent that would be agreed between reasonable parties, embodies the same idea as and is indeed a manifestation of the familiar willing vendor/willing purchaser

test. The question is what figure would notionally be agreed upon by the parties, acting freely and adequately informed. Figures fixed by arbitration for rent reviews as between captive parties are not necessarily a reliable guide, since they do not represent the unfettered play of market forces, but rather the arbitrator's assessment (assuming that he has applied himself to the task correctly) of what market forces should produce. It is only a freely negotiated rent on a new letting that can confidently be taken to be truly comparable, providing of course that there are also sufficient similarities in site and otherwise."

Affordability: "so-called "market" rents arrived at on a basis which puts the premises beyond the economic reach of reasonable tenants would of course, not be true market rents. I am not saying that such is the case here, only that the matter requires consideration by the arbitrator. In the present economic climate the point may be of some general importance."

Market Rent: "The arbitrator could take the view that a reasonable landlord would require and a reasonable tenant would pay a rent commensurate with optimum use of the premises for a motor vehicle dealing business. In theory that would be a market rent. The tenant would not be entitled to a lower rent if, for instance, it had organised its business in an unprofitable way or accepted an unfavourable franchise. …The question must be what rent should fairly be paid for the premises during the relevant period by a reasonable motor vehicle dealer. Presumably a reasonable motor vehicle dealer would give prominent regard to potential profitability."

Profitability/Economic Viability: "It is conceivable that there is enough evidence of truly comparable transactions to enable the proper rent to be arrived at with sufficient confidence without any consideration of the tenant's accounts. If so, it would be proper for the arbitrator to find that reasonable parties would go no further. But, in the light of the evidence and the questions asked by the arbitrator of the Court, I think that the tenant is entitled to the opportunity of contending before the arbitrator that this case is not in that category.

… Each case must turn on its own facts and there certainly should be no general practice of requiring accounts. But, in cases where there is real doubt as to whether a fair economic rent can otherwise be ascertained, such accounts are likely to be relevant. It will be for the Arbitrator to decide whether or not this is one of those cases."

Granadilla Ltd v J G Berben

Paragraph 16 of the Crowns counter notice states "The Crown must earn a return which relates to the value of the asset base." And then concludes "the Crown had a fiduciary duty to maximise the return and ensure that it related to the current value of the land."

In this Court of Appeal judgment, dated March 1999, Blanchard J traversed a number of earlier decisions reinforcing the prudent lessee rule.

In his judgment he referred to Ziman v Auckland Grammar School Board 1929 in which it was said "Importantly, the question is not so much what rental would give the lessor proper interest upon the value of the land but, rather what would a prudent lessee give for the land for the term and subject to the conditions of the lease". He also stated "Accordingly, the valuer is to be concerned only with matters which would affect the mind and ultimately the judgment of the prudent lessee in making an offer of rental to the lessor… They include of

course a consideration of the use to which the lessee may put the premise consistently with any restrictions in the lease or the District Plan. Looking at the matter from the hypothetical willing but not over anxious lessor perspective, it is what the partly can reasonably expect to be offered which must be assessed, not what the party would like to receive". This sentiment was reinforced later in the judgment when Blanchard J stated "We repeat that the fair rent is what the lessee can reasonably be expected to offer, not what the lessor would like to received."

In meeting this test consideration must be given to comparable new open market lettings. Although a fair return on capital may bear little or no relationship to the market rent, in the absence of comparable new lettings in fixing a market rate the valuer may adopt other approaches which accord with established valuation practices. This includes the traditional method of applying a market rate to the underlying land value.