

# SUMMATION AND COMMENTARY: FORESTRY AS A BUSINESS IN NEW ZEALAND

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I should like to begin by offering congratulations on what must be rated as an excellent meeting. The discussions have been open, frank, enthusiastic and actively participated in by the audience. One usually hopes to achieve this in conducting a professional meeting by the panel approach, but it is a goal I have seldom seen achieved.

I do not intend to undertake a straightforward summary of this meeting. In the first place, I do not think that is what was intended when I was invited to take on this assignment. Secondly, far too much ground has been covered for a reasonably complete résumé to be possible. Accordingly, I plan to concentrate on giving my impressions as an outsider on the status of forestry as a business in New Zealand and also, hopefully, I shall be able to clear up a few points on which I sense there has been some degree of confusion throughout the sessions. Originally, I undertook to prepare parts of this talk without the advantage of advanced papers. However, the very first panel on Wednesday quickly invalidated those preparations so I am afraid this will be largely an impromptu effort.

## THE NEW FOREST ECONOMICS

Before launching directly into the subject at hand, I should like to clarify what appears to be a common mistaken impression as to what constitutes modern forest economics. Nowadays, it is far more than the Faustmann formula and the manipulation of forestry budgets using compound interest techniques. Modern forest economics, like agricultural economics, is as broad as the whole field of economics itself. Forest economics is not a special brand of economics. Instead, it is the application of the whole field of economics, including business administration, accountancy and operations research, to the economic problems of forestry.

The basic reason for this broad approach is well worth remembering. As an economic activity, forestry cannot take place in a vacuum but only as an integral part of the general economic activity of a nation or of the world. Very often early forest economists and forest managers appear to have overlooked this simple fact, either unknowingly, or perhaps as a result of wishful thinking. Today, it seems fairly obvious that the most restrictive forces likely to come to bear on the forestry firm will originate in the general economy. Moreover, these forces are likely to be of more importance to the profit position of the forest business than what happens in the forest economy alone. It thus behoves the modern forest business manager to understand the general economy in addition to knowing how to operate his own shop efficiently.

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In the United States, there is an overwhelming movement under way in the business world to make use of the modern tools of economic analysis. Most businesses of any size, including forestry firms, have found they can no longer afford to run the risks of guiding their operations on the basis of experience and intuition. This has moved some universities having forestry programmes to establish postgraduate offerings in forestry business patterned after the efforts pioneered several years ago by our leading engineering schools. Essentially, these efforts have involved a hybridization of economics or business and technology. It clearly indicates the complex nature of the problems of guiding the modern business firm.

## ECONOMICS AND BUSINESS COMPARED

Now turning closer to the heart of my assignment, let us have a look at some terminology. A leading dictionary lists the following synonyms for the word "business": Industry, commerce and trade. It goes on to point out that business is usually a broader term than any of these synonyms but that it is often used specifically to designate the activities of those engaged in the purchase or sale of commodities or related financial matters. The terms and approaches of business and economics are often confused, so perhaps it should be pointed out that business constitutes a large segment of all economic activity but is properly viewed as being more restricted than economics. The economics of the firm and industry is that phase of economics which is most specifically concerned with business. The total field of economics, in contrast, devotes a great deal of attention to problems of national income and income distribution. Thereby, the economist is led to the study of such topics as international trade, monetary and fiscal policy, and national economic growth. This, of course, does not mean to imply that business is not concerned to some extent with the same topics. Presumably, however, the concern held by businessmen for such topics is largely from the point of view of their own self-interests. For example, business people are most likely to be interested in national income from the point of view of markets for their products, fiscal policy from the standpoint of probable impact on financing costs, economic growth from its influence on the value of business assets, etc. This, in turn, does not mean to imply that business people seldom assume community or social responsibility, for quite the opposite trend may be observed throughout the world today.

The one thing that truly characterizes business as a form of economic activity throughout the capitalistic western world is the profit motive. Most of economics, for example, is predicated upon the assumption that the behaviour of the firm, whether it be a corporation or an individual, can be explained by its efforts toward profit maximization. There is no inference here, I hasten to add, that the profit maximization motive is either "good" or "bad". Such is not a question for objective economic analysts—it is a question for moralists. But I would be remiss if I did not admit that the universality of the profit motive has been debated to some extent by professional economists. However, few of the challenges to this basic motivational force have stood up over time or have enjoyed wide acceptance among economists. As a

matter of fact, it is safe to say that, if it is to survive, a business must be operated profitably in the long run in relation to other such activities in the economy.

The above arguments tend to be borne out by business history and economic theory. Business history indicates that the firm must grow or at least continue to modernize in order to succeed. Economic theory explains that, in order to grow or modernize, the firm must continue to attract capital. In order to be able to continue to attract capital, the firm must not only show a positive profit, it must show a competitive rate of profit measured by one of the several acceptable profit criteria.

Judging from statements made during this symposium, the above contentions have been generally accepted, though not totally. Acceptance, however, has been general enough for one to assert that this meeting has never basically questioned the concept of forestry as a business. Thus, essentially, this meeting has been concerned with a search for avenues by which the forestry business might improve its long-run competitive position.

Perhaps by recalling for you the difference between implicit and explicit interest as a cost in the practice of forestry, I can clarify a point which appears to have been responsible for more than one breakdown in communications during these sessions. Interest, you will recall, can be a matter of contractual obligation, as is usually the case in the business world, or it can be considered as an opportunity cost—*i.e.*, without actually being paid, as is the case in economics. These differences separate accounting profit on the one hand, which takes into account only costs which are actually met, plus allowable commitments and economic profit on the other hand, which is cognizant of opportunity earnings foregone. The argument often put forth by forest economists to the effect that the profitability of forestry is unaffected by increases in stumpage values is based on the assumption of opportunity costs. That is to say, it is assumed that the opportunity cost of holding timber growing stock is the most significant cost in forestry and that such costs, determined by the owner's alternative rate, rise and fall directly with ups and downs in stumpage values.

The usual measures of business profit are based on accountancy practices and, as Mr Ross pointed out, these practices are largely established by law. The common measures of business profit are the balance sheet or the profit and loss statement. There are various versions of these, depending on how actual historical costs are treated and how assets are valued. Economic analysis, on the other hand, makes use of several somewhat different profit criteria. These include the internal rate of return, the present worth and the benefit-cost ratio. The first two of these are probably the most common to foresters since both can be arrived at via the Faustmann formula. And we were reminded that present worth amounts to nothing more than the discounted net cash flows that are anticipated. We were also reminded of the fact that determining the internal rate of return can have an ambiguous solution. But perhaps it should be added that a benefit-cost ratio amounts to nothing more than the present worth per dollar of invested capital required to achieve benefits which may include extra-market as well as market values.

An important point I should like to get across is that, as guides to decision making, the economic profit criteria, including the use of compound interest, are not inconsistent with ordinary measures of business profit. That is to say, if the economic profit criteria are used as guides to decision making in the day-to-day operation of the forestry firm, the firm will be led to a higher profit position as measured by standard accountancy procedures. As a footnote to this discussion of the differences between accounting and economic measures of profit, it might be observed that herein lies the explanation for the fact that forestry business firms find it to their liking to finance forestry expansion activity through the profit plough-back mechanism.

## VALUATION OF STUMPAGE AND OTHER RETURNS

There has been considerable discussion in forestry circles regarding the merits of the cost of production versus the residual value approach to stumpage valuation. Economic theory tells us that in the long run all of the costs of any economic activity must be exceeded by returns. Given this axiom, one might ask why there is any question regarding the proper approach to stumpage valuation. The answer, of course, lies in the fact that a large share of the timber on the world market is derived from natural forests which have been produced at virtually no cost to man except for rather negligible holding costs. Thus, the residual value approach, which begins near the consumer where a market price has been established and involves successive subtractions of accumulated costs back toward the raw material source, is accepted as a valid method for valuing many extractable natural resources.

Given the extent of the debate on the proper worth of timber stumpage, I am surprised that the old standby terms "buyer's value" and "seller's value" have not been put forth. You will recall that the seller tends to set a price which exceeds all of his costs of production, including unwise expenditures, sufficient to leave him with a satisfactory profit. The buyer, on the other hand, tends to offer a price in accordance with the value of the service that the commodity is capable of performing for him. Note here the reference to the service the commodity is capable of rendering rather than to some inherent value in the commodity *per se*. It is important to keep this simple principle in mind because we are often inclined to forget that it is the service that a product is capable of rendering which is sought by the consumer rather than the product itself. The market price that is finally arrived at, however, is one that is established as the result of successive compromises on the part of both buyer and seller, with the one in the poorest bargaining position being forced to make the most concessions.

Here in New Zealand you are rightly concerned about the competitive world prices for timber products, particularly for stumpage and sawn timber since these usually offer the best short-run opportunities for increasing foreign earnings from timber products. In the case of sawn products, I would like to suggest that you keep in mind that capturing a larger share of the world market may prove to be quite a difficult feat since it will often require hurdling established tariff barriers and the invasion of non-expand-

ing markets already being served by established capital in the form of sawmills, logging transport systems, etc. Also, I would like to remind you that, in meeting world competition in these product arenas, you are likely to come face-to-face with the non-rational market tactics of the Eastern bloc countries. In the case of natural resource derived commodities, there have been instances where such nations have disregarded production costs in favour of political considerations in establishing asking prices to foreign buyers.

In regard to project evaluation, it has been suggested several times during the course of this meeting that extra-market values should be given greater consideration in determining the merits of forest development undertakings here in New Zealand. Note that I have used the term *extra-market value* in preference to the more commonly used term, *intangible value*. I prefer the former term to the latter since it emphasizes the fact that in such situations we are talking about true economic values whose exchange occurs outside the normal market channels of trade; hence an ordinary monetary value is not established.

Of course, it is legitimate to consider extra-market values in connection with forestry development projects in New Zealand as elsewhere, but it can be a ticklish proposition. First, one should keep in mind that extra-market values are just as likely to require the investment of scarce capital to produce them as ordinary market commodities. Perhaps it would be easy to justify such investments if they played a significant role in attracting tourists from overseas by adding to the supply of outdoor amenities. However, in my judgement this possibility would be rather remote when one considers that New Zealand already has quite an abundant supply of attractive scenery and outdoor recreation areas. Of course, the basic danger in bringing extra-market considerations into otherwise sound benefit-cost analyses is that they may be overvalued and thereby open an avenue through which uneconomic projects might be justified.

## RETURNS EXPECTED BY INDIVIDUAL FOREST INVESTORS

A great deal of time was spent discussing the prospective profitability of forest investments, a topic which proved to be inseparable from the objective of forest ownership. The discussions seemed to bring out what appears to be a well-established fact in the forest industry—namely, the rate of return on invested capital is lower in timber growing than it is in timber processing. In this regard it may be of interest to note the business strategy of most vertically integrated forestry firms in the U.S. who readily admit that their investments in land tend to dilute the rate of return on all of the firm's invested capital. Take the situation in the Southeast, for example, where millions of acres of forest are in industrial ownership. Here the firms have the option of buying all of their wood requirements on the open market with no investment in land or they can grow all of it at a slightly lower unit cost, even allowing for the opportunity costs on capital. Though fully recognizing that the rate of return on capital in the forestry enterprise alone is not entirely competitive with that in processing, these firms nevertheless plan to grow around 60 to 70% of their future timber requirements. A penetrating discussion as to all

of the implications of this strategy would require many days, thus I would like to suggest it as a possible topic for a future meeting.

Your discussions have reminded me of another interesting point concerning the profitability of forestry investments which I chanced upon recently among unpublished records. These were long-term records from scores of small forest properties in the United States and this is essentially the story they told: Profits from forest ownership tend to be maximized by those who minimize early investments in new or recently established forests. Though this is contrary to the idealized forest management we prefer to envisage, it is certainly consistent with the exponential climb of the compound interest curve.

It was not surprising that the discussions concerning the rate of return on forestry investments finally got around to that inevitable question of forestry versus agricultural profitability. Again, days could be spent discussing the subject so perhaps little more can be done in this summary than to point to some often overlooked considerations on this question. In that regard it seems worth noting that, if one is to make a fair comparison, it is essential to separate, in so far as possible, those returns which are attributable to specific factors of production such as land, labour and capital. In the case of forestry, for example, one ordinarily deals with returns attributable to land and capital. On the other hand, profitability appraisals of agriculture usually involve returns due to management and possibly some labour inputs as well, that are supplied by the manager in addition to those returns due to land and capital. In such circumstances, if one were to perform an analysis based on the assumption that the returns in both instances are attributable to land and capital inputs only, agriculture could be expected to show up more favourably than forestry.

## FOREST SIZE AND LOCATION

The discussion on forest size and location centred more on size than it did on location. Possibly, however, it was implicitly assumed that the outcome of the size question would largely determine whether or not there were locational problems to consider. That is to say, if the decision was to the effect that existing forests should be expanded to the exclusion of the establishment of new forests, the locational question would be resolved automatically.

The discussions on size reminded me of those I have often heard in agricultural economics regarding the merits of the small family farm and those debates among general economists regarding the advantages of small firms characteristic of perfect competition. Since most of you agreed, though somewhat reluctantly in a few cases, that there are enormous economies of scale in forestry, it seems to boil down to this question: What is the cost of sacrificing efficiency in order to achieve a philosophical fundamentalistic goal? Economists ordinarily do not attempt to answer such questions directly. Instead, they simply try to point out the alternatives and estimate the costs of selecting one goal versus the other.

But perhaps there is a more immediate point concerning the matter of size which I do not think has been emphasized sufficiently



during these sessions. I have in mind the almost indisputable contention that large firms have a distinct advantage in competing for markets, particularly overseas markets. The recent history of business activity throughout the world will certainly confirm this contention.

## THE PROPER ROLE OF GOVERNMENT IN FORESTRY

The proper role of government in any area of economic activity is an age-old question in the western capitalistic world. The arguments put forth in these discussions indicate a general willingness to accept some degree of government activity in forestry. This was borne out in these discussions by citations from the history of government in forestry in New Zealand and by Mr Ross's assertion that business and government co-operation is an absolute necessity.

We may also be able to get a little help on this somewhat emotional question by considering what appear to be world-wide standards of acceptance for government participation in general economic activity. For example, there is general acceptance that government should do research for industries which are too fragmented for individual firms within the industry to undertake their own research. Such activity appears to be particularly welcomed if the research stands to contribute to the export potential of the fragmented industry or to general welfare as in, for instance, those situations where a great many individuals are involved in the fragmented industry. Agriculture would be a good example of such an industry.

In most countries there also seems to be general agreement that government should engage directly in, or underwrite, desirable high risk ventures in order to prove their feasibility for private enterprise. An example of such an activity would be the field of atomic energy. Once undertaken, however, such activity often raises many additional questions. For example, should government undertake to demonstrate economic feasibility as well as to prove physical feasibility? Once government has proven feasibility, should it withdraw totally from the demonstrated activity and if so how should it go about doing so?

These are profound questions which may never be answered in our time, so perhaps there are more immediate questions concerning the appropriate role of government in forestry that warrant attention. One such question, which I think was answered during the course of these discussions, concerns the treatment of overhead costs ordinarily borne by government. It was noted that in national planning it is often forgotten that government frequently sustains large overhead costs which thereby permit the operation of many areas of private enterprise. However, since this overhead is usually supplied without regard to a specific individual line of economic activity, it is not appropriate to allocate its costs arbitrarily to all of the individual activities which share the benefits. Accordingly, in terms of the individual activity, it may be valid to ignore the overhead costs entirely. An obvious example of such a situation would be the forest which is being established in an area which has a good public road system and which is justified on the basis of other needs.

## CONCLUSION

The weighing of public opinion by an outsider is always subject to great error, even when one restricts his sampling to a narrow sector of society. However, in this case, the conclusions reached do not seem to be in jeopardy.

From the front and financial pages of your daily newspapers, as well as from the climate of this meeting, plus what I have observed in the way of forestry operations throughout the country, it seems quite evident that forestry as a commercial economic activity truly has come of age in New Zealand. Forestry has achieved the image of a business in the eyes of the public and, more importantly, among foresters too. The fact that you have convinced yourselves that forestry is a business will, in the long run, prove to be the most important factor in maintaining the vigour of commercial forestry in this country.

As I see it, the biggest lift to the image of forestry as a business in New Zealand has come from its actual and prospective earnings of foreign exchange. Moreover, from the press and elsewhere, one gets the impression that New Zealand investors and their advisers now view forestry and its associated products processing as one of your top investment opportunities. But, ironic as it may appear, I strongly suspect that the forest investments made in the '20s and early '30s which are now contributing substantially to New Zealand's exports, have not yielded a particularly outstanding return on invested capital. However, this is not the time to explore such a supposition and its many implications; but if at all true, it is an aspect of the economics of forestry which warrants a great deal of thought and discussion in the future.

The choice of the theme of this meeting and the interest that has been shown in the topics discussed clearly indicate your realization of the necessity of subjecting most of New Zealand's forestry activities to harsh objective economic analysis. I view this as part of the maturing process inherent in the acceptance of forestry as a business. But it is my duty to warn you that complete acceptance of such a concept is not likely to be achieved easily—many pitfalls are likely to be encountered in the process. I believe that two of these are worth calling to your attention.

First, in any industry, there is the danger that the drive toward technical perfection may, and in fact often does, supersede the profit maximization goal which is so vital to business success. Fortunately, the two goals, the technical ideal and the profit maximization objective, are often coincident and hence management often unwittingly makes the wise economic decision. But in forestry, the two goals are likely to be quite divergent, thus requiring astute management to avoid economic disaster.

The second danger is one which is even more peculiar to forestry. I am thinking of the possibility that the conservation motive, based essentially on what might be termed the conservative ethic, will result in a divergent goal which may also supersede the profit maximization goal. In both of these dangers, the burden of compromise must rest with the man with the technical forestry training, since he alone realizes what is physically feasible. In such situations, no other member of the management team can substitute his judgement for that of the forester—thus forestry business



success may well hinge on the forester's ability to see both the technical and business sides of the picture.

I would like to close by leaving with you a final word of caution regarding the application of economic analysis to forestry. I would like to do so by offering this brief and loose quotation from Professor Paul Samuelson, one of the world's most respected economists and author of the most popular textbook ever written in the field of economics. In the introduction to his popular text, Samuelson warned that, in economics, commonsense often proves to be nonsense. That is to say, the novice is often trapped by the fact that everyone is inclined, by virtue of everyday experience, to think he knows something about economic analysis.