

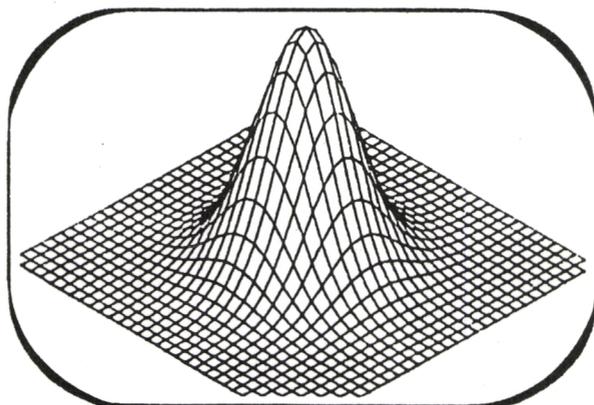
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FOREST TAXATION AND ROUNDWOOD SUPPLY IN FINLAND

Raimo Rauskala



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FOREST TAXATION AND ROUNDWOOD SUPPLY
IN FINLAND

Raimo Rauskala

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The forestry taxation system based on the average yield was adopted in Finland in 1922. The taxation system is based on the forest area of a wood lot and its average yield properties, but not on the stumpage revenue from selling timber. The site productivity is measured by average site tax classes 1-5.

From ownership categories only private forest owners are considered. Sixtyfour per cent of forest land and 76 per cent of the total volume increment are privately owned.

The supply of roundwood has decreased during the last two decades. The significance of other tangible as well as non-tangible forest products has increased along with the change in the ownership structure of private forestry and with the rise in the standard of living. There are other economic factors (e.g. inflation, low interest rates on loans) which have also depressed timber sales. Consequently the supply of timber has remained below the allowable cut level.

Forest taxation is one basic instrument of public forest policy for encouraging investments in timber production and for supporting the supply of roundwood.

The current measures of forest taxation, which focus on timber growing, are not directed at roundwood supply although they contribute to the creation of better cutting possibilities in the long run.

Forest taxation measures affecting roundwood supply are e.g. tax reliefs for regeneration areas, means for changing the level of income taxation and of the value of taxable property, the promotion of timber sales, especially delivery sales, and methods for calculating the taxable value of each cubic metre produced.

The effectiveness of taxation on roundwood supply could be increased e.g. by changing the method of assessing the taxable net revenue (with more emphasis placed on particular properties of the wood lot) and by means of increased tax reliefs for cuttings of mature stands. Some measures, such as the considerable reduction of the level of taxation, may, however, even decrease the supply of roundwood.

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PREFACE

This publication is my voluntary paper for the conference of IUFRO - Division 4 in Thessaloniki - Greece, August 27-31, 1984. The paper was distributed during the meeting of Working Party S4.06-01: 'Effectiveness of Forest Policy'. The general topic of the conference was 'POLICY ANALYSIS FOR FORESTRY DEVELOPMENT' and the methods and output of investigations to the effectiveness of forest policy were presented in the meetings of S4.06-01.

I prepared this paper under the guidance of prof. Risto Seppälä. Very valuable advice I got from prof. Päiviö Riikinen, dr. Veli-Pekka Järveläinen and particularly M.Sc. Ilpo Tikkanen, Chairman of IUFRO Working Party, S4.06-01. Acting prof. Matti Palo also read the paper and offered helpful comments.

Miss Riitta Vainio typed the manuscript. Messrs Tim Bird and Michael Starr checked the English text.

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1. INTRODUCTION

The proportion of forest land of the total land area in Finland amounts to 65 per cent. In the economy of the country, forestry and the forest industry are of great importance. In 1983, for example, forestry products accounted for 37 per cent of total exports.

Ensuring the availability of sources of raw material for the forest industry seems to have become one basic goal of forest policy during the last 20 years (cf. Riihinen 1981.) The significance of forest policy is emphasized because the supply has remained increasingly below the allowable drain with regard to the demand for wood. Between 1965 and 1983 there were a total of 140 million cu.m. so called cutting savings which are still growing; two thirds of which are privately owned (Järveläinen 1984).

Forest taxation is one basic instrument of public forest policy for increasing the supply of roundwood and for encouraging investments in timber production. The profitability of these investments is largely dependent on what kind of economic policy is chosen, taking into account the long time interval associated with investments. Investment is profitable if it results in the increased supply of roundwood (cf. Riihinen 1981).

The effect of forest taxation upon the average yield in Finland has been studied by, for example Runeberg (1968), and the effectiveness of public forest policy upon forestry investments has been studied by Tikkanen (1981). According to Tikkanen, in practical policy-making the given policy goal is aimed at with a combination of several policy means rather than with a single policy measure. Kuusela (1983) deals with forest taxation with regard to the wood supply during the 1980s. However, the effect of forest taxation upon the supply of roundwood has been little studied in Finland.

This paper deals with the effect of Finnish forest taxation on the supply of roundwood. From ownership categories only the private forest owners are considered. Sixtyfour per cent of the forest land, 76 per cent of the total volume increment (Kuusela 1978) and 78 per cent of the total drain in 1983 belonged to private forest owners.¹⁾ There are about 365 000 forest owners, most of whom are farmers, while the number of owners of other professions is continually increasing. Their proportion of the total number of private forest owners is approaching 50 per cent (Riihinen 1982, p. 336).

1) The Finnish Forest Research Institute, Department of Forest Economics and the Central Association of Finnish Forest Industries

2. FOREST TAXATION IN FINLAND

A special feature of forest taxation in Finland is that the actual stumpage revenue is not taxed, but the taxation is based on the assessed average value of the annual increment of the growing stock during the preceding three years. Forest income thus resembles capital income for taxation purposes. This yield taxation, fixed by law, was adopted in 1922. It is called the area-based taxation system, because it is based on the area of forest and the division of land quality into average site tax classes, 1-5.

The site tax classes indicate the productivity of forest land. No classification of the growing stock is carried out.

The yield for taxation is based on the average increment of the growing stock, the structure of allowable cut in forest tax regions (170 in all), and the average stumpage prices for timber assortments for three years preceding the taxation year.

A forest 'income tax' has to be paid every year regardless of whether timber has been sold or not. Because the forest income (yield) is taxed along with the other incomes of a forest owner, the tax levied depends on the economic position of the forest owner and a separate forest tax is not indicated.

3. THE SUPPLY OF ROUNDWOOD

The forest taxation measures affect the roundwood supply indirectly through the decision making of the private forest owner. The forestry behaviour of forest owners has been recently examined quite extensively (e.g. Järveläinen 1981, 1983; Järveläinen and Karppinen 1983).

There are also other kinds of forestry use than wood production, such as conservation and recreational use which have a decreasing effect on the wood supply. The significance of these other forestry use has increased with the rise in the standard of living (Tikkanen 1978, 1981).

Inflation has for its part, according to Riihinen (1982), depressed timber sales and many forest owners have preferred to take bank loans with low interest rates rather than to sell timber.

In dealing with the effectiveness of forest taxation reform, price elasticity of roundwood supply should be taken into account.

4. THE EFFECTS OF FOREST TAXATION ON THE ROUNDWOOD SUPPLY

41. Investments and taxation

The aim of forest taxation based on the average yield is to encourage timber production. After the point at which a wood lot has been improved to such an extent that its productivity exceeds the average, taxes on the excess increment are not levied.

The attainment of increased timber production, however, requires investment which is partly provided for by forest improvement legislation. An area under forest improvement for a certain period of years is not included in the tax assessment and thus encourages forest improvement investments. Particular reference is here made to drainage, fertilization, seedling stand improvement and building of forest roads.

On the other hand, it is not necessarily beneficial to a single holding to increase timber production potential, because expenditure is accounted for in average deductions. Willingness to invest may be reduced because investments are seen to be beneficial to the forest improvement maker only to some extent because of the length of time involved.

42. Effects on the roundwood supply

A policy means included in forest taxation to affect the wood supply is the regulation of the level of forest taxation. Provision of tax reductions based on the area are applied in the form of either tax exemption years (e.g. areas of forest damage, of drainage and of afforestation) or tax relief (regeneration areas). The committee of developing forest taxation (Komiteanmietintö 1978:21) argues that tax relief on forest regeneration areas promotes the regeneration of mature stands and timber sales.

The regeneration of one hectare in an average-sized holding in southern Finland generates a tax relief of 20 per cent on the taxable forest yield after the seedling stand has become established.

Other factors reducing the level of taxation are

- the real classification of forest lands for taxation is not equal to the classification in the national forest inventory, according to which the yield principles for different site classes are calculated for taxation,

- the basis value for the assessment is calculated from the average price of three successive felling years preceding the taxation year, without taking into account the inflation. This aspect becomes more important because of the influence of conjunctures on the stumpage prices. During economic booms revenues are received in money of a 'higher value' than that for paying taxes. The low conjunctures have a contrary effect.

Exemption from taxes are also used for the promotion of timber sales, especially delivery sales, through the value of delivery work.

The level of taxation can be influenced also by wealth taxation. There is a possibility either to reduce or to increase the capital value of the forest, if the value of growing stock in a holding significantly deviates from the average value. The average value means the average growing stock-value of the forest tax region concerned. The growing stock not sold can be burdened with taxes. This policy measure, which might increase timber supply, has not, however, been applied.

The effectiveness of forest taxation means on timber supply, such as the level of taxation, is dependent on many factors. The most important factor affecting the timber selling is the need for money by a forest owner (Järveläinen 1983, Järveläinen ja Karppinen 1983). The silvicultural need for cutting equally affects the decision to sell timber by forest owners living in urban areas. Due to social change and the rise of the standard of living private forest owners are not as much dependent on regular forest income as before (Järveläinen etc. 1983).

The factors lowering the level of taxation reduce the need of money by a forest owner, thus possibly reducing the wood supply, especially when the need of money is a primary stimulus for sales.

The forestry management plans have, according to Järveläinen (1981), Kuuluvainen etc. (1983) and Niemi (1977), increased volumes of wood sold per sale or joint sale by forest owners. Volume of wood sold were, according to Korhonen (1983), on forest co-operation areas, which have management plans, 22 per cent higher than on non-planned areas under comparison.

The costs for making a forestry plan are eligible for deduction in the forest taxation of the holding since 1984. About 40 per cent of forest owners have a forestry plan in 1984.

43. The effectiveness of taxation

The need for a regular income from forestry is dependent on the total economy of a forest owner. Borrowing money has been a more profitable solution than timber sales for many forest owners (see section 3). Taxes on forestry income have to be paid every year regardless of timber sales because of the need to equalize income distributions by public authorities. The question arises, does forest taxation in this way result in timber selling in order to pay the tax?

According to Riihinen (1981), the effect of forest taxation depends on the relative economic importance of the forest property in the owner's economy as a whole, on the system of taxation and the progression of taxation.

In figure 1 the estimated forestry tax revenue before tax exemptions and gross stumpage revenue can be compared from 1970 to 1983.

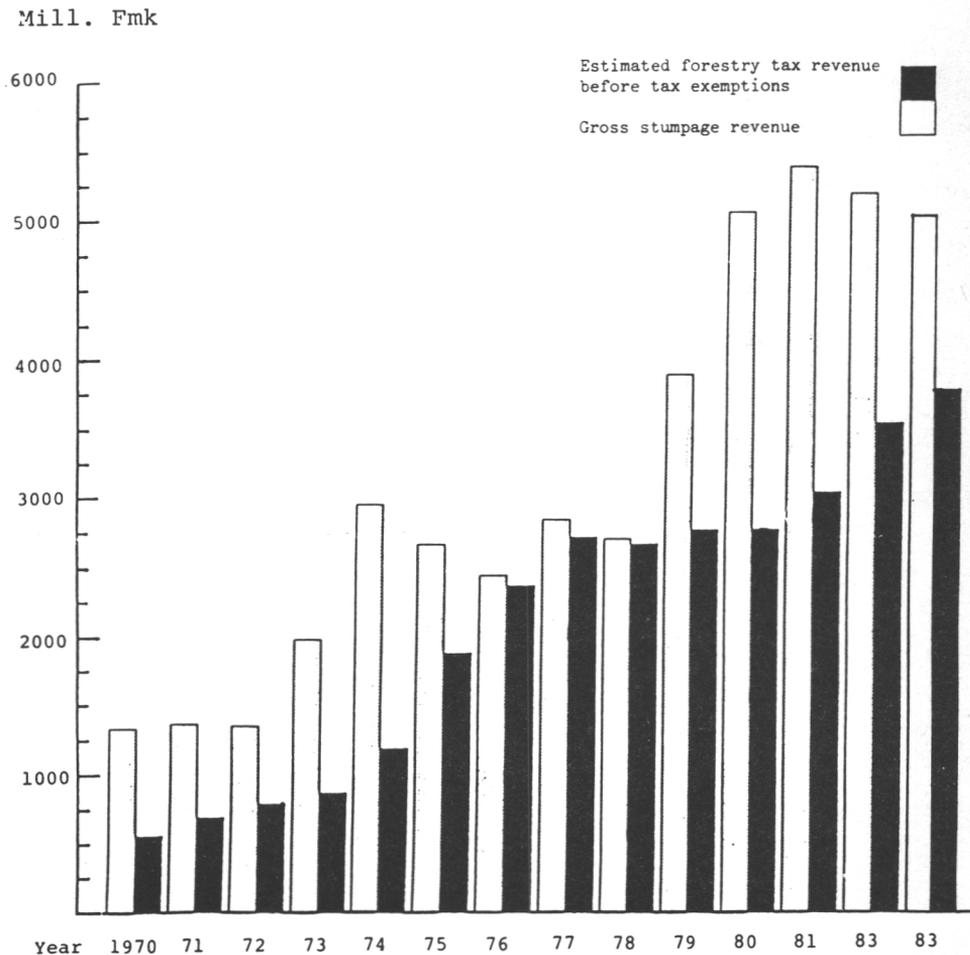


Figure 1. Estimated taxable revenues and actual gross revenues in 1970-1983.

The taxable revenue and the gross revenue of timber sales were nearly the same (97:100) during the period 1976-78, when the tax levels were raised (Loven 1980). The main reason to this equity was, however, that income from timber sales was reduced during this period of depression due to the decreasing export demand of forest industry products (cf. Tikkanen 1978). This was likely to diminish the effect of taxation on the wood supply.

Because of inconsistency in site tax classification, forest taxation does not work similarly over the whole country. Thus the effectiveness of taxation on the wood supply can vary even between neighbour municipalities.

The progression of taxation is applied to the additional income such as from forestry. Forest income is marginal to non-farmers or forest owners living in urban areas. It is not clear whether the requirement for paying forest taxes or anticipated tax relief have then an effect on the decision to sell timber in this case.

The effectiveness of taxation has an influence on the division of property through inheritance. In avoiding progressive taxation a holding may be divided into smaller ownership units owned preferably by the heirs. The lower tax effectiveness by the heirs (as a forest owner group) as regards to its individual members separately has also through the increase of heirs resulted in the decreasing of wood supply (e.g. Hahtola etc. 1973, p.172).

44. The system of taxation

Riihinen (1981) has evaluated the present system of forest taxation as means of economic policy at the macro-level by comparing it with an alternative taxation system based on the actual stumpage revenue.

By taxing the actual sales income the stumpage price would affect the wood supply more than under an area-based taxation system. One may assume that by rising the stumpage price the supply of timber may even decrease in the case where actual stumpage revenues are taxed. The reason for the decrease might be the weakness of supply incentives. While reducing the inputs to forestry the forest taxation revenue would also be reduced. The effect on investment, production, employment, differences in individual and regional income distributions and on the international balance of payments disfavour the suggested tax reform (Riihinen 1981).

5. DISCUSSION

The disequilibriums in timber markets set challenges for the development of forest taxation among the means of public forest policy. Research into forest owners' behaviour (e.g. timber-sales behaviour) is gaining increasing importance in outlining policy programs as well as in policy making proper.

There is some evidence for that forest taxation system applied within changing economic conditions is not effective enough to affect the wood supply. With a high standard of living, inflation and low interest rates on loans, the area-based yield taxation system tends to spur the conservation of mature growing stock. By taking loans it has been possible to reduce the effect of taxation. The forest owner's dependence on regular timber sales income has also decreased along with the rise of other income.

There are some features which have emphasized the need to develop a forest taxation system in order to encourage the supply of wood. First, non-productive utilities of forests have gained increasing importance with the rise of the level of living; secondly the non-cut growing stock has increased. It is required to have a policy means which is directed more to the forest owner. It is emphasized to use different means for different owner groups according to their needs and behaviour (Ervasti 1984).

In which way can cutting activity and forest treatment be stimulated? According to Järveläinen etc. (1983), lengthening the period of tax exemption on young stands would increase the volume of wood sales. Relatively few forest owners in this study believed that a levelling-off in the fluctuation in wood prices or one-year stumpage price guarantees would increase the volume of timber sold.

To increase the wood supply the incentive to regenerate mature stands should be improved. This could be achieved by speeding up the period of exemption from taxes after the regeneration. At present exemption from taxes is permitted not until the seedling stand has become established. A similar tax relief regulation for the afforestation of abandoned agricultural areas will be admitted as soon as the afforestation measures have been completed.

The utilization of tax relief statutes for stand regeneration should achieve better development potential in the future. Forest taxation with supporting the timber production has a similar effect on the amount of allowable cut.

An example of policy means towards the forest owner is the determination of the deduction of actual costs per holding, not the average level. The deductions by holdings increase the willingness to sell timber especially if they are tied up to the sales occurrence more directly. This aspect is also well suited for decreasing the deviance of forest income as a capital income from earned income.

The forest taxation system applied does not take into account different cutting possibilities by forest owners. According to Riihinen (1982) there is a need to improve the inflexible area-based taxation system with a system based on development classes of forest area. Stands of development classes 'open area', 'advanced thinning' and 'mature stands' would be most heavily taxed and 'seedling' and 'young thinning' stands would be taxed least. The forest management plans for every forest holding are then needed. This would equalize the differences in the utilization of cutting potentials.

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