Pellervon taloudellisen tutkimuslaitoksen työpapereita

Pellervo Economic Research Institute Working Papers

N:o 3 (1997)

ROUNDWOOD PRICE REPORTING

Comparison of a Few European Countries

Ritva Toivonen

Helsinki 1997

ISBN 951-8950-69-5
ISSN-1455-4623

Pellervon taloudellinen tutkimuslaitos PTT
Pellervo Economic Research Institute PTT
Eerikinkatu 28 A
00180 Helsinki

Helsinki 1997

TOIVONEN, RITVA. 1997. ROUNDWOOD PRICE REPORTING - Comparison of a Few European Countries. Pellervo Economic Research Institute Working Papers No 3 (1997). 23 p. (Pellervo Economic Research Institute PTT, Eerikinkatu 28 A, 00180 Helsinki). ISBN 951-8950-69-5, ISSN 1455-4623.

ABSTRACT: Lack of symmetric market information may reduce the efficiency of roundwood markets. In Finland, as in several other European countries, roundwood demand is increasingly concentrated into a few large, professionally-managed forest industry companies. In contrast, a majority of the roundwood supply originates from nonindustrial private forest (NIPF) owners who have less access to market information. At the same time, the changes in competition legislation have resulted in changes or collapse of the tradition in collective price negotiations. In this situation, public price reporting improves especially the forest owners' informational position. Therefore the development of price reporting systems seems to be a way to improve roundwood market efficiency. This study targets at describing and comparing frequency and coverage of public roundwood price reporting in a few countries in Europe during the first half of 1990s. Based on the available information, it seems that coffective price agreements may have replaced public roundwood price reporting to some degree: Prices are reported more frequently in countries which had no binding price agreements, and where private forest ownership is significant. However, a careful cost/benefit analysis is needed before investing in developments in price reporting. This particularly concerns Finland where the reporting frequency of roundwood prices is the highest of the countries analyzed.

Key words: Roundwood markets, Market information, Price reporting systems, Competition

TOIVONEN, RITVA. 1997. HINTARAPORTOINTI RAAKAPUUMARKKINOILLA - Eräiden Euroopan maiden vertailu. Pellervon taloudellisen tutkimuslaitoksen työpapereita n:o 3 (1997). 23 p. (Pellervon taloudellinen tutkimuslaitos PTT, Eerikinkatu 28 A, 00180 Helsinki). ISBN 951-8950-69-5, ISSN 1455-4623.

TIIVISTELMÄ: Symmetrisen markkinainformaation puuttuminen voi heikentää raakapuumarkkinoiden tehokkuutta. Suomessa, kuten useissa muissakin Euroopan maissa, raakapuun kysyntä keskittyy pääosin muutamiin suuriin yrityksiin kun taas tarjonta on peräisin pääosin yksityismetsänomistajilta. Voidaan olettaa, että puun ostajayrityksillä on paremmat mahdollisuudet rnarkkinainformaation hankintaan ja hallintaan kuin puun myyjillä. Tästä voi aiheutua markkinoiden tehottomuutta, jota kuitenkin voidaan korjata lisäämällä julkista puun hintaraportointia. Tässä raportissa kuvataan ja verrataan muutamien Euroopan maiden raakapuumarkkinoiden rakennetta ja julkista puun hintaraportointia 1990-luvun puolessa välissä. Käytettävissä olleen informaation perusteella näyttää siltä, että kollektiiviset puun hintasopimus- tai neuvottelujäjestelmät ovat korvanneet hintaraportointia: hintaraportoinnin frekvenssi näyttäisi olevan tiheämpi maissa, joissa ei ole hintaneuvottelujärestelmää, mutta puun tarjonta on peräisin yksityismetsänomistajilta. Julkisen hintaraportoinnin kehittäminen edellyttää kuitenkin huolellista tutkimusta ja kustannus/hyöty-analyysiä. Tämä pätee etenkin Suomeen, jossa hintaraportointi on jo nyt useudeltaan tarkastelujen maiden kärkiluokkaa. Suomessa hintaraportoinnin kehittämisessä olisikin jatkossa ehkä tarkasteltava puun laadun ja ympäristökysymysten huornioinnin tarpeellisuutta ennemmin kuin raportointifrekvenssin tihentämistä.

Avainsanat. Puumarkkinat, hintainformaatio, hintaraportointijärjestelmä, hintaneuvottelut, kilpailu

CONTENTS

1. INTRODUCTION

1.1 Price information and structure of timber markets

Perfect competition is an ideal situation which rarely exists in the markets of any products (e.g. Stigliz 1995). One of the possible reasons for less than perfect competition is that the trading agents do not have symmetric market information. This regards, among other markets, also roundwood markets.

In Finland, 62% of forest land is owned by NIPF owners (non-industrial private forest owners). The forest industry is concentrated in a few large companies. Traditionally, centrally negotiated price agreements aimed at balancing the differences between buyers and sellers in the Finnish roundwood markets (e.g. Sundberg 1988). But fixing prices by an agreement system may cause disequilibria in the markets. The new competition legislation (1992) resulted in the termination of the nation-wide collective price agreements.

At the same time, the fluctuations in roundwood market seem to be increasing and the markets have developed to become more geographically fragmented (e.g. Toppinen & Toivonen 1997). This development together with the termination of the recommending price agreement system make the follow-up of market changes more demanding for single trading agents. One improvement for this situation may be increased providing of market information for all trading agents. This would improve the transition of information about price changes quickly from one area to another and enhance the market efficiency in this way. However, comparison with other roundwood markets is essential when assessing the need for, and various alternatives to developing price reporting. Thus, the changing circumstances in Finland, but also in many other European countries, are the motivation for this study.

In roundwood market research, most of the studies related with market information have been carried out in northern America. For example, Boyd and Hyde (1989) argue that NIPF owners may not have the resources to acquire enough market information and hence, correct predictions of market development cannot be made. In contrast, the roundwood buyers are professionally managed firms that make timber contracts daily. Thus the companies have superior information about supply and the current market price level compared to forest owners. Their conclusions were based on analyzing the situation in the southern states of United States. In another type of study, Munn and Rucker (1994) found out that hiring a consultant to assist in roundwood sales raised the prices in the southern states of the USA. This may indicate, among other things, that NIPF owners have difficulties in finding out the relevant market price level.

Boyd and Hyde (1989) and Hyde and Newman (1990) show that the gains from price reporting clearly exceed the investments in the price reporting system in the southern U.S. timber markets. They argue that price reporting improves availability of market information especially for the private forest owners and reduces price variation. Therefore, they suggest that price information should be provided especially to forest owners. Provencher (1994) analyses the effects of providing not only historical price information but also price prediction information for forest owners. He expects that providing timber price predictions might increase social welfare in the short term. However, he points out that the availability of timber price predictions may change in the long run the way how the timber markets function. Therefore the final results of providing price forecast information in timber markets are unclear.

In the Nordic timber markets, for example Ollonqvist and Heikkinen (1994) have noted that frequent use of price reports improves the performance of NIPF owners in Finland. In Sweden, Bergman (1994) has emphasized price reporting as a possible mean to balance the position of NIPF owners as compared to the buyers.

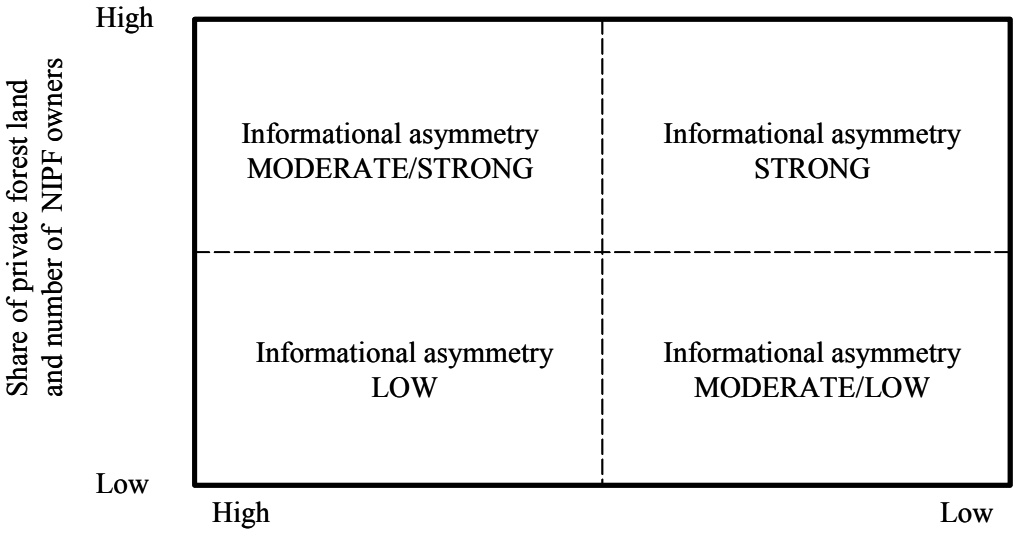
As mentioned before, most of the above referred studies have analyzed the timber markets in the USA, but it is assumed that the conclusions are also indicative to European countries with a similar type of market structure. Because of the conclusions of Provencher (1994) about the difficult predictability of effects of providing timber price predictions, this paper only focuses reporting of realized prices.

The market structure may be at least one of the factors on the background of informational asymmetry between the buyers and sellers in any markets (Structure-Conduct-Performance -paradigm, e.g. Shepherd 1990). Hence, the guiding hypothesis on the background of this study is that informational asymmetry is more likely in timber markets where private forest ownership is prevalent and roundwood demand is concentrated into large companies as compared with the markets where the positions of buyers and sellers are fairly similar. However, this study is merely descriptive and no attempt to test this hypothesis is made.

It is also assumed that the trading agents' behavior (conduct), such as cooperation in roundwood marketing or procurement, affects the informational balance in the markets. For example, the collective price agreement system can be seen as at least a partial substitute for price reporting systems because all trading agents can easily find out the collectively negotiated price level (Uusivuori & Mykkänen 1996). This is true particularly in the case of relatively binding collective price agreements. Hence, both market structure and conduct should be considered in assessing the need for public

price reporting (see Figure 1). It should be stressed that the suggested connections in Figure 1 are not tested by empirical data in this study. It should be also noted that the concentrated buyer or seller structure is by no means a sufficient or necessary condition for non-competitive markets (Clarke 1985). Hence, deeper data analysis is needed to test the degree of competition than the scope of this study is.

Figure 1. Market characteristics and the hypothetical degree of informational asymmetry.



1.2 The purpose of the study

Roundwood markets, in this study, are defined as consisting of roundwood sellers and buyers including various middlemen in a country or state. Assortments are seen as different products since these are mainly used for different purposes (end-uses). The markets for logging services or wood chips are not analyzed. Markets are defined as being within a country. Market information is defined as information about the products exchanged in the markets. Since competitive markets function through the price mechanism, we concentrate on price information in this study.

Perfect information has been defined as knowledge about the physical characteristics of all products and their potential substitutes, prices, availability, delivery and location (Tirole 1988, pp. 6-7). Hence, quality criteria for price information in roundwood markets are: *timeliness, specificity, i.e. connection with specific roundwood*

assortments and qualities, method of delivery and location of the lot sold. A self-evident quality criteria is reliability which includes, among other things, the data coverage.

As it was mentioned earlier, it must be emphasized that description of market structure, including concentration of supply or demand, does not allow to make conclusions regarding the market competitiveness. Empirical data about the quantities and prices of the goods exchanged in the markets are needed for that. Since this kind of empirical data is not used in this study, the general purpose and scope of this study is limited to providing a description and comparison of roundwood markets and related public roundwood price reporting in selected European countries. More specifically, the objectives of this study are:

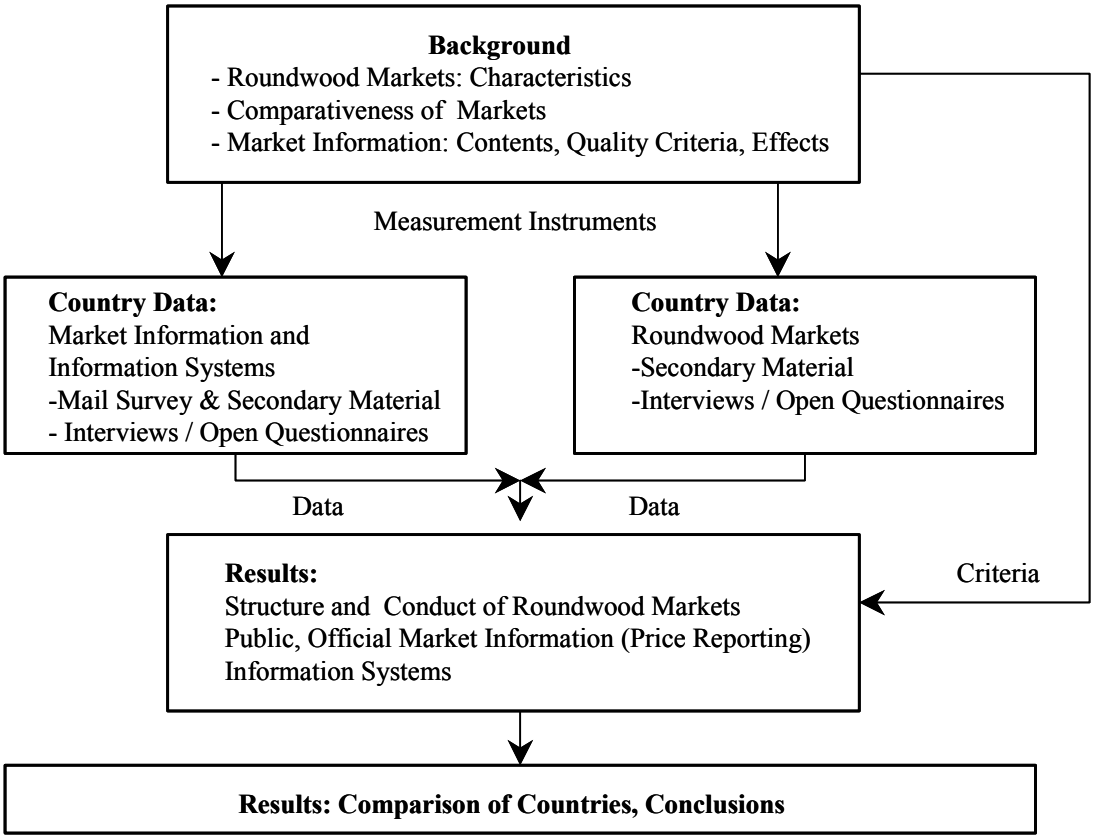
1. *To describe roundwood markets in selected European countries: Finland, Sweden, Norway, Germany, France, United Kingdom, Austria and Switzerland.*
2. *To describe publicly available price information in these countries.*
3. *To compare public market information, especially price reporting, its frequency and contents, in the context of the market structure in the selected countries.*

In this study, only official public price reporting is focused on, i.e. public price reporting which is produced by the government or some other public institution and is available for anyone. Private information (not available for all trading agents in the markets) is not analyzed. Chapter Two describes the materials and methods used as well as the study design (Figure 2). Chapter Three includes descriptions of the roundwood markets in the selected countries as well as a comparison of the countries. In chapter four, the possible need for developing price reporting in each country is discussed.

2. MATERIALS AND METHODS

The study was carried out partly as based on secondary materials and partly by collecting empirical data. The outline of the whole project is shown in Figure 2.

Figure 2. Conduct of the study.



Empirical data was collected in two phases in 1994-1996. Firstly, questionnaires including both structured and open-ended questions were mailed to organizations providing price data for the "UN-ECE/FAO Timber Bulletin". Furthermore, these organizations were asked to name the other organizations providing public roundwood price information in their country. Using the information provided, a questionnaire and a letter describing the study was mailed to totally 19 organizations of which 10 responded (see References). Secondly, 12 experts in roundwood markets were interviewed in Finland, Sweden and Germany. In addition, a questionnaire with open questions about roundwood markets and market information availability was sent to totally 14 experts in all selected countries (see References). For more information about the data and conduct of the study, see Toivonen 1996.

Forestry and roundwood markets were described based on secondary material and information gathered from open questions and interviews. Market information was described based on all three data types; secondary data, such as price bulletins, data gathered with mailed structured questionnaire, interviews and a questionnaire with open-ended questions. The number of countries analyzed is fairly small. Therefore, each country was described as a special case and the conclusions are based on a qualitative analysis.

3. ROUNDWOOD MARKETS AND COMPARISON OF PRICE REPORTING

3.1 Description of roundwood markets and price reporting by countries

In Finland, forest land covers about two-thirds of the land area (67%)[1]. The forest industry is one of the main industrial sectors in the country. The number of privately owned forest holdings (larger than one hectare) is 432 000, of which about 290 000 are larger than five hectares. The average size of a privately owned forest estate is 26 hectares. Private forest owners own 62% of the forest land and they are the major source of roundwood for the forest industry (about 80%). (Yearbook of Forest Statistics 1995)

In addition, in the sawlog markets, there exists a fairly large number of small and medium-sized independent sawmills which buy about half of the sawlogs entering the markets. The other half is bought by companies belonging into large consolidations. The pulpwood markets can be regarded as concentrated (Ylitalo *et al*. 1990), since all the pulpwood entering markets is bought buy the few large consolidations. The prevailing roundwood sale is a stumpage sale (65-75% of annual sales from private forests are sold as stumpage).

A majority of the private forest owners are members of local forestry associations (about 270) which form 18 provincial associations (in 1998 the number is reduced due to uniting of some the federations). During 1995-1996, these associations negotiated recommending price levels for standard roundwood assortments in four large regions in the country. The forest companies operating in these four large areas were the counterparts in the regional negotiations. This system was operative in 1995-1996. In 1997, only two large companies discussed with forest owners representatives about the market situation and formed a common idea of how the market situation is expected to develop and how this may affect roundwood prices.

Stumpage and roadside prices for the six standard roundwood assortments are published by The Finnish Forest Research Institute every week. The information is the moving average of four weeks' prices and is available on-line from an electronic information system "METINFO". Printed price bulletins are published monthly. The price information is available to all forest owners and forest industry companies through professional newspapers and magazines. The data for price information covers about 80-90% of the roundwood sales from private and public forests excluding state-owned

[1] Table 1 shows forest resources, forest ownership, methods of roundwood trade and public price reporting in the countries analyzed in 1995-1996.

forests. Both stumpage and delivery prices (roadside) are reported by provinces and by the four price negotiation regions. There has not been any public price information available from the state roundwood sales during the 1990s.

In Sweden, forests cover about 60% of the total land area. Private forests owned by NIPF owners account for about half of the forest land. Forest companies are another considerable owner group with an ownership share of about 40%. NIPF owners supply over 50% of the roundwood to the Swedish roundwood markets. There are about 245 000 private forest holdings in Sweden (the average size is 45 hectares). (Skogsstatistisk årsbok 1994)

The structure of the Swedish forest industry resembles that of Finland in the sense that there are a few large forest industry companies which buy and use most of the roundwood. In particular the forest industry's pulpwood use is concentrated into a few large companies and hence, the pulpwood industry can be regarded as concentrated (Bergman 1994). Most of the roundwood is sold at roadside (delivery sales). However, there are several different variations of the delivery sale. (Skogstatistisk årsbok 1994 & 1997)

One third of private forest owners are members of the nearly 200 local forestry associations which have joined together to form eight regional associations. These associations may deliver wood from their member forest owners and may also own forest industry. The price negotiation system was changed in 1996 according to the changes in competition regulations. There are no more any central negotiations between the interest groups of forest owners and forest industry. The regional associations of forest owners may now negotiate delivery wood prices with single forest industry companies but no more with the associations of forest industry. Hence, the forest owners associations may have several price lists at one time and the price lists may change several times per year. The non-member forest owners usually follow the price lists of the regional forest owners associations. (Bergman 1994; Nikunen 1995; Skogstatistisk årsbok 1997).

The National Board of Forestry in Sweden publishes price information every fourt month and an annual average price statistics. Earlier, the delivery sales prices were based on the regionally negotiated price lists between the forest owners' associations and forest industries or the price list of the association, and the actually sold quantities based on sales contracts. After the changes in the price negotiation systems, the delivery wood prices are calculated according to the actual sold quantities and the price lists of forest companies. The annual prices may differ from the four-month prices due to the different corrections in paid prices. The stumpage prices reported are based on sample data about

the actual sales contracts. Prices are published at the region level (three regions) and the country level. Sawlog prices are reported by quality classes and dimensions. Prices are available in special price bulletins and through electronic mail service. In addition, prices are published in professional magazines. (Skogsstatistisk årsbok 1994)

In Norway, forests cover 28 % of the land area. NIPF owners own about 80 % of the forest land and supply more than 90 % of the roundwood. There are 123 000 privately-owned forest enterprises in Norway. About half of the NIPF owners are members of local forestry associations (450) which form 19 regional federations. Members need not to sell their wood via the association, which was the custom in the beginning of 1990s. In addition, about 250 of the largest private forest owners have their own association. All roundwood is sold as delivery sales.

The forest industry' pulpwood use is concentrated in a few large companies. In addition, the companies co-operate in roundwood procurement (Nikunen 1995). The roundwood price negotiation system has undergone significant changes during the last few years in Norway, too. There are no longer and central negotiations between the associations of forest owners and forest industry (in 1997). Roundwood prices are negotiated between the provincial forest owners associations and individual forest industry companies.

Two kinds of roundwood prices are reported annually by The Norwegian Statistical Office. The delivery (roadside) prices based on forest owners associations price lists are published by districts. The other price statistics are based on all roundwood cut for sale in Norway, and these prices are published by county and assortment, as annual averages. Prices are published in the statistical yearbook. From 1996 on, this statistics is for a calendar year whereas it earlier was for a working year in forestry, i.e., 1.8.-31.7.

In Germany, the share of forest land is about 30% of the total land area. NIPF owners own about 46% of forest land. This includes the forests undergoing privatization in the former East Germany. The states and the federal government together own 34% and other public owners (mainly municipalities) own about 20%. Tere are about 437 000 private forest holdings iwith an average size of about eight hectares. The German forest industry does not own forest land. Private and municipal forest owners are organized in various associations and co-operatives. (AID 1995; Kroth & Bartelheimer 1993)

The most important sector of the forest industry is the sawmill industry. In addition to the forest industry companies, various middlemen operate in the German roundwood markets. About 250 professional roundwood traders buy the small wood from the individual forest owners, reclassifying and reorganizing the wood into larger lots and

finally selling these to the forest industry companies or for export. (Allihn 1994)

Table 1. Price reporting in the context of roundwood market structure and conduct.

”-” = information was not available

	Austria	Norway	France	Finland	UK	Sweden	Germany	Switzer-land
Forest land, millions of hectares (% of land area)	4 47%	9 28%	13 24%	20 67%	2 9%	24 60%	10 30%	1 28%
Ownership (%) Private-State-Other public-Industry	**85**-15-0-0	**81**-15-4-0	**69**-12-19-0	**62**-24-5-9	**62**-38-0-0	**50**-5-8-37	**46**-34-20-0	**27**-6-67-0
Private owners	214,000	123,000	1,300,000	440,000	45,000	240,000	437,000	257,000
Average size of private estate (ha)	13	23	7	26	-	45	8	1,5
Forest owners organizations local+provincial	67 public, several private	430 (19) + one large owners' assoc.	Several associa-tions and groups	265 (17)	Private manag. comp. 30 (4)	200 (8)	Varies between states	-
Collective price agreements /discussions	No (end in 1995)	Yes	No	Yes	No	Yes	No	No
Collective sales contracts/other arrangements/ Exchanges	Collective sales Timber exchanges	Collective sales	Auctions	Collective sales	Auctions	Collective sales	Collective sales Timber exchanges Auctions	Collect. sales
Standing/Roadside sales contract prevailing (% of wood sold)	Delivery Roadside (90%)	Delivery Roadside (100%)	Majority standing	Majority standing (65 % of private sales)	Both common	Delivery Roadside (85%)	Majority roadside	Majority roadside (90%)
Public price reporting frequency	Monthly	Annual	Annual	Weekly	Bi-annual monthly	Three times per year	Bi-monthly Monthly	Three times per year
Regional prices	Yes	Yes	-	Yes	Yes	Yes	Yes	Yes
Prices by assortments	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prices per sales contract type	Roadside	Roadside	Roadside Standing	Roadside Standing	Standing	Roadside Standing	Roadside	Roadside
Prices per quality	-	Yes	No	No	Stem size	Yes	Yes	Yes
Import/Export prices	Monthly	Annual	Annual	Monthly	Annual	Annual	Quarterly	Monthly

The most customary roundwood sales contract is a delivery sale (roadside) but felled roundwood is also sold in auctions. Typically, roundwood is sold collectively by several private or municipal forest owners. A state forest agency may also organize collective sales which include wood from private and municipal forests in addition to that from state forests. These collective contracts are made for a specific time period, for example a year, and include deliveries of several specified lots by certain dates. In addition, a few so-called timber exchanges provide a local forum for buyers and sellers to discuss timber price levels and market prospects, but also actually trade roundwood. (Kroth & Bartelheimer 1993; Jöbstl 1994). However, there are differences in the roundwood trade practices between the various german states, and any generalizations are difficult to make.

Roundwood prices for forest owners are reported bi-monthly during the felling season for the forest owners by an information agency ZMP (Zentrale Markt- und Preisberichtstelle GmbH). Prices are publicly available monthly. Prices of sawlogs and pulpwood are reported according to tree species, quality classes and forest owner groups and by states in special roundwood price bulletins. The data originates from about 300 monitoring organizations. ZMP was in 1995 considering to start to provide data through electronic networks. In addition, the Federal Ministry of Agriculture and Forestry and the Federal Statistical Office produce quarterly price bulletins which are based on sales from the state-owned forests.

In Austria, forest land covers about half of the land area (48%). NIPF owners own about 85% of forest land and supply an equally large share (85%) of roundwood to the markets. There are 214 000 private forest estates in Austria, and their average size is 13 hectares. The most typical roundwood sales contract is a delivery (roadside) sale; only 10% of roundwood is sold in stumpage sales. The Austrian forest industry does not own forest land. (Schwarzbauer 1994; Jöbstl 1994)

The roundwood markets in Austria have been described as a polyopol (Jöbstl 1994). In addition to the forest industry and forest owners, various middlemen operate in roundwood markets. Forest owners are legally required to be members of local forest owners' organizations (67 Agricultural Chambers). These associations assist forest owners in roundwood trade and may organize collective sales. In addition, there are various other forest owners' organizations which may even own sawmills. However, quantities marketed through these organizations are relatively small; 10-15 % of the annual fellings (Jöbstl 1994; Schwarzbauer 1994). There are a few local timber exchanges providing arenas for gathering market information (Jöbstl 1994). Earlier, the pulpwood and hardwood timber prices were centrally negotiated between the forest

industry's interest groups and forest owners. This negotiation system was abandoned in 1995.

Prices of sawlogs, pulpwood and fuelwood are reported monthly by the Federal Statistical Office. Prices are published in bulletins and also in professional newspapers and magazines. The data originates from the local agricultural chambers.

In France, forest covers about 24 % of the total land area. A majority of forest land is owned by NIPF owners (69 %). The state owns about 25 % and other public owners 6 %. There are 1.3 million private forest estates larger than one hectare in France. The average size of the private forest estate is less than seven hectares. Private forest owners supply about 55 % of roundwood to the markets and they have associations and co-operatives to enhance roundwood production. However, forest owners' joint roundwood marketing did not seem to be very significant in terms of the volume of roundwood marketed (Lèvêque & Péguret 1988, pp. 125-245).

The forest industry in France used to consist of fairly small production units and companies but the situation is changing somewhat due to foreign investments in the paper industry and consolidation process in the sawmill industry. The paper sector has been described as concentrated (Lèvêque & Péguret 1988, p. 202). In contrast, a large number of sawmills exist. The French forest industry buys standing roundwood (stumpage sales) in auctions arranged both by state and private forest owners. Office National des Forêts (ONF) is a government office managing the state forests. ONF also may manage private and municipal owners forests and organise auctions for roundwood sales, where roundwood from the municipal and private forests is also sold. In addition to forest companies and forest owners, various dealers operate in the French roundwood markets. There are no collective price agreement system in the country.

Official roundwood prices are published once a year by the French Statistical Office and the ONF. Both stumpage prices (from state forests only) and prices for the roadside sales are published as annual national averages. The prices are published by tree species and assortments in a statistical yearbook of agriculture and forestry. The national association of private forest owners publishes monthly stumpage prices from private forests (based on auction prices) in their magazine (Forêts de France). In addition, the private forest consultants' bi-monthly magazine also publishes stumpage prices (based on auctions where private forest owners' wood is sold).

In the United Kingdom, forests cover 9% of the land area. Private forest owners and the forest industry together own 62% of the forest land. The forest industry's share is not

separated in the statistics, but it is regarded as fairly small. The State Forestry Commission owns 38% of forest land. However, the majority of private forest land is not owned by farmers or other individuals as in the other countries analysed. For example investment companies are a considerable owner group, since investing in a forest land was popular in the United Kingdom about a decade ago. Nearly 30 large forest management companies oversee of the large private owners' forest holdings including marketing of roundwood. Therefore the number of private sellers in the British roundwood markets is actually smaller than the number of owners. Private forest owners have two associations.

The most common ways of selling roundwood are auctions and public tenders. Sawlogs are usually sold standing (stumpage sales) whereas pulpwood is sold most commonly at roadside (delivery) (Mitchell *et al*. 1994). There are no collective price agreements for roundwood in the United Kingdom.

The Forestry Commission publishes roundwood stumpage prices twice a year. This information covers sales from state forests and is available by country (England, Scotland and Wales). Prices are published by tree species, stem size and type of sale. In addition, the Forestry Commission's Statistical Office publishes some other roundwood price statistics on a monthly basis. These statistics are available for a fee.

In Switzerland, the share of forests is 28% of the total land area. NIPF owners own 27% of the forest land, municipalities 67% and other public owners 6%. Although the privately owned forests' share of all forest land is small, the number of private forest estates is 257 000. Thus, the average size of a private forest holding is less than 1,5 hectares. It should be noted that for the other countries included in this study, only forest holdings of at least one hectare were taken into consideration. Private forest owners have a central association which may assist them in roundwood sales. (Künftige Rundholz...1991)

There are several relatively small sawmills and pulp and paper companies in Switzerland. The sawmills buy roundwood mainly from individual sellers. On the other hand, pulpwood is sold mostly through collective contracts between several forest owners, private and public, and the buyer company. The regional Forest Service organizes the deliveries from different sellers to the factories. Roundwood is sold mainly in delivery sales (at roadside). In Switzerland, there exists collective roundwood sales (particularly pulpwood), in the same way as in Germany, but not similar collective price agreements or recommendations as in the Nordic countries. (Künftige Rundholtz Versorgung in der Schweitzer Wald 1991; Jöbstl 1994)

The Ministry of Agriculture and Forestry and The Central Statistical Office publish roundwood prices three times per year. The four-monthly prices are published as national averages and by four geographical regions. Prices are published by coniferous and deciduous trees, by assortments and by quality classes. The Statistical Office publishes monthly roundwood export and import prices. It should be also noted that there exists an electronic bulletin board for roundwood trade which is organized by the association of forest owners.

3.2 Comparison of market structure and price reporting in different countries

As a result of comparisons, the countries were divided into three categories based on the structure of forest ownership and roundwood marketing practices.

A. High degree of private ownership and collective price negotiations/discussions

The first group is formed by the countries that have some kind of collective price negotiation system (Norway, Sweden and Finland). In all of these countries, the central, nationwide negotiations between the associations of forest owners and forest industries are abandoned. However, some kind of collective negotiations or discussions about prices still take place between the associations or representatives of forest owners and individual companies. In Norway, a large part of the roundwood supply comes from forest owners who are members of forest owners' associations, and thus well aware about the prices negotiated by the association and individual companies. In Sweden, only about a third of the forest owners belong to forest owners' associations, but most of the non-members are also said to follow the price lists of the associations.

In Finland, about half of the forest owners belong to the associations which negotiated the recommending regional price levels in 1995-1996. However, the members were not by any means bound with the recommending price levels. In 1997, the price levels were even more roughly stated, and the discussions were arranged separately between two large companies and forest owners. Also in Finland the non-members of forest owners associations have good access to the information about the recommended price levels. The recommending price levels provide indications of the price development for forest owners.

B. Significant degree of private ownership but no collective price agreement system

In Germany, the tradition of collective roundwood sales contracts organized by the state forest agencies and by the forest owners' organizations somewhat balance the contrast between private forest owners and forest companies. In addition, the local timber exchanges provide price indications at least about regional prices. The situation is fairly similar in Austria.

In France, the degree of co-operation between private forest owners and state or municipal owners seems may not be very intensive, nor are there any price agreement systems. However, state, municipal and private owners may arrange joint roundwood stumpage auctions which provide price indications also for the NIPF owners. In the UK, the structure of forest ownership and the existence of a few large forest management companies are assumed to somewhat balance the differences between forest owners and forest industries.

C. Low degree of private ownership

In Switzerland, NIPF owners are a minor owner group (27% of forest land). Collective sales contracts in pulpwood trade have been used (in 1994).

The existing public price reporting systems (in 1994-1995) in each country were compared according to the quality criteria defined in Chapter 1. Timeliness of information must be seen as one of the most important price quality criteria since it provides the basis for making the buying/selling decision. Although it is difficult to define any precise "adequate" frequency for public price reporting in roundwood markets, it seems clear that price reporting once a year is not sufficient. For example, monthly price reporting has been considered as a sufficient frequency to have effects on markets (Boyd and Hyde 1989). This criteria is used also in this paper. Hence, the countries were classified into two groups according to their price reporting frequency :

1. Infrequent public price reporting: Sweden, Norway, France, UK and Switzerland.

   Prices are reported fairly infrequently in Norway (once a year) and Sweden (every four months). In these countries, however, exist some kind of collective (regional) price agreement or discussion systems, which may have replaced price reporting to some degree.

Prices are also reported infrequently in France (once a year) and in the United Kingdom (twice a year). However, in France some price information about auction sales from private forests is published monthly in forest owners´ magazines. As well, in Sweden and Norway price information is published in professional magazines, and the associations may provide their members with roundwood price information. In the UK, some timber price statistics are available monthly for a fee.

In Switzerland, prices are published three times per year, but private forest owners may get price indications from their association which runs an electronic timber exchange.

2. Frequent public price reporting: Austria, Finland and Germany. Prices are reported fairly frequently in Austria (monthly), Finland (weekly), Germany (monthly). These countries are characterized by prevailing or significant private forest ownership. In Finland, there exists a collective price discussion system (in 1997). In all countries, price information is published in professional magazines.

In addition to frequency, contents of price information was compared. The first quality criteria was the specificity of price information. In roundwood markets, this indicates both regional prices and prices for roundwood sold at different points of delivery. Regarding the latter characteristics, only roadside prices are reported in most countries as this is either the only or at least clearly the most prevalent sales contract type in these countries (Austria, Norway, Germany, Switzerland) (see Table 1). In countries where standing sales have a dominant role (Finland, France), both standing and roadside prices are reported. In Sweden, both standing and roadside prices are reported even though the share of standing sales is relatively small. In the UK, both contract types are common but Forestry Commission reports standing prices. Prices are reported in most countries by provinces/states, i.e. regionally. In this sense there are not any significant differences between the countries.

Both coverage of, and sources of the data vary between countries. In the Nordic countries, data is based on roundwood sold from private forests. In Finland, the data covers about 90% of the sales from private forests. In Sweden and Norway, the prices used to be based on the negotiated prices or price lists of forest owners associations and realised quantities. In Sweden, the price reporting system is changed to be based on forest companies price lists. In Norway, roundwood prices from both private forests and all forests are published. In Germany, prices from private forests are based on a sample. Instead, the price information from state roundwood sales is based on

fairly complete data. In the UK, prices from state forests are reported. However, sales from the state forests cover a marked share of all roundwood sales. Import and export prices are reported in all countries, but there are differences in the reporting frequencies of these prices. The most frequent (monthly) reporting of export/import prices is in Austria, Finland and Switzerland.

4. CONCLUSIONS AND DISCUSSION

The aim of this study was to describe and compare the roundwood markets and public price reporting in selected European countries. This information may serve in assessing the need for and potential ways of developing public price reporting. The study is based on secondary material, a mail survey and interviews. However, the data did not make it possible to use any statistical methods. Thus the study is descriptive. It should be also noted when comparing the countries that the data used may be from different years. The countries analysed do not represent a sample of any larger population.

The Structure-Conduct-Performance paradigm was used as the background framework guiding the country descriptions. It was assumed that the higher the share of forests owned by NIPF owners, and the more fragmented the private forest ownership is, and the less there is co-operation between private private forest owners in roundwood marketing, the more important the price reporting is in reducing the informational asymmetry between the trading agents. The various methods of roundwood trade, as well as collective price agreements or discussions and other cooperation in roundwood marketing, were also considered in the analysis.

The country descriptions based on literature and interviews show that prices are publicly reported relatively infrequently in Norway and Sweden. In both countries private forest ownership prevails and collective (regional) price lists are used by forest owners associations. Hence, it seems that price agreements have been used as substitutes for price reporting at least to some degree, as suggested by Uusivuori and Mykkänen (1996). However, it seems that the price agreements can not fully replace price reporting. Therefore, development of price reporting to become more frequent in both Sweden and Norway could be considered, especially since the price agreement systems have changed to be less binding and more company specific.

It could be also considered to start more frequent price reporting in France where private ownership dominates but roundwood prices are officially reported only annually and no agreement or discussion system exists. In the UK the existence of forest management companies may reduce the need for very frequent price reporting. In Switzerland, the low degree of private forest ownership (NIPF owners) is assumed to reduce the general importance for frequent public price reporting. However, it is also in Switzerland difficult for the private forest owners to follow the development of roundwood price levels without frequent price reporting.

Public roundwood price reporting is more frequent in Finland than in any of the countries

analysed. There also exists a collective discussion system about the development of price level between the forest owners and two large forest industry companies. Prices are also reported fairly frequently in Austria and Germany, which are characterised by private ownership but no collective price agreements between private owners and forest industry. There is no major need to develop the frequency of public price reporting in any of these three countries.

Keeping in mind the limitations of the empirical data used in the country descriptions, and that no statistical methods were used, no conclusions can be made about the competitiveness of the roundwood markets in the countries analysed. This would require deeper analysis using quantitative methods which go far beyond the scope of this study, such as testing the competitiveness of markets based on empirical data about products and prices in the markets. These results should be compared with the results of this study about roundwood price information availability.

In conclusion, the frequency of public roundwood price reporting in Finland seems adequate in comparison to other countries. The data coverage must be regarded as good in private forests, however, information about roundwood prices from state forests is totally missing. Prices are not reported by sawlog qualities in Finland as in some other countries.

Not only accuracy, coverage and specificity of the information but also various environmental aspects may need to be considered in the future when developing roundwood price reporting. These aspects are now missing from all the price reporting systems analysed in this study. Still another point is that the primary users of price information seem to be in many countries the government officers instead of the trading agents. Perhaps the needs of the trading agents should be better taken into consideration in developing the price reporting systems in Europe to increase the beneficial effects of the price reporting.

However, assessing the beneficial effects of improved price reporting relative to its costs would be always needed before investing in developments, since price reporting has also its costs. This applies to Finland and any other of the countries analysed in this study. Private information services accomplish public price reporting and therefore these should be better considered in the further studies.

REFERENCES

AID. Forst und Holz. *(1995) Auswertungs- und Informationsdienst fur Ernährung, Landwirtschaft und Forsten. Bundesrepublik Deutschland.*

Allihn A. *(1994) Aufgaben und Chancen des Holzhandels bei veränderter Organization des Holzabsatzes. In Bartelheimer, P. & Moog, M. & Volz, K.-R. (eds.). 1994. Rohholzabsatz als Organizationsproblem. Forstliche Forschungsberichte München 136. pp. 74-87. Schriftenreihe der Forstwissenschaftichen Fakultät der Universität München un der Bayer.*

Bergman, M. A. *(1994) Konkurrensen på virkesmarknaden och den nya konkurrenslagen.(Competition in the roundwood markets and the new competition legislation). Arbetsrapport 87. Sveriges Lantbruksuniversitet. Institutionen för skogsekonmi. 25 p.*

Boyd, R.G. & Hyde, W.F. *(1989) Forestry Sector Intervention. Iowa State UniversityPress. pp. 91-119.*

Clarke, R. *(1985) Industrial Economics. Basil Blackwell Ltd. 291 p.*

Hyde, W.F. & Newman D.H. *(1990) The value of price information in roundwood markets. IUFRO XIX World Congress Proceedings. pp. 91-119.*

Jöbstl, H.A. *(1994) Einführung in die Forstliche Absatz- und Marktlehre. Teil I und Teil II.Schriften aus dem Institut für Forstliche Betriebswirtschaftspolitik. Abteilung für Rechnungswesen und forstliche Marktlehre. FOFI. Kommissionsverlag, Österreichischer Agrarverlag. Wien. 186 s (Teil I) + 78 s. (Teil II).*

Kroth, W. & Bartelheimer, P. *(1993) Holzmarktlehre. Lehrstuhl fur Forstliche Wirtschaftslehre in der Forstwissenschaftlicher Fakultät der Ludwig-Maximilians-Universität. München. Verlag Paul Parey. 205 p.*

Kuuluvainen, J. & Hetemäki, L. & Ollonqvist, P. & Ovaskainen, V. & Pajuoja, H. & Salo, J. & Seppälä, H. & Tervo, M. *1988. The Finnish roundwood market: an econometric analysis. Finnish Economic Papers. Vol 1(2). pp. 191-201.*

Künftige Rundholzversorgung aus dem Schweitzer Wald*. Ziele und Prognosen für die Jahre 1995 und 2000 basierend auf Umfragen beim kantonalen Forstdienst und den Waldwirtschaftswerbänden. (1991) Bundesamt für Konjukturfragen. IP Holz 940. 81 p.*

Lèvêque, F. & Péguret, A. *(1988) Forêts et Industries du bois. Structures et performances. Economica. Collection économie et agro-alimentaire. 516 p.*

Mitchell, C.P. & Cooper, R.J. & Ball, J. & Gunneberg, B. & Swift, J.J. *(1994) The Private Woodlands Survey. The Costs of Forestry Operations in Great Britain 5.4. 1989-4.4. 1992. Forestry Commission Technical Papers 5. 50 p.*

Munn, I. A. & Rucker, R.R. *(1994) The value of information services in a market forfactors of production with multiple attributes: The role of private consultants in private timber sales. Forest Science Vol. 40 No. 3. pp. 474-496.*

Nikunen, T. *(1995) Raakapuumarkkinat ja kilpailulainsäädännön uudistaminen Pohjoismaissa.(Roundwood markets and renewal of competition legislation in the Nordic countries). The Finnish Forest Research Institute. Reports N:o 548. 70 p.*

Ollonqvist, P. & Heikkinen, . *(1994) The Finnish Forest Research Institute. Research Notes . p. In Finnish.*

Ovaskainen, V. & Kuuluvainen, J. *(eds.) (1994) Yksityismetsänomistuksen rakennemuutos ja metsien käyttö. (Structural changes in the private forest ownership and use of forests). The Finnish Forest Research Institute. Research Notes 484. 122 p. In Finnish.*

Phlips, L. *(1988) The economics of imperfect information. Cambridge University Press. 275 p.*

Provencher, B. *(1994) Structural estimation of the stochastic dynamic decision problems of resource users: An application to the timber harvest decision. Journal of Environmental Economics and Management 29, 1995. pp. 321-338.*

Schwarzbauer, P. *(1994) Die Organization des Rohholzabsatzes. Österreich im internationalen Vergleich. Holz-Zentralblatt, Nr. 105. 2.9.1994. pp. 1650-1656.*

Shepherd, W.G*. 1990. The economics of industrial organization. Third edition. Prentice Hall, Englewood Cliffs. New Jersey.*

Skogsstatistisk årsbok. *(1997) Skogstyrelsen. Svenska officiella statistik. 351 p.*

Skogsstatistisk årsbok*. (1994) Skogstyrelsen. Svenska officiella statistik. 349 p.*

Stigliz, J. E. *(1995) Role of government in the contemporary world. Background Paper No. 5. Hig level group on development strategy and management of the market economy. Third meeting. Helsinki Finland 8-10 July 1995. United Nations/Wider. 15 p.*

Sundberg, P. *(1988) Raakapuun kaupan valtasuhteiden kehitys vuosina 1970-1985.(Institutional power in Finnish roundwood markets in 1970-85). Pro Gradu - thesis. Department of Forest Products Marketing. University of Helsinki. In Finnish.*

Tirole, J. *(1988) The Theory of Industrial Organization. The MIT Press. 479 p.*

Toivonen, R. *(1996) Raakapuumarkkinat ja markkinainformaatio eri maissa. (Roundwood markets and market information in selected countries). University of Helsinki, Department of Forest Economics. Working papers No 8. 61 p + appendixes.*

Toppinen, A. & Toivonen, R. *(1997) Cointegration in testing the Finnish Roundwood Markets. Pellervo Economic Research Institute. Working papers No 1.. 15 p + appendixes.*

Uusivuori, J. & Mykkänen, R. *(1996) European Competition Policy in the Finnish Forest Sector. Pellervo Economic Research Institute PTT. Reports and Discussion Papers 138. 73 p.*

Vähäsaari, H. *(1994). Ison-Britannian metsätalouden rakenne ja korjuukoneiden markkinat. (Forestry in Great Britain and harvester markets.) Finland Trade Center Publication Series 10/1994. Finland Trade Center. London. 20 p. In Finnish.*

Yearbook of forest statistics *(Metsätilastollinen vuosikirja) 1995. (1995) Agriculture and Forestry 1995:5. The Finnish Forest Research Institute. 345 p.*

Ylitalo, E. & Mäki-Simola, E. & Turunen, J. *1990. Markkinapuun alueittaiset hankintamäärät ja kulkuvirrat vuonna 1988. Summary: Removals and flows of commercial roundwood in Finland in 1988, by districts. The Finnish Forest Research Institute. Folia Forestalia No 758. 51 p. 32 Referenecs*

Respondents of the structured mail survey to organizations providing price information (9):

Zentrale Markt- und Preisberichtstelle GmbH. Rochusstrasse 2, 53123 Bonn (1995)

Ministerium fur Ernährung, Landwirtschaft und Forsten. Bundesrepublik Deutschland. Referat Forstliche Erzeugung, Vermarktung, Forstnutzung. Rochusstrasse 1, 53123 Bonn (1995)

Staatliches Forstamt Bonn, Flerzheimer Allee 15, 53125 Bonn (1995)

Bundesministerium für Land- und Forstwirtschaft. Sektion Forstwesen, Federal Ministry of Agriculture and Forestry. Forest Statistics Section. Ferdinandstrasse 4, 1020 Wien (1994)

Inventaire Forestier National, Direction Technique, Château des Barres, 45290 Nogent-sur-Vernisson, France (1995)

Agricultural University of Norway, P.O.Box 5044, 1432 Ås (1995)

Skogsstyrelsen, National Board of Forestry, Forecasting Department, 55183 Jönköping, Sweden (1995)

Eidgenössische Forstdirektion, 3003 Bern, Switzerland (1994)

Forestry Commission, Department of Forest Management, 231 Corstorphine Road, Edinburgh EH12 7AT, UK (1994)