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Forest Resources, Production and Exports of Roundwood and Sawnwood from Russia

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Abstract
In this study, the recent development and current state of Russian forest sector are reviewed in order to evaluate its significance in a global scale. The main emphasis is on the utilisation and management of Russian forest resources and on the recent development in roundwood and sawnwood exports, which currently comprise over 50 per cent of the total forest product export from Russia.

Since the beginning of the 1990s, Russian forest sector has undergone a deep structural change. The privatisation of forest industry, institutional changes, liberalisation of forest product's prices and intensified participation in international trade have strengthened Russia's role as an important wood procurement region as well as a noteworthy producer of low value-added forest products such as sawnwood. Due to economic and political reforms such as the devaluation of rouble in 1998, fellings and exports of roundwood and sawnwood have begun recovering after the drop in the early 1990s. In 2002, fellings in Russia totalled 165 million cubic metres whereas roundwood and sawnwood exports reached 37.7 million and 9 million cubic metres, respectively.

In Europe, Russia has become an important actor in sawnwood markets. In German sawnwood market, for example, the market share of Russia is the largest of sawnwood importing countries. Roundwood trade with Finland and Sweden, the largest European importers of Russian roundwood, has increased during the transition period and comprises nowadays approximately one fifth of industrial use of roundwood in both the countries.

Currently, Russia is negotiating for participating in World Trade Organisation, the new Forest Code is under construction and Russian Federation tries to attract investments in forest sector. Furthermore, the economic growth in Russia is rapid and it will evidently increase the domestic demand for forest products. Vast forest resources in Russia provide a solid base for increasing forest industry capacity in the area. On the other hand, many obstacles such as lack of infrastructure, heavy bureaucracy and undeveloped financial institutions, some to mention, still exist in Russia. In the future, it is nevertheless likely that Russian forest sector will progress towards a more significant role both in national and international business.

Keywords
Russia, forest resources and management, roundwood and sawnwood exports

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1 Introduction

Since the collapse of the Soviet Union, Russian forest sector, as the whole Russian society, has been in a state of transition. Reforms induced by the radical change from the top-down control-and-command system to market economy, such as privatisation of forest industry, liberalisation of forest product's prices and gradual opening of the borders to international trade have affected the structures and functioning of the Russian forest sector and made it increasingly export-orientated. The incentive provided by the higher international prices of forest industry products than in Russia has also affected this development decisively, especially as regards the exports of low value-added products. From international perspective, the penetration of Russian forest products to international markets is likely to tighten competition, especially in Europe and Eastern Asia.

Russian forest sector development has also effects on the traditional forest products exporting countries, such as Finland and Sweden. In order to evaluate the present and future significance of Russian forest sector, it is essential to understand its structures and potential. Therefore, the aim of this paper is to present a short overview of the development of the Russian forest sector during the post-Soviet period and give basic information for assessing the future development of roundwood and sawnwood exports from Russia. The present overview is a result of a larger ongoing project analysing determination of exports of roundwood and sawnwood from Russia to its main European markets and examines how Russian exports can be expected to effect on competition especially in European sawnwood market. Therefore, the emphasis is put on German markets, where Russian sawnwood has become a great competitor for Finnish sawnwood.

The outline of the paper is as follows. First, we discuss the forest resources, forest management and forest use in Russia. Second, we review the export of forest products from Russia, and their competitiveness in world markets. As roundwood and sawnwood currently comprise about 50% of forest product exports from Russia, we shall focus on describing the development in production and export of these products. From the European perspective, the majority of Russian forest product exports originate from the European part of Russia and from Northwest Russia[1] especially. In year 1999, about 29% of total Russian exports of roundwood, 35% of plywood exports and 40% of paper exports originated from Northwest Russia (Dudarev et al. 2002). Despite the emphasis of this review is on Northwest Russia and its forests, information concerning the whole Russian Federation will be presented in order to broaden the perspective into forest-related issues in Russia.

[1] In this review, Northwest Russia includes the Republics of Karelia and Komi and the Archangel, Leningrad, Murmansk, Novgorod, Vologda, and Pskov regions (*oblast*). In addition to these regions, the official Federal District of Northwest Russia includes the City of St. Petersburg, Kaliningrad region and Nenets autonomous region (*okrug*), the forest resources of which, however, are relatively small. The Russian units of regional administration are republic, federal city, oblast (region), autonomous oblast, autonomous okrug (district), and krai (district), which all have the equal status of a subject (a member of the Russian Federation).

2 Forest Resources and Forest Management in Russia

2.1 Forest Resources

The scale and quality of forest resources determine the economic potential of a nation's forest sector. In the case of Russia, forest resources are often regarded as vast and seemingly endless. The area of 850 million hectares covered with forest vegetation accounts for 22% of global forest area and 50% of the total area of Russia (1710 million ha). The growing stock of 82 milliard m^3 accounts for 25% of the total volume of world's forests. Consequently, the forest resources of Russia are the largest of all countries. (Roshupkin, 2003)

To clarify the Russian forestry-related terminology, we define first the concept of Forest Fund (*lesnoi fond*). The Forest Fund of the Russian Federation, which is often considered synonymous with Russia's forest resources, comprises practically all the land area[2] that might potentially be covered with forests. Thus, the Forest Fund contains both forest and non-forest lands which are used or could be used (e.g. after reclamation) for forestry purposes. Forest lands, which account for the aforementioned 850 million ha, include, in addition to closed forests, naturally open stands, glades, nurseries, plantations, and felling sites. About 78% of the forest lands are located in the Asian part of Russia and the remaining 22% in the European part. Despite of this, the forest resources of the European part of Russia exceed the forest resources of the rest of the Europe (Päivinen et al. 1999). Non-forest lands, which cover an area of 287 million ha, include treeless peatlands, forest roads, sands, glaciers, pastures, and hayfields, for example. Consequently, the total area of the Forest Fund is 1113 million ha, which account for 69% of the total area of the Russian Federation. (Russian Forests 2003)

Due to Russia's geographical position, boreal coniferous forests dominate the Forest Fund. Over 76% of the area of the Forest Fund belong to the boreal (*taiga* in Russian terminology) forest vegetation zone. In the north, the Forest Fund consists of nearly treeless tundra forests (13% of Forest Fund), whereas in the south mixed and broad-leaved forests of the temperate vegetation zone are prevailing (7% of the Forest Fund). A minor proportion of forests in the south is classified as forest steppe and steppe (3% of the Forest Fund). (Kuznetzov 2003)

Coniferous species, i.e., pine, spruce, larch, fir, and Siberian pine, predominate 71% of the forest area (Fig. 1). However, as regards the growing stock the share of the coniferous tree species is even higher, over 80% (Kukuev 1994). This results from the fact that the broad-leaves of boreal zone usually are the pioneers of succession and, therefore, are typical of young stands with relatively low volume of growing stock. In the final stages of natural succession, conifers prevail. The most common conifer, larch, predominates 36% of the forest area. Larch as well as Siberian pine and fir forests are typical of the Asian part of Russia, whereas in the European

[2] A minor share of forest land (ca. 40 million ha or 0.5% of all the forest lands) is not included in the Forest Fund. These forests are either used for military purposes and administered by the Ministry of Defence (ca. 30 million ha) or they are so-called urban forests, i.e., green belts around cities (ca. 10 million ha) (Russian Forests 2003).

part, boreal forests are characterised by spruce and pine (Russian Forests 2003). Birch is the most common of broad-leaved tree species predominating 13% of the forest area. Young birch-dominated stands of the early stages of succession are typical of the areas under intensive forest use in the European part of Russia and in the Western Siberia (Russian Forests 2003). Although oak and beech forests are rare in Russia (predominating 1% of the forest area), they are of great regional economic importance in the south-western parts of the country, especially in Caucasus area as well as in Russian Far East (Roshupkin 2003).

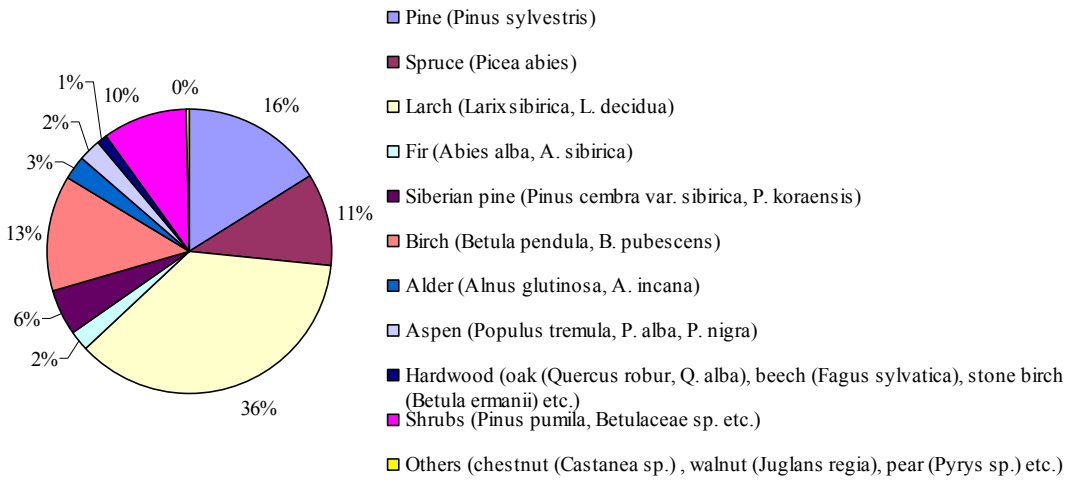

Fig. 1. Dominant tree species on the forest lands in Russia. Percentages are proportions of the total forest land area (State Account Forest Fund 1998 (SAFF-98) statistics provided by E. Kuznetsov).

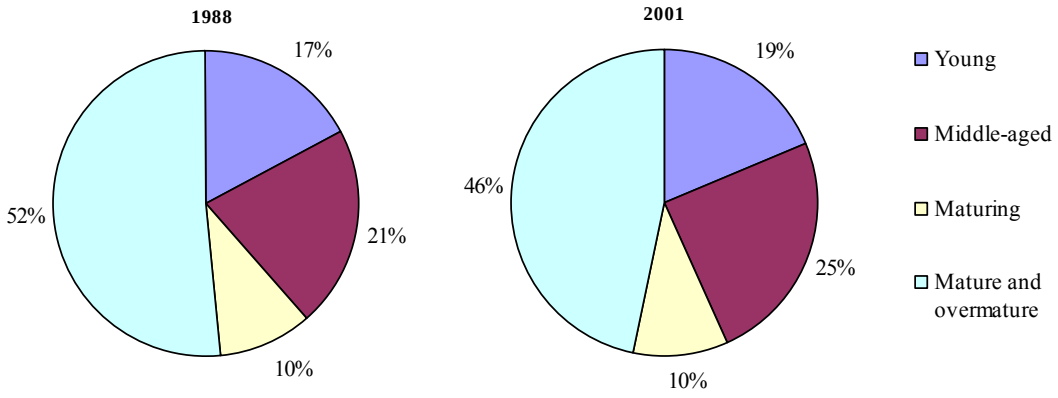

Fig. 2. Development class distribution of Russian forests by area in 1988 and 2001 (Russian Forests 2003).

The development class distribution of Russian forests[3] is presented in Fig. 2. As can be seen, the forest lands are dominated by mature and overmature stands, the proportion of which was 46% of the forest area and 57% of the growing stock in 2001 (Russian Forests 2003). However, the

[3] The Russian development class classification on the boreal zone is as follows: young; 0 – 40 yrs. (conifers), 0 – 20 yrs. (broad-leaves), middle-aged; 41 – 80 yrs. (conifers), 21 – 40 yrs. (broad-leaves), maturing; 80 – 100 yrs. (conifers), 41 – 50 yrs. (broad-leaves), mature 101 – 160 yrs. (conifers), 51 – 80 yrs. (broad-leaves), overmature >160 yrs. (conifers), >81 yrs. (broadleaves) (Burdin et al. 1998).

proportion of mature and overmature forests has had a decreasing trend mainly due to intensive forest use in certain regions. Furthermore, the age class distribution varies greatly regionally. About 71% of the mature and overmature forests are located in the Asian part of Russia, often in areas being difficult or impossible to access (Gareyev et al. 1998). In fact, a large proportion of forests of the Asian part are still in virgin state. In the Eastern Siberia, for example, nearly 40% of the forest area is classified as intact forest by nature conservation NGOs. In some regions, such as Koryak autonomous region, 90% of the forests are considered intact. In turn, in Northwest Russia, where relatively intensive forestry has been practised for centuries, the share of mature and overmature forests is lower (30% of forest area) than on an average in Russia and only a minor proportion of forests (9%) is still intact. (Aksenov et al. 2002)

The age structure distorted towards mature and overmature forests affects inter alia the growth rate of Russian forests. The mean annual increment is estimated to be only 1.3 m^3 per hectare, which results from the slowed growth rate of old trees as well as from the high mortality in unthinned stands (Russian Forests 2003). However, also the fact that more than a half of all the forests in Russia are growing on the permafrost soils in the Asian part of Russia contributes to the rather low average timber-producing productivity of the forests (Kopylova 1999a). For the sake of comparison, in Finland the mean annual increment is 3.5 m^3 per hectare (Finnish Statistical… 2003). The regionally uneven age class distribution increases the transportation costs of wood and forest products, as the harvestable forests are far from wood processing plants and consumers. Furthermore, because of the prevalence of mature and overmature forest, traditional Russian logging technologies are focused on clear felling. This together with the low state funding for silviculture, the annual amount of intermediate fellings is insufficient in terms of optimal tree species composition, timber quality and economic profitability of forestry (Roshupkin 2003). However and obviously, the large virgin forest areas are of great ecological value.

2.2 Management of Forest Resources

2.2.1 Forest Ownership and Institutional Structure of Forest Management

Currently, the Russian forest legislation and the forest administration are under a heavy reconstruction. Information concerning the stage and factual effects of this process is limited and sudden changes are common. However, already during the Soviet era, the administrative structure of forestry and forest industries underwent a multitude of radical changes in terms of unifications, separations, reunifications and renamings of the administrative units with coinciding redistributions of their functions and responsibilities (cf. Tatcûn 1996). However, this often concerned merely the ministry level while the changes at the operational level were milder: the soviet *leshoz*–system, for example, remained the same with only minor alterations until recently. Whether the current restructuring process follows the old traditions, remains to be seen. In the following, we attempt to describe the integral elements of the present (spring 2005) situation and review the recent practises in forest management.

The post-Soviet privatisation process of Russia's economy has not influenced the ownership of forests decisively, for according to the valid federal Forest Code from 1997, the Forest Fund is in the federal ownership[4] (Lesnoi Kodeks… 1997). The Forest Code also admits a transfer of a part of the Forest Fund into the ownership of the members of the Russian Federation, i.e. the subjects. However, this does not alter the fact that in Russia, forests are still state owned, as they have been since the forestland nationalisation in the early 1930s. The proposed bill for the new Forest Code, contained in the spring of 2004 a section that would have allowed the private ownership of forests after a 15-year lease period. This particular section, however, faced opposition at the Federal Duma and the Council and, consequently, it was removed from the recent drafts of the Forest Code. The legislative process is continuing and new drafts of Forest Code are being prepared. In addition, changes are simultaneously being made to the Forest Code of 1997. The Federal Law 199-FZ (dating from December 29th 2004), for example, changed many sections of the valid Forest Code considerably thus giving insight into future development of Russian forest legislation.

Currently, practically all the forests (99.97%) constituting the Forest Fund are controlled by the Ministry of Natural Resources (MNR). The Ministry of Education has the control over the remaining 0.03% (www.mnr.gov.ru)[5]. Within the MNR, forest issues are dealt with in two departments: the Federal Forest Agency (FFA) manages the state forest property factually and the Federal Supervisory Natural Resources Management Service supervises the forest management. The FFA is responsible for functions such as forest monitoring; maintaining of growing stock records, determines the felling ages and approves the designed felling areas, some to mention. (www.mnr.gov.ru).

At the regional level, the subjects have their own central administration and management bodies of natural resources including a body of forest resources. These regional forest services, which are called Forest Committees, Forest Ministries or Forest Administrations depending on the region, operate under direct supervision of the FFA and perform functions such as preparing of legislation concerning forest management within the subjects, organising of tending, regeneration and forest protection, preparing proposals for the local executive organs, i.e. forest management units, on distribution of the felling areas, and funding forest management units within the framework of federal budget as well as from local budgets (Russian Forests 2003). The federal Forest Code allows the subjects also to have their own forest laws and statutes, which should not be in contradiction with the federal Forest Code. However, the Forest Code is ambiguous regarding the jurisdiction and the distribution of ownership rights and obligations between the Federation and the subjects, for which, among other things, it has been criticised

[4] To be precise, lands classified as forestry lands are under federal ownership. In turn, the private ownership of land classified as agricultural land is allowed. Because agricultural lands also include closed forest lands the private ownership of forests actually is possible in Russia (www.idanmetsatieto.info).

[5] Until the end of 2004, about 4% of the Forest Fund was controlled by Ministry of Agriculture. Currently, these forests belong to the control of regional authorities. The proportions of the former agricultural forests vary regionally: in the Vologda region, for example, 20% of forestlands are former agricultural forests (www.idanmetsatieto.info).

(e.g. Kopylova 1999b, Petrov 2003a). However, the ongoing legislative procedure has shown that the tendency is to centralise decision making on forest issues to organs on federal level.

Forest management units (*leshoz*, FMU) operate at the local level and have been the most important actors as regards managing of state forest property in practise. These statutory state organs, founded as a part of the forest nationalisation process in 1929, are the official and legal holders of forest land. The FMUs have performed functions such as forest account work, allotment of felling sites on the strength of established allowable cut, as well as participating forest inventory and planning. Furthermore, they have put out forestlands to short- and long-term lease on the basis of joint (coordinated with executive bodies) resolutions and granted corresponding licences. They also have supervised that logging enterprises are operating according to forest lease agreements and execute silvicultural operations such as intermediate fellings and activities related to regeneration of forests. (Gareyev et al. 1998)

In the 1990s, the structure of Russian forest management underwent significant reforms affecting the FMUs' activities and status. Until 1993, both forest management and logging operations were performed by FMUs and their near correspondents called *lespromhoz*es (logging enterprises). However, the reform of Russian forest legislation in 1993 separated forest management from final fellings and the mechanised logging units of the aforementioned integrated forestry enterprises were reorganised as private and joint private-state enterprises. (Russian Federation… 2003) In other words, final fellings, which in Russian terminology as distinct from western tradition belong to the forest industries instead of forestry, were privatised together with wood processing industries, whereas most silvicultural activities remained state functions.

In current market economy, government funding with respect to the FMUs' operation costs has been insufficient. Further funding is found by selling wood. This has been possible due to the FMUs' permission to execute intermediate and sanitary fellings having the nature of silvicultural operations (Piipponen 1999). In particular, the FMU's practise of executing "sanitary felllings" as a means to earn money has negatively affected forests quality (Key Challenges… 2004). Consequently, the dual role of the FMUs being the doers and supervisors of forestry, is considered problematic and a potential source of misuse and corruption. Therefore, the aim of the current organisational restructuring is to abolish the FMUs in their present form as has already occurred in the Leningrad Region (www.idanmetsatieto.fi).

2.2.2 Forest Lease

As mentioned before, the forests of Russia are state-owned, whereas industrial use of them is privatised to great extent. This is implemented by granting forest use usufructs, the main forms of which, according to the federal legislation, are leasing, concession[6] and short-term use. In

[6] Forest concession is intended for underdeveloped, remote areas requiring investments for basic infrastructure. In contrast to the aspirations of the federal government, concession agreements are rare.

this review, these forms of owning the right to utilise forest commercially are combined under the concept of forest lease[7]. Forest lease applies to wide range of forest use practises including wood harvesting, collection of resin, collection of secondary forest products (stumps, pine bark and phloem, birch bark, pine and birch branches), harvesting of minor forest products (i.e., hay, pasturage, apiculture, and the gathering of mushrooms, berries lichens, and medical plants) as well as hunting. According to Forest Code (1997), and taking into account the alterations cause by the aforementioned Federal Law 199-FZ, in leasing and concession, the lease period varies from 1 to 99 years depending on the lease agreement and the procedure with which the agreement is obtained. In short-term use, which practically is selling of wood on the stump, the lease period is less than one year long. The granting of the aforementioned usufructs is based on the results of competition procedure (leasing), forest auction procedure (short-term use), auction or competition and decision of the federal SFS (concession), and on the decision of the subjects of the Russian Federation (leasing for 1 – 5 years, short-term use). (Lesnoi Kodeks… 1997) It is estimated that 40% of forest lease agreements are based on competition (i.e., on tenders), 25% on auction procedures, and 35% on the decisions of state authorities (Petrov 2003b). However, the regional differences are substantial. In the Republic of Karelia, for example, the decisions made by state authorities have been the main form of granting the rights to use forests (Piipponen 1999). The Federal Law 199-FZ changed the way of granting the forest use usufructs quite dramatically, as conducting of long-term lease agreements should currently be based only on open competition, i.e. on tenders. Regional authorities reacted to this change and hastened putting out of the remaining non-leased forest areas for lease on old conditions resulting a large increase in new lease contracts in the fourth quarter of 2004 (www.mnr.gov.ru).

Forest lease is widely practised in the areas close to domestic and international markets. In the Republic of Karelia and Archangel and Vologda regions in the Northwest Russia as well as in Primorsk and Khabarovsk krais in the Far East, for example, practically all the economically accessible forests are assigned for lease (Kopylova 1999b). The sizes of the lease areas vary from single stands sold in auctions to hundreds of thousand hectares in leasing. Also, the silvicultural obligations vary in different lease forms. Short-term forest harvesting rights obtained by forest auction usually entitle to harvest timber without the obligation of reforestation. Long-term lease contracts, in turn, often oblige the leaseholder to regenerate clear cut areas as well as to perform thinnings according to a officially confirmed management plan. Because of the silvicultural obligations, logging enterprises have been reluctant to conclude long-term lease agreement which contributes to the fact that 80% of lease agreements are less than 5 years (Petrov 2003b). The proposed bill of the new Forest Code would strengthen the tendency of vesting the obligations from the state to leaseholders, for long term (from 10 up to 99 years) lease agreements making the leaseholder responsible for silviculture and the costs of it, would be the main form of granting forest use usufructs.

[7] Furthermore, forests can be handed over to local institutions without charge on grounds of maintaining social services, for example.

According to Forest Code, natural and juridical persons, equally Russian and foreign, may act as leaseholders. However, in order to be awarded a long-term lease agreement, enterprises are required to have established activity in the territory the lease area is situated as well as to possess enough industrial capacity for harvesting and processing of timber and other forest resources (Lesnoi Kodeks… 1997). Furthermore, as regards forest auctions, the regional authorities may subjectively exclude some of the tenders from the auction process (Jacobsen 1999). Thus, the equality of Russian and foreign enterprises is considered rather questionable.

From 1997 until the end of 2004, the forest lease fees were based on the tax-like per-cubic-meter stumpage prices constituting of the so-called minimum price set for each subject at the federal level by FFA in Moscow and the regional adjustment set by the forest management bodies of the subjects on the condition that the regionally adjusted stumpage price could not be lower than the minimum price. The stumpage prices was supposed to be calculated by using the equation

(1) Stumpage price = world market price – transportation costs – harvesting costs – other costs related to harvesting (e.g., taxes and fines unrelated to profits) – risk and profit compensation to investors.

Finally, the local FMU decided, adjusting the stumpage price with respect to stand characteristics such as tree species composition, quality of growing stock, distance of hauling, and distance to foreign markets, the reservation price under which forests cannot be leased (Jacobsen 1999). In the progress of changing the forest legislation, it has been discussed whether there should still be a minimum fee or should the lease fees lease be based only on tenders.

The introduction of forest auctions, which were used as the main tool of allocating state forest property before 1917, as well as the long-term lease contracts concluded on the basis of tenders was an attempt to create a market mechanism for granting the usufructs of forest use. The obvious aim from the federal point of view was to attract foreign buyers and adjust via tightening market competition the level of lease fees to correspond at least to some extent to the costs of silvicultural operations and to gather money for state forest management[8]. The average prices paid in the forest auctions have indeed been considerably higher than the federal minimum prices or the average fees paid in forest leasing. In 2001, for example, the average prices paid in auctions were 78 roubles (2.7 $) per m^3 and, therefore, nearly four times higher than average authoritatively set minimum prices (20 roubles per m^3) (Vasin 2002)[9]. On the other hand, the average fees paid in long-term leasing have been close to minimum prices indicating

[8] In 2001, for example, the costs of state forest administration and management were trice as much as the revenues (Russian Forests 2003).

[9] In the Northwest Russia, the auction prices (excluding hardwood) were, depending on the timber assortment, 10 – 25% higher than on average in Russia. However, the auction surplus (difference between the minimum or reservation prices and the auction prices) has been relatively smaller in the Northwest Russia than on average in Russia. (Holopainen 2004) Possible and rather obvious explanations for this is that in Northwest Russia, there is no real competition in the auctions or that the minimum/reservation prices are set better to correspond the market price of wood than on an average in Russia.

the obvious lack of competition in granting the lease agreements (Holopainen 2004). It remains to be seen, whether the recent legislative change that conducting of lease agreements should be based only on competition will rice the lease fees. It seems, however, that in the new Forest Code there will be included a procedure, such as a closed auction, to benefit the Russian domestic forest industry in the tendering competition (Kivelä 2005).

2.2.3 Forest Management Groups

In order to direct forest use in practice, since 1943, all the forest of Russia have been divided into three management groups according to their economic and ecological characteristics and intended use. Each management group has its own detailed directives regarding forest use and silvicuture. Therefore, the management group classification system has a fundamental effect on economic use of forests as well as forests' ecological values. In the following, an overview of the characteristics of different management groups is presented.

Group I comprises forests with a protective function. Typically, these forests are situated along lake and river systems, public roads, railways, and around cities. Also areas of strict nature conservation such as state nature reserves, national parks, and nature parks belong to this group. Clear felling is mainly forbidden in Group I forests, whereas other types of final fellings as well as intermediate fellings (thinnings) and sanitary fellings are usually allowed[10]. In 2001, 21% of Forest Fund belonged to Group I. (Russian Forests 2003)

Group II comprises forests with both protective and economic functions. These forests are usually situated in densely-populated areas. Forests characterised by insufficient timber resources belong also to this group. In Group II forests, annual volume of felling is limited to equal annual growth and clear felling is allowed if regeneration is secured. In 2001, approximately 6% of Forest Fund belonged to Group II. (Russian Forests 2003)

Group III comprises commercial forests intended for meeting the national economy's demand for industrial roundwood without incurring damage to their protective values. These forests are situated in regions abound in forest resources. In Group III forests intensive forest use methods, such as clear fellings are allowed. In 2001, 73% of Forest Fund belonged to Group III. (Russian Forests 2003)

The distribution of forests to management classes is, however, not in stagnation. During the last decades, there has been an upward trend in the proportion of forests under restricted use. From

[10] In addition to clear felling, methods of final felling in Russia include different types of continuous, group-wise and strip fellings, all of which include clear cut areas of various sizes. In Group I forests (excluding nature conservation areas), the maximum size of these clear cuts is restricted to 5 – 15 ha depending on the dominant tree species and the vegetation zone. For the sake of comparison, in Group III forests the maximum size of a clear cut is 50 ha in most parts of Russia. Thus, although in Russian terminology clear felling as a specific type of final fellings is forbidden in Group I forests, the felling operations allowed in terms of the size of clear cut areas are even more intensive than in PEFC-certified forests in Finland.

1966 until 2001, the proportion of Group I forests increased from 14% to 21%, whereas the proportion of Group III forests decreased from 81% to 71% (Russian Forests 2003). The amount of forest belonging to management groups of restricted use (Groups I and II) has increased especially in the regions in the European part of Russia. For instance, in the Leningrad region, forests belonging to Group III are absent[11]. This process may partly be induced by public opinion emphasising the protective values of forests. However, as regards conserving of biological diversity and other ecological values of forests, the importance of schematic buffer zones along main roads or railways, for example, is questionable. In all, Russian analysts consider the further increase in the amount of forests under restricted use as a threat to the economic development of Russian forest sector (Russian Federation… 2003). It should be noted that the inflexible division of forests to three management groups was heavily criticised already during the Soviet era (e.g. Perepechin 1964).

3 Production and Exports of Roundwood

3.1 Production of Roundwood

During the first years of economic reform, the amount of fellings diminished rapidly in Russia (Fig. 4). By 1994, the volume of fellings had dropped to account for approximately one third of the annual fellings of the pre-reform era. After 1998, harvested volumes have grown slightly, but the growth seems to have stagnated (Fig. 4).

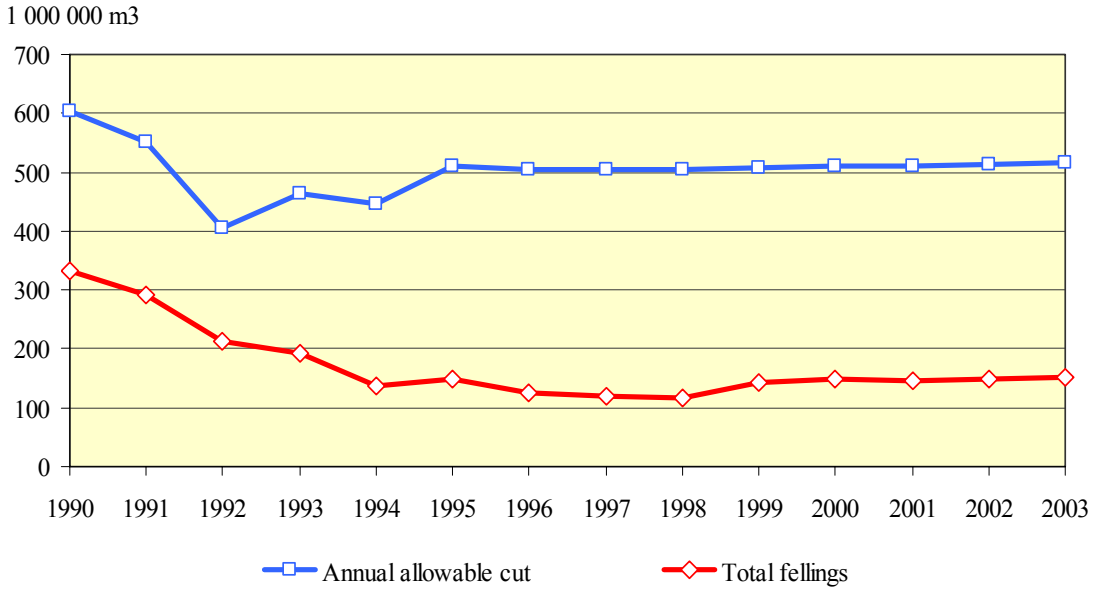

Fig. 4. Annual allowable and total fellings (including final, intermediate, and other fellings) of Russian forests controlled by the Ministry of Natural Resources in 1990 – 2003 (Russian Forests 2003).

[11] However, currently, 36% of Russian roundwood exports to Finland originate from the Leningrad region

Compared to the annual allowable cut, which is the calculatory and officially confirmed maximum sustainable volume of final fellings[12], the current level of roundwood harvest is only 23% indicating, in economic terms, underutilisation of Russian forest resources. However, regional differences are high. In Northwest Russia, the actual fellings account for 40% of the allowable cut, while in some regions, such as the Republic of Karelia, they are about 70%. Thus, in some parts of Russia the volume of annual fellings is close to the maximum sustainable level – also according to official statistics.

However, as regards the recent trends of fellings and roundwood production, which has always been coniferous orientated in Russia, the interpretation of the growth rate is difficult due to variability of figures presented in different data sources. The production of industrial roundwood according Goskomstat statistics reported by FAO is illustrated in Fig. 5. According to these figures, the production of industrial roundwood has grown more steeply after 1998 than the volume of total fellings presented in Fig. 4. One reason for this is that fuel wood, extensively logged and used in Russian countryside, is not included in the volumes of Fig. 5.

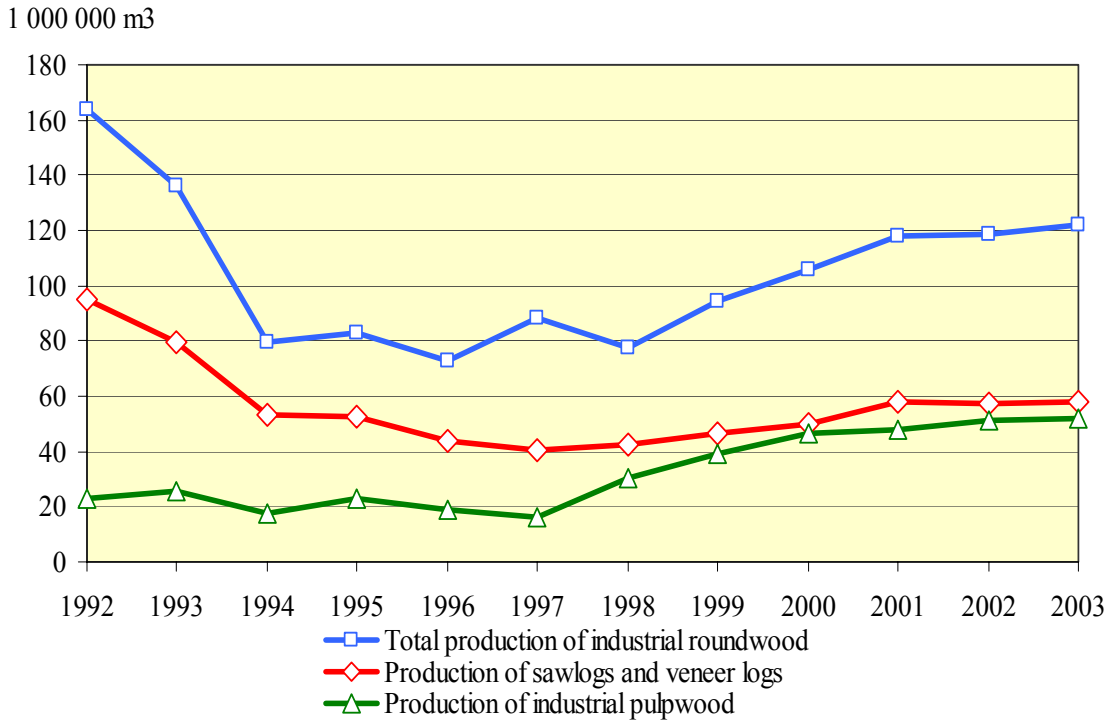

Fig. 5. Total production of industrial roundwood (including coniferous and non-coniferous sawlogs, veneer logs, puplwood, chips and other industrial roundwood), production of saw- and veneer logs (coniferous and non-coniferous), and production of industrial pulpwood (coniferous and non-coniferous, round, split and chips) in Russia according to State Committee of the Russian Federation on Statistics, Goskomstat (Faostat).

making it the main procurement area of Russian roundwood for Finnish forest industries (Laine 2004).

[12] Other than final fellings, such as thinnings, are regarded as a part of silviculture and not economic use of forests in Russia. Therefore, the roundwood procurement potential from such fellings is not considered when determining the allowable cut.

As regards the distribution of roundwood production to logs and pulpwood, the proportion of pulpwood (including chips) has grown to account for approximately 50% of production of industrial roundwood in 2003. The volumes of felled logs seem to have settled to 60 million m^3 annually (Fig. 5). The distribution of logs to coniferous and non-coniferous tree species has remained quite stable over the last decade: approximately 80% of felled logs are conifers. In the production of pulpwood, the proportion of non-coniferous tree species (mainly birch and aspen) has increased considerably. From 1992 until 2003, the proportion of non-coniferous pulpwood increased from 20% to 40% of the total production of industrial pulpwood in Russia as the production volumes of non-coniferous pulpwood grew from 4 to 20 million cubic meters (Faostat). This development coincided with the notable increase in birch pulpwood exports to Finland.

The figures of the official statistics, however, do not cover all the fellings in Russia. The reasons behind this are that the statistics are scattered among many ministries and not all fellings are even reported (Ministry of Defence does not report statistics; unreported fuel wood use of households is approximately 20 million m^3). Therefore, it is assessed that the statistics gathered by FAO underestimate the total fellings by 30%. In addition, the estimates for other fellings not included in the official statistics vary from 1% (the official figure by MNR) via 10% (Ottitsch et al. 2005) to 30% (Greenpeace, WWF) of the volume of reported fellings in the Northwest Russia[13]. This "unreported" or "illegal" wood consists of wood felled without a cutting licence, wood felled over the volumes determined in the cutting licences, wood felled from the area next to the forest determined in the licence, wood felled by local people for personal needs such as heating or constructing, etc. (www.forest.ru).

Logging without licence, which probably is to be considered the most "illegal" of the unreported fellings, occurs in large scale in areas close to international markets of roundwood as well as in relatively distant regions where supervision is minimal. This kind of logging is often performed by small mobile teams, which sell wood in cash to customers, both international and Russian, or to Russian middlemen and are protected by local criminals (www.forest.ru). However, it is estimated that this kind of illegal logging accounts for a minor proportion of unreported fellings. A larger part of unreported fellings is due to the discrepancies between actually logged volumes and volumes defined in cutting licences, for example. Unreported wood consumption by local people for their personal needs is substantial as well. Although the actual volumes of unreported fellings as well as the definitions of illegal logging vary substantially, illegal logging is an officially recognised problem in Russia and measures to restrict it has been taken. Recently, the MNR published a plan to use satellite and aerial images for controlling the forest use and restricting illegal activities (www.idanmetsatieto.info). However, the difficulties in restricting the illegal logging are numerous as corruption prevails in nearly every stages of Russian society, resources for law enforcement are insufficient and, at the same time, ill-defined boundaries between political and business activities and heavy

[13] In fact, Northwest Russia is not considered the worst region in Russia in terms of illegal harvesting. According to WWF Russia, in the Russian Far East the amount of "unreported" wood is 50% and in the Caucasus region 100% of the official figures (www.forest.ru).

bureaucracy are corruption-promoting (Levin & Satarov 2000). Due to pressure from European customers, the official line of many Western forest industry companies operating in Russia is not to buy wood if its origin is unknown.

To summarise, despite that the actual level of annual fellings is unknown, the decrease in roundwood fellings stopped in Russia in 1998. Since then harvested volumes have begun growing - although slowly. The annually harvested volumes still are far below the Soviet era level and compared to the roundwood producing potential of Russian forests, harvested volumes could grow considerably. However, there are many obstacles for the intensification of economic utilisation of forest resources. The majority of mature and overmature forests are situated in remote areas in the Asian part of Russia, where infrastructure is absent. Infrastructure in general and forest road network in particular, need large investments also in the European part of Russia. Furthermore, the recent status of forest ownership and the distribution of rights and obligations in forest lease have not encouraged the logging enterprises to invest in regeneration or other silvicultural operations resulting a deterioration of economic quality of forest stands. One aim of lengthening the maximum forest lease period has been to create to logging enterprises an incentive to improve forest management and to build forest roads. However, the economic state of many logging enterprises, especially small- and medium-sized and vertically non-integrated ones, is difficult as they are running at a continual loss and have the social obligations dating from the Soviet era.

3.2 Exports of Roundwood

During the Soviet era, the exports and imports of roundwood and forest industry products were organised by the state monopoly Exportles. The volumes of production and the prices of exported products were fixed by the Gosplan, the state planning authority. Typically, the export prices were lower than the global market prices. The political and economic changes in Russia caused the termination of the Exportles in the beginning of the 1990s. In the years 1993 – 1995, export licenses and quotas were applied to some products (Myllynen 1996). However, only after 1995, the foreign trade was totally liberalised, and the local logging companies, lespromhozes, as well as other roundwood traders were able to access to international markets.

In the beginning of the 1990s, only about 5% of total fellings in Russia were exported. Since then, the export volumes have increased significantly (Fig. 6). In 1992, the total volume of roundwood exports was about 10 million m^3. In 2003, the total volume had increased to about 37 million m^3, which was over 30% of the total felling in Russia. It should be noted, however, that this increase was mainly due to the increase in coniferous (mainly spruce and pine) exports. While the non-coniferous (mainly birch) export has only slightly increased during the last decade, the exports of coniferous roundwood has increased from 5 million m^3 in 1992 to about 28 million m^3 in 2003. The main reasons for this development are that the fellings have concentrated mostly on coniferous fellings because of the good export prices, and an increase in domestic utilisation of birch. Especially, the trade volumes increased sharply after the

devaluation of rouble 1998 due to the increased price competitiveness. After the turn of the century, the growth of total exports has dried up mainly due to increase of tariffs, transportation and other costs, and the annual volumes have remained above 35 million m^3.

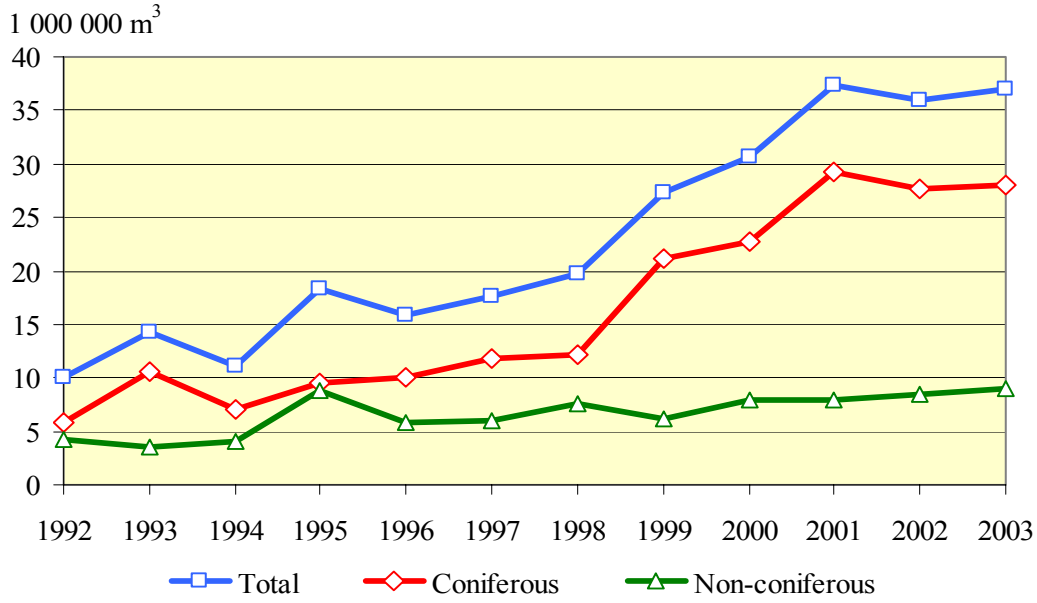

Fig. 6. Roundwood exports from Russian Federation 1992 – 2003 (Faostat).

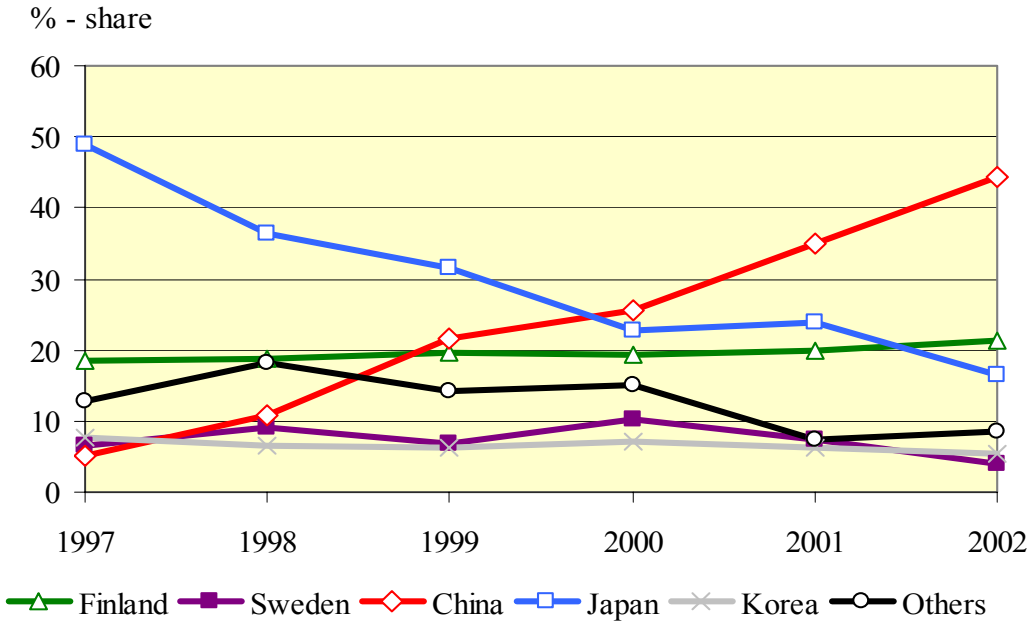

Fig. 7. Main export countries of Russian coniferous roundwood, 1997 – 2002 (Faostat).

Along with the increase in export volumes, the distribution of roundwood exports by countries has changed. As can be seen from Fig. 7, China has replaced Japan as the most important destination of the Russian coniferous roundwood. Nearly half of the total exports directs to China, which nowadays is the world's largest importer of industrial softwood. Japan, who

consumes mostly sawlogs for construction purposes, imported 17% of the total export volumes of Russian coniferous roundwood in 2002. Although the export volumes have increased, the export share to Republic of Korea has been rather stable over time being about 6-7% of the total export.

From the Western part of Russia, most of the roundwood exports directs to current area of European Union (EU 25). Especially, as can be seen from the Fig. 8, Finland is the most important European importer of the Russian coniferous roundwood. Finland's share has been about 20 per cent of the total Russian coniferous roundwood exports over the time period 1997 – 2002. The share of Sweden, the second largest importer of Russian roundwood in the EU area, has slightly decreased being less than 4% of the total export in 2002.

The volume of Russian coniferous roundwood exports to current area of European Union totalled 3.3 million m^3 in 1997, which accounted for 27% of the total exports (cf. Vinokurova et al. 2005 for more details). The corresponding figures in 2002 were 28.4 million m^3 and 30%, respectively. Inside the EU area, the export volumes have distributed rather unequally. Finland and Sweden are the most important importers of the Russian roundwood accounting for over 80% of the total export volume to EU area (Fig. 8). In 1997, Finland's share was 66% of the coniferous roundwood exports from Russia to EU, while by 2002 the share had increased to 70%. During the same period, the export share of Sweden had diminished and the export shares of the Baltic countries, especially Estonia and Latvia, had grown slightly. The export to Germany has also slightly increased.

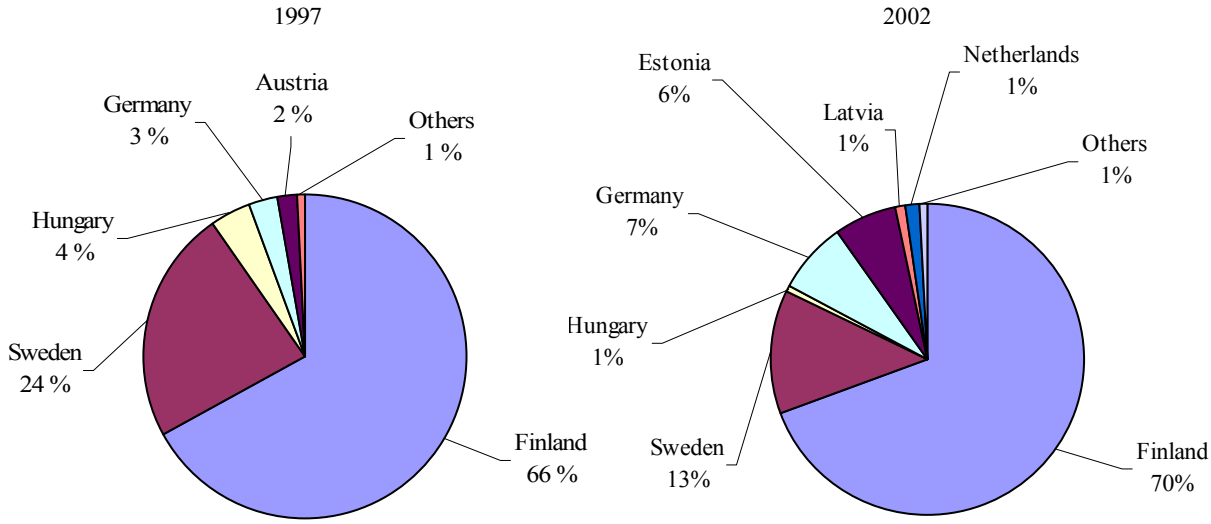

Fig. 8. Export shares of Russian coniferous roundwood to different EU-countries in 1997 and 2002 (Faostat).

Nearly 90% of non-coniferous roundwood exports from Russia direct to EU area. During the years 1997 – 2002 Finland has been the main importer of Russian non-coniferous roundwood. According to the Fig. 9, the Finland's share of non-coniferous roundwood exports from Russia has increased from 60% in 1997 to ca 80% in 2002. The share of Sweden is about 10 % of the

Russian non-coniferous exports. It is also noteworthy that China, despite its minor share until year 2000, has increased its imports of non-coniferous roundwood from Russia. The roundwood exports from Russia to other countries, such as Japan or other EU countries have been of marginal importance.

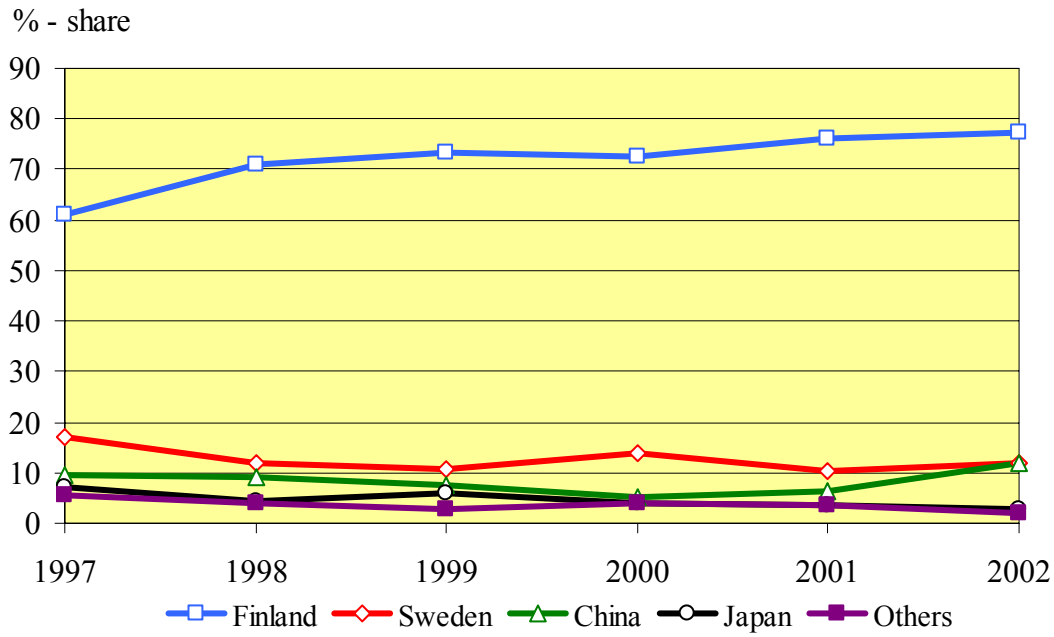

Fig. 9. Main export countries of Russian non-coniferous roundwood, 1997 – 2002 (Faostat).

The exports of Russian non-coniferous roundwood to the current area of European Union even emphasise Finland's dominant role. Fig 10. depicts the export shares to EU area. From 1997 to 2002, Finland's share of Russian non-coniferous exports to EU area has increased from 75 to 84%. At the same time, Sweden's share has diminished from 20% to slightly over 10%.

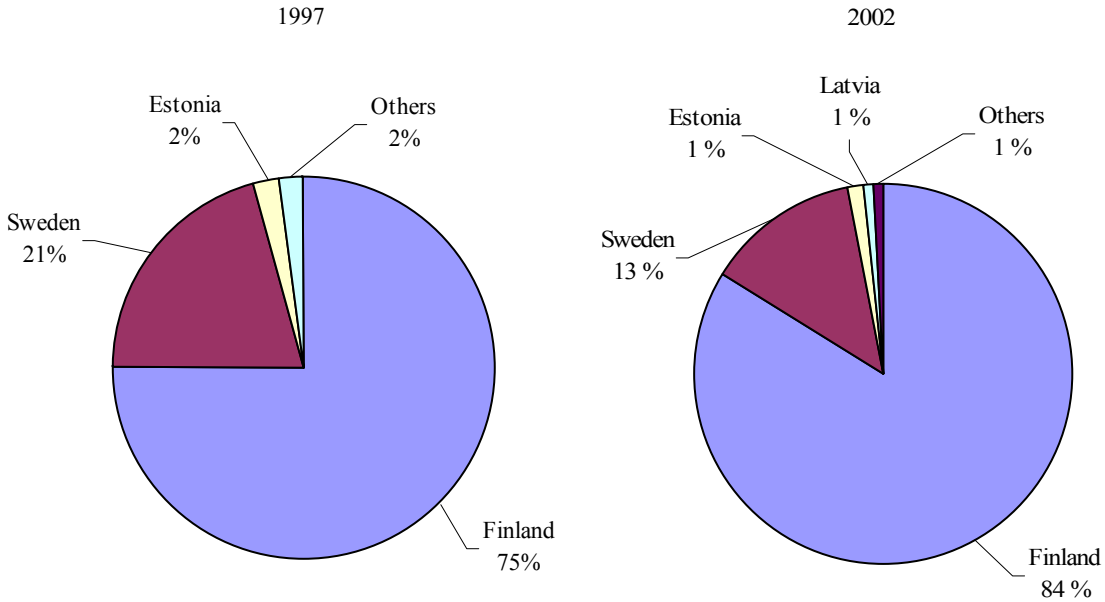

Fig. 10. Export shares of Russian non-coniferous roundwood to different EU-countries in 1997 and 2002 (Faostat).

The reason for the increased non-coniferous exports is due to the inability to utilise all harvested volumes of hardwood in Russia even though the domestic use of birch has increased during the recent years. Forests in Russia are mixed and forest legislation obligates to cut the non-coniferous as well as coniferous wood from stands. In Northwest Russia, the lack of coniferous stands has necessitated the fellings toward into more birch intensive forests. In addition, while most of the fibre- and particleboard enterprises were bankrupted after the collapse of the Soviet Union, the logging companies have had strong incentive to sell the non-coniferous pulpwood to abroad where they receive a better price than in domestic markets. The federal government in Russia has also promoted this export by diminishing customs duties for non-coniferous pulpwood until the domestic utilisation of hardwood will recover.

Most of the Russian roundwood exports to EU area originate from Northwest Russia. Although any reliable or detailed statistics of roundwood exports or of the distribution of assortments from Northwest Russia do not exist, the export volumes to Finland give a good approximation of the evolution of the total roundwood exports to European Union. As depicted in Fig. 8 and Fig. 10, most of the total roundwood exports to EU area direct to Finland, which compiles extensive statistics of the imported roundwood assortments. The total roundwood imports from Russia to Finland has more than doubled from the early 1990s to 2003 consisting 13.4 million m^3, which is over 80% of the total roundwood import to Finland. This accounts for about 20% of the total industrial use of wood in Finland. However, as discussed in Ollonqvist & Viitanen (2004) and Tilli et al. (2004) in more details, the distribution of imported roundwood assortments has changed during the last 10 years.

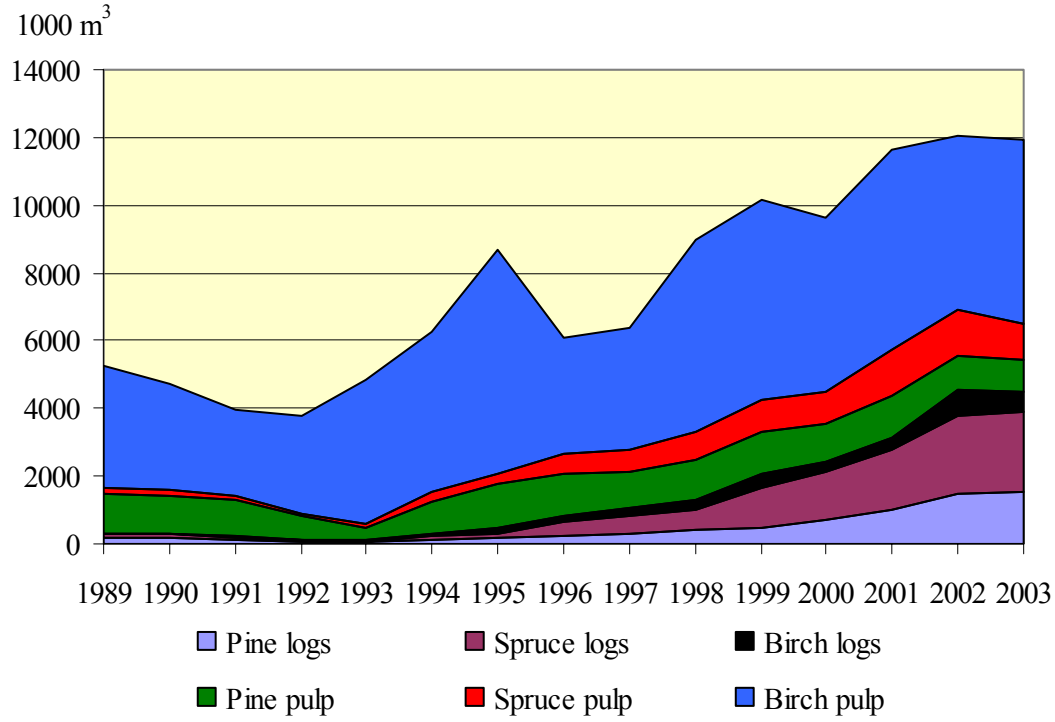

Fig. 11. Distribution of roundwood exports (1000 m^3) from Russia to Finland, 1989 – 2003 (Board of Customs, Metinfo).

In the early 1990s, over 90% of the roundwood imports from Russia to Finland consisted of pine and birch pulpwood (Fig. 11).[14] Although birch pulpwood, consisting currently about half of the roundwood imports from Russia, is still the most important assortment, the share of coniferous logs has increased significantly. In 2003, the shares of pine and spruce logs were 12% and 17%, respectively, while in the early 1990s the shares were less than one per cent. The share of pine pulpwood has remained rather stable over time, whereas spruce pulpwood has become a more important import article for Finnish forest industry. In 2003, its share of total roundwood imports from Russia was 8%.

4 Production, Consumption and Exports of Russian Sawnwood

4.1 Production and Consumption of Sawnwood in Russia

During the pre-reform period the Soviet Union was, after the USA, the second largest sawnwood producer in the world. The collapse of the Soviet Union had dramatic impacts on Russian sawnwood production. In the period of economic transition, sawnwood production dropped about 75% compared to the year 1989. The development of sawnwood production and domestic consumption[15] in 1992 – 2003 are presented in Fig. 12. As to sawnwood production, two different periods can be separated. During the first one, up to 1998, production volumes were sharply falling. In 1999, the decrease in production volumes stopped and, after a slight increase, production settled down to 20 million m^3 annually. Thus, the trends of sawnwood production (Fig. 12) resemble those of sawlog fellings (Fig. 5).

During the 1990s, the Russian sawmilling industry together with other branches of forest sector was in economic crisis suffering from low level of investments and innovations, low technical level of production, labour productivity and consumption decreased etc. In this crisis, also the earlier policy of the Government (in the 1980s) may have worsened the situation. As a part of the Soviet industrial policy that emphasised the expansion of utilisation of natural resource of Siberia and Northern regions, logging and wood processing was shifted to Siberia and Far East, where the largest and underutilised forest resources existed. (UNECE 2003). This has caused high transport costs and other inefficiencies for the processing industry, whose customers are far from the place of production. The difficulties in transition towards market economy are clearly detectable in sawnwood consumption (apparent consumption) that has been continuously

[14] The data from 1989 – 1994 is collected from Finnish Board of Customs (Mutanen 2004). While for years 1995 – 2001 only the total imported volumes of species are available, the sub-division of pine, spruce and birch into pulpwood and logs is estimated by using the shares of timber assortments with respect to the total import to Finland as reported by Finnish Forest Industries Federation. The data from 2002 onwards contains detailed information of assortments, and is collected from Metinfo.

[15] Consumption figures are calculated as apparent consumption = production – exports + imports. The statistics do not contain all small-scale sawmills in Russia.

decreasing during 1992 – 2003 (Fig. 12). With this respect, the consumption figures differ from production, as consumption shows no signs of rise since 1998.

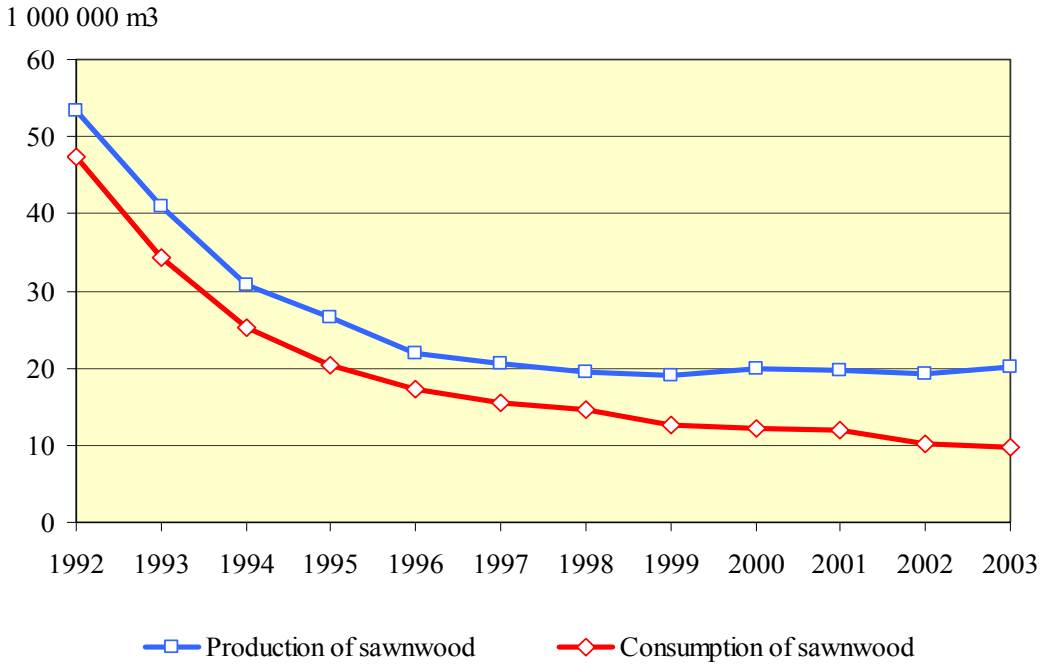

Fig. 12. Production and (apparent) consumption of sawnwood in Russia, 1992 – 2003 (Faostat).

An important reason for the decreasing consumption as well as production was the sharp drop in Russian economy in the transition period. The gross domestic product (GDP) was decreasing during several years (Table 1). In 1998, the GDP was only 57.5% compared to the level of 1990 (UNECE 2003). The economic crisis forced the Government to try to change the economic policy, but it was also forced to allow the rouble to float at a more wide and expanded range against the US dollar. This resulted in a devaluation of the rouble by 40% in 1998.

Table 1. Macroeconomic indicators for Russia.

Indicator	1992	1996	1998	2000	2003	2004
GDP, %- change	-14.5	-3.6	-5.3	10.0	7.3	7.1
Lending interest rate, %	*	147	41.8	24.4	13.0	10.4
Construction, %-change	*	*	-6.3	17.4	14.4	10.0
RUB/USD	1247**	5560	20.65	28.2	29.5	27.8

Sources: Bofit Russia Review 2:2005 (Original source: State Statistical Service, CBR) and IMF database, * missing data, ** for 1993.

After the 1998 crisis, the economic development has been improving and the GDP has shown higher rates of growth (Table 1). The improved economic situation affected positively also the production of forest products stopping the falling development of sawnwood production. The strongest positive effects were, however, in the production and consumption growth of wood-based panels. Because sawnwood consumption remained weak, driving force of production was

the increasing exports. Export growth was supported by the devaluation of rouble that improved the competitive ability of Russia in export markets. However, when assessing consumption, it must be noted that because of the lack of actual consumption statistics, figures are calculated as given in footnote 14. Most probably, also the consumption quantities in Fig. 12 and Table 2 are therefore underestimations of true consumption levels. Furthermore, there are weaknesses in Russian production statistics as the production volumes of local small sawmills are not systematically included in the official statistics by Goskomstat. There are also shortcomings in business transparency because enterprises have incentive to avoid taxes, for example.

An interesting feature for the Russian mechanical wood industry market is that economic growth has supported consumption of wood-based panels but not of sawnwood after 1998. Reasons for this can be found in the end-use patterns of these products. The main end-use sector of sawnwood is construction and repairing of buildings using about 70% of all sawnwood in Russia (UNECE 2003). During the transition period, the declining construction, including housing construction, led to shrinking sawnwood consumption. At the same time, per capita consumption dropped from 0.4 m^3 in 1990 to 0.07 m^3 in 2001. In the case of wood-based panels, the drop was not as sharp, from 0.06 m^3 to 0.03 m^3. The most important end-use sector of panels is furniture production, 60% of consumption, where consumption is increasing (UNECE 2003). The drop in per capita consumption of sawnwood especially indicates changes in its use in construction and substitution by other materials, such as cement and bricks. Indeed, the production of Russian cement industry shows a growth of 40% from 1999 to 2003 (reported by Goskomstat).

Table 2. Annual per capita consumption of sawnwood and wood based panels (m^3/per capita) in Russia with comparison to EU, Canada and Finland in 2001.

Country/Area	Sawnwood	Wood based panels	GDP growth 2004-09e
Russia	0.07	0.03	5,9 %
Finland	0.92	0.12	2,9 %
Canada	0.39	0.16	*2,8 %
EU(15)	0.23	0.12	2.2 %
EU(10) new countries	0.15	0.11	4.0 %

Sources: UNECE/FAO Timber database, country specific data 2001 and ETLA, Suhdanne 1/2005.
* for North America.

In the beginning of 2000s, Russian per capita consumption of sawnwood has been much lower than in the EU countries (including the 10 new members) or in Canada (Table 2). The same applies to wood-based panels. It is, however, probable that consumption in Russia will return to close to its level of early 1990's and possibly rise above it in future, if the development follows other countries' per capita figures. According to the forecasts, national income in Russia shall grow at a higher rate than e.g. in the old EU(15) countries also in the long term, which creates possibilities for large increases in the use of wood-based products, including sawnwood.

4.2 Development of Sawnwood Exports from Russia

The development of Russian, Finnish and Swedish exports of coniferous sawnwood during 1992 – 2003 are shown in Fig. 13. The export of Russian sawnwood, which dropped together with the Russian forest industry production in the early 1990s, remained at a low level until 1998. Since then sawnwood exports from Russia have more than doubled, totalling 10 million m^3 in 2003 (UNECE 2004).

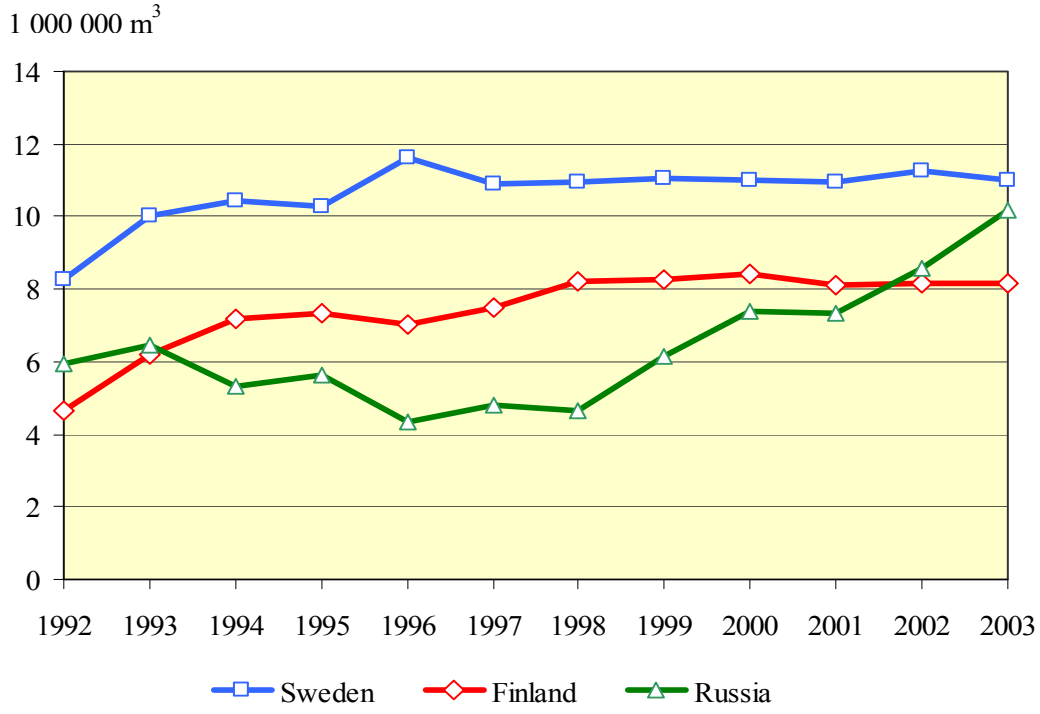

Fig. 13. Export of coniferous sawnwood from Russia, Finland and Sweden, 1992 – 2003 (Faostat).

Sawnwood exports from Sweden and Finland have also been growing during the period of 1992-2003. Reasons behind this development are manifold. First, due to forest conservation issues in the Pacific Northwest, Canada has turned its export activity towards supplying the increasing demand of the US construction. Second, the sawmills in the Nordic countries have been active in seeking new markets outside of the European Union. For example, exports of spruce sawnwood to Japan have been increasing rapidly in the late 1990s.

Although the statistics of Russian domestic consumption of sawnwood is considered as low reliability, there is indication that international trade orientation of Russian sawmill industry has grown during the 1990s. The statistics for early years of 1990s after the collapse of Soviet Union indicate that for example in 1993, only 20% of sawnwood production was exported. In 2003, the corresponding share was 58%. The most recent statistical information indicates that the growth in sawnwood exports continues: during the January-September of 2004 Russian exports increased by 20%. In comparison, the export volume of roundwood increased by only 9% during the same period (EUWID 2005).

There are at least three alternative and possibly overlapping explanations for this development. First of all, due to lack of domestic purchasing power, it has been lucrative for Russian sawmilling industry to export abroad and get higher prices. Second, the increasing foreign involvement in Russian sawmilling industry could affect, so that foreign investors have rather used their production in Russia mainly to serve their customers in export markets and not selling to domestic clients. Third, the question of illegal logging activity is present in Russia (for a more thorough discussion, see section 3.1). Therefore, also the statistics for Russian sawnwood exports may suffer from discrepancies if exports reported by Russian authorities are compared to imports reported by export destination countries.

As can be seen in Fig. 14, the timing of the devaluation of the Russian rouble in the autumn 1998 initiated the new growth of Russian sawnwood exports. Devaluation improved the price competitiveness of Russian sawmilling industry especially in the European markets. It can also be seen in Fig. 14 that the exporters' prices expressed in US dollars dropped in 1998 and decreased until year 2002, when they started to increase again. However, since Finnish and Swedish export prices have also been on a downward trend between years 1995 and 2001, it is not possible to conclude that it was devaluation of Russian rouble that shows in export price only. Evidently, cyclical fluctuations have affected on the sawnwood price development.

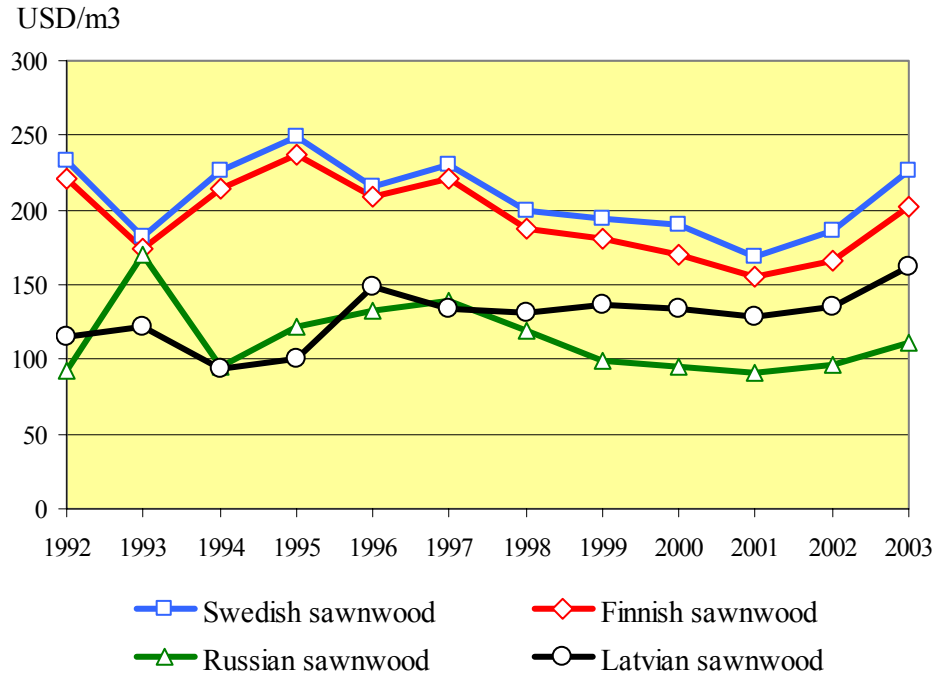

Fig. 14. Unit export values of Russian, Finnish, Swedish and Latvian coniferous sawnwood, USD/m^3 (Faostat).

When comparing absolute price levels between Russian producers and their main competitors in Europe, average export price of Russian sawnwood was 111 USD/m^3 in 2003, approximately 45% lower than average Finnish price and 51% lower than average price of Sweden. Comparing development in Latvian prices shows that Latvia, where the sawmills utilise typically modern

new technology, has been able to improve its' average export unit value so that it currently approaches the level in Sweden and Finland. Reasons for the lower relative price development for Russia are related to the lower quality composition of Russian sawnwood exports. For example, the proportion of kiln-dried sawnwood is still lower than in the sawnwood exports from the Nordic countries. In addition, the bottlenecks in transportation, logistical difficulties in shipping, different classification of sawnwood dimensions and different railroad gauge have, together with other barriers for small-scale companies to entry the international markets, resulted in that Russian sawnwood producers has been rather price takers than leading competitors in the world markets.

The structure of Russian coniferous sawnwood exports in 1997 and in 2002 is shown in Fig. 15. The overall structure of Russian sawnwood exports is quite fragmented, and the eight largest import markets in 2002 covered less than one half of total export volumes both in 1997 and 2002.

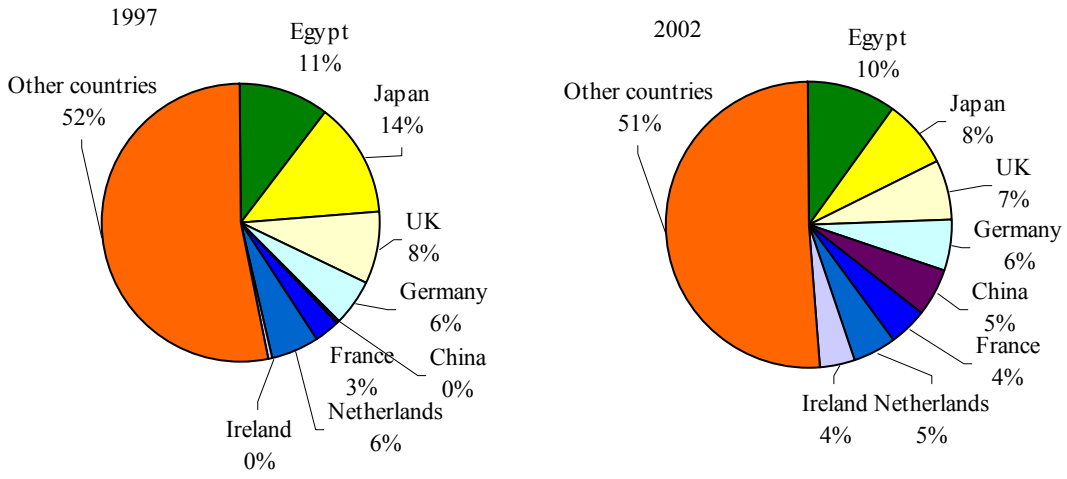

Fig. 15. Main export countries of Russian sawnwood in 1997 and 2002 (Faostat).

Although the time periods we compare are only a few years apart, there has been interesting development going on in the export markets. For example, the three largest export countries in 1997, Egypt, UK and Japan, have lost their attractiveness as a destination market, and their share has decreased from 33% to 25% during 1997 – 2002. In contrast, China has become the fifth largest importer of Russian sawnwood in 2002, while its share was less than 0.2% in 1997. Also high economic growth in Ireland shows and it has become an important destination market for Russian sawmills during the 2000s. In the group of other countries, former CIS-members such as Azerbaijan, Kazakhstan and Uzbekistan are important destination countries.

4.3 Development of Market Shares and Relative Prices in German Sawnwood Import

The recent development indicates that after the drop in the early 1990s, the Russian sawmilling industry is regaining market shares in Europe (Tilli et al. 2001, 2004). In the German sawnwood import, for example, the Russian producers of sawnwood have been able to strengthen their position considerably during the recent years, and the market share of Russia is currently the highest of the importing countries in German sawnwood imports (Fig. 16). As the market share of Russia has grown, Finland and especially Sweden have lost their market shares. To understand better the nature and intensity of the competition as well as the effect of price changes on traded volumes, substitution effects between Russia and its rival countries in Northern Europe were analysed as a part of this project in Mutanen (2005).

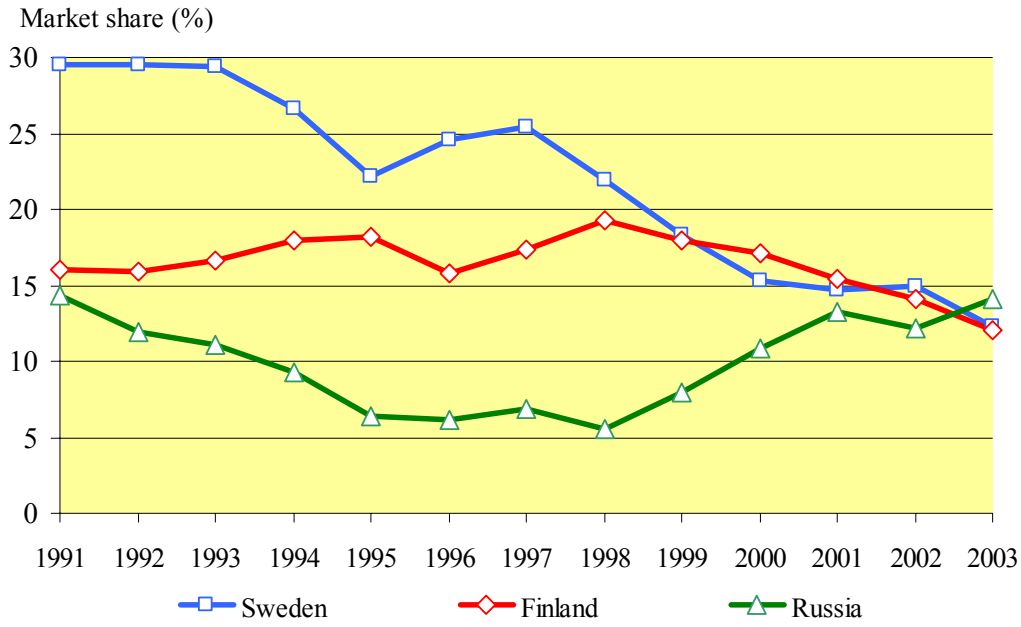

Fig. 16. Development of market shares of Swedish, Finnish and Russian sawnwood in the German sawnwood imports in 1991 – 2003 (Eurostat).

The results revealed that the price development of Russian, Finnish and Swedish sawnwood imports to Germany had been extremely uniform, but the price of Russian sawnwood had continuously been lower than the prices of Finnish and Swedish sawnwood. As mentioned before, the possible reason for the price difference is the lower quality of Russian sawnwood as well as the difficulties related to sawnwood shipments. Furthermore, the prices of Russian and Swedish sawnwood had followed the price of Finnish sawnwood indicating that Finnish sawnwood producers might have possessed some market power over their Russian and Swedish counterparts in German market. However, it could not be concluded that Russian sawnwood would have substituted either for Finnish or Swedish sawnwood in German sawnwood imports. (Mutanen 2005)

Although the theoretically consistent substitution effects in terms of cross-price elasticity in German sawnwood imports remained unclear, Russian producers of sawnwood have the possibilities to strengthen their position further in German as well as in other West European markets. The price of Russian sawnwood is competitive compared, for example, to Finnish and Swedish sawnwood, and there seems to be an increasing demand for Russian sawnwood in Europe. However, the difficulties in sawnwood production and export logistics in Russia and thus the incapacity to meet the demand may partly explain why sawnwood exports from Russia have not reacted to price changes as the economic theory suggests.

4.4 Future Development of Russian Sawnwood Production and Exports

The future of forest products production and consumption depends on the socio-economic development in Russia as well as the strategy drawn up by the Ministry of Economic Development and Trade to develop forest sector. The future income level, population growth and age structure, among other things are drivers of construction, the largest end-use of sawnwood. In the end use, the competitiveness of wood with respect to other materials and the quality and availability of domestic production is essential. Currently over 20 % of Finnish forest industry capacity depends on Russian wood. The situation is different in pulp production, where imports could be substituted with eucalyptus, but in sawlogs this is not possible. Therefore, it would be likely that closures of sawmill capacity would follow, if the volume of imported sawlogs dropped down.

According to the forecasts of FAO (UNECE 2003) Russian production of sawnwood may grow threefold up to 2015 and domestic consumption will grow at the same rate. Sawnwood consumption is largely dependent on house building and country cottage construction.

Table 3. Projections for Russian sawnwood markets over 2000 – 2015.

Sawnwood (all)	2000	2015	growth, %
Domestic demand, mill.m^3	12	31	158
Per capita consumption, m^3	0.08	0.3	275
Production, mill. m^3	20	50	150
Exports, mill. m^3	8	13.5-24	70-200

Source: UNECE 2003, Basic Scenario, assuming GDP annual growth 5-10%.

There is a considerable need for new housing construction and repair of buildings in Russia that has been overlooked in the transition period. A special federal programme (Individual House) envisages an increase in low-prise building construction and includes a target for wooden houses. The share of single-story wooden houses is only about 15% in the total housing units (m^2). All this is likely to increase demand for wooden elements and consumption of sawnwood and wood based panels. However, the signs of increasing imports of high quality joinery and furniture indicate increasing foreign competition in this field.

Regarding the export market structure, sawnwood exports from Russia and the Nordic countries to Asia and North Africa have lately increased, as construction growth in traditional markets in Europe has been only moderate. Also in the future, higher demand is forecasted in Eastern Europe and Asia. The demand-supply balance in the European sawnwood market could be aided by China's strong demand and increasing output of higher added-value wood products, which will draw off some of the sawnwood oversupply in Europe (Finnish forest sector… 2004).

An important factor affecting production and exports of wood industry products is the growing interest in foreign direct investments in the Northwest Russia. It is difficult to estimate the increase of foreign activity on the production capacity, because not all plans discussed in the public are being materialised. However, according to UNECE (2004) the estimated sawnwood capacity emerging from investments scheduled for 2002-2006 is 4.1 mill. m^3. According to UNECE (2004), estimates by Jaakko Pöyry Consulting for the value of investments in the Russian forest industry (including logging industry) amounted $540 million in 2002. This is a substantial figure; although the size of the individual investment projects, mostly in the form of pilot-projects in the sawmilling industry, is still moderate in value and size. For example, the cost of Stora Enso's Impilahti mill of 100.000 m^3 production capacity was about 11 mill. euros (Särkkä 2004).

5 Conclusions on Future Challenges of Roundwood Exports and Sawmilling Industry

The aim of this study was to shortly review the current state of Russian forestry, utilisation of forest resources and evolution of roundwood and sawnwood exports from Russia, and their effects on market competition. After the collapse in early years of transition, fellings, production and especially foreign trade of forest products have recovered. In 2002, total fellings in Russia accounted for about 165 mill. m^3. The volumes of roundwood and sawnwood exports were 37.7 mill. m^3 and 9 mill. m^3, respectively. Two main reasons can be found for this improved development. The first concerns with the structural changes in Russian economy and with ongoing development in proprietary rights and institutions. After the political chaos and overall uncertainty in Russia, there was transition towards a more market and customer oriented economy, which included privatisation of forest industry enterprises, reform and management of the forest resources. Also, the improved macroeconomic stability together with an increased growth of GDP and reduced inflation rate has also promoted the recovery. The second reason was the 40% devaluation of rouble in 1998. As a consequence, the improved price competitiveness set off an increase in export volumes for both roundwood and sawnwood.

For Finland, the role of Russian forest sector is manifold. On one hand, it acts as an important foreign supplier of roundwood; on the other hand, it is a competitor in the markets for sawnwood. At the same time, Russian market with its own growth potential is a lucrative target for ongoing and future export and investment activity for Finnish forest industries. A main

strength from the Finnish point of view is the proximity to the large forest resources accounting for about one fourth of the world's growing stock, and large population base that still has a very low per capita consumption level in wood industry and paper products. The long tradition in trade between Finland and Russia can also be seen as an advantage for Finland. Also, high cost competitiveness of roundwood and labour, as compared to western economies, provide possibilities to transfer and allocate production technology to Russia.

The long-run target of the Russian Federation is to promote domestic value-added production and investment activity and to decrease exports of raw materials. The location and timing of new investments in Russian woodworking industry will, together with domestic wood products consumption, largely determine the development of roundwood and wood product exports. Foreign activity by international forest industry companies has adverse effects on the sawnwood markets. On one hand, the effect of foreign production in low-cost regions like Russia improves financial performance of companies after the investments start to create profits. On the other hand, regarding export volumes, the effects can be negative, especially in the long run, if production e.g. in Finland and other countries is substituted by the investments in abroad. The overall effect is still difficult to evaluate as diversification of production base may also bring out new possibilities for finding new markets for production situated in home country (e.g. Finland) as well. Hence, whether Russian domestic consumption will grow at a faster pace than export trade is a question that needs to be assessed when export potential of its' sawmilling industry is analysed.

As a downside to these aims arising from the structure and development of Russian economy and forest sector, there are few key issues that may slow down the positive development. Among the internal weaknesses of Russia, high dependency of forest sector development on the political system, low business transparency and problems related to shadow market are some of the hindrances. Furthermore, as long as the price of the crude oil remains high in world market, most of the currency income comes from oil exports and, there are fewer incentives to develop forest sector in Russia. New Forest Code is being launched, but it is unclear how and in what extent the leasing of Russian forest will be implemented, and how it will affect forest business in Russia. The absence of infrastructure such as forest road network, unclear social responsibilities on foreign investors and lack of investment guarantee system are obstacles for the rapid development of Russian forest sector.

Assessing the future development and competitive position of Russian forest sector is challenging, but to conclude this review, a few key areas can be identified to evaluate the progress. First, the ratification of the new Forest Code is essential for the management of the vast forest resources in Russia. This eliminates uncertainty with the long term wood procurement plans by setting new rules for the forest leasing. Second, the domestic need for sawlogs in Russia is likely to increase in the near future. This arises from increasing forest investment activity and growth of domestic demand for sawnwood. Especially, the wood constructing may partly replace the standard element construction in Russia. While this increase in domestic demand may replace sawnwood exports, the most intense effect, however, will be

on roundwood exports and, especially, on export of sawlogs which may decrease. Third, Russia is currently negotiating for participation in WTO. This participation is likely to implement more harmonised trade legislation with western countries, customs duties and gives equal treatment for the foreign forest enterprises. Fourth, bearing in mind the competitive export prices of Russian sawnwood and the potential created by the forest resources, there definitely are opportunities to increase sawnwood exports to Europe. All of these factors certainly are in favour of attracting both domestic and foreign forest investments to Russia. Finally, the general economic development both in Russia and world markets affects the demand of Russian wood and wood products. Especially, the economic growth and construction in China has been strong and it is likely to continue increasing the global demand for roundwood and wood products. Therefore, the role of China cannot be undermined when anticipating the development of global roundwood trade in near future.

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