

Finnish Forest Sector Economic Outlook 2005–2006

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Summary

The exceptional growth that occurred in the rest of the world economy outside the euro area in 2004 is now weakening. Real GDP growth in the world economy in 2005, weighted according to the distribution of Finnish forest industry exports, will be about 2.5%, and will rise a little higher in 2006. The demand for forest industry products in Europe has grown slightly but has been too slow to reduce the persistent oversupply. Finnish paper prices have nevertheless risen modestly in 2005, although sawnwood prices have continued to fall. The 2005 figures for Finnish forest industry production and exports and domestic roundwood consumption will be considerably below the previous year's level, due to the effects of the labour market dispute in the paper industry.

The economic outlook for the euro area, so important for Finnish forest industry exports, will be slightly improved in 2006, which will raise paper industry production and exports to new record levels following the low of 2005. Exports of sawnwood, however, will not reach the 2004 level because of the decrease in domestic production and the weak trend on the European construction market. With continued oversupply in Europe, the average export price of paper will remain at the 2005 level. Oversupply on the sawnwood market will increase as new investments in Central and Eastern Europe come on stream, and so the average price of Finnish exports is forecast to decrease a little further. Pulpwood will feature more prominently in roundwood demand and in total fellings, as production in the sawmilling industry in 2006 will be below its 2004 level. With the demand for sawlogs changing little and imports

of roundwood and wood chips increasing further, no dramatic changes are forecast in stumpage prices in 2006.

Only Slight Improvement in Euro Area GDP Growth in 2006

The economic outlook in Western Europe, a key market for the Finnish forest industry, will improve in 2006, but GDP growth for the year will again be slower than elsewhere in the world. Euro area GDP growth in 2006 is forecast to rise to about 2%, following the growth of about 1.5% in 2005. Growth in the German economy will again be below the level of other euro countries, despite the slow recovery, and growth in the United Kingdom economy will slow to just over 2%. Interest rates in Europe will remain low in 2006. The Chinese economy will continue growing at a rate of almost 10%, while Japan's economy is forecast to grow by almost 2% in both 2005 and 2006. In the United States, GDP growth in 2005 will be 3.5%, and is forecast to remain over 3% in 2006.

The main uncertainties in the 2006 growth forecasts for the world economy are the price of crude oil and the state of the US economy. In the latter case, the uncertainty concerns a possible weakening in consumer confidence and also the massive US budget and current account deficits, which, through exchange rates, share prices and interest rates, could affect the entire world economy. Although the structure of national economies and their ability to with-

stand energy price rises have improved since the 1970s oil crises, a rise in oil prices to over USD 50/barrel would reduce household purchasing power in real terms and encourage general uncertainty about the world economy.

Slow Growth in Paper Demand Means Sluggish Price Trend

Total paper consumption on Finland's main export markets in Western Europe in 2005 will be more or less unchanged from 2004. However, the drop in supply caused by the shutdown of Finnish mills in May–June has meant a reduction in producers' and customers' stocks, and the situation also brought the opportunity for price increases. The average prices of Finnish pulp and paperboard exports in 2005 are likely to be close to the 2004 level. On account of the mill shutdowns, Finnish production and exports of paper, paperboard and pulp for 2005 as a whole will be down by about 10% on the previous year's figures.

In 2006, the growth in private consumption in Western Europe will lead to a slight increase in advertising and thus in the demand for paper. However, there will also be a modest increase in capacity within the paper industry, and so the oversupply on the European market will continue almost unchanged. To reduce oversupply, deliveries to markets outside Europe will probably increase further. The rise in costs will generate pressure on prices and may well prevent them from returning to a downward track. Finnish pulp and paper industry production and exports will be up considerably in 2006 in comparison with the exceptionally low figures for 2005. In comparison with 2004, production and exports of paper and paperboard are forecast to be up by about 3% in 2006, and the percentage increase in pulp exports will be even greater. Prices are forecast to remain at the 2005 level on average, or to rise slightly.

Drop in Finnish Sawnwood Production, and Oversupply Pushes Prices Down

The demand for sawnwood in Europe has been less active than in the rest of the world, and producers have felt the effects of the weak price trend caused by oversupply. Finnish exports have decreased to many of the traditional European export markets, and the average export price has fallen, too. The drop in exports has also been due to the decrease in production resulting from the paper industry shutdowns. Exports in 2005 are expected to be about 6% lower than in 2004, and production will be down to about 12.5 mill. m³.

In 2006, any increase in Finnish sawnwood exports to the European market will be linked to growth in Europe's housing renovation sector. The European market will again be troubled by overcapacity, because sawnwood supply from Russia will increase and capacity expansion plans in Central Europe will come to fruition. A slight decrease is again forecast in Finnish sawnwood export prices. With only minor growth expected in Finland's domestic sawnwood consumption in 2006, and exports remaining at the 2005 level, there will be only a small increase in production in the sawmilling industry, keeping the total near to the 2005 figure.

Profitability Up in the Paper Industry but Still Weak in Sawmilling in 2006

Profitability in the Finnish forest industry in 2005 has been affected by higher prices of production inputs, falling sales and a weak price trend. The prices of end products in the pulp and paper industry have remained almost unchanged in annual terms and have fallen slightly in the sawmilling industry.

In 2006, profitability in the pulp and paper industry will improve considerably, as production and exports increase to new records. Profitability will be boosted by higher turnover, even though prices are not forecast to rise very much. In the sawmill-

ing industry, the tough competition on the export markets will also continue in 2006, and production and export volumes will be at approximately their 2005 levels. Profitability in the sawmilling industry will remain weak, as sawnwood prices are expected to fall slightly again.

Higher Imports Will Keep Domestic Pulpwood Price Rises in Check

Roundwood consumption in the Finnish forest industry will be down in 2005 on account of the production shutdowns. Despite this, roundwood imports for the year will be higher than expected, and will account for a record one quarter of all roundwood consumption in the forest industry. Commercial fellings in 2005 will be down to 50.9 mill. m³ from the previous year's 55.1 mill. m³, because of the drop in roundwood consumption and the increase in imports.

Increased production in the paper industry in 2006 will mean an increase in the industry's roundwood consumption. An estimated two thirds of the additional demand for roundwood will be met from commercial fellings in Finland, which will rise to almost 53 mill. m³, and one third will be from imports of roundwood and wood chips, which will increase to nearly 21 mill. m³. The growth in imports will limit the extent to which domestic roundwood prices can be raised. The price of pulpwood will also be affected by various stand-specific factors, because the emphasis in fellings will shift further towards pulpwood and thinnings. Stumpage prices for pulpwood will rise slightly, but softwood sawlog prices will be at their 2005 level, because sawlog demand in the sawmilling industry will change little.

Further Decline in State Subsidies for Timber Production

Overall investment in timber production in non-industrial private forestry in 2005 will be down to less than EUR 175 mill. but will increase somewhat in 2006, partly because of an increase in artificial

regeneration. The amount of financing provided by the forest owners themselves will be up in 2005, but state subsidies for timber production in non-industrial private forestry will down for the third successive year; the decrease in 2005 is more than 5%. In 2006, state subsidies of approximately EUR 60 mill. will be allocated for ensuring that timber production in non-industrial private forestry remains sustainable.

Stumpage earnings in non-industrial private forestry will be down to about EUR 1.4 billion for 2005, due to the reduction in fellings, but will rise by 2–3% in 2006. Net stumpage earnings per hectare in 2005 will be down by 8%, to EUR 88/ha, as a result of the reduced fellings. An increase in fellings in 2006 will raise net stumpage earnings to almost EUR 90/ha, although this, too, will be significantly below the peak years of the forest taxation transition period. The investment return on forest ownership will increase to over 4% in 2006, due to a slight rise in stumpage prices.

Assumptions and Uncertainties in Forecasting

The aim of this Economic Outlook is to present clear and consistent information on the current state of the Finnish forest sector and the outlook for the near future. The forecasts for the forest sector are based on publicly available statistics, world economic forecasts, market information and other forest sector data, and research conducted by the Finnish Forest Research Institute. The views of GDP growth in the world economy and in export markets have been formulated on the basis of forecasts made by a number of different organisations, among them the Organisation for Economic Cooperation and Development, the International Monetary Fund and the Research Institute of the Finnish Economy. The forecasts given in this publication are for the years 2005 and 2006 and are based mainly on information available in late September and early October 2005.

The forest sector forecasts presented here are the views of researchers about the most likely course of

events. They are point forecasts and are based on export market GDP forecasts and other background assumptions about the markets. One of the greatest uncertainties in the forecasts is whether or not GDP growth will be lower than expected. The main uncertainties in the growth forecasts for the world economy are the price of crude oil and the performance of the United States economy. The uncertainties in the US economy could affect currency markets and jeopardise the level of world GDP growth and therefore also the growth in the euro area. Although the structure of national economies and their ability to withstand energy price increases have improved since the 1970s oil crises, a rise in oil prices to over USD 50/barrel would reduce household purchasing power in real terms and encourage general uncertainty about the world economy.

If GDP growth in the main export markets in Europe turns out to be weaker than expected, the demand for forest industry products will be lower than forecast. This would further exacerbate the prevailing oversupply, forcing down prices. If there is an unforeseen weakening of the US dollar against the euro, this would hamper European export prospects and add supplies from countries outside Europe. The demand-supply balance on the European market could also change as a result of storm damage occurring in Europe or elsewhere in the world, and the effects would be felt quickly through today's international trade. However, the overall impact of the

storm damage in the Baltic Sea region in the early part of 2005 on the supply situation in the European sawnwood market will probably turn out to be relatively small, as seems to be the case for the demand impact of Hurricane Katrina.

If the GDP growth in export markets is below the forecasts given here, this will affect export prices, production and profitability in the Finnish forest industry. With falling demand for wood, the adverse impact would spread from the forest industry to roundwood markets, forestry employment and the profitability of non-industrial private forestry. Growth in the Finnish forest sector would then fall short of the forecasts presented here.

Key forecasting variables, 2005–2006

Forecasting variables	2005*	2006*
	% change from previous year	
Sawnwood production	-7	1
Paper production	-11	16
Sawnwood export price	-2	-2
Paper export price	0	1
Commercial fellings	-7	4
Roundwood imports	11	8
Sawlog prices	-4 - +3	0 - 2
Pulpwood prices	0 - 1	1 - 2

*estimate based on forecasts



1 World Economy

Real GDP growth in the world economy in 2005, weighted according to the distribution of Finnish forest industry exports, will be about 2.5%, and is expected to rise to almost 3% in 2006. GDP growth in the euro area, so important for Finnish forest industry exports, is also picking up and is likely to be about 2% in 2006, rising from the 2005 figure of approximately 1.5%. Among the forest industry's key export markets, Germany's GDP growth will continue to be weaker than that of the other euro countries in 2006, despite the slow recovery in its economy, and the United Kingdom's GDP growth will slow to just over 2%. Interest rates in Europe will remain low in 2006.

China's economy is continuing to grow at an annual rate of almost 10%, while Japan's GDP growth is expected to be nearly 2% in both 2005 and 2006. GDP growth in the United States' debt-driven economy is estimated to be 3.5% in 2005 and over 3% in 2006, although there are many uncertainties surrounding these forecasts. The debt burden of US households and the higher price of energy may lead to a contraction in domestic demand, and there are further uncertainties in the form of a possible weakening of consumer confidence and the massive budget and balance of payments' current account deficits, which, through their impact on exchange rates, share prices and interest rates, could affect the entire world economy. Although the structure of national economies and their ability to withstand energy price increases have improved since the 1970s oil crises, a rise in oil prices to over USD

50/barrel would reduce household purchasing power in real terms and encourage general uncertainty about the world economy.

Only a Slight Recovery in Euro Area GDP Growth in 2006

Euro area GDP growth in 2005 is expected to be about 1.5%, following the 2% growth recorded in 2004. The lower figure is the result of a weakening in the export competitiveness of the euro area due to the faltering world economy, the rise in oil and other energy prices, and the stronger euro. Lacklustre domestic demand and structural problems in the euro economies have also contributed to the slower growth. In order to encourage growth, the European Central Bank (ECB) has refrained from raising interest rates, which has widened the gap between European and US rates, in the latter's favour. The difference in short-term market interest rates is already almost two percentage points. In recent months this has boosted demand for dollar investments and led to a slight weakening of the euro, which, in turn, has improved export competitiveness in the euro area.

Euro area GDP growth is expected to pick up slightly in 2006, to just short of 2%. However, this will still be below the growth rates in the rest of the world. The latest statistics point to a modest growth in euro area demand and investment. Both consumer and corporate confidence in the economy have also

risen. Not wishing to smother the emerging economic recovery, the ECB is scarcely likely to raise its central rate before the first half of 2006. With the US Federal Reserve likely to increase interest rates further in late 2005 and early 2006, the interest rate gap with Europe will widen and a further slight weakening in the euro can be expected. Consumer prices are expected to rise in 2006 by somewhere in the region of 2%. If there are no energy and oil price increases, inflation will probably remain at about 1%.

Although the euro area's overall price competitiveness in real terms will improve in 2006 as the result of low inflation and a weakening euro, the effects of this will be felt in the area's economies in different ways because of their structural differences. The impact of a rise in crude oil prices will also differ from one country to the next. With its traditional role of driving the euro area's exports, the German economy has been export-led, whereas growth in the French economy, for example, has been stimulated by strong domestic demand. By contrast, Italy's labour-intensive economy has lost market share in many sectors to low-cost countries, and so an increase in price competitiveness will improve the prospects for Italian exports.

GDP growth in the countries that joined the European Union in May 2004 will be lower in 2005 than the previous year. With falling domestic demand, rising inflation and structural economic problems, in addition to slack demand in the euro area, the GDP growth in these new member states is estimated to average 3.5% in 2005, rising to about 4% in 2006. The Baltic countries form an exception, however, as their GDP growth is forecast to remain at over 6% in both 2005 and 2006; in Latvia, the 2005 figure will be as much as 7.5%. This level of growth is sustained by private consumption and above all by investment and export growth, which are in excess of 10%. The underlying reasons are a stable rise in employment, low interest rates, an increase in domestic purchasing power and the stability brought by the pegging

of Baltic currencies to the euro. High inflation and a rapid rise in credit portfolios are nevertheless a cause for slight uncertainty over the growth forecasts.

Among the EU countries not belonging to the euro area, Sweden's GDP growth for 2005 will be down to just over 2% but will return to close on 3% in 2006. The country's fiscal policy measures and its low inflation will increase domestic purchasing power and household consumption in 2006. Investment will be maintained due to low interest rates and the level of confidence in the economy. Construction will be up by over 10% for the full 12 months of 2005, and will be well over 5% in 2006. With low inflation prevailing, the Swedish central bank, the Riksbank, is unlikely to be under any pressure to raise interest rates before mid-2006. Although the krona weakened by a little over 3% against the euro in January–September 2005, it is expected to regain this as it strengthens in 2006, but Sweden's export competitiveness will remain high.

German Economy Almost at a Standstill and UK Growth Slowing Down

Germany and the United Kingdom are the most important European export markets for the Finnish forest industry. Growth in the German economy has been below the euro area average in recent years and has slowed almost to a standstill in the second quarter of 2005. The country's economy has traditionally been export-led. The weak trend in consumer purchasing power, together with gloomy consumer expectations, has reduced domestic demand and encouraged precautionary saving by households. Nevertheless, there has been a slight improvement in indicators of corporate production expectations and order books, and the growth prospects for the second half of 2005 show an improvement on the first six months. The impact on the economy as a whole, however, will be felt more slowly. Indeed, Germany's GDP growth for 2005 is estimated to be

a modest 1.2%, and the projected growth for 2006 is only a little higher, at about 1.5%. Employment is improving on the German domestic market, and consumer confidence in the economy has grown slightly in recent months, which should lead consumer demand to pick up somewhat in 2006. The structural changes in the German economy and labour market will gradually increase corporate productivity, competitiveness and profitability, and, together with an improvement in real price competitiveness, will create the right conditions for an increase in exports.

The United Kingdom's 3.2% GDP growth in 2004 was significantly higher than in the euro area. Low interest rates, an increase in real earnings and a low unemployment rate have together maintained consumer confidence in the economy, and, with UK exports feeling the effects of the weak demand in the euro area, most of the GDP growth has been based on an increase in private consumption and household indebtedness. The halt in rising house prices experienced in the second half of 2004 led to a slowing of private consumption, which appears to be continuing in 2005, as indicated by the increase in the rate of saving. The UK's GDP growth for 2005 is therefore expected to be down to about 2%.

In 2006, UK growth is forecast to be very similar to that in the euro area economies. To ensure that growth continues, the Bank of England is unlikely to raise its central rates, and so the interest rate gap in favour of the United States will grow and the pound will weaken a little against the dollar. Even if the euro rate against the pound remains unchanged, the improvement in price competitiveness in real terms and the recovery in euro area demand will lead to a turnaround in the UK's trade balance with euro area, turning the UK into a net exporter. Investment and private consumption will also be up on the 2005 figures. The UK's GDP growth for 2006 is forecast to be 2.2%.

Slowdown in Russian GDP Growth Due to Inability to Increase Oil Exports

The value of Finnish forest industry exports to Russia in 2004 amount to EUR 380 mill., and this is expected to increase substantially in the coming years. Russia has also become a significant forest industry competitor for Finland, especially on the export market for sawmill products. Assisted by oil revenues, Russia's GDP growth was over 7% in 2003 and 2004, and its domestic demand and investment have also increased. The growth has been concentrated very much in the major cities and a number of key industrial areas. The increase in foreign exchange earnings has led to a strengthening of the ruble against the euro/dollar basket in recent years, which, together with an annual inflation rate of 10%, has weakened the price competitiveness of Russia's exports in real terms. Despite interventions by the Russian Central Bank resulting in a devaluation of the ruble in January–August by 13.9% against the euro and 2.9% against the US dollar, the ruble is forecast to strengthen in 2006.

Russia's oil production capacity is today almost fully utilised, and so the country's oil exports cannot be increased in the future without considerable investment. Russian GDP growth is in fact forecast to slow down in the near future and to be increasingly based on rising consumer demand. The country's GDP growth in 2005 is expected to drop to 5% and to be slightly less than 5% in 2006.

US GDP Growth Continues, but Uncertainty Increasing

GDP growth in the United States in the first six months of 2005 was 3.6%, down on the previous year's figure of 4.2%. The main reason for this slowdown was the slight reduction in private consumption. Investment, on the other hand, has continued to grow at a brisk rate. The good level of growth in the economy has also produced a lot of new jobs.

Forecasts of economic growth (real GDP, annual percentage change)

Area	Proportion of Finnish forest industry's total export value 2004, %	Actual GDP growth % 2004	ETLA 2005	IMF 2005	ETLA 2006	IMF 2006
Weighted by proportion of Finnish forest industry exports	100	3.2	2.4	2.6	2.6	2.9
EU15	63.7	2.2	1.5	–	1.9	–
Euro countries	44.1	2.0	1.4	1.2	1.8	1.8
Germany	17.6	1.2	1.2	0.8	1.2	1.2
United Kingdom	13.2	3.2	1.9	1.9	2.2	2.2
New EU member countries (10)	4.2	4.9	3.5	4.1*	4.0	4.4*
Russia	3.2	7.2	5.0	5.5	4.5	5.3
United States	7.3	4.2	3.6	3.5	3.2	3.3
Asia	10.7	6.7	6.1	7.3	5.7	6.9
Japan	4.2	2.6	1.8	2.0	1.7	2.0
China	1.2	9.5	9.2	9.0	8.2	8.2
Other	10.9					

* Include Bulgaria, Romania and Croatia

Forecast by Research Institute of the Finnish Economy (ETLA) published September 8, 2005.

Forecast by International Monetary Fund (IMF) published September 21, 2005.

Provided that consumer confidence in the economy remains good, the estimated 3.5% GDP growth for 2005 should materialise.

The growth prospects for the US economy are subject to uncertainty because of a number of factors, and these could therefore also affect the world economy in general. GDP growth in the United States has for many years been based on growth in household consumption, which has largely been financed through debt. However, at some stage, households must start to improve their financial position by repaying their loans, which will inevitably mean a reduction in consumer demand. With low interest rates and high GDP growth, house prices have also risen rapidly in many parts of the country. Interest rate increases by the Federal Reserve and a possible drop in demand could cause a fall in property values and in the value of other real assets.

Major, macro-scale problems in the US economy remain unresolved. The federal budget has long been

in deficit and has been financed largely by overseas borrowing. Alongside a massive balance of trade deficit, the US balance of payments' current account deficit was as much as 6% of GDP in the first half of 2005, which by international standards is alarmingly high. The 2.1% revaluation of the Chinese renminbi has had no significant effect on the US trade deficit and did not produce any relief for US domestic industry in its competition with imports.

The Federal Reserve has gradually raised its federal fund rate in order to control domestic demand and rising inflation. The three-month market interest rate is close to 4%, and long-term rates are a little higher still. Interest rates higher than those in the rest of the world have attracted international investment in the dollar. The widening interest gap in relation to euro area rates means a further strengthening of the dollar, which will further slow the growth in exports and add to the debt burden, because US debt is primarily in dollars while its receivables are in other

currencies. Any increases in interest rates could also have a negative impact on household confidence, which is already under threat from the higher crude oil and liquid fuel prices, a drop in purchasing power and the destruction caused by the autumn storms.

In spite of all these uncertainties, it must be assumed that international investors will continue to bankroll the United States. With neither the euro area nor Japan being ready to drive the world economy, there is no desire to upset the US economy and plunge the rest of the world into recession. To maintain a balance, the Federal Reserve will, however, have to raise its federal fund rates in 2006 as well. This will keep domestic consumer demand in check, generate pressure for a strengthening of the dollar and slow the GDP growth to something in excess of 3% in 2006.

Among the Finnish forest industry's competitors, Canada has benefited from the growth in the US economy. Canada's 2005 GDP growth is expected to be at the 2004 level of about 3%. Although the Bank of Canada is expected to tighten its interest rate policy before the end of 2005, to guard against inflation and overheating of the economy, the country's domestic consumer demand and investment will continue to be high in 2006. Canada's exports will also be helped by the slight weakening of the Canadian dollar against the US dollar (by about 2%) and by a continuation in the level of consumer demand in the US economy. Canada's GDP growth in 2006 is forecast to accelerate to 3.5%.

China Continues to Drive Asian Economy, while Japan's Economy Sees a Slow Recovery

In the last few years, the Chinese economy has been growing at an average annual rate of almost 10%, and China has partially displaced Japan as the driving force in the Asian economy. This growth is mainly the result of an increase in exports and domestic investment, and efforts have been made to keep the latter under control by raising domestic interest rates. China's export growth has been

very strong. Exports in January–February 2005, for example, were 36% higher than in the same period in 2004. Exports have been boosted by strong price competitiveness as a result of the country's low labour costs and the weakness of its currency against the US dollar and the euro. The increased demands from the US and Europe for an exchange rate adjustment led to a 2.1% revaluation of the renminbi in spring 2005 and its pegging to a basket of currencies. In practice, the main outcome of such a small revaluation was to allow China to buy time for political manoeuvring and avoid a trade war breaking out; it is not likely to have any marked effect on trade flows between China and the rest of the world. This, and the fact that domestic investment and consumption will also remain high despite the measures to keep them in check, means that China's strong GDP growth is expected to remain at almost 10% in both 2005 and 2006.

Although Japan's GDP growth in 2004 amounted to 2.6%, total output in the second and third quarters of 2004 was actually down on the corresponding figures for the previous year. Output picked up in the final quarter, and in the early part of 2005 it was growing at an annual equivalent of 5.3%. The reason for this growth was an increase in exports, especially to China and the United States. Domestic demand has remained lacklustre as a result of deflation and consumers' poor expectations about the future. The scope for using monetary and fiscal policy to revive demand has been limited on account of the already low interest rates and the high public sector deficit. Although the Japanese economy has not performed as well as in 2004, the outlook in the latter part of the year is already improving, and Japan's 2005 GDP growth will reach almost 2%. This is the result of structural reforms in the economy, growth in retail sales, a steady reduction in the unemployment rate and a positive trend in corporate investment. Despite the slow recovery on the domestic market, growth in Japan's economy is strongly dependent on the trend in the rest of the world. If trade with the United States and China continues to be good, Japan's GDP growth in 2006 should remain at about 2%.



2 The Finnish Forest Industry

2.1 Exports and Production in the Sawmilling and Plywood Industries

The demand for sawnwood in Europe in 2005 has been less active than elsewhere in the world, and the sawnwood market has suffered from oversupply and its effect on prices. Finnish exports to most of the traditional markets in Europe have fallen, while growth has occurred mainly in exports to certain African countries. In Finland, housing construction has maintained the high level of sawnwood consumption on the domestic market. The drop in sawmilling production caused by the shutdowns in the paper industry has also contributed to the reduced level of sawnwood exports in 2005, which are expected to be about 6% below the previous year's total. The average export price will be down by about 2% on the 2004 figure. Demand on Europe's plywood market has been better than anticipated, and this has raised the price of plywood. The slight fall in production in the first half of the year means that production and exports of Finnish plywood in 2005 will fall short of the total recorded in recent years.

Growth in Finnish sawnwood and plywood exports in 2006 will be dependent on growth in the housing renovation market. With Russia's sawnwood supply continuing to grow and capacity increasing in Central Europe, the overcapacity problem in Europe will remain. As a result, Finnish export prices are expected to fall slightly once again. A modest increase

in domestic consumption will raise production in the sawmilling industry in 2006 by just a little, although the total will fall short of the 2004 production level. On the plywood export market, the prices of both birch plywood and softwood plywood are expected to pick up slightly, contributing to the forecast increase of about 3% in the average export price and export volume of Finnish plywood in 2006.

Sawmilling Capacity on the Increase in Eastern and Central Europe

The oversupply situation prevailing on Europe's sawnwood market is largely the result of the new export-oriented sawmilling investments in the Baltic countries and Northwest Russia and the increased production in Europe's traditional producer countries, namely Germany, Sweden, Finland and Austria. New investments in sawmilling capacity in Eastern Europe and Russia during 2002–2004 amounted to an estimated 5 mill. m³, and further new investment in production capacity planned for 2005–2006 totals about 2 mill. m³. The gradual rise in stumpage prices in Eastern Europe and Russia towards international levels is likely to slow down export-oriented investments to a certain extent in future years.

In Central Europe, the rate of investment is gathering pace. In Germany, forest inventory data published in late 2004 indicates the potential for a considerable expansion in sawmilling production capacity, and the scope for increasing the use of

softwood sawlogs is greatest in the case of spruce. Planned increases in raw material inputs for Germany's sawmilling production amount to about 8.5 mill. m³ of wood in the period 2005–2006, which is calculated as being equivalent to an increase of about 4 mill. m³ in Germany's sawmilling capacity.

Decrease in Finland's Sawnwood Production and Exports

In the last 15 years, Finnish sawnwood production has risen to record levels due to demand in Europe and export growth to markets outside Europe. Domestic construction has also increased, and sawlog availability has been good due to the increase in removals and imports. The situation is changing, however. In recent years the trend in raw material prices in relation to sawnwood export prices has become increasingly disadvantageous to producers, and profitability in the sector has, on average, weakened. Sawnwood prices have been falling in Europe because supply has been growing at a faster rate than demand. This, and the fact that it is no longer easy to achieve a significant increase in productivity, means that raw material prices will be critical in maintaining the present extent of production. Raw material costs constitute well over half of turnover in the sawmilling industry. Oversupply on Finland's main export markets is unlikely to diminish in the near future, however, as sawmilling capacity is continuing to increase in Eastern and Central Europe.

The drop in Finnish sawnwood production in comparison with the 2004 figures was already visible in the statistics in March, and the spring and summer shutdowns in the paper industry led to a further decrease in sawnwood production. In the period January–July 2005, production fell by 14% on the same period the previous year; the drop in production of pine sawnwood was 16%, and spruce sawnwood 12%. Following the shutdowns, production in the second half of 2005 can be expected to return close to the level seen in the last six months of 2004, as stocks of finished products in the wood

The Finnish sawmilling and plywood industries, 2004
1 000 m³.

	Sawnwood	%	Plywood	%
Production	13 544	100	1 350	100
*Domestic use	5 318	39	116	9
Exports:	8 226	61	1 234	91
EU	5 073	37	1 096	80
Africa	1 165	9	2	0
Japan	1 163	9	10	1
Asia excl. Japan	636	5	52	4
North America	42	0	62	5
Russia	8	0	2	0
Other	139	1	10	1

*Estimated domestic use = production – exports

Sources: Statistics 2004 (Finnish Forest Industries Federation) and Finnish Forest Research Institute

products industry are below their normal level according to the August 2005 Business Tendency Survey of the Confederation of Finnish Industries. Total sawnwood production in 2005 is expected to be about 12.5 mill. m³.

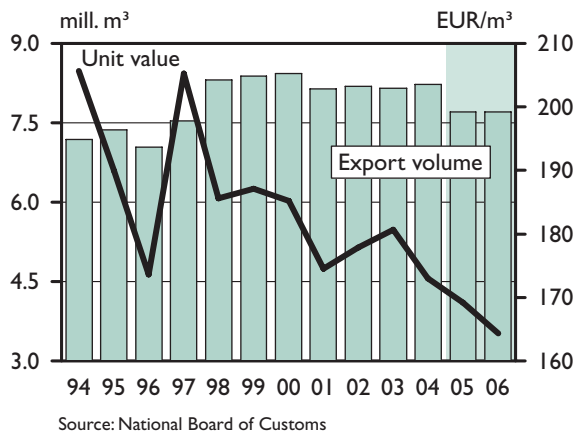
Total sawnwood exports in January–March 2005 fell short of the figure for the same period in 2004, and the January–June figures also revealed a similar picture, with spruce and pine sawnwood export volumes down by 8%. Exports to most of the biggest traditional markets in Europe were down, and the total volume of Finnish sawnwood exports to Europe was down by about 12% (January–June). In the United Kingdom, for example, Finland lost some of its market share to Russia and Germany. In the first half of 2005, total exports of Finnish sawnwood increased only to a number of African countries. While there was a significant increase in planed sawnwood exports to North America, the amounts exported were small. If the spring and early summer production shutdowns are included, total sawnwood exports for 2005 are expected to be down by about 6% in annual terms.

Sawnwood Prices Falling

The export price of Finnish pine sawnwood was down by 6%, and spruce sawnwood by 2%, in January–June 2005 in comparison with the same period a year earlier. The pine sawnwood market was particularly affected by oversupply, caused in part by the growth in exports from Russia. Growth in sawnwood consumption in 2005 has also been affected by the lower average growth in new housing starts in Western Europe than in 2004 (according to Euro-construct's June 2005 report). Sawnwood prices in the United States were falling in the first six months of 2005, due to there being an increase in domestic production and imports at the same time as signs of a slowdown in housing construction in response to rising interest rates. The demand for building supplies has risen slightly following the damage caused by Hurricane Katrina, and this has led to a peak in sawnwood prices. This is expected to be only a temporary phenomenon, which is also the hope of the US federal government in its aim to ensure that reconstruction can progress without difficulty.

There was also significant storm damage to forests in the Baltic Sea region in early 2005, in which about 75 mill. m³ of timber was felled in Southern Sweden, for example. This has had relatively little impact on the demand-supply balance in the European market, however, because most of the increased sawnwood production was exported to the United States in the first half of the year. Sawnwood produced from storm-damaged trees will also enter the market in 2006, as such wood can be kept in water storage basins for a long period.

European sawnwood producers have expressed their concern over the disproportionate price trends in sawnwood and sawlogs. They justify the need to raise sawnwood prices on the basis of the rise in roundwood prices and transportation costs. The Confederation of Finnish Industries' Business Tendency Survey indicates that price rises can be expected in the Finnish wood products industry in the second half of 2005. However, without a clear increase in



Volume and unit value of sawnwood exports, 1994–2006 at 2004 prices (wholesale price index)

demand, prices cannot be raised by any significant amount. The average export price of Finnish sawnwood for 2005 as a whole is expected to be about 2% lower than in 2004.

Sawnwood Exports in 2006 Will Not Reach Peak Levels

A modest increase is forecast in Europe's GDP growth in 2006, and interest rates are expected to be more or less unchanged. New housing construction is declining, however, and is forecast to be about 1% lower by value than in 2005. New housing starts will be down in Germany, France and the United Kingdom, for example, which are all traditional export markets for Finnish sawnwood. Sawnwood consumption in Western Europe in 2006 will be very much reliant on the housing renovation market, which is forecast to grow by about 2%. Renovations will account for about half of all residential construction activity.

The increase in sawnwood production in Eastern and especially Central Europe in 2006 will have an impact on Finnish sawnwood exports because growth in Europe's sawnwood consumption will be quite low. The situation in markets outside Europe, in particular the North American and Japanese markets, will be important in determining the price trend.

Europe's sawnwood exports to the United States continued to grow in the first half of 2005, reducing the volume of sawnwood available on the European market. However, the situation may change in 2006, as North America will also experience oversupply on account of increasing US imports and higher sawnwood production in both the United States and Canada.

According to the National Association of Home Builders, housing construction in the United States in 2006 will be about 6% down on the record level of 2005, due to rising interest rates. Even though damage repair following Hurricane Katrina will increase construction activity somewhat, it will not have that great an impact on the demand for sawnwood. Assessments suggest that reconstruction will not begin in earnest for some months and is likely to proceed slowly over a number of years. Reconstruction in the damaged area is estimated to consume annually only less than 2% of the entire US annual sawnwood consumption of 105 mill. m³. The hurricane also caused damage to the area's forests, and provisional estimates indicate that the volume of hardwood and softwood affected was considerably greater than the early 2005 storm damage in Sweden. No detailed estimates are yet available on the volume of sawmill-fit timber felled by Hurricane Katrina.

About one third of US sawnwood consumption is met by imports from Canada, where production is on the increase. One reason for the expansion in Canada's production capacity is the need to process the considerable volume of trees being felled in British Columbia due to mountain pine beetle damage. The planned reduction in felling volumes in Eastern Canada in 2006 will not be sufficient to provide much relief for the oversupply situation in North America.

The pressure to reduce sawnwood prices in the United States in 2006, in combination with rising transportation costs, will probably limit the growth in US imports from Europe. Growth in Europe's exports to Japan may also be less than in 2005, because forecasts indicate a slowdown in residential construction growth in Japan to less than 1%. With

oversupply continuing in Europe, the average price of Finnish exports is forecast to fall by about 2% in 2006, and no growth is anticipated in sawnwood exports.

China's growing demand may benefit the European sawnwood market in a number of ways, for instance by drawing in more sawnwood imports to meet the increase in value-added processing of wood products in China. Among Finland's competitor countries, Russia and Canada are the biggest suppliers of sawn softwood to China, where about one fifth, or 2 mill. m³, of total sawnwood imports consists of sawn softwood. The NAFTA decision on the sawnwood import duty dispute between Canada and the United States was published in August 2005, declaring that Canadian exports to the US do not weaken the sawmilling industry's position in the United States. This, at least in theory, should mean that the duty will be removed. However, the immediate reaction from the US was to maintain the duty. The continued imposition of the duty will support imports from Europe.

Finnish Consumption and Production of Sawnwood in 2006

Housing production is still relatively high in Finland due to migration patterns within the country and an accumulation of housing demand. However, following growth in housing production of over 7% in 2004, the Research Institute of the Finnish Economy forecasts that the figure for 2005 will be only about 2%; the forecast for 2006 is 3.5%. Supported by low interest rates, detached and other low-rise housing will account for a higher proportion of all housing starts in 2005 than the previous year, and this will again be the case in 2006, according to the assessment of the Confederation of Finnish Construction Industries (RT). Domestic consumption of sawnwood in 2005 will therefore remain high.

In 2006, sawnwood consumption in Europe is scarcely expected to grow at all, and continued oversupply is likely to create downward pressure on prices. In this situation, no increase can be expected

in Finnish production, even for the purpose of protecting market shares, which has been the case in recent years. The likelihood is that the least profitable production units will be discontinued in the future, and efforts focused instead on more highly processed products. There are already signs of a decrease in production, mainly in pine sawnwood, where the drop in export prices has been sharper than for spruce sawnwood. UPM Wood Products closed its Aureskoski sawmill in 2004 and has reduced production at the Alholma and Kajaani sawmills, and Stora Enso Timber closed its Veitsiluoto sawmill 'temporarily' in summer 2005. Other announcements have also been made about intended production cuts, indicating a reduction of 0.9–1.0 mill. m³ in Finnish sawnwood production by the end of 2006.

With no increase in sawnwood exports expected, and with only a small rise in sawnwood use on the domestic market, total Finnish sawnwood production in 2006 is forecast to be approximately 12.6 mill. m³, which will be less than the 2004 total. The figure could be lower than this if profitability in the sawmilling industry deteriorates further. A critical factor is the relationship between the price of sawlogs and sawnwood.

Plywood Prices Rising

In 2004, Europe's plywood consumption grew at a faster rate than production, drawing in more deliveries not only from Finland but also from, for example, Russia and China. In the same year, North America increased its imports of plywood by 44% as a result of the busy construction market and the full utilisation of domestic production capacity.

Finland's plywood exports to Europe in 2004 were up by 7%, mainly concerning exports to the key markets of Germany and the United Kingdom. The increase in plywood prices in Europe was also reflected in the average export price of Finnish plywood, which began to rise steadily at the beginning of 2004. The high demand from North America led to an increase of about 5% in Finnish exports there, whereas exports to Asia fell slightly. Softwood

plywood accounts for more than half of Finland's plywood production and exports.

Competition began to intensify in the first half of 2005, especially in the bulk plywood market. As economic growth and construction slowed in Europe, the export volume of Finnish softwood plywood fell by 5%, and hardwood plywood by 6%, in January–June 2005. UK demand fell in the first part of the year, and in Germany the growth in imports of hardwood plywood was down from the previous year's peak. There was also a drop in exports of Finnish birch plywood to Germany in the first six months of 2005, which mainly concerned exports of lower quality plywood. By contrast, Russian, Italian and Romanian plywood accounted for an increasing proportion of German imports. As with birch plywood, Finnish softwood plywood exports to Germany also fell by almost 20%, due to the substantially higher proportion of Brazilian plywood in German imports. In percentage terms, the growth in the supply of Chinese hardwood and softwood plywood has been especially great, although the actual volumes are still relatively small. China is becoming a significant competitor on the European plywood market as a whole, and in its trade with North America it has rapidly turned from being a net importer to a net exporter of plywood.

Finnish plywood production in January–June 2005 was 3.6% lower than for the same period the previous year. The principal reason was the closure of UPM's Kuopio and Viiala mills, which were both fairly small producers of mainly birch plywood. Birch plywood production declined by 4%, and softwood plywood by 2%, in the first half of the year.

The export price of plywood continued to rise in January–June 2005. The average export price of softwood plywood rose by 11% and birch plywood by 6%. Prices are expected to rise at a lower rate in the second half of the year, and so the increase in the average export price of plywood for the year as a whole will be about 8%. Production and exports of plywood are expected to rise slightly in the second half of 2005, but the volumes for the full year will be about 2% below the 2004 levels.

Forecasts of production and exports in the sawmilling and plywood industries, 1000 m³ (percentage changes from previous year are shown below the respective volumes).

	Production			Exports		
	2004	2005	2006	2004	2005	2006
Sawnwood	13 544	12 500	12 600	8 226	7 700	7 700
	-1	-7	1	0	-6	0
Plywood	1 350	1 320	1 370	1 234	1 210	1 240
	4	-2	4	5	-2	3

Forecasts of export prices for sawnwood and plywood (as percentage changes from previous year*).

	2004	2005	2006
Sawnwood	-3 (173€/m ³)	-2	-2
Plywood	0 (475€/m ³)	8	3

* Export prices are nominal unit values

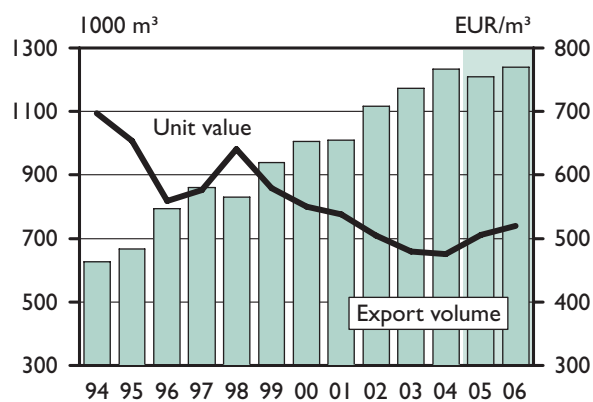
Tougher Competition on the Plywood Market in 2006

As a result of the decrease in construction activity in Europe, the growth in demand for Finnish plywood is expected to slow down a little in 2006, and price increases will be more moderate. There are many different plywood grades, and the market trend varies according to the grade in question. The demand for high-quality birch plywood is expected to remain good, which is also the case for plywood demand in the packaging and transportation industries.

The active construction market in North America has ensured record demand for plywood and pushed up prices. Following the reduction in US plywood production capacity, imports have increased from South America, Asia and Europe, leading to a reduction in the volumes that would otherwise have been offered to the European market. As a result of Hurricane Katrina, the price of plywood in the United States has risen further. The plywood market does not suffer from the oversupply situation seen on the sawnwood market, and so prices can be expected to remain high in 2006 as well. It is estimated that

about 2% of the total US consumption of structural panels will be needed annually to repair the damage from Hurricane Katrina. The reconstruction is therefore unlikely to have a very great impact on the demand for plywood. In 2006, US plywood demand is expected to be about the same as in 2005.

With the completion of investments by Finnforest and UPM, production and export volumes of Finnish plywood in 2006 are forecast to return to their 2004 levels. The rise in birch plywood prices will slow down, as supply from Russia and elsewhere continues to grow, and the increase in the export price of softwood plywood will level off due to the reduction in housing construction in Europe. The average export price of Finnish plywood in 2006 is expected to rise by about 3% from the 2005 figure.



Source: National Board of Customs

Volume and unit value of plywood exports, 1994–2006 at 2004 prices (wholesale price index).

2.2 Exports and Production in the Pulp and Paper Industry

Paper consumption has remained high on Finland's main export markets in Western Europe during 2005. However, owing to a labour market dispute in the Finnish paper industry, the country's paper, paperboard and pulp production for 2005 will be down by more than 10% on the previous year's total. With Finnish mills laying idle in May–June, supply was reduced and producers and customers had to use up stocks. This brought the opportunity to increase paper prices, and so, in contrast with the declining price trend in 2004, the average 2005 export prices of paper, pulp and paperboard will be unchanged or slightly up on the previous year.

In 2006, the minor increase expected in private consumption in Western Europe will raise the demand for advertising and thus for paper to a certain extent. However, the paper industry's capacity will also be expanded somewhat in 2006, and so the oversupply situation on the European market will be almost unchanged, and efforts to reduce it will probably continue by increasing deliveries to markets outside Europe. The increase in costs will lead to pressure on prices and may keep them from returning to a downward path. The Finnish pulp and paper industry's production and exports will be up considerably in 2006 compared with the 2005 figures, which were exceptionally low. Comparing the figures with 2004, paper and paperboard production in 2006 is expected to be up by about 3%. The percentage growth in pulp exports will be even higher on account of the increased capacity. As Europe's oversupply situation continues, prices are forecast to remain at around the 2005 level.

Modest Growth in Paper Consumption, and Price Trend Stronger in North America than in Europe

The consumption of paper and paperboard in the Finnish paper industry's main markets in Western Europe was up only slightly in 2004, according to figures from the UN's Food and Agricultural Organisation (FAO), but nevertheless exceeded for the first time the record level seen in 2000. Western Europe's production was up more markedly, however, as producers increased their deliveries to markets outside Europe. Prices of printing and writing papers continued the downward slide that began in mid-2001.

In the first half of 2005, European demand for printing and writing papers was at about the level of 2004 in the case of newsprint, coated magazine and fine papers, or slightly below that level in the case of uncoated magazine and fine papers. The lack of demand growth was visible in the export prices of Finnish paper. Despite the price rise intentions expressed by producers at the end of 2004 and the supply uncertainty brought by the dispute over employment conditions, export prices in May 2005 were still fairly close to the 2004 year-end level, and the average export price of paper had only risen by just under 1%.

The demand for printing papers is affected not only by consumers' disposable income and how much they read, but also by printed advertising, which is strongly linked to economic growth. GDP growth in the key German export market has continued to be weak in 2005. According to the German magazine publishers' umbrella organisation, Verband Deutscher Zeitschriftenverleger, German magazines featured more than 5% less advertising in January–September than in the same period of 2004, and, moreover, the outlook for magazine advertising appeared uncertain for the remainder of 2005. Germany accounts for about one third of Western Europe's magazine paper consumption. Magazine

The Finnish pulp and paper industry, 2004, 1000 tonnes.

	Chemical pulp	%	Paper	%	Paperboard	%
	of production			of production		of production
Production	7 783	100	11 178	100	2 858	100
Domestic use*	5 536	71	960	9	397	14
Exports:	2 247	29	10 218	91	2 461	86
EU	1 847	24	7 508	67	1 685	59
Asia	165	2	926	8	391	14
Africa	20	0	102	1	81	3
United States	112	1	1 113	10	183	6
Russia	11	0	245	2	103	4
Other	92	1	324	2	18	1

* Estimated domestic use = production – exports

Sources: Statistics 2004 (Finnish Forest Industries Federation) and Finnish Forest Research Institute

advertising was also down in France and the United Kingdom in the first half of 2005.

In North America, the strong growth trend in the demand for printing and writing papers is already a thing of the past, and newsprint consumption is now declining. The demand for magazine papers in January–August 2005 was about 1% higher than in the same period in 2004, according to the American Pulp and Paper Product Council, and the demand for fine papers was down by 4%. Despite the slack trend in demand, magazine paper prices were about 15% higher in the first half of 2005 than in the same period the previous year, according to producers. The newsprint PIX price at the start of October 2005 was 8% higher than at the start of the year, which is explained by the reduction in supply. Producers have gradually closed down their older machines, which has improved the balance in the market.

The demand for consumer packaging board in 2005 has been reasonably good, and paperboard manufacture in Finland has been more profitable than paper production. By contrast, the container-board market (liner and fluting) has suffered the effects of global oversupply, and product prices have been falling. Whereas the Finnish producers in the sector are only small, the large producers in Europe are under pressure to close their least profitable

machines. Liner and fluting constitute almost one quarter of Finnish paperboard production, but only one tenth of the value of paperboard exports.

Finnish Paper Production Collapsed in First Six Months of 2005 due to Labour Dispute, but Rest of Year Looks Busy

As a result of strikes and a prolonged lockout in connection with a collective agreement dispute, Finnish pulp and paper production was down by almost one quarter in the first half of 2005 in comparison with the same period in 2004. Nevertheless, the second half of the year is turning into a busy period for the paper mills, not only because of stronger seasonal demand but also because both producers and buyers need to replenish stocks diminished during the paper industry lockout. The new collective agreement for the sector will allow paper production to continue during the Christmas holidays.

Without the reduction in paper supply due to the labour market dispute, the only factor in Europe creating upward pressure on paper prices would have been the general increase in production costs. Labour costs are rising steadily, and the costs of materials and transportation have risen too, as they include the effects of the oil price increases. Pulp

prices have also risen during 2005. The PIX euro price of long-fibre pulp in mid-November 2005 was about 13% higher, and that of short-fibre pulp 30% higher, than at the start of the year.

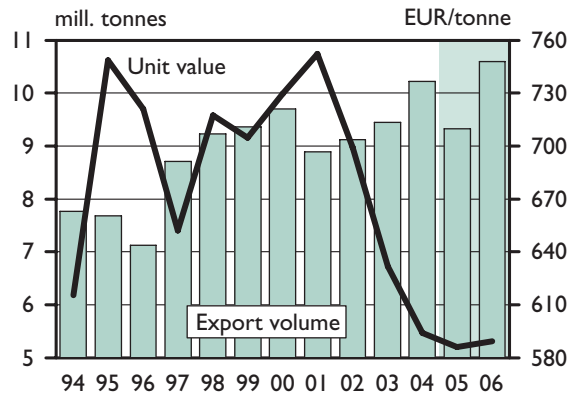
Although hardwood pulp production capacity has expanded, the increased demand for hardwood pulp has prevented oversupply and enabled prices to be raised. Various other factors have also affected the supply and price of pulp. In Sweden, production of softwood pulp has increased, replacing some hardwood pulp production, in order to utilise the trees that had fallen in the winter storms. In Germany, the introduction of Zellsstoff Stendal's new pulp mill has increased production and reduced imports of softwood pulp.

Total Finnish production of paper, paperboard and pulp in 2005 is expected to be about 11%, and export volumes about 8–9%, below the previous year's level. The average export price in all the main product groups is expected to be at about the 2004 level, or slightly higher.

South American Pulp Mills and Chinese Paper Mills

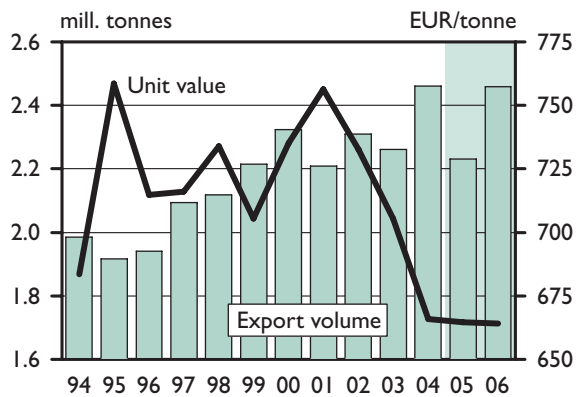
The main focus in new investment within the pulp and paper industry is currently on South America and China, while in North America and Europe investment is mainly in modernising existing machines. In South America, pulp production costs are relatively low on account of the fast-growing planted forests. Paper production and paper demand in South America are growing only slowly in tonnage terms, and so the pulp produced in the new mills is shipped to Asia, Europe and North America.

In China, the demand for paper, paperboard and the pulp needed in their production is growing at a brisk rate, driven by the strong growth in the economy. In addition, environmental considerations are leading to the replacement of the straw pulp widely used in the region with wood pulp. Despite the forest planting undertaken, the existence of major forest conservation programmes to protect forest resources means that the region's own pulpwood resources are



Source: National Board of Customs

Volume and unit value of paper exports, 1994–2006 at 2004 prices (wholesale price index).



Source: National Board of Customs

Volume and unit value of paperboard exports, 1994–2006 at 2004 prices (wholesale price index).

as yet insufficient to meet production demand. China is in fact the world's largest pulp importer. According to statistics from the UN's Food and Agricultural Organisation (FAO), China's imports of wood pulp have increased during the past five years by more than half a million tonnes annually, and its waste paper imports have grown even more. China's own pulp production is increasing at the same rate as the growth in its planted forests, and a recent example of this was the spring 2005 opening of Asia Pulp

Forecasts of production and exports in the pulp and paper industry (1000 tonnes); percentage changes from previous year are shown below the respective volumes

	Production			Exports		
	2004	2005	2006	2004	2005	2006
Chemical pulp	7 783	6 910	8 050	2 247	2 060	2 350
	6	-11	16	0	-8	14
Paper	11 178	9 950	11 500	10 218	9 330	10 600
	8	-11	16	8	-9	14
Paperboard	2 858	2 550	2 900	2 461	2 230	2 460
	6	-11	14	9	-9	10

Forecasts of export prices for the pulp and paper industry (as percentage changes from previous year*)

	2004	2005	2006
Chemical pulp	0 (402 €/tonne)	1	1
Paper	-5 (594 €/tonne)	0	1
Paperboard	-5 (666 €/tonne)	0	1

* Export prices are nominal unit values.

& Paper's new million-tonne eucalyptus pulp mill in Hainan. Environmental organisations have questioned the adequacy of plantation wood resources for the mill.

Finnish companies have also been actively involved in investments in Asia and South America. The new Veracel eucalyptus pulp mill opened in Brazil in May 2005 is co-owned by Stora Enso, and in Uruguay a pulp mill is being built by Metsä-Botnia. In China, UPM began production with its latest fine paper machine in spring 2005. Finnish companies also have other Chinese and South American investments planned or in progress, for instance for the production of self-adhesive laminates, liquid packaging board and pulp.

In Europe, three new paper machines will be introduced in the near future for production of uncoated SC magazine paper. Stora Enso will launch its new machine in Sweden at the end of 2005, and both UPM and Myllykoski have reported that

they will build a new SC paper machine in Central Europe within the next few years. To avoid oversupply, the companies intend to close older machines. Europe's newsprint production capacity will be reduced slightly in 2005, when Norske Skog closes one of its machines, but capacity will be expanded in 2006 with Holmen Paper's new machine in Spain.

Paper Oversupply in Europe Slow to Decrease

The Association of European Publication Paper Producers (Cepiprint) reports that the oversupply of mechanical printing papers (newsprint and magazine papers) in Western Europe fell slightly in 2004, when the ratio of deliveries to capacity rose to 92%. The capacity utilisation rate in coated magazine papers was lower than in other grades. The slow demand growth in Western Europe has increased deliveries by European producers to Asia and North America, despite the strong euro. The fine paper market in Europe is also troubled by oversupply, which will be exacerbated further by the considerable increase in capacity in Asia in both 2005 and 2006.

The forecast GDP growth in Europe for 2006 is unlikely to mean any significant increase in consumer demand and advertising, and so the growth in Europe's demand for paper will remain modest again in 2006. The forecasts indicate that growth in the German economy, in particular, will still be weak.

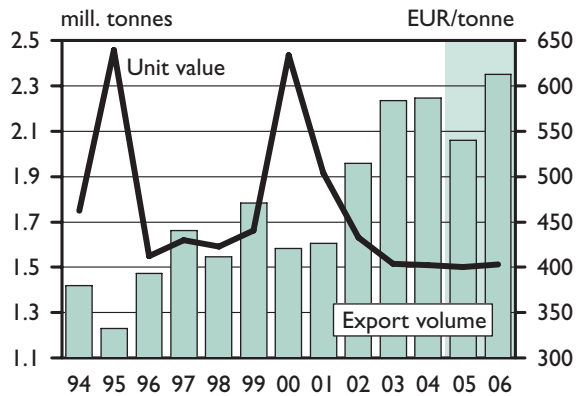
Oversupply will continue and announcements of the closure of some of the least profitable production units can be expected in Europe in 2006. The rise in production costs will lead to pressure to adjust paper prices, but any significant increase would require a clear revival in economic growth and paper demand in Western Europe.

Growth in the US economy is expected to remain fairly strong in 2006, which should ensure stability in paper consumption on the US market. No new production capacity is due in 2006, but there will be a considerable reduction in the amount of newsprint production capacity. In Asia, the continuing rapid growth in China's economy will ensure further strong growth in pulp and paper consumption. The region's high rate of investment has, however, brought with it a clear risk of oversupply, which, should it materialise, will also be reflected in the European and North American paper and paperboard markets in 2006.

Finnish Paper Production Up in 2006, but Sluggish Trend in Export Prices

In 2006, Finnish paper and paperboard exports will increase and capacity utilisation rates will rise. In comparison with the exceptionally low production in 2005, the percentage growth will be substantial. A better reference year is therefore 2004, against which production and exports of paper in 2006 are forecast to be up by about 3%. Paperboard production will also be up slightly on the 2004 level.

Export prices of Finnish paper and paperboard in 2006 are forecast to be about the same as, or just a little above, the 2005 figures, as the growth in demand will be small and the market will still be troubled by oversupply. The average export price of pulp is forecast to rise by 1–2%, although the trends in hardwood pulp and softwood pulp may once again differ from each other, for instance due to the substitution possibilities between different pulp grades. In 2006, the latest eucalyptus pulp mills in China and Brazil will be up and running, with a capacity of almost 2 mill. tonnes, which will keep



Source: National Board of Customs

Volume and unit value of pulp exports, 1994–2006 at 2004 prices (wholesale price index)

hardwood pulp price rises in check. The supply of softwood pulp in 2006 will be up in comparison with 2005 because the Finnish pulp mills should be fully operational throughout the year. Price forecasts are based on the assumption that there will be no notable changes in euro exchange rates against the US dollar and other key currencies important for exports.

2.3 Costs and Profitability in the Finnish Forest Industry

A collective agreement dispute in the Finnish paper industry brought pulp and paper production to a standstill in May–June 2005 and reduced forest industry profits in the second quarter of the year. Forest industry profitability in 2005 has also been affected by the fact that the prices of nearly all production inputs have increased while at the same time end-product prices are either virtually unchanged (paper industry) or have fallen slightly (sawmilling industry) in annual terms. Although capacity utili-

sation rates and turnover will increase in the paper industry in the latter part of 2005, the industry's profitability will be weaker for the full year than it was in 2004. The capacity utilisation rate in the sawmilling industry will be down and profitability will remain weak, due to a drop in sales volumes and lower export prices.

In 2006, paper production and export volumes are forecast to rise to new record levels. Higher capacity utilisation rates will improve profitability in the pulp and paper industry considerably, although paper prices are not expected to increase very much. In the sawmilling industry, competition on the export markets will continue to be tough in 2006. Production and export volumes will be up, but will fall short of the 2004 levels. Forecasts indicate a further slight fall in sawnwood prices, and so profitability in the sawmilling industry will remain weak in 2006.

Paper Industry Profitability Hit by Production Shutdowns

In 2004, the Finnish forest industry's exports increased by an average of 7% in volume terms on the previous year's figures. However, export prices were down by an average of more than 4%, and so the forest industry's export income grew by only 2.5% and its profitability improved by a small amount. The combined turnover of the five largest Finnish forest industry corporations (Stora Enso, UPM, Metsäliitto Group, Ahlström and Myllykoski) in 2004 was EUR 34 billion, which was 1.5% up on the previous year. The Finnish production units of these corporations accounted for about half of this turnover. Their combined profit before extraordinary items amounted to approximately EUR 1.1 billion, compared with EUR 0.8 billion in 2003.

Total investment by all Finnish forest industry corporations in 2004 was about the same as in 2003, totalling approximately EUR 2.3 billion and representing about 7% of turnover. Some 65% of this

investment was made abroad, as in the previous year.

In the first six months of 2005, the forest industry's production shrank by an average of 20% in comparison with the same period in 2004. This was due to a collective agreement dispute in the Finnish paper industry. However, the combined turnover of Stora Enso, UPM and Metsäliitto Group fell by only 1.5% in the same period, because Finnish production accounts for only a proportion of their total turnover. Their combined half-year profits before extraordinary items were down to approximately EUR 0.3 billion, compared with EUR 0.4 billion for the same period in 2004.

The profitability trend in the paper and sawmilling industries is shown by product group in the accompanying diagrams. While the diagrams represent the entire worldwide production of the Finnish forest industry corporations, the assessments presented below concerning the production costs and profitability of the Finnish forest industry in 2005 and 2006 deal only with domestic production.

Export volumes in the Finnish pulp, paper and paperboard industries were up by almost 9% in 2004. The combined export income of these industries was EUR 9.2 billion, which was only 3% up on the previous year's figure because of the 5% drop in paper and paperboard export prices. With costs increasing as well, profitability in the paper and paperboard industry remained weak.

The production shutdowns in the pulp and paper industry led to a 23% drop in paper and paperboard production in the first half of 2005, and a drop of 20% in export income, to EUR 3.6 billion, in comparison with the same period in 2004. Cost did not fall in this way, however, and so profitability deteriorated. Pulp and paper industry profitability for 2005 as a whole will also be down on the previous year's figure because the growth in production and exports in the second half of the year will be insufficient to make good the losses of the first six months. Profitability will be further reduced because the costs of all production inputs have risen and the average export price of paper will be unchanged from 2004.

Sawmilling Industry Profitability Continues to be Weak

Export income from sawnwood, plywood and other wood products in 2004 was about the same as the previous year, totalling EUR 2.6 billion. Export volumes of sawnwood were up by about 2%, but export prices were down by 3%. Profitability in the sawmilling industry remained weak, leading to a negative net profit for 2004.

Finnish sawnwood production in the first six months of 2005 was 14% below the figure for the same period a year earlier, due to the production shutdowns in the sawmilling industry as a result of the paper industry dispute over employment conditions. Sawnwood export volumes for 2005 as a whole are expected to be only about 6% below the previous year's level, however. Nevertheless, the sawmilling industry's export income and its profitability will be below their 2004 levels because the average export price of sawnwood is expected to fall by 2% for the year as a whole. The principal reason for the weak profitability is the high price of sawlogs in relation to sawnwood export prices.

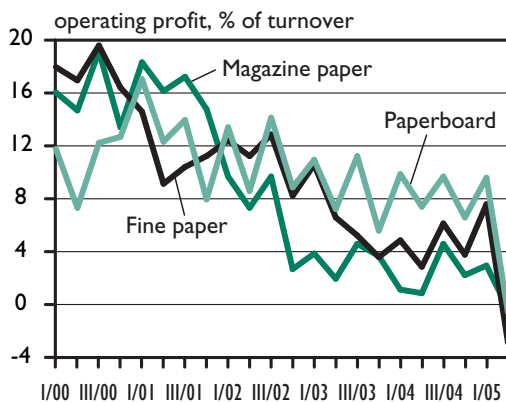
Production and export volumes in the Finnish plywood industry in 2005 are expected to be about

2% lower than in 2004. Prices of both birch and softwood plywood have risen significantly in the first six months of 2005, and the average plywood price for the full year is expected to be up by 8%. This favourable price trend will improve the profitability of plywood production.

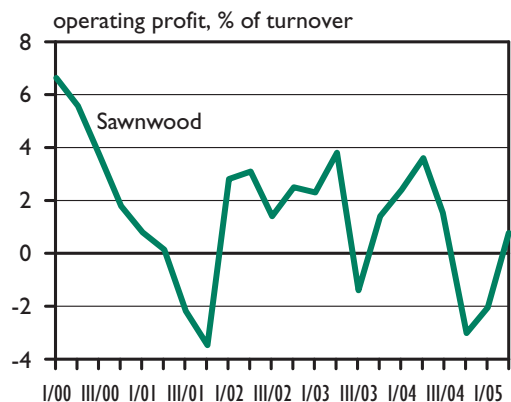
Roundwood Costs Up in 2005

Wood raw material costs comprise about one third of total costs in the wood products industry, and about 14% in the pulp and paper industry. The figures cover all sections of these industries, including the manufacture of processed products. The Finnish forest industry's roundwood costs are made up of the stumpage, harvesting, transportation and procurement costs of domestic roundwood, plus the costs of foreign imported roundwood.

For the wood products industry, stumpage costs are the most important individual cost element, accounting for almost one quarter of total costs. By contrast, stumpage costs account for only 4% of total costs in the pulp and paper industry. Stumpage prices are expected to be up only very slightly in 2005. Stumpage prices for spruce and pine pulpwood are projected to be up by 1%, and for spruce and birch



Sources: Annual and interim reports of UPM-Kymmene, Stora Enso, M-Real and Finnforest



Sources: Annual and interim reports of UPM-Kymmene, Stora Enso, M-Real and Finnforest

Forest industry operating profit by product group, 2000/I–2005/II.

sawlogs by 3%. The price of birch pulpwood will be unchanged, but that of pine sawlogs will be down by 4% on the 2004 level.

The costs of roundwood harvesting and transportation constitute 6.5% of total costs in the wood products industry and 3.5% in the pulp and paper industry. These costs have risen significantly since 2004. According to figures from Statistics Finland, forwarder and harvester costs rose by about 6%, and transporter costs by about 8%, between July 2004 and July 2005.

Taking all the cost items into account, total roundwood costs in both the paper industry and the sawmilling industry in 2005 are expected to be slightly higher than in 2004, though the difference will be smaller in the sawmilling industry.

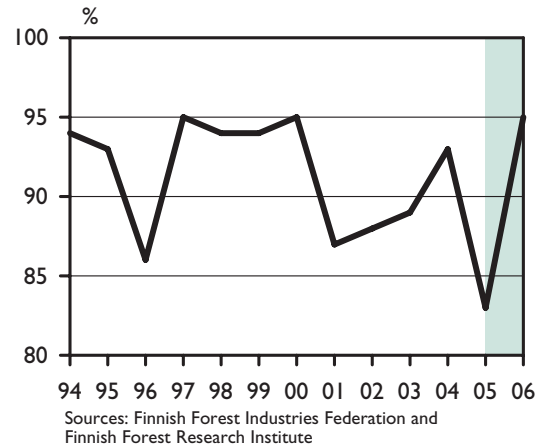
Forest Industry Pay Settlement Will Raise Pay at the Same Rate as in Recent Years

Labour costs are equivalent to about 16% of the pulp and paper industry's total costs and 15% of the wood products industry's total costs. Under the collective agreement between the Finnish Forest Industries Federation and the Finnish Paper Workers' Union, pay will be increased in 2005 by 2.5% and in 2006 by a further 2.1%.

Labour productivity increased by 11.9% in the pulp and paper industry, and by 0.1% in the wood products industry, in 2004, according to figures from Statistics Finland. Labour productivity in the pulp and paper industry will be down in 2005, due to the interruptions in production, and will also be down in the wood products industry, where production has decreased in 2005.

Energy Costs Rising

Energy costs account for about 8.5% of total costs in the Finnish pulp and paper industry, and 2.5% in the wood products industry. The majority of the energy costs are from electricity consumption, though the



Paper and paperboard industry capacity utilisation rates, 1994–2006

high degree of self-sufficiency in energy production has a stabilising effect on energy costs. In 2004, the forest industry consumed 27.5 mill. MWh of electricity, of which 43% was produced by the industry itself.

The average price of market electricity in the first half of 2005 was EUR 27.6 per MWh, or 5% less than in the same period the previous year. However, the price in the second quarter was 13% higher than in the first quarter, largely because of the rise in the market price of carbon dioxide emission allowances from EUR 7 to about EUR 25 per tonne of CO₂. Following this rise, futures trading quoted on the Nordic power exchange, Nord Pool, anticipated an increase in the price of electricity to EUR 32–35 per MWh in the latter half of the year.

Fuel totalling 280 000 TJ was used in the forest industry's own electricity and heat production in 2004, up by 4% on 2003. Wood accounted for 75% of this fuel input, natural gas for 15%, peat for 6% and heavy fuel oil for 4%. Compared with the previous year, the use of wood was higher but the use of natural gas and fuel oil a little lower. The price of natural gas in the first quarter of 2005 was up by about 7% on the same period in 2004. The price of peat in the first quarter of 2005 was about 4% higher than in the same quarter of 2004.

Rise in Oil Prices Reflected Indirectly in Forest Industry Costs

The price of crude oil has risen sharply in 2005 since its level of USD 40/barrel at the start of the year. The year-end crude oil price forecast by the Research Institute of the Finnish Economy is USD 62/barrel, which would mean an increase of about 55% during 2005. Rises in the crude oil price mainly have an indirect effect on forest industry costs via their impact on freight and other transportation costs, the prices of chemicals and pigments, and harvesting costs.

The sharp increase in sea freight charges that began in summer 2004 continued throughout the rest of the year, due to the strong growth in demand on world markets. However, by the end of August 2005, the Baltic Dry Index (BDI), measuring dry cargo spot prices, had fallen to one third of its level at the start of the year. Sea freight charges have not been lower than their present level for the past two years, although they have fluctuated from one extreme to the other during that period. They are not, however, expected to rise to their late 2004 peak during the final months of 2005. In addition, the forest industry's contract carriage arrangements are based on long-term transportation contracts and are therefore subject to more moderate changes than spot prices for sea freight. Transportation and storage accounts for about 8–9% of total costs in both the pulp and paper industry and the wood products industry.

Oil price fluctuations are reflected in the prices of pigments and forest industry chemicals via their impact on the costs of manufacturing these pigments and chemicals. During the first half of 2005 these prices were 3.5% higher than in the same period in 2004. Chemicals account for about 8%, and pigments 3%, of production costs in the pulp and paper industry.

Moderate Increase in Costs in 2006

No significant upward pressure on the Finnish forest industry's production costs is anticipated in 2006.

Neither are significant changes expected in the euro exchange rate, which will help stabilise prices of imported goods. Oil prices are not expected to rise any further beyond their current high, which will temper price increases in many of the production factors. Subdued GDP growth in the euro area and the slight rise in interest rates will also keep inflation low.

Wages and salaries are a major cost item for the forest industry in Finland. Taking into account the contractual increments and wage adjustments, wages and salaries are forecast to be up by about 3% in 2006. Labour productivity is expected to rise in the pulp and paper industry, and to some extent also in the wood products industry.

Stumpage prices are expected to remain at more or less their 2005 level, and roundwood harvesting and transportation costs are also likely to remain unchanged, as energy costs are not expected to rise any further and low interest rates will ensure that capital costs remain stable. Even a small rise in labour productivity in forestry will also help reduce the effect of the pay increments on labour costs. Mill prices of roundwood are therefore not expected to rise in 2006.

The price of crude oil is forecast to be a little below the 2005 level. The Research Institute of the Finnish Economy forecasts that the oil price will be USD 58/barrel at the end of 2006. With oil production capacity being fully utilised in the short term, even a small increase in demand or an interruption in production could cause considerable price fluctuations. Chemical and pigment prices are expected to rise more moderately than in recent years.

The price of market electricity will be heavily dependent on water reserves in the Nordic countries, on the level of power consumption in the coming winter and on the price of CO₂ emission allowances. The market price of CO₂ emission allowances in 2006 is expected to be at about the autumn 2005 level, while the price of market electricity is forecast to be about the same as year-end 2005.

Pulp and Paper Industry Profitability to Improve in 2006

Profitability in the Finnish forest industry is affected most of all by the prices of end products. With only modest demand growth on the export markets, export prices of Finnish pulp and paper industry products are forecast to rise in 2006 by only a small amount on their 2005 levels. However, production and exports of paper and paperboard are forecast to rise to a new record level, following the exceptional production shutdowns in 2005, and capacity utilisation rates will rise too. Pulp production volumes are forecast to grow substantially in 2006. With no

significant increase in production costs expected, profitability in the Finnish pulp and paper industry is forecast to improve considerably, along with corporate profits.

Export volumes in the sawmilling industry are forecast to be about 1% higher than in 2005, but the average export price will fall by about the same percentage. No changes are expected in sawmilling costs, and so the industry's profitability will again be weak in 2006. Profitability in the plywood industry is forecast to improve slightly, provided that the forecast growth in export volumes and the 3% rise in export prices are a reality.



3 Forestry in Finland

3.1 Utilisation of Wood Resources

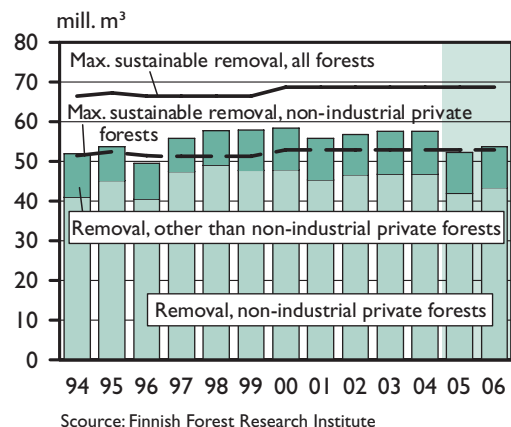
Finland's abundant forest resources are sufficient to meet the Finnish forest industry's demand for roundwood, with the exception of birch. The industry's demand for birch is some 40% higher than the estimated maximum sustainable removal will allow, and this shortfall is made up by imported birch. The industry also imports softwood. In 2002–2004, the forest industry's roundwood consumption and commercial fellings were at record highs, with consumption averaging 73 mill. m³ of roundwood a year, of which 57 mill. m³ was of Finnish origin. The level of roundwood consumption in the industry will be down in 2005, due to the interruptions in production, but will be up again in 2006.

Finland has 23 mill. ha of forest, and the total volume of growing stock is approximately 2100 mill. m³. Pine accounts for 48% of this, spruce for 33%, birch for 16% and other broad-leaved species for 3%. The annual increment in the growing stock is about 87 mill. m³. Some 2.1 mill. ha of forest, mainly in Northern Finland, is wholly or partially excluded from commercial roundwood production. Forestry can thus be practised across an area of about 21 mill. ha, containing a growing stock of over 1900 mill. m³ with an annual increment of approximately 83 mill. m³. Growing stock drain amounts to about 70 mill. m³ p.a., and so roundwood reserves are increasing annually by a small amount. The standard of Finnish

forest management has been endorsed by the Pan-European Forest Certification scheme.

The maximum sustainable removal is approximately 69 mill. m³ of useful wood per year, and the maximum justifiable in silvicultural terms is as much as 92 mill. m³, taking account of all tree species. The annual removal of roundwood meeting the dimensional requirements for industrial wood in recent years has been about 57 mill. m³, or 83% of the calculated maximum sustainable removal. In non-industrial private forests, the proportion of the maximum sustainable removal harvested has been almost 90%.

Some 62% of Finland's commercial forests are in the possession of non-industrial private owners, 23% are owned by the state, 9% by companies and 6% by other groups of owners. The state's forest ownership is concentrated in Northern Finland, which is



Removals of industrial wood and maximum sustainable removal

Wood consumption by the forest industry and maximum sustainable removals in Finland

Tree species	Consumption 2002–2004, mill. m ³ /yr		% of maximum sustainable removal	
	Domestic wood	Wood total	Domestic wood	Wood total
Pine	24.6	27.5	77	86
Spruce	24.7	28.4	102	118
Birch	6.7	14.3	64	138
Total	56.0	70.2	84	106

In addition, the industry consumed 3.0 mill. m³/yr of aspen and unspecified imported wood.

reflected in the low average increment in the growing stock compared with forests in other ownership. Forests in non-industrial private ownership account for 70% of the growing stock increment, state-owned forests for 14%, company-owned forests for 11% and the rest for 5%. From the viewpoint of the industry's roundwood procurement, the non-industrial private forests are of crucial importance, as about 80% of the domestic roundwood (and 61–63% of all roundwood, both domestic and imported) used by the forest industry is from such forests. However, this proportion has been slowly declining as imports have risen; imported roundwood now accounts for 23–24% of the total.

The table shows the Finnish forest industry's consumption of roundwood, and compares these figures with the maximum sustainable removal estimated for Finnish forests. The calculation of maximum sustainable removal is based on information about the amount, composition and annual increment of the growing stock and assumes that the standard of silviculture will remain unchanged. The calculation indicates the level to which fellings could rise without prejudicing the size of future removals.

The level of maximum sustainable removal has risen because the volume of growing stock has been rising continuously and silviculture has been quite intensive. The additional funding from the National

Forest Programme will help secure a high level of silvicultural investment. The increase in maximum sustainable removal has slowed, but with the present use of roundwood resources the maximum sustainable removal will increase again in the future.

Felling in excess of the maximum sustainable removal on a temporary basis only will not jeopardise future harvests. Flexibility of this kind, which is justifiable in silvicultural terms, is extremely widespread in Finnish forests, especially in spruce stands. In spruce-dominant forests in Southern Finland, the average volume of growing stock is high, at 173 m³/ha. Spruce harvests have been very high in recent years and spruce reserves have no longer been increasing.

From a wood resources viewpoint, pine has the best potential for quickly meeting an increase in the demand for roundwood, both as sawlogs and pulpwood. The industry's birch consumption is currently almost 40% greater than the level of maximum sustainable removal in Finnish forests will allow, and so about half of the industry's birch consumption is imported as birch pulpwood. The proportion of domestic birch resources harvested is not actually very high, as birch procurement is hampered by the fact that a significant proportion of birch grows in softwood-dominant forests, and downy birch principally on peatland. Only 9% of Finnish forests are birch-dominant. The table also shows that domestic spruce resources are being used to the full. Imports of spruce in recent years have been running at about 4 mill. m³ p.a. According to the maximum sustainable removal calculations, spruce harvests can be sustainably increased in as little as about ten years from now.

Non-industrial use of roundwood – principally household firewood – is also of importance in forest management terms, but its main significance is in terms of energy use. In the tending of young stands, an increasing volume of small-sized trees are chipped into fuelwood. The significance of this for forest management may grow if stands marked for first thinning no longer attract much interest from wood purchasers.

The aim of the National Forest Programme 2010 is to increase the use of domestic industrial wood and fuelwood (particularly felling residues). The use of industrial wood has not yet increased, but the use of felling residues and small-sized trees for energy purposes has quadrupled since 1999. In energy production, the use of wood material unfit for industrial products is very high: wood-based energy accounts for about 20% of all energy consumed in Finland and about 60% of the Finnish forest industry's energy consumption (black liquor from the pulp industry, tree bark, sawdust, etc.).

3.2 Roundwood Markets

The total volume of commercial fellings in 2005 will be about 7% lower than in the previous year, on account of the production shutdowns caused by the lock-out in the forest industry. Roundwood imports are growing at a faster rate than forecast and will account for a record one quarter of the forest industry's 2005 roundwood consumption. The increase in spruce and birch sawlog prices during 2005 has also been greater than forecast.

In 2006, the industry's roundwood consumption will increase from its low level of 2005, particularly in the paper industry. Production in the sawmilling industry will be less than 13 mill. m³, and the emphasis in the domestic roundwood market will shift more strongly towards pulpwood. Commercial fellings will be up by 4%. Thinnings will become more important in the pulpwood-dominated market, and so any increase in the average price of roundwood in 2006 will be tempered by stand-specific factors. Softwood sawlog prices are not expected to rise, because they are already very high in relation to the sawmilling industry's ability to purchase roundwood. Buoyant demand will raise pulpwood stumpage prices by 1–2%.

Two thirds of the increase in roundwood demand in 2006 is expected to be met by domestic supply

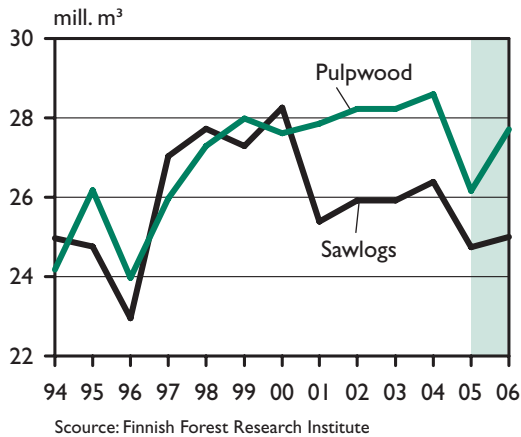
and one third by higher imports. Stocks of harvested roundwood will also be used, reducing the industry's roundwood stocks by about 17% in 2006. Imports of roundwood and wood chips are forecast to rise to almost 21 mill. m³, and may even exceed this level if those forest owners who have been paying sales revenue tax since 1993 continue to postpone roundwood sales as the forest taxation transition period ends.

Paper Industry Labour Dispute and Higher Imports Reduce Fellings by Almost One Tenth

Nothing dramatic has occurred in the domestic roundwood market during the final year of the forest taxation transition period, confirming that a 13-year transition has been long enough to adjust to the new taxation system. According to calculations by the Finnish Forest Research Institute, forest owners covered by the site productivity tax accounted for a significantly smaller proportion of roundwood sales in the first half of 2005, but this proportion was still noticeably higher than the proportion of total forest area accounted for by such holdings. The increase in the proportion of roundwood sales accounted for by owners paying sales revenue tax indicates that they are becoming more actively involved as the transition period comes to a close.

In the first few months of 2005, roundwood removals in non-industrial private forests were at the same level as in previous years, but removals in the summer months were considerably lower. This is because the market was greatly affected by the paper industry's six-week lock-out in May–June, as a result of which production in the sawmilling industry was also cut back because of the accumulated stocks of wood chips. The industry's roundwood need decreased by over 6 mill. m³ as a consequence of the dispute.

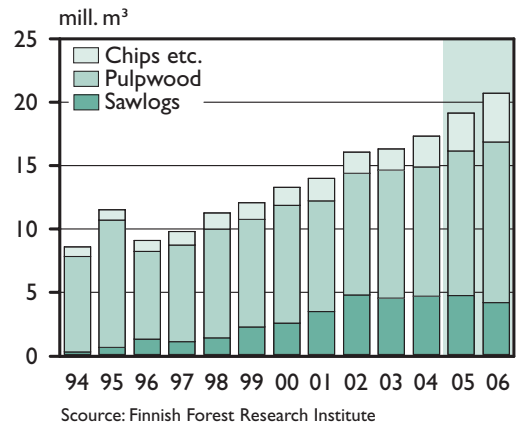
Roundwood purchases from non-industrial private forests during January–September 2005 amounted to 20 mill. m³, which was about 15%



Commercial fellings of sawlogs and pulpwood, 1994–2006

less than the previous year. The volume of standing sales was down by 18%, whereas the volume of delivery sales was up by about 1% on the same period the previous year. The volume of special roundwood (e.g. small-sized logs, birch butt logs and aspen) was down by over 15% in the first half of 2005 compared with the same period in 2004. If the industry's purchasing target of about 42 mill. m³ is to be met by the end of the year, roundwood purchases from non-industrial private forests will have to rise to an average of 4.5 mill. m³ per month in the last three months of 2005. Achievement of this target is starting to look unrealistic in comparison with the roundwood sales of recent years, even taking into account the special arrangements applied between the banks and roundwood purchasers in rendering the accounts of roundwood sellers covered by the site productivity tax.

Commercial fellings of sawlogs in January–August 2005 were 10% below the level for the same period a year earlier, but pulpwood fellings were down by only 2%. Among the different owner groups, the volume of sawlog fellings in the industry's own forests decreased in the first half of the year, and the composition of harvested wood stocks changed considerably as a result of the labour dispute. By the end of June, pulpwood stocks had increased to 7.8 mill. m³, which was almost 50% higher than a year earlier, and stocks of wood chips



Volume of imported wood by type of roundwood, 1994–2006

were up by one fifth as sawmills maintained their production despite the paper mills laying idle. Stocks of sawlogs were down by 5%. By the end of the year stocks are expected to have increased to almost 10 mill. m³, which is about 25% higher than the average winter stocks of recent years. Reserves of marked stands not included in the statistics are also expected to be up in 2005. Roundwood stocks will be needed as the industry prepares for the end of the forest taxation transition period and for a possible quieter period of roundwood sales in the first half of 2006.

The total felling volume for 2005 will be down considerably on the previous year's figure, due to the production shutdowns caused by the labour dispute in the forest industry and because of the increase in roundwood imports, despite the high capacity utilisation rate in the second half of the year. Fellings in 2005 are expected to amount to 51 mill. m³, which is 7% less than in 2004.

Roundwood Imports at a New Record

Roundwood imports have been growing more quickly than expected and will account for about one quarter of the Finnish forest industry's total roundwood consumption in 2005, which is a record level. Imports of softwood pulpwood were especially high in January–July, up by 65% on the previous year's figure. Imports of wood chips were also

up considerably in January–July (by 37%), largely because of their increased availability, for example with the opening of Stora Enso’s new Impilahti sawmill in Russia. The increase in sawlog imports evident in recent years has slowed, although imports of spruce and birch sawlogs in fact rose by 15% in January–July 2005. The trend in the unit price of imported pulpwood is particularly interesting, as this was up by 13% for pine pulpwood and 8% for spruce pulpwood in January–July compared with the same period in 2004; by contrast, the import price of hardwood pulpwood has fallen a shade during 2005.

Supplies of pulpwood have been particularly abundant in 2005 on account of the January storm damage in Sweden and the Baltic countries. The storm damage had the effect of indirectly increasing roundwood supplies in the Baltic Sea region, in particular because Sweden’s need for imported roundwood was reduced as a result of the storm damage, and so it cut its imports by one quarter in January–May. Import volumes are, however, expected to return towards their previous levels in

the second half of 2005. Finland’s imports for 2005 as a whole are forecast to be over 19 mill. m³, four fifths of which is from Russia. The industry’s greater dependence on imported raw materials is becoming a permanent feature, even though the monthly roundwood import volumes continue to vary, in part because of the undeveloped import logistics arrangements. This dependence is connected with the trend towards integration of the roundwood markets in the countries of the Baltic Sea region, and their greater involvement in foreign trade (see featured topic ‘Roundwood Markets and Price Changes in the Baltic Sea Region’).

Stumpage Prices Rising in 2005

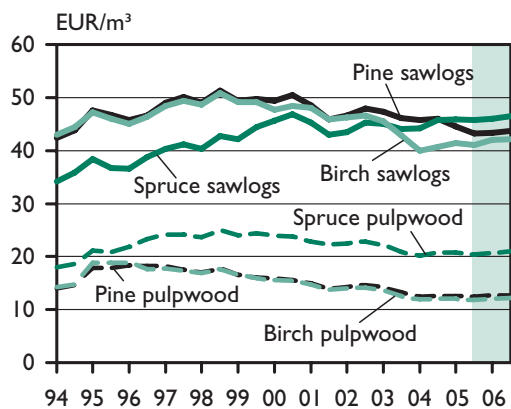
The rise in stumpage prices in 2005 has been greater than forecast. The biggest increases from January to September were in the stumpage prices of spruce and birch sawlogs (up 5%) and spruce pulpwood (up 4%). The additional capacity in the plywood industry has also contributed to the increase in demand

Commercial fellings, roundwood imports and end-of-year stocks of roundwood 2004–2006.

Roundwood type/ Ownership group	2004 mill. m ³	2005 mill. m ³	Change %	2006 mill. m ³	Change %
Commercial fellings, total	55.1	50.9	-7	52.9	4
Non-industrial private forests ¹	46.5	43.0	-7	44.0	2
Company-owned forests	3.8	3.3	-13	4.0	22
Finnish Forest and Park Service forests	4.7	4.6	-3	4.8	4
Sawlogs	26.4	24.7	-6	25.0	1
Pulpwood	28.6	26.2	-9	27.7	6
Roundwood imports ²	17.3	19.1	11	20.7	8
Commercial fellings and roundwood imports, total	72.4	70.1	-3	73.5	5
Stocks of harvested roundwood	7.0	9.8	41	8.2	-17

¹ Includes municipalities, parishes, etc.

² Excluding firewood



Source: Finnish Forest Research Institute

Semiannual stumpage prices by type of roundwood, 1/1994–2/2006 at 2004 prices (cost of living index)

for high quality spruce and birch sawlogs, and the industry's ability to purchase roundwood has been greater than that of the sawmilling industry, due to the upward trend in plywood prices. The national average stumpage price of spruce sawlogs in 2005 exceeded that of pine sawlogs for the first time, and is at a record high in both real and nominal terms. Forest owners' expectations that prices would rise at the end of the forest taxation transition period have therefore already been realised in the case of spruce sawlogs. In January–September 2005, the stumpage price of pine sawlogs was 2% down on the previous year's level. Since the summer, however, weekly roundwood prices have seen a slight rise, and record high stumpage prices have been paid for spruce sawlogs in, for example, the areas covered by the Forestry Centres of Central Finland and Häme-Uusimaa. In contrast to previous years, the proportion of delivery sales in the total in 2005 has been growing slightly, due to the high demand for pulpwood. This is evident in the higher increase seen in the delivery sale price of pine pulpwood (3%) than in the stumpage price.

The wet autumn weather in 2004 meant that roundwood had to be purchased and harvested from stands with good access under wet, unfrozen ground conditions, and so stumpage prices increased in the second half of the year. Nevertheless, due to

Average stumpage prices in non-industrial private forestry, 2004–2006.

Roundwood	2004 EUR/m ³	2005 EUR/m ³	Change %	2006 EUR/m ³	Change %
Pine sawlogs	45.9	44.2	−4	44.0	0
Spruce sawlogs	45.1	46.3	3	46.8	1
Birch sawlogs	40.5	41.6	3	42.5	2
Pine pulpwood	12.5	12.6	1	12.8	2
Spruce pulpwood	20.5	20.8	1	21.1	1
Birch pulpwood	12.0	12.0	0	12.2	2

rising demand in the latter part of 2005, stumpage prices for spruce and birch sawlogs for 2005 as a whole are expected to be an average of 3% above the 2004 figures, and stumpage prices of pine and spruce pulpwood will be up by 1%. In contrast to other roundwood categories, the stumpage price of pine sawlogs will be down by about 4%, because of lower demand arising from the weak state of the end-product markets. The export price of pine sawnwood in the first six months of 2005 was down by 6% compared with the previous year.

Domestic Demand in 2006 Will Focus More Strongly on Pulpwood

Pulpwood prices in 2006 will be supported by the growth in demand, as the paper industry's roundwood consumption is forecast to be about 17% up on the low figure of 2005. Production in the sawmilling industry is not expected to increase by any substantial amount on the 2005 total, despite the latter being lower than expected. This is because the overcapacity situation will continue on the European market and export prices will again fall slightly in 2006. In terms of the different roundwood categories, the situation has become less favourable for spruce, as the price relationship between spruce sawnwood and spruce sawlogs in 2005 has become less attractive than for pine. Among the major forest industry corporations, Metsäliitto Group is introducing a qual-

Forest Product Export Price Index and Stumpage Price Index

Pekka Ollonqvist

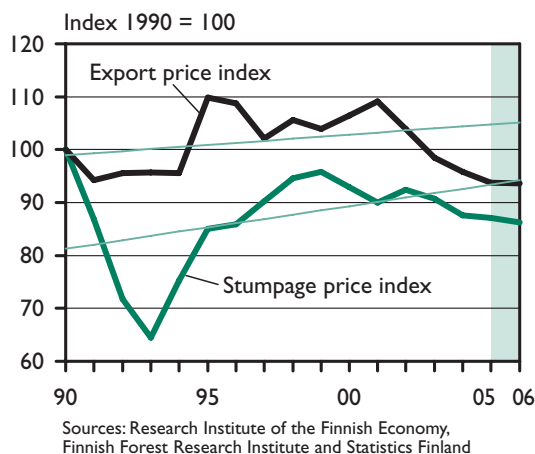
The forest product export price index, which measures the real change in forest product export prices, will be down in 2005 by about 2% on the previous year's level. The stumpage price index, which measures the real change in domestic average roundwood prices, will be down by about 0.5%. Both indices are based on prices adjusted for inflation using the wholesale price index. The stumpage price index is about 13% below its peak 1990 level that marked the end of the period of recommended stumpage prices. The forest product export price index is now about 6% below its 1990 level.

In 2006, the slight downward trend will continue in both the forest product export price index and the stumpage price index, although the change will be greater in the latter. In both indices, however, the change will be less than one percentage point. Plywood export prices will rise in 2006, and there will also be a slight increase in the pulp and paper industry's export

prices, although this will be less than the change in monetary values. The drop in sawnwood export prices in 2004 will continue in both 2005 and 2006.

A clear rising trend throughout the period 1990–2004 is visible in both indices, although the forest product export price index has risen more slowly than the stumpage price index (the difference being about half a percentage point). One of the reasons for this difference is the record low level of stumpage prices during the recession of the early 1990s. In 2005, the stumpage price index is about 7%, and the forest product export price index about 11%, below the trend calculated for the period 1990–2004.

In 2006, the real level of forest product export prices will fall for the fifth successive year, and for stumpage prices the fourth successive year, and both indices will settle at their 1991 level.



Forest product export price index, stumpage price index and their linear trends (inflation-adjusted by the wholesale price index)

ity-based pricing system for pine sawlogs, and it can be assumed that this type of pricing system, which is already in use in Sweden and Austria, for example, will also be adopted by other buyers and for other roundwood categories. During the transition to such quality-based pricing systems, the demand for high-quality sawlogs will continue to be high, but price fluctuations will become greater and there may be pressure to reduce the average prices of sawlogs temporarily.

The Finnish forest industry's wood consumption in 2006 will be approximately 9% higher than the low comparison figure of 2005, due to an increase in paper industry production. Production in the sawmilling industry forecast to remain at about 12.6 mill. m³, and so the emphasis in demand on the domestic roundwood market will shift more strongly towards pulpwood. Although the trend in the plywood industry is favourable, its impact on sawlog consumption will be small, as the plywood industry accounts for only 10% of total sawlog consumption. With roundwood sales dominated by pulpwood, thinnings will account for a greater proportion of sales, and the rise in average roundwood prices in 2006 will be kept in check by factors related to the composition of stands. For example, in first-thinning stands the stumpage price has been about 80%, and for other thinnings about 90%, of that in final cutting stands, according to local forest management association timber sales data.

Taking all roundwood categories into account, average stumpage prices in 2006 will be 1% above the 2005 level. The rise will be small because it will be tempered not only by the lower proportion of final cutting stands but also the ever increasing volume of roundwood imports. On the sawlog market, the supply from non-industrial private forests is not expected to weaken to any great extent, because only one third of the roundwood market supply in recent years has been from forest owners paying sales revenue tax, and such owners are now expected to be more active on the market. No increase is anticipated in the average prices of softwood sawlogs in 2006, as the composition of stands is changing to focus

more on thinnings. Sawmilling production will be 0.8–0.9 mill. m³ lower than in 2004, and no rise is expected in sawnwood prices. By contrast, the high production growth in the pulp and paper industry will push up the stumpage prices of pine and birch pulpwood in particular, by several percentage points. The rise in the stumpage price of pine pulpwood could be even greater, but upward pressures will be restrained by the abundance of thinning stands ready for thinning.

Commercial fellings will be up in 2006 by a total of 4%. The biggest increase, at 6%, is expected in fellings of pulpwood. Based on the anticipated increase in sawmilling and plywood industry production, sawlog fellings are expected to increase by 1%. Among the different owner groups, the greatest proportionate increase in fellings will be in the company-owned forests, although these are only of limited significance on account of the relatively small area of forest. Metsähallitus (formerly the Finnish Forest and Park Service) will also increase the amount of felling in its own forests, which will mainly affect the supply of pine pulpwood. The scope of Metsähallitus for increasing its fellings is limited, however, by the fact that there are other objectives than roundwood production that apply in state-owned forests, such as conservation. Northern Finland, for instance, will be gaining a new 42 000 ha conservation area in 2006.

Commercial fellings and roundwood imports are together forecast to increase by almost 4 mill. m³ in 2006. At the same time, the forest industry will also use up some of its stocks of roundwood, reducing them by an estimated one fifth from their high level at the end of 2005.

Imports of Pulpwood and Wood Chips Up Again in 2006

About two thirds of the forecast increase in roundwood demand in 2006 will be met domestically and one third through higher imports. Roundwood imports in 2006 are forecast to reach almost 21 mill. m³, although this will represent a smaller year-on-

year increase (8%) than occurred in 2005. If the supply of roundwood from forest owners already paying sales revenue tax does not get under way in the first few months of 2006, after the end of the forest taxation transition period, the existing import channels will allow imports to be easily increased by a further 1–2 mill. m³ if necessary. With sawmilling capacity increasing in Northwest Russia, the import of wood chips is forecast to rise again in 2006, by about 25%. The changing structure of imports will enable the raw material supply needs of the pulp and paper industry to be met more easily.

The end of the forest taxation transition period is not necessarily the most significant uncertainty in the 2006 roundwood market. More important may be the uncertainty surrounding the price trends in the different forest industry product markets. If the economic trends in the export market are weaker than anticipated here, interruptions in production can be expected. As a consequence, roundwood demand and prices in Finland could be weaker than anticipated, as the supply of imported roundwood will remain high in 2006.

3.3 Investment and Profitability in Non-Industrial Private Forestry

Total investment in timber production in Finnish non-industrial private forestry in 2005 will fall just short of EUR 175 mill. In 2006, investment will be slightly higher on account of an increase in funding by private forest owners themselves. By contrast, state subsidies for timber production in non-industrial private forestry will be more than 5% below the level of 2005. This will be the third consecutive year in which state funding has decreased. In 2006, state subsidies totalling approximately EUR 60 mill. will be available to ensure that timber production in non-industrial private forestry remains sustainable.

Per-hectare net earnings in non-industrial private forestry will be down by 8% in 2005, to EUR 88/ha, because of the drop in fellings as a result of the labour dispute in the forest industry. Net earnings in 2006 will rise to nearly EUR 90/ha, although this, too, will be significantly less than in the peak years. No major changes are expected in stumpage prices, and so the investment return on forest ownership will remain at around 4%.

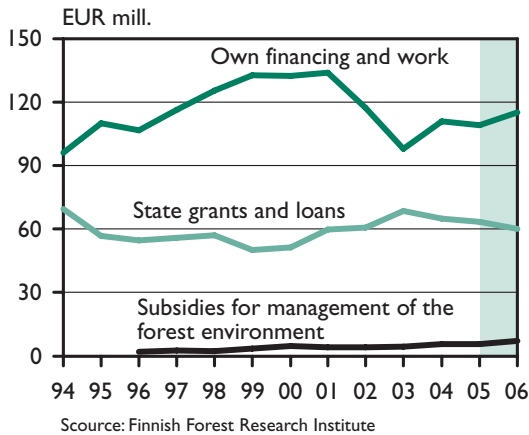
Increase in Funding by Private Forest Owners

The proportion of timber production funded by private forest owners themselves amounted to less than EUR 100 mill. in real terms in 2003, a low not equalled since the early 1990s recession. In 2004, the amount of funding and work input provided by private forest owners for silviculture and forest-improvement works was already more than EUR 110 mill. This was nevertheless about 20% less than in 1999–2001. Funding by private forest owners in 2005 is likely to fall short of the 2004 figure, but will rise to well over EUR 110 mill. in 2006.

In 2004, three quarters of the total investment of EUR 176 mill. was spent on artificial regeneration and tending of young stands. The total investment in timber production in non-industrial private forestry in 2005 will be just less than EUR 175 mill., and the figure for 2006 is expected to be a little higher.

Decrease in State Subsidies for Timber Production

The Government's budget proposal for 2006 reserves a total of approximately EUR 60 mill. in grants and loans for ensuring the sustainability of timber production in non-industrial private forestry. In nominal as well as real terms, this represents a decrease in state subsidies for the third successive year. In the present decade, state funding for timber production reached a peak in 2003, when it was almost EUR



State and forest-owner funding of investments in non-industrial private forestry, 1994–2006 at 2004 prices (cost of living index)

10 mill. more than the level reserved for 2006. The latter will be EUR 3.5 mill. below the 2005 figure. In practice, this will probably be evident as a drop in the amount of work performed under the different state-funded categories. The emphasis in the state subsidies will again be in financing the tending of young stands and in the related harvesting of fuelwood, and chipping.

The National Forest Programme 2010 sets out a number of quantitative targets for different types of work activity as well as an overall cost target for silviculture and forest-improvement works. The biggest shortfall in meeting the targets during the initial years of the Programme has been in ditch cleaning and supplementary ditching, where only 75% of the regional forest programme targets set were met. Although the emphasis in state subsidies has shifted to improving young stands, the shortfall in meeting the National Forest Programme's 250 000 ha target for first thinnings amounted to almost 70 000 ha in 2004. The overall target also concerns forests owned by the forest industry and the state, which are not eligible for sustainable forestry funding from the state. Similarly, the target of investing EUR 250 mill. in timber production, which is a joint target concerning all ownership groups, has not been met

in recent years; the annual shortfall has been over EUR 30 mill.

METSO Programme Increases Financial Support for Managing Forest Environment

The National Forest Programme 2010 sets targets for achieving and maintaining a level of conservation that is favourable to forest organisms and forest habitats. This is also evident in concrete terms in the Government's 2006 budget proposal, which reserves EUR 7 mill. for furthering the management of the forest environment. This represents an increase of almost EUR 1.5 mill. on the 2005 figure. The increased budget allocation for forestry is largely due to the programme of measures under the Forest Biodiversity Programme for Southern Finland (the METSO programme).

Environmental grants totalling EUR 4 mill. are intended for ensuring the preservation of biodiversity in a forest environment of 5000 ha. Biodiversity will also be promoted through natural values trading in an area of 300 ha. In 2006, more than EUR 2 mill. will be used for projects for managing the forest environment.

Stumpage Earnings Down by 6%

The principal reason for the decrease in stumpage earnings from non-industrial private forestry in 2005 is the collective agreement dispute in the paper industry, but another contributory factor is the increase in roundwood imports. Although average stumpage prices for 2005 will be down only in the case of pine sawlogs, as prices for the other roundwood categories will either be unchanged or up slightly, stumpage earnings will nevertheless be down by over 6%, to approximately EUR 1.4 billion. This is mainly because felling volumes in non-industrial private forests are down by 7–8%. Gross stumpage earnings have not been lower than their 2005 level in real terms since 1996. Stumpage earnings in 2006

Non-industrial private forestry balance sheet calculation for 2004 and forecast for 2005–2006. EUR/ha

	2004	2005	2006
Gross stumpage earnings			
Whole country	112.3	105.1	107.1
Southern Finland	143.6	134.6	137.1
Northern Finland	47.2	43.5	44.8
– Gross costs			
Whole country	21.5	21.9	22.1
Southern Finland	25.1	25.5	25.8
Northern Finland	14.0	14.4	14.5
+ Subsidies			
Whole country	4.5	4.4	4.2
Southern Finland	4.3	4.2	4.0
Northern Finland	5.0	4.9	4.6
= Net earnings (before taxes and external capital costs)			
Whole country	95.3	87.6	89.5
Southern Finland	122.8	113.3	115.3
Northern Finland	38.1	34.0	34.8

Northern Finland is defined as the Provinces of Oulu and Lapland
Source: Finnish Forest Research Institute

will rise again by 2–3%, but will nevertheless be significantly below EUR 1.45 billion.

Despite the price trend being reasonable from the roundwood seller's viewpoint, gross stumpage earnings in 2005 will not be that much more than EUR 100/ha. In 2006, the forest industry's roundwood consumption will return to the peak of recent years, but one third of its additional roundwood need will be met by imports. Gross stumpage earnings will be almost EUR 110/ha in 2006.

Total costs of timber production have remained at EUR 21–22/ha since 2000, and are expected to be EUR 22/ha in both 2005 and 2006. In Southern Finland, costs are about EUR 25/ha and in Northern Finland EUR 14/ha.

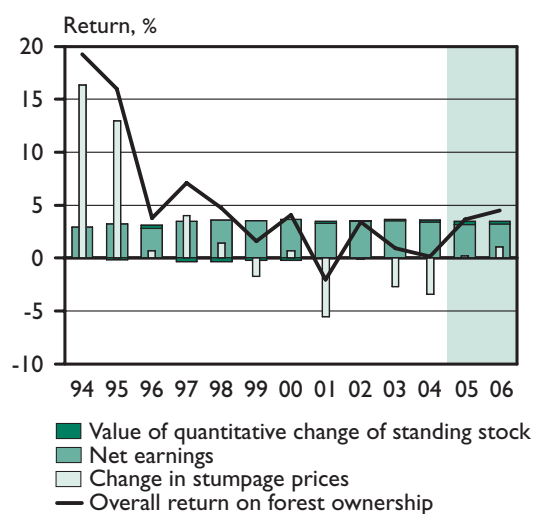
The total costs of timber production in non-industrial private forestry can be divided into four cost items, three of which mainly concern investment in timber production in individual stand compartments and the fourth the administrative and other costs concerning the entire holding. Most of the money

invested in timber production has been allocated to forest regeneration (24% in 2004), followed by tending of young stands (18%) and forest improvement (13%); administrative costs have formed the largest expenditure item (44%).

In 2005, net earnings from non-industrial private forestry will be down to EUR 88/ha on account of the decrease in fellings. Net earnings have not been this low since 1996, and in real terms the 2005 figure is EUR 25–30 below its peak levels of 1997–2000. In 2006, there will be no forest taxation transition period to boost the volume of fellings, and so, after the exceptional events of 2005, net earnings are expected to rise to a 'normal' level of almost EUR 90/ha.

Return on Forest Ownership About 4% in 2005 and 2006

The drop in stumpage prices meant that the investment return on forest ownership in 2004 was only 0.1%. The slight rise in stumpage prices in 2005 will mean a return of almost 4%, and the return in 2006 is forecast to rise to about 4.5%. The real investment



Source: Finnish Forest Research Institute

Overall real return on forest ownership, 1994–2006 (cost of living index)

return on forest assets in the period 1994–2004 was an average of 5.3%.

The investment return on forest ownership is based on calculating the return on timber production in relation to the capital tied up in the forest. The overall return is made up of several factors: stumpage earnings minus the costs of timber production (= net earnings); the value of the change in growing stock volume; and the change in stumpage prices. Harvest value is used as the value of forest assets (volume of standing stock x stumpage price by roundwood type), and this amounted to EUR 34

billion for non-industrial private forestry in 2004. The sum of net earnings and the return on the value of the change in standing stock volume is primarily tied to the growing stock increment and the cost trends. In recent years it has remained steady at more than 3%. Stumpage price fluctuations will have a decisive effect on the harvest value of the standing stock, which can occasionally cause even large fluctuations in the percentage return. The very high percentage return in 1994 and 1995 was due to the fact that stumpage prices rose after the recession to a level closer to their long-term average values.



Featured Topics

Information Technology and the Structural Change in the Paper Market

Lauri Hetemäki

For as long as printing papers (i.e. newsprint, magazine paper, office papers) have been manufactured and used for communication purposes, their consumption has grown. Moreover, the initial concerns about printing papers being marginalized by information technology appear to have been unfounded. However, recent research seems to indicate that the situation is now changing (Hetemäki 2005, Hetemäki and Obersteiner 2001, Kurikka 2005). According to these studies, the mutually supportive development of information and communication technology (ICT) and printing papers is taking on a different shape. Figures show that paper consumption is either on the wane or on the rise, depending on the end use of the paper and the geographical location of the market examined. So what is actually happening?

Newsprint Consumption Declining in OECD Countries

The statistics in many OECD countries indicate that printed newspapers are read by an ever decreasing section of the population. Young people, in particular, are not reading them, and, contrary to earlier practice, are not reading them when they get older either. This is a key factor behind the reduction in newsprint consumption in, for instance, the United States, Canada, the Nordic countries and the Netherlands (Figure 1). There are other factors, of course, such as the reduced

unit weight of newsprint and the changeover from broadsheets to the smaller tabloid sizes.

In Japan, the world's second biggest newsprint consumer after the United States, newsprint consumption has also failed to increase since the early 1990s. Japan's newsprint consumption has in fact stabilised at nearly 4 mill. tonnes p.a. This is chiefly the result of the country's prolonged economic recession and the development of ICT, though the extent to which each of these has affected the situation is difficult to assess. Newspaper circulation, for example, has been falling at about 2% p.a. in the period 1998–2003, but at the same time the economy has been growing at an average of only 0.4% p.a. (real GDP growth).

The relationship between economic growth, population growth and newsprint consumption in these OECD countries has changed, and this can be seen as a historic structural shift. Since the early days of newsprint production, demand for it has grown continually, as economies and populations have expanded. This does not necessarily hold true any longer, at least in the countries mentioned. The changes that are taking place also suggest that the situation should be analysed in regard to both *the short and the long term*. Research shows that growth in the economy can have two quite opposite effects, depending on the time horizon examined (Hetemäki 2005, Hetemäki and Mikkola 2005).

Hetemäki and Mikkola (2005) demonstrate that in models which explain US newsprint consumption

on the basis of GDP growth, among other factors, the effects of GDP growth on newsprint consumption are positive in the short term but negative in the long term. However, a precise division between short term and long term is difficult, as this is related to time series econometrics and the specific models used. Nevertheless, the short term can intuitively be perceived as reflecting cyclical fluctuations, such as the transition from downturn to upswing. The long term, on the other hand, depicts a period during which structural changes can occur in the economy and in newsprint consumption, i.e. a period that is considerably longer than cyclical fluctuations.

Research shows that cyclical changes in the economy have an effect on newsprint consumption, which confirms conventional wisdom: when the economy improves, advertising in newspapers and other media will increase and so newsprint consumption goes up, and vice versa in a cyclical downturn. This being the case, we should still see periods in the OECD countries when newsprint consumption will grow again and prices rise. The situation looks different, however, if short-term cyclical fluctuations are removed from the statistics on newsprint consumption and the economy, and attention given instead to long-term trends. In the longer term, economic growth will encourage the tran-

sition to an 'information society', where computers, the Internet, broadband connections, etc. are accessible by an increasing number of people. In other words, the wealthier the country, the more likely that people will be able to acquire and use electronic media. This, in turn, will allow people to replace printed newspapers ever more easily with digital information technology, such as on-line editions of newspapers. In some cases, reading newspapers, whether printed or on-line, may be given up completely and the time spent instead on other opportunities offered by new media and digital products and services (e.g. video games, Internet surfing, various multimedia devices). With only 24 hours in a day, the different communications channels and forms of entertainment are all competing for the consumer's time in a zero-sum game.

Office Paper Follows Newsprint Trend but with a Time Lag

Besides newsprint, the market for certain office papers (e.g. business forms) has also experienced a structural change in recent years as a result of ICT development. Commercial banks, for instance, have switched from printed bank statements and forms to on-line versions. This has often been motivated by both economic

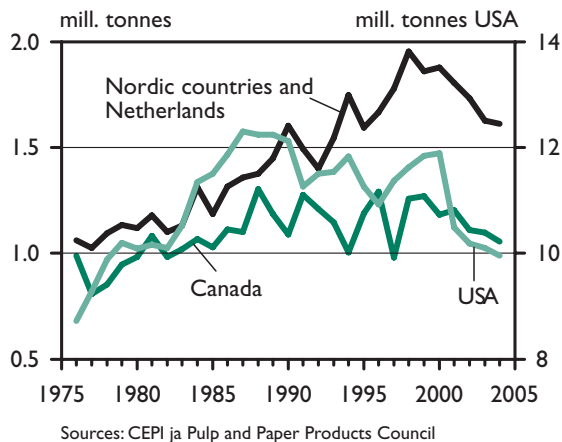


Figure 1. Newsprint consumption in selected OECD countries, 1976–2004

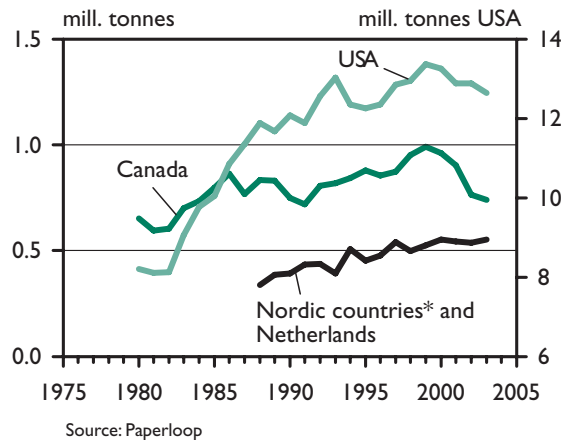


Figure 2. Office paper (uncoated woodfree) consumption in selected OECD countries, 1980–2003

and environmental considerations. In spring 2005, for example, the Bank of America announced its new policy on paper use, declaring that it aims to minimise the use of paper through measures such as increasing the amount of electronic communication (Bank of America 2005). The introduction of this policy follows pressure from environmental groups and is also based on the Bank's own economic considerations. Similar guidelines have been issued by many other companies in the United States and Europe (e.g. Citygroup and HVB Group). The banking and insurance sector is one of the biggest consumers of business forms, and so the policies adopted on paper use will inevitably affect the total consumption of office papers.

In many countries, the public sector has also adopted the goal of reducing paper consumption. Typical examples are the aims expressed by central and local government administrations and universities about changing over to electronic documents. In Finland, one of the most recent examples is Tampere City Council's aim of switching to the use of electronic documents in the business of the council (City of Tampere Environmental Strategy 2005–2012).

Published statistics reveal that in many OECD countries (Figure 2 and Hetemäki 2005, Kurikka 2005) the growth in consumption of office papers (e.g. A4 and business forms) has either slowed significantly, come to a halt or started to decline. The developments described earlier are most likely a key factor in this. Facilitating and reinforcing this trend is the development of digital information technology. In Japan, the figures show that the consumption of office paper is following this pattern, as consumption has remained at approximately 3.5 mill. tonnes p.a. in the past ten years. As with newsprint, it is difficult to estimate the extent to which the weakening of growth in office paper consumption is caused by the economic recession and by the development of ICT.

It is interesting to observe that the structural change seen in newsprint and office papers has not yet occurred in magazine paper. Consumption of magazine paper in the OECD countries, including the United States, has continued to grow, albeit at a slightly slower pace than before. This confirms the difficulty in making generalisations in assessing the effects of ICT on paper products, as the impact of ICT differs according to the

paper product in question. For example, in the OECD countries the outlook is good for paper grades suitable for printing photographs, and information technology is the very reason for this.

Assessments of Paper Consumption in OECD Countries Need Updating

Assessments of the outlook for the consumption of paper products are made at regular intervals by consultancy firms serving the paper industry and by the UN's Food and Agricultural Organisation (FAO) and various research institutions. Studies of these assessments (see Sources list) indicate that in most of them either the structural change described above has not been taken into consideration at all or the impact of ICT has not been adequately accounted for. Assessments of paper consumption in the OECD countries in the longer term made on this basis do not, therefore, appear realistic. In the case of some assessments, this can already be seen in recent developments. New assessments that take into account the impact of ICT on paper consumption are essential, though this will be a challenge to researchers because it requires the development of completely new forecasting models (see Hetemäki 2005).

ICT development affects not only the consumption of paper products but their *prices* as well. The increasing application of ICT in the paper industry has also led to an increase in productivity, and this trend will continue. At the same time, the competition between printed and electronic communications is increasing, and price trends on the world paper market are also converging as ICT development continues. All these trends will intensify competition on the paper market and create pressure for lower paper prices.

New Geographical Focus Emerging in Paper Production and Consumption

Overall, the consumption of paper products will continue to increase in the world at large, regardless of developments in ICT. Although the traditional links between paper consumption, economic growth and population growth seem now to have been broken in a number of Western countries, this is not the case yet in, for example, China or Russia. The effects of ICT

on paper products are, in principle, the same everywhere, but other factors guiding paper consumption are more prominent in these regions. In India, China and Russia, for example, consumption of newsprint and office paper per capita is only a fraction of what it is in the previously mentioned OECD countries. With greater economic prosperity, the consumption of paper will probably grow in these countries at least in the coming decade.

The development of ICT will reinforce the structural change already under way on the world paper market. Paper product consumption in the OECD countries will either increase slowly or not at all, in contrast to many Asian countries, Russia and the countries of Eastern Europe, where it will increase rapidly; these countries also have significantly lower paper industry production costs than the OECD countries. Production trends will be influenced not only by labour costs, but also by the availability and price of raw materials. All this will inevitably mean that the focus of paper consumption and production will increasingly move away from the OECD countries. This is likely to occur gradually and over the longer term.

In general, many of the structural changes brought by information technology will occur at a slow but steady rate over many years. Such changes are often easier to manage and prepare for. However, a potential problem is that slowly occurring trends do not always provoke a response, and preparing for such changes may be delayed because of more pressing issues, with the result that the response may occur too late. Hence, it is particularly important that traditional paper producing countries such as Finland should prepare for

the paper market changes referred to here, as they are already looming on the horizon. One way of doing this is to increase the amount of research, information and debate on the effects of information technology and the new opportunities that it brings. Although the latter has not been presented here, it is clear that making good use of these opportunities will probably be a key factor in responding to the structural changes on the world paper market.

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Roundwood Markets and Price Changes in the Baltic Sea Region

Anne Toppinen and Jari Viitanen

Considerable changes have taken place in the operating environment of the forest sector in Estonia, Latvia and Lithuania since the early 1990s. Their forests have been privatised, and fellings, wood raw-material use and foreign trade have all increased substantially. In addition, all three countries became members of the European Union in May 2004. The rapid international integration of Estonia, Latvia and Lithuania and the international nature of roundwood procurement by the major forest industry corporations have been key factors in unifying national roundwood markets throughout the entire Baltic Sea region.

In 2003, a total of about 30 mill. m³ (without bark) of roundwood was imported to the countries of the Baltic Sea region, according to figures from the UN's Food and Agricultural Organisation (FAO). Together, Finland and Sweden account for over 80% of this total. Although four fifths of Finland's and one fifth of Sweden's roundwood imports are from Russia, roundwood trade among the countries of the Baltic Sea region has more than doubled during the past ten years. Estonia, Latvia and Lithuania account for more than half of this trade, and in 2003 their combined roundwood and chip exports totalled more than 12 mill. m³.

The overall import and export figures do include significant differences from one roundwood category to the next, however. In Estonia, Latvia and Lithuania, for example, the lack of pulp and paper industry processing capacity means that domestic demand for pulpwood is low, and so pulpwood is exported, mainly to Sweden and Germany, which is also the case for wood chips produced as a bi-product in sawmilling. In contrast, sawmilling industry capacity in these countries has expanded considerably. With only limited sawlog reserves, fellings have exceeded the annual

growth, and domestic roundwood supply has not been able to meet the growing demand, particularly in Estonia. Almost one third of Estonia's sawlogs in recent years have been imported, mainly from Russia.

National Roundwood Prices Converging

As roundwood consumption has grown and roundwood trade increased among the countries of the Baltic Sea region, national prices for the different roundwood categories have been converging in recent years. Figure 1 presents the monthly nominal roadside prices (EUR/m³ with bark) for categories of softwood roundwood in Finland, Estonia and Lithuania since 1996. Directly comparable price statistics are not available in Sweden, Germany or Latvia, but Sweden's quarterly statistics are illustrated separately in Figure 2. Although roundwood prices in Finland have been higher than in Estonia, Latvia and Lithuania, the prices in each roundwood category have gradually converged. Whereas the Finnish price level has remained fairly stable during the past ten years, prices in Estonia and Lithuania have risen substantially, and national prices for different categories of softwood roundwood have been converging. For pulpwood grades, Estonian prices have even exceeded the Finnish price level during 2005. In trend in real prices between the different countries has been more balanced than nominal prices, due to the higher inflation in Estonia, Latvia and Lithuania than in Finland.

Research shows that Finland has been the price leader on the Baltic Sea region roundwood market. Prices in Estonia and Lithuania, which are very similar in their geographical and other circumstances, have followed each other more closely, however, than between

Finland and Sweden or Finland and Estonia. Interesting differences can be observed in the convergence occurring in the markets for the different roundwood categories. National prices for spruce sawlogs have been most closely linked of all, and on the pulpwood markets the difference between Finland and Estonia, Latvia and Lithuania has shown a diminishing trend. The fact that the clearest link is between the spruce sawlog markets is somewhat surprising, because there is greater fluctuation in short-term prices for sawlogs than for pulpwood, mainly due to quality differences. This may, however, simply illustrate tougher competition in sawlog markets and stronger transmission of demand effects to the roundwood market in the case of sawnwood than paper products.

Storm Damage Impact Evident in Prices in Sweden, Estonia, Latvia and Lithuania

The practical implications of the convergence in roundwood prices are seen in the increasing similarity of national prices levels and the faster transmission of supply and demand shocks from one country to the other. The January 2005 storms felled about 75 mill. m³ of forest in Southern Sweden and almost 10 mill. m³ of forest in Estonia, Latvia and Lithuania, mostly large-sized spruce. The storms created a sudden increase in the supply of spruce sawlogs and spruce pulpwood, in particular, and forced prices down in some parts of Sweden by over 40%.

Figures 1 and 2 illustrate how quickly this sudden supply shock translated into lower prices in the Estonian, Lithuanian and Swedish sawlog markets. The impact on the Finnish roundwood market was significantly less, because the amount of storm-damage roundwood imported from Sweden was relatively low. However, the increase in supply caused by the storm damage has been indirectly reflected in the Finnish market during 2005 in the form of a considerable increase in imports of spruce sawlogs and softwood pulpwood from Estonia, Latvia, Lithuania and Russia as a result of Sweden's reduction in roundwood imports. This was accompanied by a slight drop in import prices of softwood sawlogs in Finland.

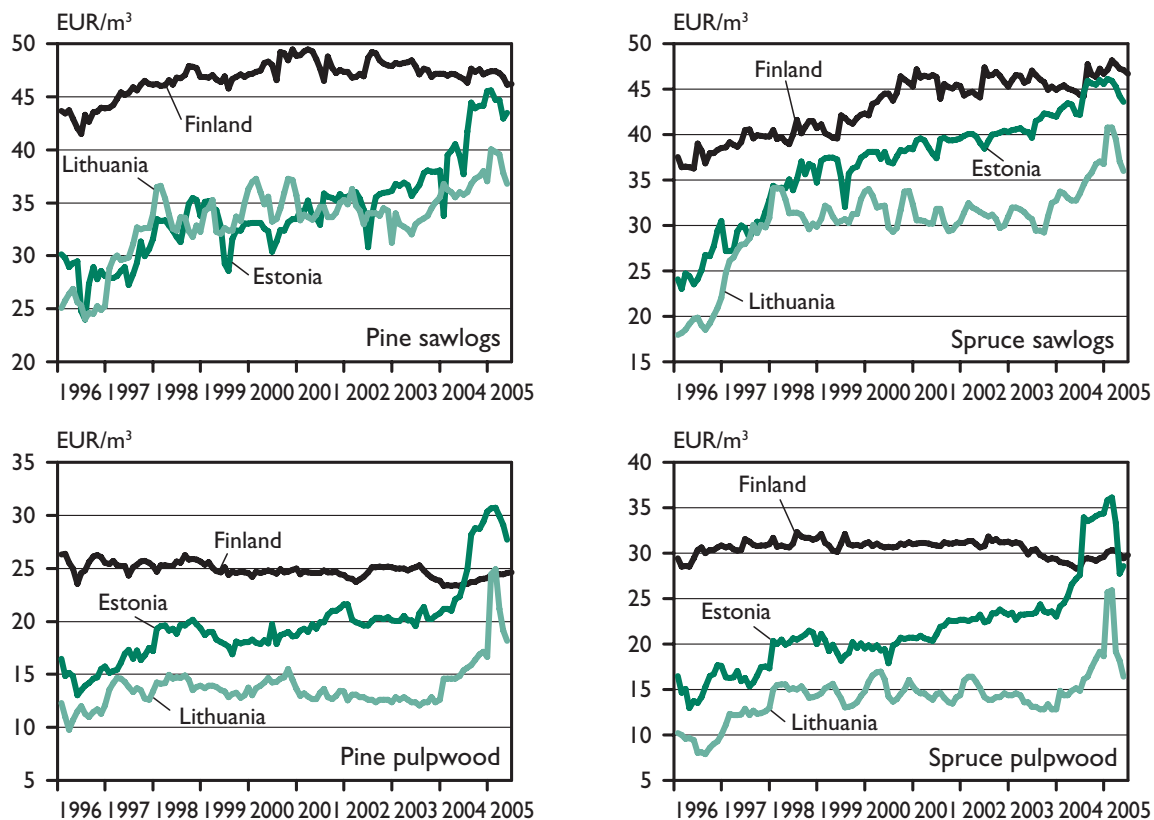
Future of the Roundwood Market in the Baltic Sea Region

Roundwood trade and prices in the Baltic Sea region are particularly affected by developments in Russia's forest industry and the world market demand for forest industry products. There are nevertheless clear differences in the outlook for each of the roundwood categories. Competition for high-quality sawlogs will increase as a result of the forest industry investments planned for Northwest Russia and the Baltic Sea region, Russia's possible export restrictions on its roundwood and the end of the forest taxation transition period in Finland. Even if the demand for pulpwood were to increase too, the supply of wood chips used as a substitute for pulpwood will grow considerably in the future as a result of the sawmill investments already being made. The pulp industry's investment focus is also gradually shifting towards the southern hemisphere's plantation forests, which means there will no longer be the strong pressure for increases in pulpwood prices in the Baltic Sea region that was present in the 1990s, when pulp and paper capacity was clearly increasing.

The internationalisation of forest industry companies operating in the Baltic Sea region will continue and cost efficiency will become more important in their operations, which will lead to greater concentration in overall roundwood procurement. Together with moderate growth in roundwood demand, this means that further convergence in the national price levels within the Baltic Sea region can be expected in the future.

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Figures 1a–d. Roadside prices for roundwood in Finland, Estonia and Lithuania, I/1996–V/2005

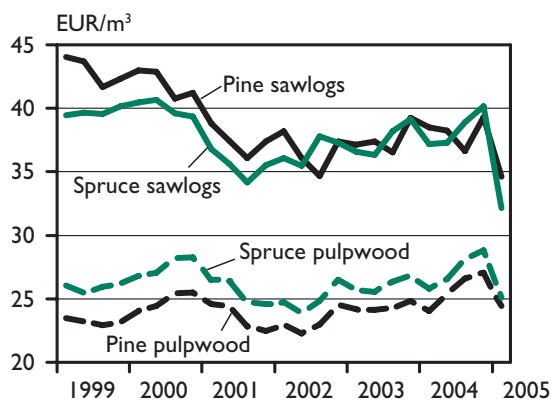


Figure 2. Roadside prices for roundwood in Sweden, 1999–2005

Source: Finnish Forest Research Institute

Changes and Challenges in the Russian Forest Sector

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Forest Policy Being Redefined

Russia's forest policy has been in continual flux since the early 1990s. Although the concept of a forest policy did not exist in Soviet times, in practice such a policy was operated via the production plans, for example, and the emphasis was on judging the extent of felling that would satisfy the industry's roundwood needs. Today, forest policy is understood more broadly as a somewhat fragmented entity encompassing forest legislation, various target programmes, strategy documents and international agreements.

The Russian Federation's first forest legislation was passed in 1993, and subsequently reformed in 1997 (as the Russian Federation Forest Code) and again in 2004. Preparation of a new Forest Code is already under way, and this is proceeding in parallel with a reorganisation of the administrative apparatus. The principal aim of the new Forest Code is more efficient economic utilisation of the forests by promoting investment and encouraging long-term forest lease agreements.

The role of the private sector in the use and management of Russia's forest resources is to be significantly expanded. The period covered by long-term forest leases, which are a key component in the economic utilisation of the country's forests, has already been extended to 99 years. The lessee's responsibilities will be increased in regard to forest regeneration, management and thinning, and construction of forest roads. Set against this, lessees will also be given greater freedom to plan and to do business. As lessees, they will be required to pay for the right to utilise forest resources and for the roundwood harvested. In addition, short-term roundwood harvesting rights (without any silvicultural obligations) will be auctioned.

Decision-making authority on forest resources has been concentrated with the national authorities at federal level, at the expense of regional and local administrations. Regional forest legislation has been annulled and forestry funding matters have been transferred to the Federal Forestry Agency. Concentration at national level is aimed at ensuring common standards and practices in forest management and use throughout the country. In the preparatory work on the new Forest Code, the possibility of privatisation has also been given serious consideration but has been abandoned, at least for the time being.

The reform of the administrative apparatus is aimed at clearly separating the state's forest asset administration, monitoring and business functions. Set up in 2004, the Federal Forestry Agency together with its regional units represents the executive organ of the Government's forest administration and operates under the Ministry of Natural Resources. At local level, there exists the network of *leskhoz*es, or local forest management units. Although the practices of the *leskhoz*es have remained almost unchanged since the 1930s, their roundwood harvesting function was transferred in 1993 to the forest users themselves, i.e. those granted the right to utilise forest resources. This left the *leskhoz*es with the duties of silviculture, conservation and monitoring, and they have also been permitted to conduct thinnings, the sales income from which must be used for financing their administrative duties. The role of the *leskhoz*es as state forest administrators, leasing managers, business operators and monitoring authorities all rolled into one has been widely criticised. Monitoring has already been transferred to a separate federal service for nature utilisation control. A new organisation is being planned to replace the *leskhoz*es, and this

would be responsible at regional level for arranging silviculture and conservation.

Improvements in Forest Management and Roundwood Harvesting

Changes in forest management and roundwood harvesting are being made in response to pressures both from within Russia and from outside the country concerning the ecological, economic and social sustainability of forestry. From the viewpoint of commercial forest users, the main problem has been the short-term nature of the leases, which has not facilitated long-term planning of forestry work.

Russia's total surface area of forest classified for full commercial use has decreased over the years, whereas the area of forest classified for limited commercial use has increased. The forests are softwood-dominant, although the proportion of birch and aspen in the total volume of growing stock and in relation to the surface area has been increasing. The proportion of the forest classified as mature or over-mature is high, at about 55%.

The greatest problem in silviculture has been inadequate financing. An indication of the problems in successfully dealing with such issues is that treeless forest land accounts for about 12% of Russia's total surface area of forest. Thinnings have accounted for only a small proportion of all fellings, at just 13% of the felled area. A substantial increase in the amount of thinnings carried out at the appropriate growth stage is required if the composition and growth of forests is to be managed more effectively. Otherwise, the effects of thinnings on the growth of the remaining trees in older forests and especially in previously unthinned forests are very small. Thinnings have traditionally been carried out by the *leskhoz*s, because under the Forest Code they have not been permitted to perform any final cutting. With the spread of harvesting technology from the Nordic countries, logging enterprises (*leskpromhoz*s) have recently shown greater interest in carrying out thinnings. The amount of thinnings undertaken has so far remained fairly low, however, because of the lack of domestic demand, especially for small-diameter hardwood timber, and because of the higher costs of harvesting in thinnings stands by comparison with

final cutting. The abundance of final cutting undertaken and the minor amount of thinnings has led to extensive areas being used for roundwood procurement. This is increasing the need for road construction, raising the costs of harvesting and transportation, and affecting the profitability of roundwood production and harvesting. It is also leading to a decrease in the amount of economically accessible forest. This is despite there being an abundance of forested land close to good road connections, because much of this is subject to felling restrictions.

Only 22% of the annual allowable cut throughout the country was used in 2003. The same year, fellings amounted to 174 mill. m³, of which 72% was from final cutting. A lot has been said in public about illegal fellings, which are estimated to account for anywhere between 5% and 30% of total fellings, depending on the definition. The problem is acknowledged by the authorities, and the prevention of illegal fellings has become one of the key aims of the Federal Forestry Agency's work. It has already introduced a fellings monitoring system based on satellite and aerial images, and plans are being made for a forest transportation control system and monitoring arrangements for wood-processing companies.

More than 90% of the former state logging enterprises (*leskpromhoz*s) have been turned into limited liability companies. Most roundwood is harvested using traditional Russian methods. The Nordic cut-to-length harvesting method has become more widely known, and in the Republic of Karelia this is used in almost 50% of all fellings. The main problem in roundwood harvesting is the poor network of forest roads, and especially the lack of roads suitable for use all year round. Poor profitability means that companies are also unable to invest in new machinery. A further problem has been the difficulty in obtaining a trained and motivated labour force.

Russia's guidelines on forest management are currently being revised. It is important that these should take account of the need to improve the efficiency and profitability of roundwood production and forest management in the longer term, so that a given quantity of roundwood can be procured sustainably from a smaller area. This means focusing more attention and resources on the different stages of roundwood

production, beginning with the tending of seedling stands and thinnings, and going on to final cutting and forest regeneration. Increasing the proportion of fellings in areas accessible from the existing network of adequate roads would reduce pressure on more distant regions and would quickly improve the profitability of forestry.

Forest Sector Exports Based on Products with Low Added Value

Russia's forest sector exports since the end of the Soviet Union have been dominated by products with low added value. Roundwood exports from Russia almost quadrupled in 1992–2004, from approximately 10 mill. m³ (under bark) to over 40 mill. m³. Indeed, Russia has become the world's biggest roundwood exporter, and there has also been a revival in its sawnwood exports. Roundwood and sawnwood together accounted for 60% of Russia's forest industry exports by value in 2004. The Government's aim is actually to reduce this high proportion accounted for by forest industry raw materials and products with low added value. In political debate, demands are regularly voiced for raising the export duties on softwood roundwood, for example.

Developments in the production and consumption of forest industry products in Central and Eastern Europe have brought structural changes to the European market, and the return of Russia to Europe's sawnwood market has intensified competition and had a major influence on the fortunes and market shares of other producer countries. However, the success of more highly processed Russian forest industry products on the export market has been hampered by inefficient production and product quality problems due to outdated processing capacity.

If Russian domestic demand for roundwood were to increase significantly and restrictions were to be placed on roundwood exports, this would naturally reduce the proportion of roundwood in the country's forest sector exports. Russia's forest resources provide the country with a firm basis for transforming itself from its present position as low-cost raw materials supplier to being a significant exporter of highly processed forest industry products with considerable influence on the world

market. The realisation of such a goal will require not only political will but, above all, major investment in infrastructure, forestry and forest industry production capacity.

Forest Industry Investment Requires Foreign Capital

Russia aims to develop its domestic wood processing industry in order to increase exports of forest industry products with a higher added value than roundwood. It aims to establish strong new vertically integrated forest industry complexes. However, the country's forest sector still lacks the domestic or foreign capital to achieve this.

Domestic investment is hampered by the undeveloped nature of the banking sector, the difficulty in obtaining credit, and the general lack of interest in the forest sector among investors. Returns available in the forest sector are smaller than, for example, in the energy sector, which has attracted the bulk of investment. Foreign investment therefore has a potentially key role in the development of Russia's forest sector. Of interest to investors are the country's massive forest resources, the prospect of high consumption on the domestic market, and the low price of wood raw material and other production inputs. Factors deterring investors are the undeveloped infrastructure, lack of clarity on forest ownership rights and right of use, obligations related to forest use, logistics, cultural differences, bureaucracy, obligations to society that come with making investments, and the lack of general agreements protecting investments. However, the most serious of these factors in the case of pulp and paper industry investments is the uncertainty surrounding the continuity and reliability of roundwood procurement. If greater investment can be attracted, this will help provide jobs and livelihoods in many regions and communities in Russia.

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