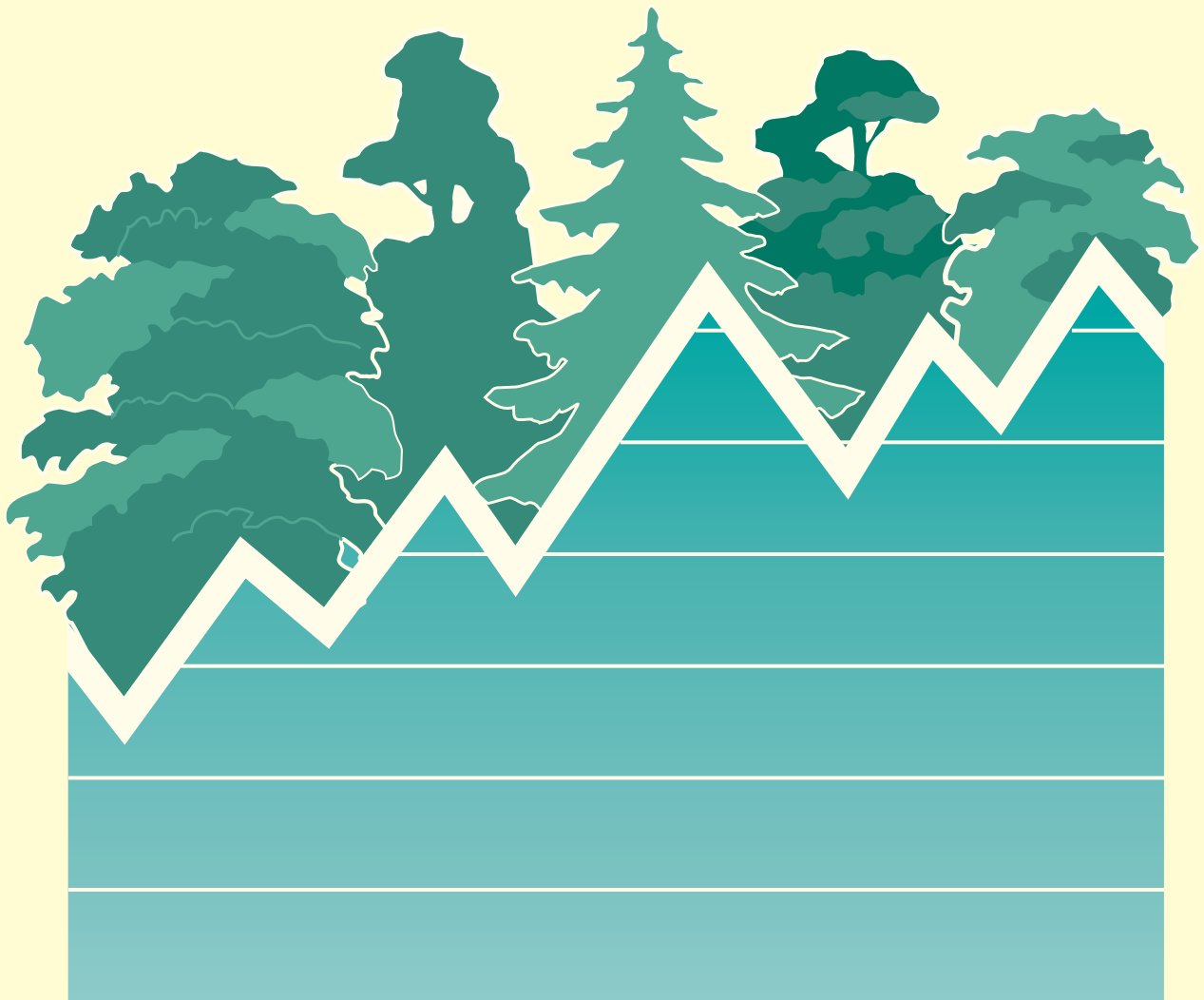


Finnish Forest Sector Economic Outlook

2006–2007



November 2006

Finnish Forest Sector Economic Outlook 2006–2007

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Summary

The 2006 figure for growth in the world economy will be higher than expected, and forecasts indicate that growth in 2007 will again be fairly high, although a slowdown in the United States economy will have an adverse impact on growth elsewhere in the world. The demand for paper on the main European markets will be up slightly for the full year 2006, but prices will be little changed from 2005. By contrast, sawnwood prices will be up considerably due to the growth in housing construction. The demand for domestic roundwood will be up in 2006 as a result of increased production in the forest industry and the lower level of roundwood imports. This will push up average stumpage prices for the year.

In 2007, GDP growth in Europe will still be relatively good, which will ensure continued modest growth in paper consumption. Higher demand will improve the opportunities for passing on the increase in production costs to the prices of paper and paperboard. Consequently, there will be a moderate rise in the average export price of Finnish paper. Paper production is nevertheless expected to be slightly down in 2007 as a result of the production unit closures undertaken in 2006 and planned for 2007. Besides this drop in production, the closures will also mean a slight decrease in exports of paper. Pulp exports will, however, be up on the 2006 figure. Production and exports of sawnwood will be adversely affected by tougher competition on the Western European market due to lower growth in housing construction in many export markets. Demand for domestic roundwood will remain high in 2007 because production in the forest industry will fall only slightly, and because there will be no increase in imports. In annual terms, the rise in stumpage prices is forecast to be lower than in 2006.

GDP Growth on Export Markets Still Relatively High

GDP growth in the euro area economy for the full year 2006 will be higher than the previous year, but in 2007 it is expected to slow down a little. Among the Finnish forest industry's key export markets, Germany's economy has been improving, although its annual GDP growth for both 2006 and 2007 will be below the euro area average, by about half a percentage point. The United Kingdom economy continues to be on a steady growth track, with GDP growth of about 2.5% forecast for 2006 and 2007. The rise in interest rates in the euro area will probably continue at least in the first half of 2007, impeding growth in housing construction. In the United States, no additional interest rate rises are anticipated, but construction is expected to decrease further. Russia's GDP growth will continue to be strong, and growth in China's economy will again be around 10%. Japan's economy will grow by more than 2%.

The main uncertainty in growth forecasts for the world economy is again the prospect of a slowdown in the US economy. Although its GDP growth is expected to slow in a controlled manner, there is a risk that a sharper fall may occur if house prices collapse, if indebted households' confidence in their personal finances drops and if crude oil prices are high. A possible sharp drop in private consumption as a result of these factors could lead the US economy into recession, which would quickly have an impact on the entire world economy in 2007.

Modest Rise in Pulp and Paper Industry Export Prices

The demand for paper on Finland's key export markets in Western Europe has picked up slightly in 2006. The long decline in paper prices came to a halt in autumn 2005, but the oversupply of magazine and fine papers has prevented anything more than modest price increases in Finnish paper exports in 2006, though these have been enough to cover the rise in production costs. Nominal prices of paper and paperboard exports will exceed the average 2005 level by only 1%. The average export price of pulp, on the other hand, will be up by about 16%.

In 2007, a continuation of the relatively high GDP growth in Western Europe will ensure moderate growth in paper consumption, which will encourage producers to transfer the rise in production costs to paper prices. The production unit closures in Finland in 2006 and those planned for 2007 will be evident in the production and export figures, which are forecast to be down by 3% in 2007. The drop in paper production and an increase in market pulp production will allow more pulp to be exported. A further incentive for exporting pulp in 2007 will be its price, which is expected to be above the 2006 average. Average prices of paper and paperboard exports are estimated to rise by 2–3%.

Sawnwood Price Increases Will Be Limited Due to Greater Supply on Export Markets

The demand for sawnwood has increased in 2006 in Western Europe on account of the unexpectedly high growth in housing construction. Along with the increase in demand, sawnwood prices have also risen significantly since the start of the year, due to the scarcity of supply. This scarcity has been due not only to the low availability of sawlogs but also because the major sawnwood producer countries have been focusing attention on export markets outside Europe.

The nominal unit price of Finnish sawnwood exports for the full year 2006 is expected to be up by almost 7%. Production and exports of sawnwood will be up by 2% but will nevertheless be significantly below their 2004 level because of the decrease in production capacity in recent years. In 2007, competition is expected to be tougher on the Western European export market. Sawnwood price increases will be kept in check because of higher sawnwood production and a weaker trend in construction. The rise in the unit price of Finnish sawnwood exports in 2007 is forecast to be lower than in 2006, at about 2%, and at the same time the volume of production and exports will fall slightly.

Rise in Prices Brings Only a Small Improvement in Forest Industry Profitability

Production costs in the forest industry have continued to rise in 2006 as in previous years, but the increase in final product prices and the rising sales volumes will mean a slight improvement in profitability in the sector compared with 2005. For the wood products industry, roundwood costs are the biggest challenge, whereas the pulp and paper industry's costs are also affected by the high price of other raw materials, such as mineral and chemicals. The rise in forest industry product prices will continue in 2007, but a drop in production and export volumes will inhibit income growth in the sector. The increase in costs is expected to slow down, however, which will mean that profitability in all sectors of the forest industry in 2007 should be at least at the level of 2006.

Roundwood Prices Rise and Sales Focus Is on Pulpwood

The increase in production in the paper industry has boosted fellings of domestic pulpwood in 2006. The volume of sawlog fellings will be down, however, despite slightly higher sawnwood production, because the industry's roundwood need has been

largely met from stocks of harvested roundwood. Roundwood imports will be down by about 3%. Overall, domestic commercial fellings will be about the same as in 2005, at almost 53 mill. m³. Softwood sawlog prices have risen briskly in 2006 due to the restricted supply caused by the change in forest taxation at the start of the year. Average prices of spruce and pine sawlogs will be up by 6–8% for the year as a whole, while pulpwood prices will be up by about 4%.

In 2007, a drop in production volumes in both the paper industry and the sawmilling industry will mean a slight reduction in their roundwood needs. Roundwood imports are not expected to exceed the 2006 level, and will total about 20 mill. m³. The focus of demand will shift towards domestic roundwood supplies, and the volume of fellings will be up as a result of the reduction in stocks in 2006. Fellings of pulpwood are forecast to be up by about 5%, and average stumpage prices to rise by 2% for the full year. Pine and birch sawlog prices will rise by 3–5% on account of the favourable demand and price trends for pine sawnwood and birch plywood on the export markets. The most significant uncertainty on the roundwood market in 2007 will be the availability and price of wood imported from Russia.

Further Cut in State Subsidies for Timber Production

The overall investment in timber production in non-industrial private forestry for the full year 2006 will be more than EUR 175 mill., which is an increase on the previous year's figure. The level of investment in 2007 is expected to be slightly higher still, though this will require an increase in the amount of financing by the private forest owners themselves, to a total of almost EUR 120 mill. This is because the Government's budget proposal incorporates a cut of almost 10% in the funds intended for securing timber production. The subsidies available for this in 2007 will be approximately EUR 58 mill.

The 2006 figure for per-hectare net earnings in non-industrial private forestry will be down by 3%,

to EUR 86/ha. This is primarily attributable to the drop in sawlog fellings and the forest industry's use of its record stocks of harvested wood. In 2007, an increase in fellings is expected to raise net earnings to over EUR 90/ha. The overall return on timber production in 2006 will rise to 9%, and in 2007 it will be almost 6%, which is still significantly above the ten-year average.

Assumptions and Uncertainties in Forecasting

The aim of this *Economic Outlook* is to present clear and consistent information and analysis on the current state of the entire Finnish forest sector and the outlook for the sector in the near future. The forecasts for the forest sector are based on publicly available statistics, world economic forecasts, market information, 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 2006 and 2007 and are based mainly on information available in late September and early October 2006.

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. The greatest uncertainty in the forecasts is that unexpected changes in GDP growth may occur. Once again this concerns particularly the performance of the United States economy and the price of crude oil. The uncertainties in the US economy could affect currency markets and jeopardise the level of world GDP growth and therefore also growth in the euro area. 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 over-supply, forcing down prices. If there is an unforeseen weakening of the US dollar against the euro, this would hamper European export prospects and increase the pressure on purchasers to obtain supplies from countries outside Europe.

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, 2006–2007.

Forecasting variables	2006*	2007*
	% change from previous year	
Paper production	15	-3
Paper export	15	-3
Paper export price	1	3
Sawnwood production	2	-1
Sawnwood export	2	-1
Sawnwood export price	7	2
Commercial fellings	1	3
Roundwood imports	-3	0
Sawlog prices	3–8	1–5
Pulpwood prices	4	2

*price changes are nominal



1 World Economy

Growth in the world economy continues to be very strong. The 2006 figure for real GDP growth in the world economy weighted according to the distribution of Finnish forest industry exports will be 3.2%, while for 2007 the forecast is around 3%. In the euro area, higher exports will boost GDP growth for 2006 to 2.5%, but the figure will fall back to about 2% in 2007 due to a stronger focus on domestic demand. Among the Finnish forest industry's key export markets, Germany's GDP is growing but will nevertheless be about half a percentage point below the average GDP growth for the euro area as a whole both in 2006 and 2007. Growth in the United Kingdom economy continues to be steady, and will be approximately 2.5% in 2006 and 2007. Growth in the Swedish economy will again be faster than that in the euro area.

GDP growth in Asia and Russia has continued to be strong in 2006 and is expected to remain so in 2007. By contrast, growth in the United States economy in 2007 is expected to fall to slightly less than 3% from its 2006 level of about 3.5%. Despite expectations that this slowdown will occur in a controlled manner, there is still uncertainty over this because of the possibility of a sharp fall in house prices, a collapse in indebted households' confidence in their personal finances, and high oil prices. A powerful contraction in private consumption in 2006 would lead to a recession in the US economy, which would in turn quickly affect growth in the entire world economy in 2007.

Euro Area GDP Growth Reaches a Peak in 2006

In 2005, GDP growth in the euro area was only 1.3%. Exports and investment were up slightly, but growth in private consumption was slow and GDP growth in the euro area's largest economy, Germany, remained weak. In the second half of 2005, however, production began to rise faster than anticipated, and in the first two quarters of 2006 euro area GDP was up by 0.8% and 0.9%, respectively, on the same quarters a year earlier. This growth has been driven by the upswing in the world economy and higher exports. The concurrent reduction in euro area unemployment and the increase in purchasing power have led to a rise in private consumption. Industrial and consumer confidence indicators have been climbing since the start of 2006, although there was a slight setback in confidence in August regarding general economic prospects. Confidence in the economic outlook nevertheless remains above average.

The 2006 figure for euro area GDP growth is expected to be about 2.5%. The strong euro will weaken price competitiveness in the euro area in the latter half of the year, and the slight growth in private consumption will not be sufficient to compensate for the slower growth in exports. Consumer prices in the euro area were up by 2.5% during summer 2006 compared with their level a year earlier. This was largely attributable to the price rises in crude oil and energy, as the core inflation rate (which excludes food and energy prices) was one percentage point

lower. With inflation above the rate targeted by the European Central Bank (2%), there may well be a rise in interest rates before the end of 2006, which would dampen the desire to invest.

In 2007, euro area GDP growth will slow to less than 2%. The reasons for this include a strengthening of the euro, which will lead to weaker price competitiveness and a consequent reduction in exports to markets outside the euro area. The stronger euro will be a result of slower growth in the US economy, a narrower interest rate differential between the US and Europe, and because GDP growth will pick up only slowly in Europe. Higher inflation and interest rates, and the fiscal policy measures taken in some member states, will curtail the growth in consumer spending power, which will lead to a situation where domestic market demand – which is growing only slowly – will be insufficient to compensate for the drop in exports. Higher interest rates will also lead to a decrease in residential construction.

GDP growth in the new EU member states continues to be strong. The IMF estimates that this growth will amount to 5.5% in 2006 and 5% in 2007, though there are considerable differences from one country to another. Among European countries not forming part of the euro area, GDP growth in Sweden has been at record levels due to the recovery in euro area growth. Almost 60% of Sweden's exports are to the EU (40% to the euro area), and about 10% to the United States. Sweden's exports for the whole of 2006 will be up by approximately 9% on the previous year's figure, and the role of investment will again be significant in the expected 4% GDP growth for 2006. The almost 8% rise in investment has been fuelled by the favourable outlook for the country's economy. Overheating of the housing market and a fall in the rate of saving may, however, lead to a rise in interest rates by Sweden's central bank. With the Swedish krona expected to strengthen by about 2% against the euro during the latter part of 2006 and in 2007, and because export markets will become less attractive, Sweden's GDP growth in 2007 is forecast to drop to about 2.5%.

German Economy Shows Signs of Improvement, and United Kingdom GDP Growth Remains Steady

Germany and the United Kingdom are the most important European export markets for the Finnish forest industry. Various structural factors have impeded growth in the German economy in recent years, with GDP growing by just 0.9% in 2005. Based on figures for the early part of the year, however, Germany's growth in 2006 looks like being the highest for five years. This is largely attributable to the boom in the world economy and the favourable trend in exports, especially for machinery and equipment. The gradual decline in unemployment has also improved consumer confidence in the economy, and domestic demand has begun to pick up slowly after remaining sluggish for so long. However, the VAT increases planned for the start of 2007, together with a rise in interest rates and slower growth in export markets, could bring a halt to the emerging growth in domestic investment and consumer demand. The 2006 figure for Germany's GDP growth is estimated to reach about 2%, but in 2007 growth may slide back to less than 1.5%.

In the United Kingdom, the lower GDP growth of 1.9% in 2005 was the result of a weak export trend and slow growth in private consumption. Figures show that growth has nevertheless been strong in the first half of 2006. With the growth in euro area GDP, the UK's exports for 2006 are expected to be up by more than 13%. Improved confidence in the economy has led to an increase in investment in particular. By contrast, growth in private consumption has been slow as a result of the low growth in real incomes. Overall, the 2006 figure for GDP growth is expected to be 2.7%.

In 2007, the slower growth in the world economy will reduce the UK's export growth to 4%, despite an improvement in the country's real price competitiveness due to a very slight weakening of the pound against the euro. With inflation rising, the Bank of England is expected to raise interest rates before the

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

Area	Proportion of Finnish forest industry's total export value 2005, %	Actual GDP growth % 2005	ETLA 2006	IMF 2006	ETLA 2007	IMF 2007
Weighted by proportion of Finnish forest industry exports	100	2,7	3.2	3.6	2.9	3.2
EU15	61.6	1.5	2.3	–	2.0	–
Euro countries	42.5	1.2	2.5	2.4	1.9	2.0
Germany	17.4	0.9	2.0	2.0	1.4	1.3
United Kingdom	12.4	1.9	2.4	2.7	2.1	2.7
Sweden	4.2	2.7	4.1	4.0	2.6	2.2
New EU member countries (10)	4.2	4.5	5.0	5.5*	4.8	5.0*
Russia	3.8	6.4	6.0	6.5	5.5	6.5
United States	7.2	3.2	3.5	3.4	2.9	2.9
Asia	10.9		7.0	8.3	6.6	8.2
Japan	4.3	2.6	2.8	2.7	2.4	2.1
China	1.2	10.2	10.0	10.0	9.5	10.0
Other	12.3					

* Include Bulgaria, Romania and Croatia

Forecast by Research Institute of the Finnish Economy (ETLA) published September 13, 2006.

Forecast by International Monetary Fund (IMF) published September 14, 2006.

end of 2006, which will reduce investment a little and boost the rate of saving. The small increase in consumer demand will be insufficient to fully compensate for the slowdown in investment growth because the rise in consumers' real purchasing power will be small. In 2007, the UK's GDP growth is forecast to be approximately 2.5%.

Russian GDP Growth Continues to be High

Although Russia is one of Finland's most important competitors on the wood products market, its proximity also means it has significant growth potential as an export market for the entire Finnish forest industry. In 2005, the value of Finnish forest industry exports to Russia was 7.3% higher than the previous year.

The Russian economy has long been on a growth track, thanks to its exports of energy products and particularly the high price of crude oil on world markets. In 2005, Russia's GDP growth was 6.4%. The

world market price of crude oil is expected to remain high, and so the flow of oil revenues to the Russian economy will continue despite the slower growth in oil production. It will be difficult to introduce new oil production capacity in the short term, and investment in sectors other than the energy sector and the metals and engineering sector is increasing only slowly.

Growing export revenue has led Russia to invest in infrastructure construction and to increase other areas of public expenditure. Public consumption will be up by 4.5% in 2006 and about 5% in 2007. Private consumer demand has been steadily rising and is currently driving the economy: in both 2006 and 2007 the growth in private consumption is expected to be over 10%. According to the Research Institute of the Finnish Economy, Russia's GDP growth will be 6% in 2006 and about 5.5% in 2007.

Lack of diversity in exports is a problem for the Russian economy. Even though most of Russia's oil revenues are channelled directly into its stabilisation

fund, a proportion of the wealth generated is also visible as an increase in consumer purchasing power, principally in the major cities. This has contributed to a rise in consumer prices, which have been growing at an annual rate of 10% in recent years. Housing prices, in particular, have been rising sharply. High inflation and the continued strengthening of the ruble have led to a rapid deterioration in the country's real price competitiveness, despite the Russian Central Bank's intervention to prevent excessive strengthening of the ruble. The country's imports of consumer and investment goods have risen to record levels, fuelled by the strong ruble and by demand. Imports are expected to be up by about 15% in 2006 and by almost 12% in 2007. Replacing imports with domestic production is a challenge that Russia must meet in the near future if it is to ensure continued and sustainable GDP growth.

United States Economy Full of Uncertainty

The growth in the US economy in recent years has been largely based on private consumption and investment. This growth has led to a drop in unemployment and a rise in consumer prices. House prices, in particular, have risen sharply, for example by an average of 17% (excl. new construction) in 2005. Oil and energy prices have also risen. To prevent the economy from overheating and to dampen inflationary pressures the Federal Reserve has raised the federal fund rate a number of times. GDP growth in the United States in 2005 was 3.2%.

Figures for the first half of 2006 indicate that growth in private consumption and residential construction in the United States has slowed considerably, and indicators of industrial and consumer confidence have also weakened. The reasons for this include the level of household indebtedness and the rise in oil and energy prices, which have reduced purchasing power. In addition, the Federal Reserve's decision to raise the federal fund rate to 5.25% has encouraged households to save. In the first half of 2006 the rise in house prices came almost to a com-

plete standstill, and in the period to September the US dollar had weakened against the euro by more than 8%. The weakening of the dollar has been due to the slowdown in GDP growth, the stronger growth in the euro area economy and the narrowing of the interest rate differential with Europe. The external price competitiveness of the US economy has improved as a result, and so exports for the full year are forecast to be up by more than 8%. Since the massive federal budget deficit prevents a major increase in public consumption based on debt funding, the growth in exports and in machinery and equipment investments will not in itself be sufficient to make up for the slackening of private consumption and investment. 2006 GDP growth in the United States is nevertheless expected to amount to 3.5%.

In 2007, the growth in private consumption in the US will decline further as a consequence of rising unemployment and a weakening of households' real purchasing power. Residential construction is forecast to be down by as much as about 7% on the 2006 level. There has been more talk of a possible recession in the US and the Federal Reserve is expected to cut interest rates at the start of 2007, provided that the rise in consumer prices remains moderate. The interest rate differential with Europe would then narrow further and the US dollar would continue to devalue. Although this would help exports, any increase in exports would be limited due to slightly lower growth in the key export markets, chiefly Japan and Europe. Investment in machinery and equipment will be up by almost 7%, but the impact of this on overall growth will be fairly insignificant. GDP growth in the United States is forecast to slow to 2.9% in 2007.

There is, however, considerable uncertainty over the GDP growth forecast for the United States. About 70% of the country's GDP is made up of private consumption, including spending on residential property, which is a popular investment for households and accounts for a considerable proportion of household assets. House price trends therefore go a long way towards determining the consumption behaviour of households, and it is this very behaviour that

will influence the direction of the world economy in 2007. If house prices start to fall, consumer confidence in the economy may collapse, in which case households will concentrate on saving instead of spending. At a time when there is a major balance of payments' current account deficit, this could even lead to a recession and a considerable weakening of the dollar, with consequences for the entire world economy. It is widely forecast, however, that house prices will not collapse and that consumption will decrease in a controlled manner. This likelihood is also supported by the forecasts of a stable price trend for energy and oil products in 2007.

Developments in the US market also have a major impact on the Canadian economy. In 2005, GDP growth in Canada, one of the Finnish forest industry's key competitors, was 2.9%, and a level of about 3% is forecast for both 2006 and 2007. This growth is based particularly on private consumption and investment. Residential construction, however, is forecast to be up by only 1% in 2006 and to decline by about 0.5% in 2007. The Canadian dollar has strengthened by about 8% against the US dollar in the past year, which has hampered export growth to the extent that imports have exceeded exports. In 2007, the Canadian dollar is expected to strengthen further by about 2%. Monetary policies will remain tight in order to control inflationary pressures.

Growth in Asia Will Slow a Little in 2007

China's annual GDP growth has been around 10% for a number of years and is forecast to remain at this level in both 2006 and 2007. This is based above all on substantial growth in investment and exports. The export growth has been a consequence of excellent price competitiveness based on the relatively low level of costs and successful exchange rate policies, and also the level of demand in the United States and Japan, whose economies have been growing. China's central bank, the People's Bank of China, has sought to keep the level of investment under control by tightening its monetary policy, but so

far with only a minor impact. Interest rate rises are nevertheless expected to continue. Private consumption will also continue its steady growth of around 8%. Despite the scale of the figures, China's growth is balanced overall, though it differs from one part of the country to another. In spite of rising levels of pay, the annual growth in consumer prices has remained moderate, the forecast for 2006 being a rise of only about 1.5%. Although the slowdown in GDP growth on China's export markets will mean a slight reduction in export growth in comparison with the previous year, China's exports will nevertheless be up by approximately 13% in 2006. The growth of more than 16% in investment will compensate for the lower export growth. Private consumption will also be up by almost 10%.

Japan's GDP growth began to pick up a couple of years ago as exports to China started to increase. The GDP figures for 2006 are expected to show a growth of approximately 3%, following the 2.6% growth in 2005. The recovery in Japan's domestic demand has mainly been the result of successful economic policies and economic restructuring. Having been long troubled by deflation, Japan is finally experiencing a period of inflation, at a rate of about 0.7%. This reduces the incentive for households to save, and private consumption has indeed begun to grow. Private investment will also be up in 2006, by an estimated total of over 8%, although residential construction will be up by only a little over 1.5%. The substantial public sector deficit prevents the country from financing public investment projects in the short term. Public sector investment will in fact be down by about 4% in 2006.

In 2007, Japan's export growth will slow down as a result of the stronger yen and the lower level of growth in the US economy. The low level of private consumption growth and the slowing of investment growth will mean that the reduction in exports cannot be made up elsewhere. Japan's GDP growth in 2007 is thus forecast to drop to 2.1%. Growth in developing countries in other parts of Asia will continue to be high in 2006 but is expected to decrease in 2007 due to the general trend in the world economy.



2 The Finnish Forest Industry

2.1 Exports and Production in the Sawmilling and Plywood Industries

Growth in housing construction has boosted the demand for sawnwood in Europe in 2006 by a greater amount than expected, and sawnwood prices have risen significantly. The supply of sawnwood in the first half of the year was limited because of export growth to markets outside Europe and the temporary shortage of sawlogs in many producer countries. A rise in sawlog prices in the second half of 2006 may stimulate an increase in sawlog supply, and higher sawnwood prices are expected to boost Europe's sawnwood production. In 2007, the growing supply of sawnwood together with a slightly weaker trend in residential construction will mean tougher competition on the export market, which will in turn keep price rises in check.

The nominal unit price of Finnish sawnwood exports in 2006 is expected to be up by almost 7% for the full year, whereas in 2007 it will be up by just 2%. Production and exports of sawnwood in 2006 are estimated to be up by about 2% but will be considerably below their 2004 level because of the reductions in production capacity in recent years. The rise in export prices will only mean a slender improvement in the profitability of sawnwood production because at the same time costs have risen. Production and export volumes in 2007 are expected to be down slightly on account of lower growth in

residential construction on both the domestic market and the principal export markets.

On Europe's plywood market, the unexpectedly high level of demand has pushed up the export price of birch plywood in particular. With tougher competition, the rise in the nominal unit price of plywood exports will slow to an annual figure of about 2% in 2007 from 3% in 2006. Plywood production and exports for the full year 2006 will be up by about 6%, and in 2007 the growth will be lower than this.

Higher Demand in Western Europe in Early 2006 Pushes up Sawnwood Prices

Demand for sawnwood in Western Europe in the first half of 2006 has been high on account of the growth in residential construction, and this has raised the price of sawnwood. Higher prices have also been the result of a relative shortage of sawlogs, which restricted production growth in the first part of the year. A scarcity of sawlogs was also apparent in many of Europe's largest sawnwood producer countries, leading to a rise in sawlog prices not only in Finland but also in Northwest Russia, the Baltic countries, Sweden, Southern Germany and Austria. The supply of spruce sawlogs in particular has been low. In Finland, sawlog supply was adversely affected in the first part of 2006 by the end of the forest taxation transition period, while in Austria, for example, the supply was affected by a reduction in the import of German sawlogs. Russia, too, has

experienced problems with sawlog availability, and its exports to Estonia, for instance, fell in the first half of 2006. In Central Europe, where the sawmilling industry has expanded, it is possible that the sawlog availability problems will worsen over the longer term and lead to further rises in raw material costs.

Decline in Residential Construction in Many Western European Countries and the US in 2007

According to the June 2006 forecast by Euroconstruct, housing repair and maintenance in Western Europe will continue to increase in 2007, whereas there will be almost no growth in the production of new housing. There are naturally differences from one country to another. In the United Kingdom and the Netherlands, for example, construction of new dwellings will increase, whereas in Germany and France a decrease is forecast. The export dependence of Western Europe's sawnwood producers means that the achievement of a balanced market will be sensitive to fluctuations in demand outside Europe. Thus, the reduction in residential construction in the United States represents a particular challenge for Western European sawnwood producers both in 2006 and 2007. Forecasts indicate that US housing construction will fall by a total of 13% in the period 2006–2007 in comparison with 2005. In Japan, however, the demand for construction products is rising, and the number of new housing starts in January–August 2006 was up by 4% on the same period a year earlier. The growth in starts on new timber-framed buildings was about 3%, and these types of dwelling accounted for about 44% of all housing starts, which is close to the long-term average in Japan. In Eastern Europe, too, construction growth is raising the demand for sawnwood.

The Finnish sawmilling and plywood industries, 2005 1000 m³.

	Sawnwood	%	Plywood	%
Production	12 190	100	1 305	100
*Domestic use	4 527	37	132	10
Exports:	7 663	63	1 173	90
EU	4 461	37	1 001	77
Africa	1 227	10	3	0
Asia excl. Japan	1 163	9	40	3
Japan	650	5	13	1
North America	51	0	46	4
Russia	12	0	2	0
Other	132	1	68	5

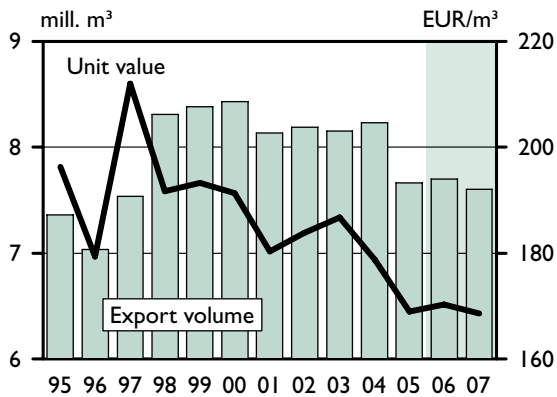
*Estimated domestic use = production – exports

Sources: Statistics 2005 (Finnish Forest Industries Federation) and Finnish Forest Research Institute

Greater Supply Will Limit Price Increases in 2007

In January–August 2006, the nominal unit value of Finnish pine sawnwood exports was up by 12% and export volumes by 7% on the same period the previous year. This export growth was attributable in part to an increase in exports to Algeria and Japan. The export price of spruce sawnwood rose by a smaller amount, 4%, and export volumes were below the level of a year earlier, due to a decrease in exports particularly to France, Germany and the Netherlands. Since there has been a scarcity of spruce sawnwood on the European market due to availability problems, its price is expected to continue rising slightly in the latter part of 2006. The nominal unit price of Finnish sawn softwood exports is therefore expected to be up by almost 7% for the full year 2006.

The principal factors affecting European sawnwood prices in 2007 will be the lower growth or even contraction in residential construction in some countries, and the oversupply of sawnwood. The rising sawnwood prices of 2006 will lead to an increase in sawnwood production, provided that the sawlog availability problems are overcome. How-



Source: National Board of Customs

Volume and unit value of sawnwood exports, 1995–2007 at 2005 prices (wholesale price index).

ever, with a reduction in demand being anticipated, such an increase in sawnwood production will mean tougher competition. Although supply from the Baltic countries and Finland is not likely to increase much, production is expected to increase in Central Europe, and Swedish sawnwood supply will also be up slightly. Supplies from Russia are expected to remain high, although the country's domestic sawnwood consumption is growing. A proportion of the growth in Russia's sawnwood exports will be destined for markets in China and for further processing in the Baltic countries. In Europe, supply may also increase slightly because of a reduction in exports to the United States for reasons of profitability, as US sawnwood prices are forecast to decrease further in 2007. With tougher competition, the rise in the nominal unit price of Finnish soft sawnwood exports can be expected to be about 2% in 2007.

Finnish Sawnwood Production and Exports in 2007 Close to 2006 Levels

In relation to sawnwood export prices, the changes in raw material prices in recent years have become increasingly unfavourable for producers, leading to a deterioration in profitability within the sector. As a consequence, there has been no investment in expanding basic sawnwood production in Finland

in recent years. Instead, Finnish-owned companies have, for instance, acquired capacity in the Baltic countries and Russia, amounting to an annual production volume of about 2 mill. m³. This has brought additional opportunities not only in raw material procurement beyond Finnish borders but also in production planning, as Finnish-based production can be substituted with production in units based abroad.

As Europe's oversupply has led to declining sawnwood prices in recent years, and it has proved difficult to achieve any further significant increases in productivity, the raw material price has become a critical factor in the sector's profitability. Raw material costs account for well over half of turnover in the sawmilling industry. The ratio of raw material price to final product price for pine sawnwood has improved since the start of 2005, with the strengthening of the export price. The trend in the same price ratio for spruce sawlogs and spruce sawnwood has been weaker, however. Spruce sawnwood prices are nevertheless expected to rise in the latter part of 2006, which will improve production profitability.

The higher sawnwood price anticipated for both 2006 and 2007 will not significantly improve the sector's average profitability, however, because production costs are also rising. Annual production and export volumes are expected to be below the 2004 level both in 2006 and 2007, because of the reductions in production capacity in recent years. The 2006 figures for sawnwood production and exports will nevertheless be up by about 2%, but in 2007 they will fall back a little as competition intensifies on Europe's sawnwood market.

Demand on Domestic Sawnwood Market Still High

After exports, some 37% of Finnish sawnwood production, or about 4.5 mill. m³, was left for domestic consumption or further processing in 2005. The Finnish Forest Industries Federation estimates that domestic consumption of sawnwood in 2005 totalled about 5.2 mill. m³, after accounting for imports and

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		
	2005	2006	2007	2005	2006	2007
Sawnwood	12 190	12 400	12 300	7 663	7 800	7 700
	-10	2	-1	-7	2	-1
Plywood	1 305	1 380	1 400	1 173	1 240	1 250
	-3	6	1	-5	6	1

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

	2005	2006	2007
Sawnwood	-2 (169 €/m ³)	7	2
Plywood	8 (513 €/m ³)	3	2

* Export prices are nominal unit values

changes in stocks. With an increase in residential construction, domestic sawnwood consumption for the full year 2006 is expected to be up by 2–3% on the previous year's figure. Forecasts by the Research Institute of the Finnish Economy indicate that growth in residential construction will slow down to 2% in 2007 from almost 6% in 2006. If this transpires, the growth in demand for domestic sawnwood will be lower than in 2006.

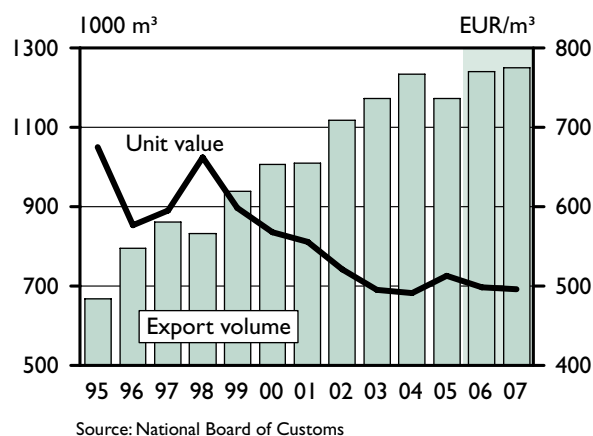
Slower Rise in Plywood Prices

The growth in residential construction in Europe and the associated demand for furniture and fittings have fuelled the demand for plywood and led to rising prices in the last couple of years. In 2005, a total of 4.1 mill. m³ of plywood was produced in the EU, meeting an estimated 60% of demand. Finnish production accounts for about one third of all plywood produced in the EU.

Only about one tenth of Finnish plywood production remains in the country, the rest being mainly exported to markets in the EU. Birch plywood, which is higher in price than softwood grades, comprises about 40% of the production and export of Finnish

plywood, the remainder being softwood plywood. Germany and the United Kingdom account for the biggest share of Finnish plywood exports, together taking about one third of Finnish production. Production and export volumes of Finnish plywood for the full year 2006 will be up by 6% following the slight setback in 2005, and the nominal average price will be up by about 3%, due to the favourable price trend in birch plywood.

The slower growth in residential construction in 2007 will reduce the growth in demand for plywood, especially softwood plywood, on the European export market. An increase in supply is expected to lead to tougher competition and to limit any rise in plywood prices. The increase in plywood supply in 2007 will include expanded production in Eastern Europe. In particular, the supply of birch plywood



Volume and unit value of plywood exports, 1995–2007 at 2005 prices (wholesale price index)

from Russia and the Baltic countries is expected to increase further, despite growing domestic consumption as housing construction expands. China is also expected to continue increasing its supply of birch and softwood plywood to Europe and is already the second largest source of plywood imports to the United Kingdom. Imports of tropical plywood from Indonesia, Malaysia and Brazil have been on the decline.

Although China already accounted for 15% of Germany's imports of non-tropical hardwood plywood at the start of 2006, Finland was still Germany's biggest supplier, with a share of about 20%. The competitiveness of Finnish producers of high-quality birch plywood is expected to remain good in the years to come. Chinese birch plywood is not yet a serious rival to birch plywood from Finland, Russia or the Baltic countries in many of the main areas of use, because of differences in quality and other properties. Due to the intensified competition on the European market, the nominal average price of Finnish plywood exports in 2007 is forecast to rise more slowly than in 2006, the year-on-year increase being about 2%. Production capacity will start to limit the growth in production, while exports are expected to grow by about 1%.

2.2 Exports and Production in the Pulp and Paper Industry

The demand for paper on Finland's main export markets in Western Europe has risen slightly in 2006. The increase is difficult to estimate, however, because the 2005 figures were affected by the labour market dispute in the Finnish paper industry, which lasted almost two months. The industry's production and export figures for 2006 will therefore show an exceptionally high year-on-year growth, averaging 15%. The long decline in paper prices came to a

halt in autumn 2005, although the price trend in Finnish paper exports in 2006 shows only a modest rise because of the oversupply situation in magazine and fine papers. The rise in prices will be sufficient to cover the increase in production costs. The 2006 export price of paper will be only about 1% higher than the average for 2005, whereas the average export price of pulp will be up by about 16%.

Paper consumption in Western Europe in 2007 will continue to rise by a modest amount, provided that the forecasts of relatively good GDP growth are borne out in practice. Higher demand will improve the opportunities for passing on the increase in production costs to the prices of paper and paperboard. In Finland, paper production and exports are expected to be 3% down in 2007, due to the production unit closures undertaken in 2006 and planned for 2007. The drop in paper production and the increase in market pulp production will allow more pulp to be exported. A further incentive for exporting pulp in 2007 will be its price, which is expected to be above the 2006 average. The average export prices of paper and paperboard are forecast to rise by 2–3% in 2007.

Oversupply and Higher Costs Have Led to Production Capacity Closures in Western Europe

In the past five years the consumption of paper on the Finnish paper industry's main markets has grown very slowly. Estimated consumption of paper and paperboard in Western Europe in 2005 was only less than 1% above its 2000 level, according to the FAO. As paper producers had prepared themselves for a greater increase in demand, and had thus added substantially to their production capacity since 2000, the entire paper industry has experienced oversupply for a number of years. This oversupply situation has been eased by the additional exports to Asia and the rapid growth in paper demand in the still modest paper markets of Eastern Europe. Western European paper exports to markets outside Western

Europe have increased by about 14% in the period 2000–2005, according to the FAO. However, it will be difficult to increase exports of printing and writing papers to Asia beyond their present volumes because of the emerging oversupply situation there too. In China, particularly, dependence on imports has been declining, and the country's own paper exports are on the increase.

The four-year decline in paper prices came to a halt in 2005, when prices began to rise a little. The increase in costs, especially energy costs, has, however, largely or completely eroded the benefit gained from the slight rise in prices. On account of the strong euro and rising costs, producers have decided to close a number of production units in Finland in order to improve their profitability. These closures, taking place in 2006 and 2007, mean a total reduction of about 740,000 tonnes of annual paper production capacity.

Advertising and the Demand for Printing Papers Have Picked Up in 2006

The demand for printing papers is affected by the level of consumer income, reading habits and the demand for printed advertising, which is closely

linked to the state of the economy. The recovery in the German economy, for instance, has led to a growth in magazine advertising. According to the German magazine publishers' umbrella organisation (Verband Deutscher Zeitschriftenverleger), the number of advertising pages in German magazines increased by over 4% in the period January–October 2006 compared with the same period the previous year. Germany accounts for about one third of all magazine paper consumed in Western Europe. In the five largest Western European economies, the value of all printed advertising is forecast to be up in 2006 by about 1.5% on the previous year's figure. In addition, the growth in newspaper advertising has been faster than average (Ad Barometer).

Figures from the Association of European Publication Paper Producers (Cepiprint) and the European Association of Fine Paper Manufacturers (Cepifine) indicate that in January–September 2006 the estimated *European* consumption of printing and writing papers was up on the previous year's figures as follows: newsprint 2.7%, uncoated magazine paper 5%, coated magazine paper 1.3%, uncoated fine paper 0.7% and coated fine paper 1.9%. Consumption of containerboard and folding boxboard in Western Europe has also grown in comparison with the same period in 2005. Estimation of the real

The Finnish pulp and paper industry, 2005, 1000 tonnes.

	Chemical pulp	%	Paper	%	Paperboard	%
		of production		of production		of production
Production	6 773	100	9 842	100	2 549	100
Domestic use*	4 823	71	869	9	386	15
Exports:	1 950	29	8 973	91	2 163	85
EU	1 587	23	5 937	60	1 247	49
Asia	130	2	791	8	332	13
Africa	19	0	125	1	72	3
United States	83	1	915	9	165	6
Russia	10	0	285	3	120	5
Other	120	2	920	9	228	9

* Estimated domestic use = production – exports

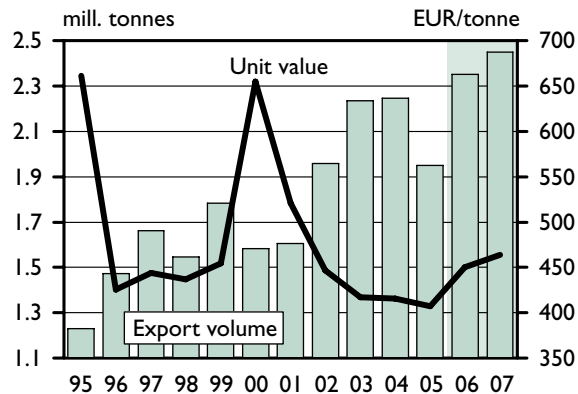
Sources: Statistics 2005 (Finnish Forest Industries Federation) and Finnish Forest Research Institute

growth in consumption in most product groups is, however, difficult because of the long labour market dispute in 2005 in the Finnish paper industry, which led to a substantial reduction in the supply of paper and paperboard.

Paper prices have risen modestly in the wake of cost increases, but prices have fallen short of the paper industry's targets. Price monitoring by Foex Indexes Ltd shows that in the period from January to mid-November 2006 the price of newsprint rose the most among paper prices, by 6%. However, newsprint forms only a small proportion (about 5%) of Finnish paper exports. The price trend for Finland's most important grades – coated magazine and fine papers – has been weaker: in mid-November the prices of these grades were at their January level. Prices of folding boxboard have remained unchanged, whereas prices of containerboard, lining and especially fluting are significantly above their 2005 year-end level.

In *North America*, demand weakened for all printing paper grades in the first half of 2006, according to information from producers. Nevertheless, prices have been above those of a year earlier. The PIX price for newsprint in mid-November 2006 was 3% higher than at the start of the year. A major contributory factor in the price rises has been the cut in supply, as producers have gradually closed down their older machines, and the capacity cuts have continued in 2006. The American Pulp and Paper Product Council estimates that newsprint capacity in North America will shrink by almost 5% in 2006, and by a further 1% in 2007. Coated magazine paper capacity has also been reduced significantly since 2005.

In *Asia*, demand for printing and writing papers has continued to grow in 2006. As a result of increases in production capacity, however, there is now an oversupply of coated printing papers in Asia. Fine paper prices in the first half of 2006 were at the previous year's level, according to information from producers.



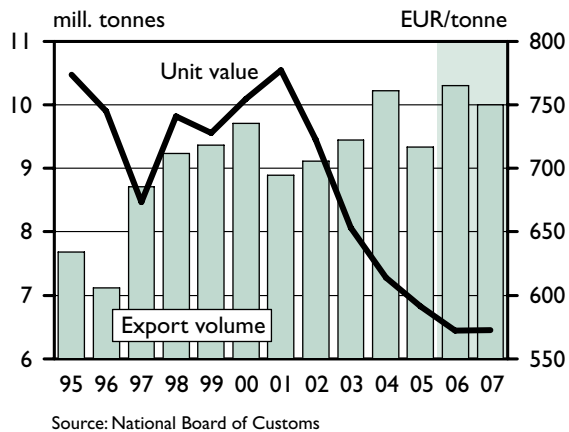
Source: National Board of Customs

Volume and unit value of pulp exports, 1995–2007 at 2005 prices (wholesale price index).

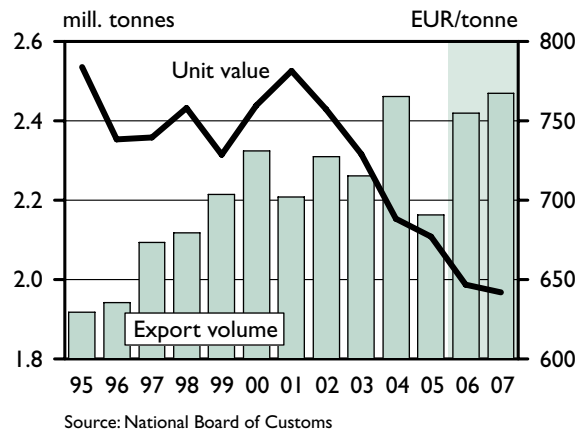
Record Production in Finnish Paper Industry in 2006

Finnish paper production reached an all-time record in the first half of 2006. The industry's new collective agreement allowed paper production to continue over the Midsummer holiday for the first time. Information from the Finnish Forest Industries Federation shows that 40% of paper mills and almost all pulp mills were operating at Midsummer. Demand for printing and writing papers is likely to remain fairly high in the remainder of 2006. Although the paper machine closures in June will affect the production figures for the second half of the year, Finnish paper and paperboard production for the full year 2006 is forecast to rise to a new record, 14.1 mill. tonnes. This represents a substantial increase of 14% on the exceptionally low production in 2005.

The increased costs in the paper industry are adding to the pressure on prices. Labour costs are rising steadily and the high price of oil is affecting both materials and transportation costs. In Finland, the price of pulpwood also began to rise in the first half of 2006. In addition, the high pulp price is adding to costs for those producers who rely on purchased pulp. Pulp production is in fact currently more profitable than paper production. The PIX price of long-fibre pulp (softwood pulp) in mid-



Volume and unit value of paper exports, 1995–2007 at 2005 prices (wholesale price index).



Volume and unit value of paperboard exports, 1995–2007 at 2005 prices (wholesale price index).

November 2006 was about EUR 570/tonne, or 12% above its January level. The price of hardwood pulp has also risen slightly, by about 4%. Hardwood pulp production capacity has increased with the introduction of new mills in South America and China, but higher demand has prevented the emergence of an excess of supply. The average export price of Finnish paper and paperboard in annual terms is forecast to be up by about 1% in 2006, and for pulp by as much as 16%.

Finnish Companies Expanding in South America and China

The focus of new investments in the pulp and paper industry is currently in South America and China, where consumption is growing rapidly and production costs are low. In Western Europe and North America, excess capacity and the slow growth in paper demand do not favour new investment. Paper industry investment in Western Europe and North America is instead directed mainly at maintaining existing machines.

Finnish producers have been actively involved in investment projects in both Asia and South America. In 2005, a eucalyptus pulp mill in which Stora Enso has a 50% holding was opened in Brazil, and Metsä-Botnia is currently constructing a similar mill

in Uruguay with an annual production capacity of about 1 million tonnes. The latter project, which has met with strong opposition from many Argentinians, is likely to be completed in the latter half of 2007. In China, UPM introduced a new fine paper machine in 2005, and both UPM and Stora Enso have a number of Chinese investment projects in progress or planned, including the production of self-adhesive laminates, liquid packaging board and pulp. For more on the Chinese market, see the Featured Topic at the end of this publication.

Paper Production in Finland Will Be Down in 2007 but Prices Will Rise

The GDP growth forecast for Europe in 2007 will mean a slight increase in both consumer demand and advertising, but the growth in demand for paper in an already mature market will remain modest. According to the Association of European Publication Paper Producers (Cepiprint), the European market for printing papers will still suffer from oversupply in 2007, with coated fine and magazine papers affected the most. In 2006 and 2007, UPM, Stora Enso and Myllykoski will close down a total capacity of about 1.2 million tonnes of coated and 0.5 million tonnes of uncoated printing papers in Western Europe. In addition, M-real is considering closing down 0.5

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	6 773	7 950	7 900	1 950	2 350	2 450
	-13	17	-1	-13	20	4
Paper	9 842	11 300	11 000	8 973	10 300	10 000
	-12	15	-3	-12	15	-3
Paperboard	2 549	2 850	2 900	2 163	2 420	2 470
	-11	12	2	-12	12	2

Forecasts of export prices for pulp and paper products (as percentage change from previous year)*

	2005	2006	2007
Chemical pulp	1 (407 €/tonne)	16	6
Paper	0 (591 €/tonne)	1	3
Paperboard	2 (677 €/tonne)	0	2

* Export prices are nominal unit values.

mill. tonnes of its fine paper capacity in 2007. The full elimination of oversupply is a particular challenge, as the sector's smallest producers are ready to fill the market gaps left by the larger companies. The production capacity of each unit is also rising continuously as de-bottlenecking and learning make operations more efficient.

The oversupply of paper is expected to fall as consumption increases and production units are closed. Producers will also be forced to increase prices as a result of cost pressures, including higher prices of energy, roundwood, chemicals and pulp. Many companies already announced price rises during autumn 2006. M-real, for instance, announced that it intends to introduce a 5% increase in paper and paperboard prices, and Stora Enso has also announced price increases for paperboard. Among producers of coated fine paper, Sappi and Burgo have also announced price rises to take effect in Europe from late 2006. Efforts to raise prices will be supported by the high price of market pulp in 2007, which will

compel even small producers that rely on purchased pulp to raise their prices.

The export price of Finnish paper in 2007 will depend to a great extent on the price negotiations conducted at the end of 2006 to determine the price level of longer term supply agreements. Provided that the relatively favourable forecasts of growth in the world economy materialise, the conditions for a rise in prices will be better than they were in 2006. The average export price of paper is forecast to rise in 2007 by about 3%, and paperboard by about 2%. The export price of pulp is forecast to be about 6% above its 2006 average. Although the production capacity of both softwood pulp and hardwood pulp will increase in 2007, the growth in market demand may prevent oversupply from emerging. The price forecasts given are based on the assumption that no significant changes will occur in the euro's exchange rate against the dollar or against other currencies of importance for exports. Any weakening of the euro would push up average export prices in the Finnish paper industry, while a strengthening of the euro would have the opposite effect.

The trend in prices will be strongly dependent on the level of growth in the world economy, about which there is significant uncertainty. If, for instance, GDP growth in the United States slows by more than expected, this would add to the growth in oversupply on the paper market, as the US would reduce its imports of paper.

Finnish paper and paperboard production in 2007 will be affected by the closures of mills and machines taking place in 2006 and early 2007. Exports of paper and paperboard are expected to be down by about 2% in 2007. The drop in paper production will, however, allow more pulp to be exported, and a further incentive for this will be the price of pulp, which is expected to be above the 2006 average. Exports of bleached sulphate pulp are forecast to be up by about 4%.

2.3 Costs and Profitability in the Finnish Forest Industry

The relationship between income and costs in the Finnish forest industry has improved in 2006 as a result of the higher prices for forest industry products and the growth in demand. Profitability in the sector will therefore be up slightly compared with the previous year. Despite this, production costs remain high and some cost elements are continuing to rise. In the wood products industry roundwood costs are the biggest challenge, whereas in the pulp and paper industry the high costs of other raw materials, such as minerals and chemicals, also have a major impact on costs. The prices of forest industry products will continue to rise in 2007, although lower production and export volumes will limit the extent of income growth in the sector. The rise in costs will at the same time slow down, however, and so profitability in all forest industry sectors in 2007 will remain at least at the level of 2006.

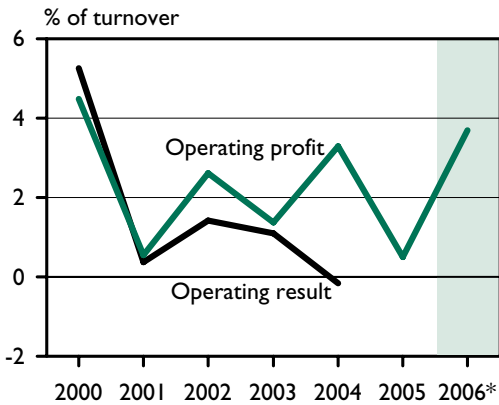
Short-Term Profitability Outlook More Favourable Than in Recent Years

In 2006, profitability in the section of the wood products industry owned by the major Finnish forest

industry corporations has been higher than at any time since 2000, measured in terms of operating profit as a percentage of turnover. Operating conditions have improved due to the more favourable market for forest industry products, the rise in prices and higher delivery volumes. At the same time, improvements in operating efficiency have been sought through rationalisation measures, especially in the major forest industry corporations.

Considerable fluctuations in forest industry profitability have occurred in the current decade, both annually and by sector. The financial figures for 'operating result as a percentage of turnover' for small, medium and large-sized enterprises in the wood products industry (financial statements database maintained by Statistics Finland) and for 'operating profit as a percentage of turnover' for the wood products business of the three major forest industry corporations all show a similar trend in the period 2000–2003. In 2004, however, there was a significant difference between these two groups of companies. According to the Statistics Finland database, which contains data on companies that vary quite considerably in size, profitability in the wood products industry in 2004 was negative, whereas in the same year the figure for operating profit as a percentage of turnover reported by the wood products businesses of Finnforest, Stora Enso and UPM rose to more than 3%. The latter figures are unadjusted balance sheet items, while the Statistics Finland figures are adjusted balance sheet items. Data for 2005 were not yet available from Statistics Finland, but the 2005 profitability figures for the major forest industry corporations indicate a deterioration back to the level of 2001. Business profitability in 2006 and 2007 is expected to improve again in both the major corporations and the smaller wood products companies, partly as a result of income growth and partly due to the efficiency drives being undertaken, especially in the major corporations.

The profitability of pulp and paper industry products in 2006 has been aided by the favourable demand situation in the sector and the corporate restructuring undertaken to improve competitive-



*January-June 2006

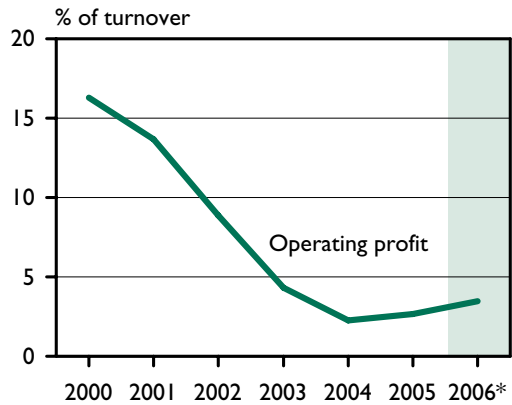
Source: Statistics Finland (operating result),
Finnforest, Stora Enso, UPM (operating profit)

Profitability in the wood products industry, 2000–2006, measured in terms of operating result and operating profit.

ness. This situation is expected to continue in 2007 as a result of the improved market and the efficiency programmes planned for the near future.

A return to the profitability levels seen in the pulp and paper industry in 2000, however, would require a significant change in the operating conditions for the industry, whose profitability has been very low in recent years. This is illustrated in the accompanying figure, which shows the financial performance of the major forest industry corporations in terms of operating profit as a percentage of turnover for the period 2000–2006. This was in excess of 16% in 2000 but subsequently fell steadily year by year, descending to a level of only just a little over 2% in 2004. In 2005 the figure rose slightly, and in 2006 it will be just below 4%.

In countries with high costs, forest industry companies have only limited scope for reducing their production costs, and their ability to influence world market prices for bulk products is virtually non-existent. By further processing their products, producers can manufacture higher priced products that are better able to cover the costs of the production factors needed to make them. This has not yet happened in the Finnish forest industry, however, as the degree of gross value added in relation to turnover



*January-June 2006

Source: M-real, Stora Enso, UPM

Profitability in the pulp and paper industry, 2000–2006, measured in terms of operating profit.

has in fact fallen in the last ten years in all sectors of the industry, which has led to a situation where, at industry level, manufacturing costs have risen by more than the income obtained from the products sold, thus contributing to poor profitability.

Roundwood Costs Are a Major Challenge in the Wood Products Industry, While the Pulp and Paper Industry Is also Affected by Other Raw Material Prices

Roundwood costs in the wood products industry are the most significant individual cost item, comprising about one third of the sector's total costs. Most of the industry's roundwood, which is mainly procured domestically, is processed by the sawmilling and plywood industries. Roundwood costs have risen in 2006 due to the 6–8% rise in softwood sawlog prices, which particularly affects the profitability of sawmills but also that of plywood producers who use spruce and birch. In 2007, the sawmilling industry's roundwood costs will rise by a lesser amount because the increase in softwood sawlog prices will be lower than in 2006.

The wood products industry is unlikely to ease its long-established problem of high raw material costs by resorting to the use of imported roundwood, because imported sawlog prices are on the increase. The average price of imported sawlogs at the start of 2006 was 2–3% above the same figure a year earlier. Following Russia's imposition of higher duties on its exported softwood in June 2006, and with another rise planned for summer 2007, it is possible that further increases could occur in the coming years.

In the pulp and paper industry, roundwood costs account for about one sixth of total costs. Approximately three quarters of the industrial wood used in the sector is of domestic origin, the rest being imported. Some 20% of the sawmill chips used are imported. The prices of all pulpwood species are expected to be up by 4% for 2006 as a whole, and the prices of both domestic and foreign sawmill chips have also risen in 2006. The industry's roundwood costs will thus be up slightly in comparison with the previous year. In 2007, it is forecast that the prices of industrial wood consumed by the pulp and paper industry will rise by less than in 2006, the increase being 2% for all pulpwood species.

The minerals and chemicals used in the production and bleaching of pulp and in the manufacture and coating of paper, and the other raw materials needed in production, together comprise about one fifth of costs in the pulp and paper industry. The world market prices of the minerals and chemicals used are affected by the price of the raw materials, energy and fuel needed in their production and processing, and by the level of demand for them. The rise in mineral and chemical prices in the past few years has been the result of a rise in the costs of producing them and the increased demand globally, which has been growing even faster than consumption of printing and writing papers. The reasons for this have included the expansion of the pulp and paper industry into new markets and various changes that have occurred in the production of different paper grades. The rise in market prices of minerals and chemicals in the pulp and paper industry has been high both in real terms (about 8% in the period

2002–2004) and in relation to other costs. Due to the growing demand for minerals and chemicals and the high costs of producing them, their prices on the world market are expected to show a further rise both in 2006 and 2007.

Labour costs represent about one sixth of total costs in both the wood products industry and the pulp and paper industry. Under the wage policy agreement in force until September 2007, forest industry pay was raised by 1.9% in June 2006, in addition to the 2.5% increase introduced in March 2005. Labour costs in 2007 are forecast to be at about the same level as in 2006. Labour productivity in the pulp and paper industry will show an improvement in 2006 as a result of the opportunity to keep mills running during the Midsummer and Christmas holidays, as negotiated in the industry's collective agreement.

Direct energy costs account for approximately one tenth of total costs in the pulp and paper industry, whereas energy costs in the wood products industry form a much lower proportion of total annual expenditure. Indirectly, fuel and electricity nevertheless affect almost all cost items through their impact on manufacturing and transportation costs. Oil prices will remain high in 2006 and energy prices will be up on the previous year's figures, and this is expected to continue in 2007. In the pulp and paper industry, however, the rise in energy costs will be balanced out by energy self-sufficiency, as about half of the electricity used in the sector is produced by power plants owned by pulp and paper producers themselves. The rise in energy prices has led to a focus on the energy efficiency and self-sufficiency of production units in the forest industry, which has been evident as an increase in energy investments by companies in recent years. There are nevertheless considerable differences between companies in their self-sufficiency in electricity: UPM has the highest level, with 100% self-sufficiency in its Finnish operations and 70% in its international production.

Higher Product Prices Mean Improved Conditions for Doing Business

The unexpectedly favourable trend in housing construction in Europe has boosted the demand for sawnwood and raised both spruce and pine sawnwood prices. The unit price of exported sawn softwood is expected to be up by about 7% for the full year 2006, and plywood by 3%. In 2007, price rises are forecast to be no more than about 2%, due to tougher competition.

The price of pulp is expected to be up by a total of 16% in 2006. This large increase is a result of both a growth in demand and the delay in completion of a number of mill projects internationally. The demand for paper and paperboard has grown slightly in the key markets for Finnish companies. The demand and price trends in newsprint have also been good, though this is of lesser importance for the Finnish industry. The average prices of paper and paperboard grades – which are more important for business – will be up by only 0–1% in 2006. Export prices for pulp in 2007 are expected to be above the 2006 average, while export prices of paper and paperboard are forecast to rise by 2–3%, which is higher than in 2006.

The price of the wood raw material used in the sawmilling and plywood industries and the other

raw material costs in the pulp and paper industry are forecast to remain either unchanged or, in some cases, to rise slightly in the near future. Electricity and energy costs are forecast to rise further, with a direct impact on the pulp and paper industry in particular, and indirectly on the entire forest industry.

Despite production costs remaining high, the conditions for growth in the Finnish forest industry in 2006 have been more favourable than in the past couple of years. In the wood products industry the improved price trend for its products has balanced out the adverse profitability impact of higher production costs, whereas in the pulp and paper industry in particular, efforts have also been made to improve profitability by corporate restructuring aimed at boosting efficiency.

Although forest industry product prices will rise in 2007, the growth in corporate income in the industry will slow down as a result of a drop in production and export volumes. Based on production volumes and product prices, the increase in income that can be expected in 2007 will nevertheless be a little greater than the rise in direct costs. This is because improved capacity utilisation will reduce the impact of changes in total costs. As a consequence, profitability in both the wood products industry and the pulp and paper industry in the coming year will be at least as good as in 2006.



3 Forestry in Finland

3.1 Utilisation of Wood Resources

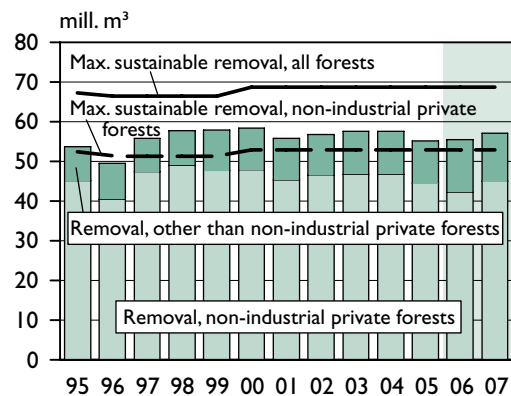
Although Finland has abundant forest resources, almost one quarter of the roundwood procured by its forest industry is imported. In the case of birch, imports are essential because the industry's consumption of birch is more than one third greater than that which the maximum sustainable removal will allow. In 2003–2005, the industry consumed an average of 72 mill. m³ of wood annually, of which 55 mill. m³ was procured domestically. In 2006 and 2007, the industry will consume a slightly greater volume.

Finland has almost 23 mill. ha of forest, and the total volume of growing stock is approximately 2200 mill. m³. Pine accounts for 50% of this, spruce for 30%, birch for 16% and other broad-leaved species for 4%. The annual increment in the growing stock is about 97 mill. m³. Some 1.7 mill. ha of forest, mainly in Northern Finland, is excluded from commercial roundwood production. Forestry can thus be practised across an area of about 21 mill. ha, containing a growing stock of almost 2100 mill. m³ with an annual increment of approximately 94 mill. m³ (4.6%). Growing stock drain amounts to about 69 mill. m³ p.a. (3.4%), and so roundwood reserves are increasing by a small amount each year.

The maximum sustainable removal is approximately 69 mill. m³ of useful wood per year, while the maximum justifiable in silvicultural terms is as much as 92 mill. m³, taking account of all tree spe-

cies. 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 is about 87%.

Some 61% of Finland's commercial forests are in the possession of non-industrial private owners, 24% 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 why the average increment in the growing stock for the state's holdings is low compared with forests in other ownership. Forests in non-industrial private ownership account for 69% of the growing stock increment, state-owned forests for 14%, company-owned forests for 11% and the rest for 6%. The non-



Source: Finnish Forest Research Institute

Removals of industrial wood and maximum sustainable removal.

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

Tree species	Consumption 2003–2005, mill. m ³ /yr		% of maximum sustainable removal	
	Domestic wood	Wood total	Domestic wood	Wood total
Pine	23.7	26.9	74	84
Spruce	23.9	27.9	99	116
Birch	6.7	14.0	64	135
Total	54.3	68.8	82	104

In addition, the industry consumed 3.3 mill. m³/yr of aspen and unspecified imported wood.

industrial private forests are of crucial importance for the industry's roundwood procurement, as about 80% of the domestic roundwood (and 61–63% of all roundwood, both domestic and imported) consumed by the forest industry is from such forests. However, this proportion has been slowly declining as imports have risen, and imported roundwood now accounts for 23–24% of the total.

The accompanying 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.

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. Spruce harvests, for example, have been very high in recent years, and spruce reserves have decreased slightly, according to information collected in 2004–2005.

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 more than one third greater than the level which the maximum sustainable removal in Finnish forests will allow, and so a little over half of the industry's birch consumption is imported, mainly 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 drained 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 rapidly growing, with almost 6 mill. m³ imported in 2005.

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 energy wood. The significance of this for forest management may grow if stands marked for first thinning attract less interest from wood purchasers.

The aims of the National Forest Programme (1999) include an increase in the use of domestic industrial wood and energy wood. Wider use of industrial wood has not yet occurred to any significant extent, but the use of wood chips (mainly felling residues from clear cutting) for energy purposes has more than quadrupled since 1999. In 2005, some 2.6 mill. m³ of wood chips were used in thermal and other power plants. Such 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

Industrial consumption of roundwood in 2006 will be up by about 9% on the 2005 level, which was affected by the labour dispute in the paper industry. The industry's consumption of roundwood in 2007 is forecast to be down by almost 1%, although domestic roundwood will account for a higher proportion of this total. Stocks will also continue to be used. The demand for domestic pulpwood will rise by 4% in 2007, which will push up stumpage prices for softwood pulpwood by 2%. The price of spruce sawlogs will be up by just 1%, following the record figure in 2006, whereas the prices of pine and birch sawlogs are forecast to be up by 3–5%. Imports of roundwood will continue to be fairly high, amounting to a total of over 20 mill. m³ both in 2006 and 2007. The most significant uncertainty for roundwood procurement in 2007 will be the availability and price of wood imported from Russia.

Quiet Early Spring on the Roundwood Market

With the ending of the forest taxation transition period the roundwood market fell quiet in January–April 2006 but picked up in early summer as prices began to rise. Those forest owners who were already previously operating under the sales revenue tax system have been active in the roundwood market in 2006, as anticipated in autumn 2005. The forest industry's demand for roundwood in 2006 has been extremely high, and so the industry's wood consumption will be up by 9% on the previous year's figure.

Purchases from non-industrial private forests in January–September 2006 amounted to 20.3 mill. m³. This was only 1% ahead of the previous year's figure because of the lacklustre sales in the initial months of the year, and due to the unusually high stocks. Sales of sawlogs were up by 3% and pulpwood down by 1% on the figures for the same period in 2005. Sales of special roundwood grades were at the same level as the previous year, and delivery

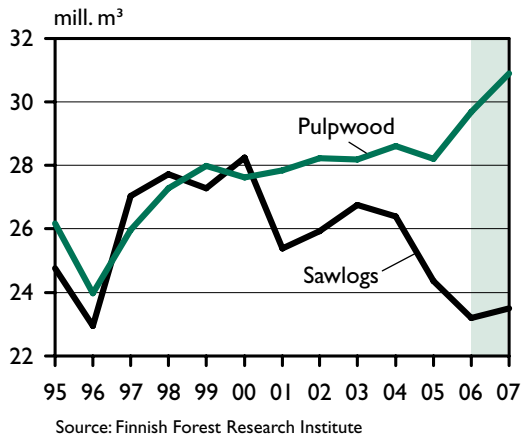
sales accounted for a marginally lower proportion of the total than previously. The weekly sales volumes for September 2006 indicate that a figure of 1 mill. m³ has already been exceeded, although the record roundwood sales of past years are hardly likely to be reached despite picking up in late autumn.

Total fellings for the full year 2006 are expected to be about 52–53 mill. m³, or about the same as in 2005, although there will be a slight decrease in fellings in non-industrial private forests following the slow roundwood sales at the start of the year. Fellings by the state-run enterprise Metsähallitus (formerly the Finnish Forest and Park Service) will be up by over 10%, and fellings on forest industry land by about 50% overall, even if the rate decreases significantly in the latter part of the year. Sawlog removals will be down by 5% in 2006, whereas pulpwood removals will be up by 5%.

In 2005, the labour dispute in the forest industry and the record level of imported wood pushed roundwood stocks up to unprecedented levels at the end of the year, amounting to over 11 mill. m³. The forest industry was also building up its stocks in preparation for the reduction in roundwood supply at the end of the forest taxation transition period. At the end of 2006, stocks are expected to be 8.8 mill. m³. This represents a year-on-year drop of 22%, and is a return to the average level of 2000.

Roundwood Imports Slightly Short of 2005 Record

Having grown faster than expected throughout 2005, roundwood imports accounted for a higher proportion of the forest industry's roundwood procurement than ever before, at 29%. In 2006, roundwood imports up to the end of August totalled over 14 mill. m³, or about the same as the previous year. Imports of wood chips were up by 12% in the same period, in part because of the supply from new sawmills owned by Stora Enso and Metsä-Botnia in Northwest Russia. Softwood imports were down in January–August by 8%, whereas hardwood imports were up by 3%. From the start of June, Russia increased



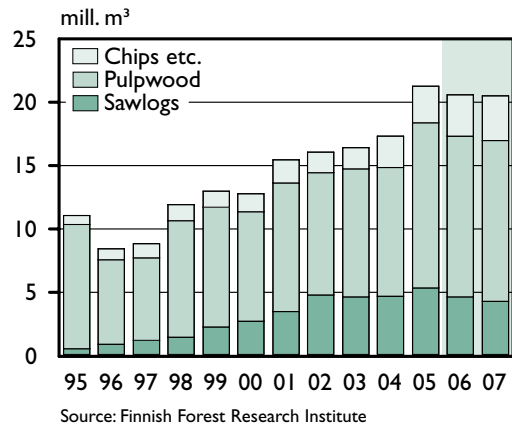
Commercial fellings of sawlogs and pulpwood, 1995–2007.

the level of duty on its softwood exports to EUR 4/m³ (minimum 6.5% of the price).

Sawlog import prices for January–August 2006 were up by 1–3% on the same period the previous year, and the price of imported birch pulpwood was up by 5%. The average price of wood chips was up by 9%. By contrast, the prices of softwood pulpwood have fallen following the sharp rises of 2005. Imports are expected to remain high in the remainder of 2006 as well, though the record figures of autumn 2005 will not quite be reached. The continuous rise in roundwood imports over the past ten years is now tailing off, and the total volume of imports for 2006 will be just over 20 mill. m³.

Considerable Rise in Stumpage Prices in 2006

The ending of the forest taxation transition period with the start of 2006 led to a reduction in roundwood supply, as anticipated. The necessary impetus for stimulating roundwood sales under the new arrangements, in which all forest owners are now operating under the sales revenue tax system, was a rise in prices. The rise in stumpage prices in 2006 has in fact been greater than forecast, even in the early months of the year, and prices began to climb more quickly towards the summer. Since the summer, weekly prices have continued to show a



Volume of imported roundwood by category, 1995–2007

slight rise, and in September the average stumpage price of spruce sawlogs across the country exceeded EUR 50 for the first time. The biggest rise since September 2005 was in pine sawlog prices (up 13%). The stumpage prices of other roundwood species have also risen, by 5–10%. The volume of delivery sales in 2006 has fallen somewhat but is still about one fifth of all sales because of the high demand for pulpwood. Roundwood prices have also been rising in other countries in the Baltic Sea region in 2006. In Sweden, for example, after the drop in prices resulting from the 2005 storm damage, prices have returned to the pre-storm level.

With demand continuing to be good in the latter part of 2006, the stumpage prices of pine and spruce sawlogs are expected to be up by an average of 6–8% for the year as whole. The demand for pulpwood also continues to be strong, but prices will probably be up by a lesser amount, about 4%, because of the fewer numbers of buyers on the market.

Demand Focus on Pulpwood Creates Challenge for Roundwood Sales

The forest industry's roundwood consumption will be down by 1% in 2007. Although production of paperboard and plywood will be up, production in the sawmilling and pulp and paper industries will be down on the previous year's level. Available stocks

will be lower than in 2006, and so commercial fellings will increase during the year. Sawnwood production will fall a little, on account of the increased competition on the European market. Domestic fellings in 2007 will have a greater focus on pulpwood than in 2006, due to a slight drop in the production of sawmill chips for use by the pulp industry, and because the prospering plywood industry accounts for only 10% of sawlog demand. The dominance of pulpwood in roundwood purchases will bring new challenges for roundwood sales, as prices on the sawlog market will continue to have a key impact on forest owners' decisions to sell.

Commercial fellings will be up in 2007 by a total of 3%, including an increase of 7% in non-industrial private forests. Fellings in industry-owned holdings will be significantly lower than the peak reached in 2006. The state-owned Metsähallitus will increase fellings as part of its productivity programme, unless there is increasing pressure to reduce removals for nature conservation reasons. Fellings of pulpwood are forecast to increase in 2007 by 4% and sawlogs

by about 1%. In all, the volume of commercial fellings is forecast to be up in 2007 by almost 2 mill. m³, while harvested sawlog stocks are expected to be down by almost 0.4 mill. m³.

The industry's higher demand for domestic pulpwood will mean a rise of 2% in pulpwood prices in 2007, which will mean less pressure to increase sawlog prices than in 2006. The prices of pine and especially birch sawlogs will nevertheless rise by a further 3–5%, while the price of spruce sawlogs will rise by only 1% from its record high.

The rise in stumpage prices will be kept in check for a number of reasons, including the decrease in the proportion of final cutting stands, the continuing high level of imports and the abundance of felling opportunities (with the exception of spruce sawlogs). With the growth in demand for pine pulpwood, in particular, and in view of the forecast level of pulp production and rising pulp prices, the increase in pine pulpwood prices in 2007 could be greater than expected. However, in practice the upward pressure on prices will be countered by the existence of a

Commercial fellings, roundwood imports and stocks of harvested wood, 2005–2007.

Roundwood type/ Ownership group	2005 mill. m ³	2006 mill. m ³	Change %	2007 mill. m ³	Change %
Commercial fellings, total	52.6	52.9	1	54.5	3
Non-industrial private forests ¹	44.2	41.9	-5	44.7	7
Company-owned forests	3.8	5.9	56	4.6	-23
State-owned forests ²	4.6	5.1	11	5.2	3
Sawlogs	24.4	23.2	-5	23.5	1
Pulpwood	28.2	29.7	5	30.9	4
Roundwood imports	21.3	20.5	-3	20.4	0
Commercial fellings and roundwood imports, total	73.8	73.4	-1	74.9	2
Stocks of harvested roundwood	11.2	8.8	-21	8.4	-4

¹ Includes municipalities, parishes, etc.

² Metsähallitus manages state-owned forests.

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 2006 by about 2.5% on the previous year's level. The stumpage price index, which measures the real change in domestic average roundwood prices, will be down by less than 2%. Both indices are based on prices adjusted for inflation using the wholesale price index.

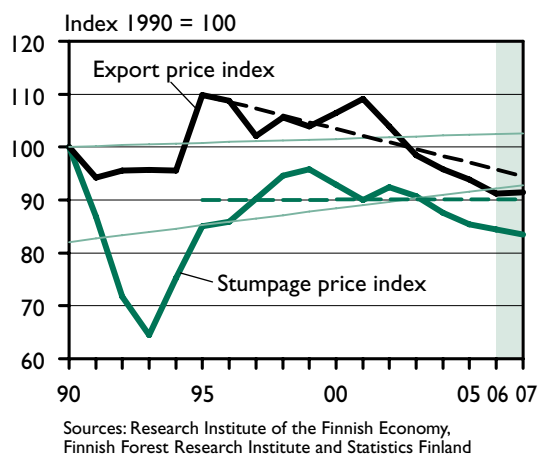
Nominal export prices of forest industry products are forecast to rise in 2007, pushing up the forest product export price index slightly. This will apply to the unit prices of both wood products and paper products. The stumpage price index is forecast to drop by about one percentage point, despite a slight rise in the nominal prices of roundwood.

The trend in both indices over the period 1995–2005 has been a declining one, although for the stumpage price index the decline has been almost imperceptible. In real terms, export prices in 2005 were about 2.5%, and stumpage prices over 5%, below their respective linear trend values. These differences are even greater when compared with the rising trend for the slightly longer period 1990–2005. The figures for 2006 will show an even greater deviation from the trend, both for export prices and stumpage prices.

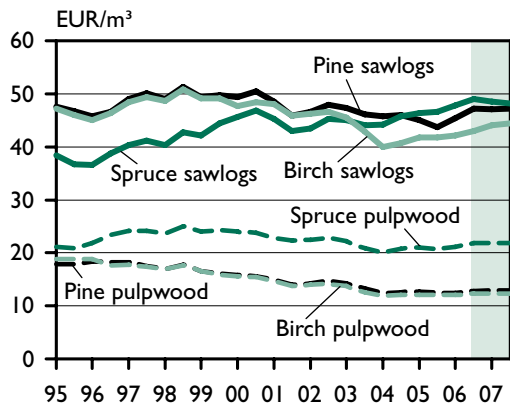
From its low level in 1991, the forest product export price index climbed to a considerably higher position by 1995, after which it fell back and did not return to that level until 2001. Since 2001, the index has fallen significantly, and in 2007 it will be at its lowest level so far. In real terms, stumpage prices rose continuously from their recession-hit low in 1993 up to 1999, after

which they have been falling. The price information system designed to support the interests of the forest industry and private forest owners was discontinued in 1999. In 2007, the stumpage price index will be about 13% below its 1999 level.

Since 1990 the difference between the two indices has varied greatly. The gap grew as large as 31 index points in 1993, when the roundwood market was very competitive. The difference narrowed considerably by 1999 and has since been less than 15 points, with the exception of 2001. In 2006 and 2007 the difference will be less than 10 points.



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



Source: Finnish Forest Research Institute

Semiannual stumpage prices by roundwood category, 1/1995–2/2007 at 2005 prices (cost of living index)

large quantity of stands fit for thinning. In addition, the new silviculture recommendations released by Forestry Development Centre Tapio in August 2006, which incorporate lower recommended diameters and ages before stands are mature enough for regeneration, could lead to an increase in the supply of final cutting stands. Weighted by the volume of roundwood sales, the average stumpage price in 2007 will be about 1% below the level of 2006, due to the higher proportion of pulpwood purchases.

Imports of Wood Chips Will Increase Further in 2007

Roundwood imports in 2007 are again expected to amount to over 20 mill. m³. The composition of imports will alter to reflect more closely the raw material needs of the pulp and paper industry. Imports of wood chips are forecast to rise again, by about 5%, as Finnish-owned sawmill production expands in Northwest Russia. The rising price of imported wood has already weakened its price competitiveness against domestic sources, however, and this will become more evident in import volumes during 2007.

Average stumpage prices in non-industrial private forestry, 2005–2007.

Roundwood	2005 EUR/m ³	2006 EUR/m ³	Change %	2007 EUR/m ³	Change %
Pine sawlogs	44.3	47.7	8	49.2	3
Spruce sawlogs	46.5	49.4	6	50.0	1
Birch sawlogs	41.8	43.2	3	45.2	5
Pine pulpwood	12.6	13.0	4	13.2	2
Spruce pulpwood	20.8	21.6	4	22.1	2
Birch pulpwood	12.1	12.5	4	12.7	2

The most significant uncertainty on the roundwood market in 2007 will be the availability and price of wood imported from Russia. This particularly concerns softwood imports, but also imports of birch sawlogs, because of the growth in Russia's own sawmilling and plywood processing capacity. An increase in Russia's export duties on roundwood from the present 6.5% to 10% in July 2007 is already anticipated and there are rumours of further increases. Political decisions are likely to underlie such changes, which could therefore occur with little advance warning. Since the Russian Federation's aim is to increase the value added by its forest industry and to attract foreign capital for its pulp industry, it may even resort to measures such as restrictions on sawlog exports. In autumn 2006, there was also some dispute over the origin of certain roundwood consignments imported from Russia by multinational companies.

3.3 Investment and Profitability in Non-Industrial Private Forestry

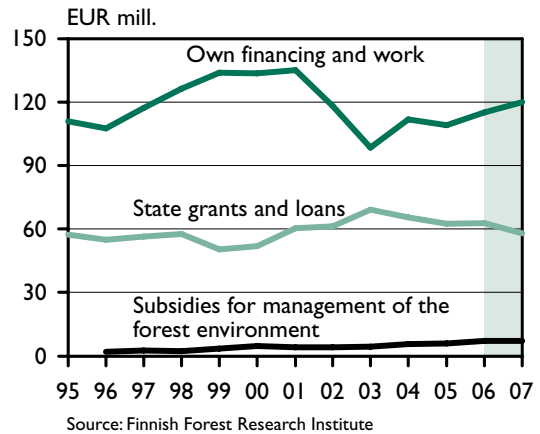
Total investment in timber production in Finnish non-industrial private forestry for the full year 2006 will rise to more than EUR 175 mill., and in 2007 the total will be slightly higher still. The achievement of these figures will, however, require an increase in the amount of financing by the private forest owners themselves, to almost EUR 120 mill. This is because the Government's budget proposal incorporates a cut of almost 10% in the funds for securing timber production. A total of approximately EUR 58 mill. in state subsidies will be available for this purpose in 2007.

Per-hectare net earnings in non-industrial private forestry will be down by 3% in 2006, to EUR 86/ha, because of the drop in sawlog fellings. Net earnings in 2007 are expected to rise to over EUR 90/ha., due to an increase in fellings. The rise in stumpage prices in 2006 will boost the overall return from timber production to 9%, and in 2007 this return will be almost 6%, which is still clearly above the ten-year average.

Subsidy Cuts Replaced by Own Financing

The amount of financing and work input from the private forest owners towards investment in timber production will amount to almost EUR 115 mill. for the full year 2006. This figure is expected to rise to nearly EUR 120 mill. in 2007. Artificial regeneration work will again form the largest expenditure item for private forest owners. In 2006, the total expenditure on forest regeneration work is likely to amount to over EUR 65 mill. The volume of artificial regeneration needs to be kept at a high level again in 2007 if private forest owners are to avoid an increase in the backlog of regeneration work.

The state subsidies for timber production, energy



State and forest-owner funding of investments in non-industrial private forestry, 1995–2007 at 2005 prices (cost of living index).

wood harvesting and chipping in 2006 are almost the same as in 2005, at over EUR 62 mill. Together with financing by the private forest owners themselves this means a total investment of almost EUR 100 mill. in silvicultural work that attracts state subsidies. The amount of subsidy available in 2007 will be less, and this will probably mean a drop of several million euros in the financing from private forest owners for this work.

The total investment in timber production in non-industrial private forestry in 2006 will amount to over EUR 175 mill. In 2007, this figure is expected to be higher still, by several million euros, and financing from private forest owners will account for almost 70% of this.

Further Cut in State Subsidies

The Government's budget proposal for 2007 incorporates state subsidies of EUR 58 mill. for work to ensure sustainable roundwood production. This is EUR 5 mill. less than in 2006, which will also mean a drop in the amount of financing by private forest owners for state-subsidised silvicultural work. In 2007, financing from private forest owners is likely to total a little over EUR 30 mill. The cuts will have the same effect proportionately on all the main areas

of work affected. One area of work not suffering cuts in the Government's budget proposal is the subsidy for energy wood harvesting and chipping, which is expected to be up by 10%, to EUR 5.5 mill. The budget proposal for 2007 will nevertheless further weaken the prospects for achieving the long-term timber production goals set for actual silvicultural work.

Under the Government's budget proposal, the state assistance for organisations that promote and monitor forestry will be 3–4% less than in 2006. This is a logical consequence of the reduction in state funding for timber production, because there will be fewer funded projects. However, it will mean further difficulty in meeting targets set in the National Forest Programme. There will also be an impact on employment, with a reduction of about 250 man-years in total, affecting employees in the organisations involved and also those carrying out the work on the ground.

No Change in Funding for Management of the Forest Environment

Funding for sustainable forestry is also used for management of the forest environment. In the ten years since it was first available in 1996, this funding has more than tripled. In 2006, the amount of funding given for furthering the management of the forest environment will total about EUR 7 mill., and almost the same sum is allocated for this in the budget proposal for 2007.

Most of the budget allocation for management of the forest environment will be paid in the form of environmental grants for safeguarding the preservation of biodiversity in the forest environment, covering a total of 4500 ha. A sum of almost EUR 2.5 mill. will be used for meeting expenditure incurred in various projects for managing the forest environment.

Stumpage Earnings Fall Again

Stumpage earnings in non-industrial private forestry have been decreasing since 2003, when they were

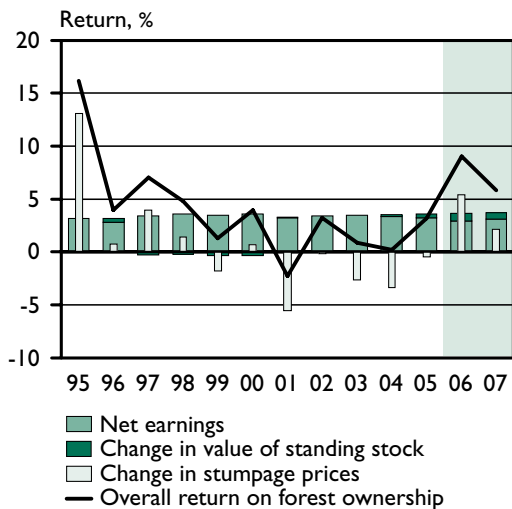
Non-industrial private forestry balance sheet calculation for 2005 and forecast for 2006–2007, EUR/ha.

	2005	2006	2007
Gross stumpage earnings			
Whole country	106.0	103.4	110.9
Southern Finland	135.4	131.9	141.0
Northern Finland	44.6	44.1	48.1
– Gross costs			
Whole country	20.9	21.7	22.0
Southern Finland	24.7	25.7	26.0
Northern Finland	13.0	13.4	13.6
+ Subsidies			
Whole country	4.3	4.3	3.9
Southern Finland	4.0	3.9	3.5
Northern Finland	4.9	5.0	4.5
= Net earnings (before taxes and external capital costs)			
Whole country	89.4	86.0	92.8
Southern Finland	114.8	110.1	118.5
Northern Finland	36.6	35.7	39.0

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

still EUR 1.55 billion. For the full year 2006, the gross stumpage earnings of private forest owners are likely to amount to a little less than EUR 1.4 billion, representing a drop of more than 2% on the 2005 figure, even though stumpage prices for all roundwood categories will be up significantly. The reason for the drop in stumpage earnings is the slight decrease in fellings in non-industrial private forests and the higher proportion of pulpwood in these fellings. Gross stumpage earnings in 2007 are forecast to rise to nearly EUR 1.49 billion, up about 9% on the 2006 figure.

The total annual investment in timber production in non-industrial private forestry has accounted for a slightly increasing proportion of gross stumpage earnings in recent years. This figure, i.e. the rate of investment, will be up in 2006 to almost 13%. In 2007, the rate will fall to just above 12%, mainly as a result of an increase in stumpage earnings.



Source: Finnish Forest Research Institute

Overall real return on timber production, 1995–2007 at 2005 prices (cost of living index).

Net Earnings Will Rise to Over EUR 90/ha in 2007

Per-hectare stumpage earnings in 2006 will be down by about 2%, to EUR 103/ha. Fellings in non-industrial private forests were down in the early part of the year, when there was a considerable drop in roundwood sales due to both sellers and buyers getting used to the new situation following the end of the forest taxation transition period. In 2007, fellings in non-industrial private forests will be up by 7%, because the industry's roundwood need will be high, its surplus stocks of harvested wood will have been used up and it does not wish to be too dependent on imported wood. Gross stumpage earnings will also be up by 7%, to more than EUR 110/ha.

Changes in the average annual costs of timber production have not been as great as the changes in stumpage earnings. Total costs of timber production in 2006 are expected to be EUR 22/ha, and the figure for 2007 is expected to be unchanged. In Southern Finland, costs will rise to EUR 26/ha and in North-

ern Finland to almost EUR 14/ha. State subsidies for timber production in 2006 amount to EUR 4/ha in Southern Finland and EUR 5/ha in Northern Finland. In 2007, these figures will be reduced by about 10%.

Net earnings from non-industrial private forestry in 2006 will be down to EUR 86/ha, despite the rise in stumpage prices. In real terms, the figure is some EUR 25–30 below the net earnings in the peak years of 1997–2000. In 2007, costs will remain at the 2006 level but state subsidies for timber production will be cut. Increased fellings and a gentle rise in stumpage prices will push up net earnings to EUR 93/ha.

Return on Timber Production Rises to 9% in 2006

The rise in stumpage prices will increase the return on timber production to over 9% in 2006. The return in 2007 will be almost 6%, which will again be above the average for the period 1995–2005 (just short of 4%).

The investment return on forest ownership is based on calculating the return on timber production in relation to capital tied up in the forests. The calculation of overall return is made up of several components: stumpage earnings, subsidies and the costs of timber production (subtracting costs will give net earnings), the change in the balance sheet value of the growing stock and the change in stumpage prices. Harvest value is used as the value of forest assets (volume of standing stock multiplied by the stumpage price for each type of roundwood).

The figure for net earnings plus the return on the change in balance sheet value is primarily dependent on the growing stock increment and costs. In recent years this figure has remained steady at more than 3%. Stumpage price fluctuations will have a decisive effect on the harvest value of the standing stock, and this can occasionally cause even large fluctuations in the percentage return.



Featured Topic

China – Global Competitor or Growing Export Market?

Anne Toppinen and Riitta Hänninen

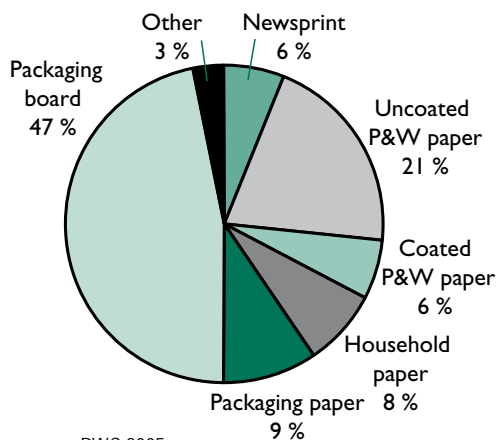
The annual rate of growth in the Chinese economy in the ten-year period to 2005 averaged 8.5%. As a producer and consumer of paper, China is now surpassed only by the United States. If its paper consumption continues to rise at the rate of the past ten years, the coming decade will see China accounting for about 40% of the global growth in paper and paperboard consumption and about 30% in sawn softwood consumption. The state of the Chinese economy and its forest industry would then be the largest individual factor influencing the global forest sector. The impact on Finland would be both direct and indirect and would concern not only global sales and market prices of roundwood and forest industry products and the industry's location decisions, but also, more generally, the sustainable use of forests worldwide.

Rapid Growth in China's Demand for Paper and in its Furniture Exports

Growth in the Chinese economy has stimulated the country's demand for forest industry products to such a level that imports have roughly tripled since 1997. China's demand for paper and paperboard has been growing in recent years at an annual rate of about 13%, whereas the figure in Europe and North America has been 2–3% or less. According to the China Paper Association, China's annual consumption of paper will be about 70 mill. tonnes by 2010, or almost 40% more

than at present. In addition, figures from the independent forest industry information provider RISI show that China's consumption of sawnwood will double to approximately 40 mill. m³ by 2015. Despite this growth in paper and sawnwood consumption, China's per capita demand for paper will be only one fifth of the level in Western countries, and its per capita sawnwood consumption considerably lower. The relationship between the demand for forest industry products and their prices has become stronger in China, and the impact on prices in international forest product markets is also apparent. This will continue in the future as China gradually becomes a more market-oriented and open economy.

Packaging board accounts for almost half of China's paper and paperboard production. In 2004, China produced 49.5 mill. tonnes and imported 6.1 mill. tonnes of paper and paperboard. The increase in its paper production has boosted imports not only of pulp but also recovered fibre, the latter rising from less than 1 mill. tonnes in 1995 to 12.3 mill. tonnes in 2004. China's paper industry makes extensive use of recycled fibre (45%) and non-wood-based raw materials (35%). About 84% of pulp production uses non-wood-based raw materials, principally straw. It is forecast that by 2020 some 40% of the world's paper investments will be in China, which will mean a doubling of its production capacity.



Source: PWC 2005

Structure of paper and paperboard production in China, 2004.

The most important products in China's wood products industry are plywood, MDF and fibreboard. Production of plywood in 2004 amounted to 21 mill. m³ and MDF and fibreboard about 30 mill. m³. Production of sawnwood totalled 17.9 mill. m³ in 2005, of which about half was sawn softwood. Sawnwood production is nevertheless thought to be much higher than this because small-scale local producers are not included in the statistics. Even the official figures on the production of forest industry products are not entirely accurate for China.

The volume of China's forest industry exports has tripled since 1997, and the country has become an important exporter of low-priced wood products. The growth in China's production and the competitiveness of its exports on the world market are based above all on its low labour costs. In recent years the composition of China's imports of forest industry products has altered somewhat. In the late 1990s, for example, China imported a lot of plywood, whereas now it imports roundwood for the needs of its own plywood industry. At the same time, its pulp imports have grown and now exceed imports of paper. This is largely due to the decisions of international forest corporations to locate paper production in the growing Chinese market.

Furniture and wood-based panels are the most important of China's forest product exports. Between

1997 and 2004, the value of China's exports of wooden furniture increased annually by about one third, and the country's share of the global furniture trade is already about 30%. The key export destinations are the United States, Japan, Hong Kong and the EU. With Chinese products already accounting for one fifth of the US furniture market, the US has begun to limit Chinese furniture imports through special duties. The success of Chinese exports is based on China having the world's lowest labour costs: for example, the cost of one furniture industry worker in Western countries is the same as that of 35 furniture industry workers in China. Besides cheap labour, the growth in furniture exports is also attributable to China's massive production of MDF.

In addition to furniture, China has also increased its production and exports of wood-based panels, especially plywood. China is already the world's biggest exporter in the plywood market, the main export destinations being the United States, Japan and the EU. In 2005, China's exports of hardwood plywood to Germany, for instance, were up by one fifth, while exports of softwood plywood to the German market almost tripled. This raised China's share of Germany's imported plywood to almost 10%.

In 2005, China accounted for about 1%, or EUR 133 mill., of the Finnish forest industry's exports. About two thirds of this consisted of paper industry products. This figure was in fact down by 10% on the 2004 total, due to the increase in Finnish-owned capacity in China. Chinese exports of forest industry products to Finland in 2005 amounted to EUR 28 mill., most of which consisted of products of the wood products industry. Furniture imports from China amounted to EUR 5 mill. in 2000 and are expected to total EUR 40 mill. in 2006.

Foreign Investment a Key Factor for China's Forest Industry

The foundation for the powerful growth in China's economy in recent years has been provided by its WTO membership in 2001 and the country's continued success in attracting foreign investment. More than half of China's exports are currently from foreign-owned companies operating in the country, and in the paper

industry this proportion is almost 30%. China's economic success in recent years has also been based on the weak exchange rate of its currency, the renminbi, which has also benefited foreign investors exporting from China. Under pressure to do so, China revalued the renminbi in 2005, but by only 2%. A key attraction for foreign companies locating in China is access to the rapidly growing Asian market. In circumstances of tough competition, companies are also looking to improve the competitiveness of their global operations, which is possible by combining technology transfer with low production costs.

Two of Finland's major forest corporations, UPM and Stora Enso, have also invested considerably in China. The value of UPM's Changshu fine paper mill, opened in 2005, was approximately EUR 900 mill. For comparison purposes, this is about three times more than the amount Finnish companies have so far been willing to invest in Russia. UPM's China strategy also includes the establishment of a paper industry research unit there.

Concentration in the Chinese paper industry, with its 3500 mills, is still very low, as only about 10 mills reach an annual production figure of 300 000 tonnes. Consolidation in the sector is thus expected in the next few years. The biggest producer of printing and writing papers is the multinational Asia Pulp and Paper (APP), which has grown considerably in recent years.

China's Imports of Wood Will Be a Challenge for the Sustainable Use of the World's Forests

The volume of China's roundwood imports has more than tripled since 1997, because of its relatively scarcity of forest resources. In 2005, it imported about 35 mill. m³ of roundwood, most of which was from Russia. Other sources are Malaysia, Papua New Guinea and Myanmar. China is the world's second biggest importer of roundwood and wood chips after Japan.

The anticipated growth in forest industry production and other use of wood (e.g. firewood) will also increase the major gap that exists between China's wood resources and its demand for wood. Estimates show that fellings in Chinese forests already exceed the level that sustainable forest use will allow, and the gap will grow in the future. The situation will be

exacerbated further by illegal fellings and continued growth in firewood use. China is developing its own national forest certification system, which is mainly an adaptation of the FSC criteria. There is still a considerable amount of work to be done on this, though several trials have already been carried out.

The Chinese government's aim is to establish a total of 13.4 mill. ha of planted forest in the period 2001–2015. The existing plantations are able to produce only 8–10 mill. m³ of pulpwood annually. In view of this, Stora Enso, for instance, has invested USD 150 mill. in eucalyptus plantations in Southwest China in order to safeguard future roundwood procurement for its investments. Nevertheless, according to a number of different estimates, China's future fellings of industrial wood will be far short of the target set, due to factors such as the nutrient-poor soil of planted forests, poor silvicultural standards and the distant locations of planted forests.

China's level of roundwood imports will inevitably have unwanted effects on the environment and on sustainable use of forests in the countries of origin. China has already faced obstacles to its EU exports, as increasing attention has been directed at environmental considerations and the sustainable use of forests (above all illegal fellings and issues concerning the origin of timber).

China Will Have Positive Impact on Finnish Forest Industry Cluster in Short Term

From the producers' viewpoint, the growth in demand for forest industry products in China will have a positive effect on world market prices of forest industry products. China's increasing imports and investment will open up new opportunities for Finnish forest companies as well, and so its importance for the Finnish forest sector as a whole will remain positive in the next few years. The market for Finnish paper industry machines, equipment and technological know-how in particular has been extremely good in China in the past few years. On the down side, however, the investments in China by Finnish forest industry companies will also have an adverse impact on the development of Finnish-based production units by tying up capital and human resources.

China's dependence on imports will probably grow in the future because of the strong growth in demand and the shortage of home-grown roundwood resources. Increased consumption will mean greater imports of roundwood, pulp and recycled fibre in particular, which will affect the world market for these products. A tighter market could lead to major price fluctuations. China's demand growth will also bring further pressure on world market prices for roundwood and recycled fibre. With production growing rapidly, it is possible that price fluctuations will intensify, for example in the market for coated fine paper. If China's own consumption does not grow quickly enough to keep up with the growth peaks in production, exports from China could grow, leading to a temporary downward pressure on prices, which has already happened on the fine paper market. On the plywood market the growth in China's exports is forecast to level off as domestic demand rises.

In the longer run, China's ability to increase its exports of forest industry products will improve and, as a highly competitive producer, its exports may grow considerably faster than its imports. There will also be a growing proportion of value-added exports as a result of the increasing adoption of modern technology, the rising volume of imported raw materials and higher freight costs. This will mean even tougher competition on the European markets of importance to Finnish forest industry companies. Thus, the answer to the question posed in the title of this article is that China

is undoubtedly both a competitor and a growing market for the Finnish forest industry. The competitiveness of China's forest industry will, however, depend not only on demand and movements in exchange rates, but also on the national economy in general, complete with its political risks. Future developments will also be determined by the strategies adopted by the globalising forest industry companies themselves.

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Finnish Forest Sector Economic Outlook

The Finnish Forest Sector Economic Outlook is an annual publication that examines economic trends and business cycles in the Finnish forest industry and forestry sector. It gives an overview of recent developments and includes forecasts for export volumes and prices, roundwood consumption and prices, and investment in private forestry. In addition, it contains a few short articles on topical matters.

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