



# Finnish Forest Sector Economic Outlook 2008–2009

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## Summary

*The demand for Finnish forest industry products in 2008 has been adversely affected by the slowdown in euro area GDP growth, the drop in housing construction, the high level of interest rates and the uncertainties on the financial markets. Sawntwood production and sawntwood export volumes and prices are down in 2008 by about one fifth on the figures for 2007, which was a boom year in the sawmilling industry. Production and exports in the paper industry are also down in 2008. Despite capacity closures, Europe's paper market is still experiencing oversupply, which is evident in the weak price trend for end products and in poor profitability. With the drop in production volumes, the Finnish forest industry's roundwood consumption in 2008 is down on the previous year's total, which is also the case for the volume of domestic commercial fellings, the level of stumpage earnings and forest industry employment. Nominal stumpage prices of softwood sawlogs will also be lower than the record levels of 2007. Pine pulpwood stumpage prices have risen due to growth in demand as declining volumes of sawmill chips are partially replaced with pulpwood. Roundwood imports remain high in 2008, and preparations are being made for Russia's roundwood export duty increases at the start of 2009. The Finnish government's decision to reduce the roundwood sales tax will boost the domestic supply of roundwood.*

*Forest industry production and exports in 2009 will be down further as GDP growth declines on the main export markets. Sawntwood prices are nevertheless expected to be up slightly in the latter half of the year as Russia's export duties adversely affect the global availability of sawlogs. Paper prices are forecast to remain at their 2008 levels due to the capacity cuts,*

*despite any decrease in demand in Europe. The industry's consumption of roundwood will fall further as production decreases, but domestic commercial fellings will be up as roundwood imports shrink to almost half of their 2008 levels. If the economy was booming, such a reduction in imports would push up the price of domestic roundwood. However, with the forest industry's market faltering, the nominal stumpage prices of softwood sawlogs will be down again slightly in 2009, and pine and birch pulpwood stumpage prices will be close to the 2008 average.*

*The principal uncertainty in the forecasts for the Finnish forest sector is the possibility that the state of the economy on export markets and domestically could deteriorate, which would reduce the demand for forest industry products and their prices and would also weaken the profitability of production.*

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### Considerable Slowdown in GDP Growth on the Finnish Forest Industry's Export Markets

Real growth in the world economy weighted according to the distribution of Finnish forest industry exports will slow to 2.6% for the full year 2008, and will slow further in 2009. GDP growth in Germany, the United Kingdom and Japan, which are the main export markets for the Finnish forest industry, is down considerably on the 2007 figures. Growth in the economies of Sweden and Canada – both forest industry competitors for Finland – has also fallen. Rising costs, higher interest rates, fading demand in export markets and the uncertainties in the

housing and financial markets have all served to slow GDP growth in the euro area to about 1.5% during 2008, and will slow growth in 2009 to even less than 0.5%. German GDP growth will be up by about 1.5% in 2008, but in 2009 the German economy could experience zero growth. In the UK economy, the growth figure for 2008 will be about 1% and could even be negative in 2009. GDP growth in Russia and China will slow a little on the 2007 figures, but will nevertheless continue to be significantly higher than elsewhere in the world in both 2008 and 2009. In the United States, the economy has slowed in 2008 and growth may even come to a standstill in 2009. By contrast, GDP growth in North Africa and the Middle East is forecast to continue. The forecasts for the Finnish economy indicate that GDP growth will remain above the euro-area average, but slower export growth in 2008 will mean a drop in GDP growth to 2.5% for the year, and to about 1.5% in 2009.

#### Weak Outlook for Sawntwood Market

The slump in the US housing market and the uncertainty on financial markets were already being felt in Europe in the first half of 2008, with a considerable weakening in sawntwood demand and prices as housing construction declined. Sawntwood demand on the Finnish market has also been affected by the fall in housing construction. Production limits are nevertheless expected to reduce producers' sawntwood stocks in Europe in the second half of 2008, which will curtail the fall in prices. The nominal average export price of Finnish sawntwood for the full year 2008 is expected to be down by about one fifth, and both production and exports are expected to be down by a similar extent.

Sawntwood consumption in the euro area in 2009 is expected to be decrease further as housing construction declines, and so Finnish sawntwood production and exports will again be down slightly. Production costs will remain high, and this is likely to continue to limit sawntwood production in Europe, thus reducing oversupply on the European market. The absence of Russian roundwood on the world market could also reduce the oversupply,

leading to an upsurge in sawntwood prices in Europe in the latter half of 2009. China and Japan, both major importers of Russian roundwood, may meet some of their roundwood needs by importing more processed and converted products, such as sawntwood. However, no significant rise in sawntwood prices can be expected before a revival in Europe's construction sector. The average export price of Finnish sawntwood in 2009 is expected to be below the average for 2008. The cyclical trend on the plywood market has been less dramatic than on the sawntwood market. The average unit price of plywood exports will be up in 2008 by about 6% on the 2007 figure, due principally to the upward price trend for birch plywood. The volume of Finnish plywood exports will be down in 2008 in comparison with the previous year, because of the curtailed growth in plywood consumption on the Western European market as a result of the trend in the construction sector. In 2009, plywood consumption in Western Europe is expected to decline further, which will in turn reduce the volume and price of softwood plywood exports.

#### Paper Exports Down

Paper industry capacity has been closed in Finland and elsewhere in Europe as a result of the protracted period of oversupply and the weak trend in prices. Despite this, new mills have come on stream in Europe and the sector is still affected by oversupply. The significant reduction in GDP growth and the attendant weakening in the demand for paper have led Finnish forest industry corporations to announce further closures of production facilities and machines during autumn 2008, to take effect at the end of 2008 and in 2009. With substantial cuts in production capacity, Finland's production and exports of paper are expected to be down by about 6% for the full year 2008, and production and exports of paperboard by about 2%, compared with the previous year's figures. Although export prices of paper and paperboard in the first half of 2008 have risen a little, the average nominal price for the whole of 2008 will be about the same as in 2007 because of the weaker demand.

The declining GDP growth in export markets will reduce the demand for paper in 2009. With the forest industry making further cuts in its production capacity in Finland, production and exports of paper and paperboard will be down in 2009. Production and exports of paper are forecast to be down by about 4%, and paperboard by about 3%. Although considerable cuts are being made in the capacity of Europe's paper industry, it may be difficult to raise prices because of the lower demand. Nominal average export prices of Finnish paper and paperboard in 2009 are forecast to remain at around their 2008 levels.

### Decrease in Industry's Roundwood Consumption and Fall in Stumpage Prices

In 2005–2007, the Finnish forest industry used an average of 73 mill. m<sup>3</sup> of roundwood annually, of which about 55 mill. m<sup>3</sup> was domestic roundwood. The industry's roundwood use will be down in both 2008 and 2009. Total commercial fellings in 2008 will be down to 51 mill. m<sup>3</sup> as a result of the reduction in sawnwood and paper production. Commercial fellings in non-industrial private forests will be down by 13%, whereas fellings in company-owned forests and in forests owned by the state enterprise Metsähallitus will be down by about 5%. Imports of roundwood are expected to be up on the 2007 total, to just over 18 mill. m<sup>3</sup>. Despite the reduction in fellings, stocks of harvested wood are up considerably.

The rapid drop in the demand for sawnwood already had a downward effect on the stumpage prices of softwood sawlogs in 2007. The drop in sawnwood production will also mean a reduction in softwood sawlog demand for the full year 2008, and the nominal stumpage prices of softwood sawlogs are expected to be some 12–15% below the average for 2007. By contrast, the stumpage price of birch sawlogs will be up by several per cent due to the favourable state of the market for birch plywood and the scarcity of birch sawlogs. The stumpage prices of pine and birch pulpwood are rising slightly, and delivery sale prices significantly, because pulp demand and export prices were up in the

first half of 2008 on the previous year's level. Pulpwood prices will also be affected by the drop in sawmilling production, as this means that the reduced volume of sawmill chips will be partially replaced by pulpwood removals.

Total commercial fellings in 2009 will be up a little, even though the forest industry's production will be lower than in 2008. The need for Finnish roundwood will nevertheless remain high, because the increase in Russia's roundwood export duties will bring an end to Finnish imports of Russian roundwood, with the exception of birch pulpwood and wood chips. The Finnish government's decision to introduce tax relief on roundwood sales revenue is expected to boost the supply of domestic roundwood. As sawnwood production decreases, the nominal stumpage prices of softwood sawlogs are likely to continue to decline a little, whereas the stumpage price of birch sawlogs is expected to remain at the 2008 level. Although birch plywood production is expected to decrease, the demand for domestic birch sawlogs will be up because of the almost complete cessation of imports. Stumpage prices of softwood pulpwood will remain at close to their 2008 levels, as the reduced volumes of Finnish sawmill chips will be replaced in the paper industry with domestic pulpwood. The stumpage price of birch pulpwood is expected to be up by about 5%. The total volume of roundwood imported from all sources is forecast to be down in 2009 by at least 40%, to about 11 mill. m<sup>3</sup>.

### Forest Industry's Profitability Declining

The profitability trend in the Finnish forest industry has turned onto a downward track during 2008. Among the various subsectors, the greatest deterioration in profitability is in the wood products industry. This is especially due to the disparity between the price trends for sawnwood and wood raw material. With the continuing fall in sawnwood prices, the decrease in domestic sawlog prices has levelled off and imported sawlogs have risen significantly in price. No real relief is expected for the profitability trend in the wood products industry until at least 2010, when construction activity is likely

to pick up on both the Finnish market and export markets.

In the pulp and paper industry, profitability for the full year 2008 will only be down slightly on the 2007 level, despite the trend in product prices being weaker than anticipated. Contributory factors in this are the production cuts and cost-saving measures aimed at raising profitability, the result of which is a gradual reduction in Europe's oversupply of paper grades that have been the subject of capacity cuts. The stronger US dollar has also improved the sector's competitiveness and profitability. The continuing deterioration in the economic outlook and the fall in demand are, however, jeopardising the prospects of successfully raising export prices of paper, which is essential for profitability. Thus no significant improvement is expected in the pulp and paper industry's profitability in 2009.

Russia's decisions on its roundwood export duties will have a significant impact on the operating environment of the Finnish forest industry in 2009. Imposition of the duty increases will lead to considerable changes in the Finnish forest industry's roundwood procurement. Finding alternative raw material sources may prove difficult and so further cuts in production capacity are likely. However, the almost complete cessation of Russian roundwood exports, especially softwood sawlogs, will hamper raw material availability not only in Finland but in many other European countries too, and particularly also in China and Japan. This will reduce the world supply of sawnwood and could raise sawnwood prices on export markets by more than expected. This would have a favourable impact on the profitability of the Finnish wood products industry, which would be felt during 2009. However, for the Finnish-based pulp and paper industry, the effect of Russia's roundwood export duties will be purely negative.

### Stumpage Earnings Down but Investment in Non-Industrial Private Forestry Up

Total investment in timber production in Finnish non-industrial private forestry for the full year 2008 will rise to over EUR 200 mill., which represents more than 13% of stumpage earnings.

As a result of the increase in the surface area for forest regeneration, total investment in 2009 will already reach about EUR 210 million, of which almost one third will be financed using the support available for financing sustainable forestry. By contrast, stumpage earnings in 2008 will be about 25% below the record level of 2007, falling to less than EUR 1.6 billion. In 2009, stumpage earnings will be down slightly on the 2008 figure. The decrease in activity on the sawnwood market is clearly visible in the figure for operating profit in non-industrial private forestry, which will be down on the peak level reached in 2007, to below EUR 100/ha in both 2008 and 2009. Due to the drop in stumpage prices, the real return on assets in timber production will be about minus 10% in 2008.

### Assumptions and Uncertainties in Forecasting

The aim of this *Economic Outlook* is to provide information on the current state of the entire Finnish forest sector and the outlook for the sector in the near future. The forest sector forecasts are based on publicly available statistics, world economic forecasts, market information and other forest sector data from different sources, and research conducted by the Finnish Forest Research Institute. The forecasts presented here are based on the principle of derived demand, according to which fluctuations in GDP growth on the domestic and export markets will, via demand, be reflected in forest industry production and thus the domestic roundwood market. Changes in the forest sector's operating environment, such as Russia's export duties and the Finnish government's economic policy measures, are taken into account in making the forecasts. If GDP growth turns out to be below the level forecast, this would mean that export prices, production and profitability for the Finnish forest industry will be lower than indicated in the forecasts given here. 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.

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 based mainly on forest sector information available in late September and early October 2008 and world economic forecasts for 2008 and 2009. 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 in export markets. At the time of writing there are a number of uncertainties and risks concerning economic growth, the most prominent of which are the possible deepening of the financial crisis that originated in the United States to become a credit crisis, and the prospect that inflation rates may remain high. Such a credit crisis would compound the general economic uncertainty and would ensure that interest rates remain high and that investment financing and private consumption face a difficult period. If

Key forecasting variables, 2007–2009.

Forecasting variables	2007	2008	2009
	% change from previous year		
Sawnwood production	2	-20	-1
Sawnwood export	-8	-18	-3
Sawnwood export price	23	-18	-3
Paper production	1	-6	-4
Paper export	1	-6	-4
Paper export price	-2	1	0
Commercial fellings	13	-12	1
Roundwood imports	-9	4	-40
Sawlog prices			
Pine	34	-12	-5
Spruce	33	-15	-4
Birch	10	3	0
Pulpwood prices			
Pine	23	2	-1
Spruce	11	-9	-1
Birch	21	2	6

Price changes are nominal

inflation were to remain above the target level of about 2% set by the European Central Bank, this would keep central and market interest rates high and would delay the recovery in the euro area's housing market and its economies. The weather and harvesting conditions in winter 2008/09 will also affect the extent to which roundwood procurement can rely on domestic sources to replace Russian imports.

## NOTE

The forecasts used in this Outlook report were made on the assumption that Russia will impose substantial increases in its roundwood export duties as of 1 January 2009 (see p. 34). However, on 12 November 2008 it was announced that the export duty increases will be postponed by 9–12 months. The effects of this postponement are likely to be minimal as

the Finnish forest industry has already introduced measures to procure roundwood from alternative sources and is unlikely to make further significant alterations to these arrangements.

At this point, it can be added that the most recent economic forecasts world wide are gloomier than those available in early October when this report was produced.



## I World Economy

*GDP growth in Germany, the United Kingdom and Japan, which are the main markets for the Finnish forest industry, has weakened considerably in 2008 compared with 2007. The Swedish and Canadian economies – both competitor countries for Finland's forest industry – have also slowed down. Real GDP growth in the world economy weighted according to Finnish forest industry exports will be 2.6% for the full year 2008. Rising inflation, higher interest rates, curtailed demand in export markets and the uncertainties in the housing and financial markets have all served to slow GDP growth in the euro area to about 1.5% during 2008, and will slow growth in 2009 to even less than 0.5%. German GDP growth will be up by about 1.5% in 2008, but in 2009 the German economy could experience zero growth. Growth in the UK economy for 2008 will be about 1% and could even be negative in 2009.*

*GDP growth in the Russian and Chinese economies will slow a little on the 2007 figures, but will nevertheless remain high in both 2008 and 2009. Growth in the US economy has slowed in 2008 and may even come to a standstill in 2009. The greatest uncertainties surrounding forecasts for the world economy are an escalation of the financial crisis into a global credit crisis, a deepening of the downward slide in the euro area's housing markets, and a sharp rise in raw material and energy prices.*

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### Euro Area on the Brink of a Recession?

Euro area GDP growth in 2007 was moderate, despite the very modest private consumption growth as a result of various factors adding to uncertainty. Investment in the euro area in 2008 will nevertheless be up by a total of more than 6%, and export growth will reach 4.4%. Euro area GDP growth was 2.6% in 2007.

The effects of the housing and financial market crisis, which originated in the United States, a strong euro, rapidly rising raw material and energy prices and high interest rates, pushed the euro area onto a slower growth track in the first half of 2008. Although first-quarter GDP was up by 1.8% on the same quarter in 2007, the second-quarter figure showed a contraction of 0.8% on the first quarter (adjusted to annual rate). Indicators show that the financial crisis has caused a quick deterioration in business and household confidence regarding the future, and that this confidence is now at a very low level.

With accelerating inflation and the consequent reduction in households' real purchasing power, and with the deteriorating employment situation and the crisis in the financial markets, consumers have become very cautious. The postponement of purchases and purchase decisions has meant a clear slowdown in the euro area's private consumption growth in 2008. Although exports to Asia and Eastern Europe have continued at moderate levels in the first half of 2008 and the euro has weakened against the US dollar since summer 2008, export growth will slow down in the second half of the year as GDP growth and demand slow in the world economy. Export growth for the full year 2008 is expected to be approximately 4%.

High interest rates, rising costs, tighter credit terms and the weakening demand for products are also curbing investment growth. This is also being exacerbated by the slump in the housing market in Spain and Ireland, the sluggish growth in the French economy, and the continued poor housekeeping in the Italian economy. Nordea forecasts that euro area investment growth for 2008 as a whole will be in excess of 3%, and GDP growth 1.3%.

Although the euro is expected to continue to weaken slightly in 2009, and thus to aid the export industry, the concurrent slowdown in global demand will restrain the growth in euro area exports, keeping this to just short of 2%. Investment growth is being substantially curtailed by the high interest rates, fears of a steepening decline in housing markets and concern that the financial crisis will turn into a credit crisis for Europe. Private consumption in 2009 will not show any marked improvement on 2008, despite lower inflation. According to the International Monetary Fund (IMF), the Irish, Spanish and Italian economies could even go into recession in 2009, and the overall euro area GDP growth will be only 0.2% for the year.

Germany, constituting about one third of the entire euro area economy, is the single most important export market for the Finnish forest industry by value. The latest figures on the German economy – an indicator of what to expect elsewhere in the euro area in 2009 – are gloomy. Even though figures for the first half of 2008 show a further drop in unemployment, the IFO index of business confidence hit a 15-year low in August. Second-quarter German GDP growth also showed a contraction on the first-quarter figure. It is clear that uncertainty is limiting growth in private consumption, which constitutes around half of all GDP growth in developed economies. Germany's GDP growth is expected to be up by about 1.5% in 2008, while in 2009 it is expected to be almost at a standstill.

The greatest forecasting uncertainties for the euro area are the state of the US economy, the continuation of uncertainties in the financial markets, a possible credit crisis, developments in the housing market and the inflation rate. The

worst of the upward pressure on prices is over, however, because the slower GDP growth in the second half of 2008 will reduce the demand for oil products and raw materials. In 2009, the inflation rate is expected to settle at about 2%, which will allow the European Central Bank to continue to reduce its reference rate by 0.5–1 percentage points in order to revive the economy and the financial markets. Any interest rate reductions will also have an adverse effect on euro exchange rates. The US dollar's average rate against the euro in 2009 is forecast to be below 1.40, compared with the average of 1.53 (based on monthly figures) for January–August 2008. With the world economy in a somewhat fragile state, even minor storm damage in oil production locations or regional conflicts or other uncertainties will be quickly felt in the world price of oil, in costs in general, in EUR/USD exchange rates, in inflation expectations and, through these, in monetary policy decisions. Even with calm gradually descending on the financial world following the autumn 2008 crisis, uncertainty will keep interest rate margins above their normal levels.

### Slowdown Elsewhere in Europe Too

The Finnish forest industry's second-most important trading partner in terms of export value is the United Kingdom, where GDP growth in 2007 amounted to 3.1%. The rise in world market prices of raw materials and oil has accelerated inflation in the UK to almost 4%. The growth in private consumption and investment in the UK is slowing down as a consequence of the reduction in real household wealth following the housing slump and due to the deteriorating employment situation. Together with the crisis on the financial markets and due to the weak demand on export markets, this will reduce the UK's GDP growth for 2008 to about 1%, and the economic difficulties are set to continue in 2009. The growth in private consumption could almost come to a standstill and investment may even decline if the problems on the housing and financial markets become more acute. Exports will be up in 2009 by only less than 1% because of

Growth forecasts for world economy (real GDP, annual percentage change).

Area	Proportion of Finnish forest industry's total export value 2007, %	Actual GDP growth % 2007	ETLA 2008	IMF 2008	ETLA 2009	IMF 2009
<b>Weighted by proportion of Finnish forest industry exports</b>	100.0	3.7	2.7	2.6	2.4	1.5
EU-27	63.8	2.9	1.8	1.7	1.6	0.6
Euro countries	41.4	2.6	1.6	1.3	1.4	0.2
Germany	18.0	2.6	1.8	1.8	1.2	0.0
United Kingdom	11.3	3.1	1.6	1.0	1.2	-0.1
Sweden	3.6	2.7	1.8	1.2	1.5	1.4
Russia	4.9	8.1	8.0	7.0	7.0	5.5
United States	6.2	1.7	1.7	1.6	1.6	0.1
Asia	11.2	8.7	7.0	7.7	6.6	7.1
Japan	3.6	2.1	0.6	0.7	1.3	0.5
China	1.6	11.9	10.0	9.7	9.0	9.3
Other	13.9					

Forecast by Research Institute of the Finnish Economy (ETLA) published September 24, 2008.  
Forecast by International Monetary Fund (IMF) published October 8, 2008.

the expected strengthening of the pound against the euro and the poor export demand. Although lower inflation will provide the opportunity for the Bank of England to introduce a further cut in its central rate, the effects of this would not extend into 2009. The IMF expects the UK's GDP to shrink by 0.1% in 2009.

In contrast to Sweden's 2007 GDP growth of 3%, it looks like the country will experience much lower GDP growth for 2008. Due to the slowdown on the export markets and the faint strengthening of the krona against the euro, the growth in exports will slow to 4.5% for 2008 and to 3.5% in 2009. Construction investment in 2008 will be up by only less than 1%, and in 2009 such investment is not expected to grow at all. With the inclusion of public investment projects, overall investment will be up by a total of over 4% in 2008, though this is likely to fall back to about 0.5% in 2009. Despite real growth in households' purchasing power, the increase in uncertainty is also evident in private consumption, which will be up by just short of 2% in 2008, and by a little over 1% in 2009. Sweden's GDP is expected to grow by almost 1.5% in both 2008 and 2009.

The period of sustained growth in the new EU member states has now come to an end as well. In Estonia, the slump in the housing

market, the sluggish demand on export markets and the deterioration in price competitiveness internationally are all contributing to a reduction in GDP growth, by more than 1% in 2008 and by 0.5% in 2009. A similar fate threatens the Latvian economy. In Lithuania, however, GDP growth will be approximately 3.5% for 2008 as a whole, and about 1% in 2009 on account of the country's successful fiscal policies and its exports of refined oil products. Elsewhere in Eastern Europe, GDP growth is showing a general slowdown, and economies are not expected to pick up until at least the latter half of 2009.

### Russian Economy Almost Unchanged

The Russian economy has been growing at an annual rate of 7–8% in recent years. In 2007, Russia's GDP growth reached 8.1%, and almost this level of growth is expected to continue in both 2008 and 2009. The country's high growth has been based on exports of oil and energy products, and the rapid rise in world market prices of oil and raw materials that began in 2007 has further boosted Russia's export earnings. Although most of these earnings have been directed to a special fund, some of them have also been channelled into consumption and investment.

Figures for the first half of 2008 indicate that Russian GDP growth has continued to be strong, although investment growth is showing a slight drop on the 2007 figure. Private consumption is expected to be up for the full year 2008 by more than 12%, and investment by 18%. The increase in public consumption is being held at only about 4% for economic policy reasons. Russia's GDP growth for the full year 2008 is nevertheless expected to be approximately 7%.

Strong economic growth has brought with it high inflation, which has long been at almost double figures, and the country's major population centres are already experiencing occasional labour shortages. Furthermore, Moscow is now said to be the world's most expensive capital city. Russia's inflation rate is forecast to rise to as much as 15% for the full year 2008, which will weaken household purchasing power and adversely affect consumption in 2009. The effects of the tighter monetary policy measures begun in spring 2008 will not be evident in the economy until 2009. Private consumption is nevertheless expected to be up in 2009 by a further total of about 10%, and investment by 16%. High inflation and the balance of payments' current account surplus will also have an adverse impact on the country's real price competitiveness in foreign trade. Despite the momentary weakening of the ruble as a result of the Georgian conflict, its value is expected to pick up during 2009. This, together with the drop in demand in the euro area and in other important export markets, will slow export growth in 2009 to slightly over 3%. Russia's GDP growth in 2009 is forecast to be 5–6%.

### US Economic Downturn Continues

GDP growth in the United States was 1.7% in 2007. Following the slump in the housing market, with housing construction down by almost 18% in 2007, growth has been maintained by the increase in private consumption and exports.

Figures for the first half of 2008 show that the US economy grew in the first quarter by an annual equivalent of 0.9%, and in the second quarter by 1.9%. The figures give to some extent

too positive a view of the situation, because the growth is based largely on the tax relief introduced in advance of the presidential elections and on the growth in public consumption. The effects of these measures are now diminishing, and the situation for the second half of 2008 looks gloomy. Private consumption is being kept in check by higher inflation (over 5%), household indebtedness, declining house prices (and thus the drop in real household wealth), the deteriorating employment outlook, the chaos on the financial markets and the general increase in uncertainty. The growth in private consumption in 2008 as a whole is therefore expected to be no more than just under 1%. Housing construction in 2008 has slumped by almost 20% on the previous year's figure, and corporate investment in machinery and equipment has also continued to decline. Supported by the weak dollar, exports have so far saved the US economy from recession. Nordea forecasts indicate that the 2008 growth in US exports will be almost 8%, and that the country's GDP growth will slow to an overall 1.3%.

The economic downturn will continue in 2009. Housing construction is forecast to shrink further by almost 4%, and investment in machinery and equipment is also expected to decline on account of the poor outlook for business profitability. The growth in private consumption is likely to be positive, but by only a small margin. The only bright spot in the economy will be the export growth of nearly 5%, which is nevertheless lower than in 2008. Exports will be adversely affected by the slower demand growth in the world economy and the strengthening of the dollar. IMF forecasts give a figure of 0.1% for GDP growth in the United States in 2009.

The greatest forecasting uncertainties are again inflation and the problems on the financial markets, which, if they worsen, would lead to lower GDP growth than expected. Although inflation is expected to fall as a result of the decrease in oil and raw material prices, there is still some way to go to reach the target level of about 2% set by the US Federal Reserve. The central rate (currently 1.5%) is unlikely to be altered before the end of 2008. Any sudden increase in inflation

could even add pressure to raise interest rates, which would further stifle economic growth. The pace of the revival in private consumption and investment will also be slowed by any increase in general uncertainty due to the problems of the housing and financial markets, and by any credit crisis. In the worst case, a 'credit crunch' could even lead to a short-term recession in the economy. The ability of a new administration to respond through fiscal policy measures will also be a key factor in reviving public confidence and the economy in general.

Canada's GDP growth in 2007 was 2.7%, though there was a clear reduction in growth in the second half of the year. GDP growth in the first quarter of 2008 showed a contraction of almost 1% on the first-quarter figure. Second-quarter growth was only 0.3%. Although private consumption is growing at an annual rate of almost 4%, the weak demand in the neighbouring US economy will mean a fall of over 4% in Canada's export growth in 2008. With the decline in construction too, Canada's GDP growth will be 0.8% in 2008, according to OECD estimates. In 2009, the Canadian dollar is forecast to remain unchanged against the euro but to weaken a little against the US dollar. This will help the export industry achieve a growth rate of more than 1%. With 3% growth in private consumption and a revival in investment, Canada's 2009 GDP growth is expected to be 1.9%.

### China Fares Well, Japan Does Not

China's GDP growth has been running at an annual rate of over 10% for many years, and in 2007 it amounted to 11.9%. However, as a result of the deteriorating outlook on China's export markets and the tighter monetary and fiscal policies pursued by the Chinese government, the country's GDP growth – which has overheated in places – will slow a little both in 2008 and 2009. The price competitiveness of China's exports is weakening as a result of the increase in inflation to 7% during 2008, and

the strengthening of China's currency. Exports are nevertheless forecast to be up by an annual total of 11%, and in 2009 by 12%. Investment will be up as well in 2008, by as much as 14%, though this is a somewhat misleading figure. The total includes, for instance, construction projects for the Olympic Games and reconstruction work following earthquake damage, which account for several percentage points of the overall growth in investment. Growth on China's domestic market will continue to be strong though, with private consumption growth forecast to be 10–12% both in 2008 and 2009. China's GDP growth is expected to be up in 2008 by 10%, and in 2009 by 9%.

Japan's economy grew by 2.1% in 2007. Although its first-quarter GDP in 2008 was 3.2% up on the previous quarter, the second-quarter growth was already down by 2.4%. With private consumption and investment being in the doldrums in recent years, exports have been driving growth in the Japanese economy. Now, however, due to the weakness in demand on the export markets, Japan's export growth will also slow in 2008, to a little over 6%, and in 2009 to 4%. With interest rates low, Japan has no room for manoeuvre in seeking to revive the economy through monetary policy measures. Furthermore, indebtedness prevents any attempt at revival through extensive fiscal policies. With different confidence indicators warning of bad times ahead for businesses in Japan, the willingness of businesses to invest is diminishing. Consumer confidence is also low due the weakening employment situation and rising inflation. Total investment is expected to be down in 2008 by 2%, and in 2009 by about 0.5%, and private consumption growth will be about 0.5% both in 2008 and 2009. Japan's GDP growth for 2008 as a whole will be less than 1%, and in 2009 about 0.5%.

According to OECD figures, GDP growth in Egypt, Morocco, Algeria and Libya will average almost 6.5% in both 2008 and 2009. Investment growth in some of these markets could even exceed 10%.



## 2 The Finnish Forest Industry

### 2.1 Production and Exports in the Sawmilling and Plywood Industries

*The market for sawn softwood in Western Europe has weakened considerably, as the effects of the economic downturn in the US housing market are felt in Europe. Housing starts in Western Europe in the first half of 2008 were down significantly on the same period the previous year. This has had a significant adverse impact on sawnwood demand and prices, and the Finnish market too is experiencing a drop in sawnwood demand as a result of the reduced level of housing construction. Production cuts are nevertheless expected to reduce producers' sawn softwood stocks in the second half of 2008, which will curtail the fall in prices. The average export price of Finnish sawnwood for the full year 2008 is expected to be down by about one fifth, and both production and exports are expected to be down by the same percentage. A fall in production of a similar magnitude last occurred in 1981–1982.*

*Finnish sawnwood exports to the euro area in 2009 will be slightly down again, by about 3%, due to the further decline expected in euro area sawnwood consumption as a result of the decline in housing construction. Production costs will remain high, and this is likely to limit sawnwood production in Europe, which will reduce the oversupply on the European market. The absence of Russian roundwood on the world market could also reduce the oversupply, leading to a slight strengthening of sawnwood prices in Europe in the latter half of 2009. China and Japan, both major importers of Russian wood, may meet some of their roundwood needs by importing more processed and converted products,*

*such as sawnwood. No significant rise in prices can be expected before a revival in Europe's construction sector, however. The average export price of Finnish sawnwood in 2009 is expected to be below the average for 2008.*

*The cyclical trend on the plywood market has been less pronounced than on the sawnwood market. The average unit price of plywood exports in 2008 will be up by about 6% on the 2007 figure, due to the relatively favourable price trend for birch plywood. The volume of exported plywood will be down in comparison with 2007, due to the lower growth in plywood consumption on the Western European market as a result of the trend in the construction sector. In 2009, plywood consumption in Western Europe is expected to decline further, which will in turn reduce the volume and price of softwood plywood exports in particular.*

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#### Housing Construction Outlook Still Weak in 2009

European consumption of sawn softwood in 2007 was up by almost 5% on the previous year's total, due primarily to the high level of construction in the first half of the year. In 2008, demand has fallen on account of the slowdown in construction. Euroconstruct's June 2008 forecast indicates that new housing construction in Western Europe will be down for 2008 as a whole by over 8% on the 2007 total, and that in 2009 the year-on-year decrease will be 5%. The growth in building renovations will be close to zero in both 2008 and 2009, which will

	Sawnwood	%	Plywood	%
Production	12 400	100	1 410	100
*Domestic use	5 319	43	171	12
Exports:	7 081	57	1 239	88
EU	4 027	32	1 039	74
Africa	1 448	12	2	0
Asia excl. Japan	484	4	65	5
Japan	940	8	14	1
North America	8	0	35	2
Russia	9	0	4	0
Other	165	1	80	6

\*Estimated domestic use = production – exports

Sources: Finnish Forest Industries Federation and National Board of Customs.

do nothing to aid the demand for sawnwood. In North America and Japan, too, sawnwood demand and consumption are falling.

In the United States, the sawmilling industry has adjusted itself to the fall in demand and to lower sawnwood prices by instituting significant cuts in capacity. Demand will continue to fall in the remainder of 2008, and will remain low in 2009. In Japan, there was a slight setback in the demand for sawnwood due to certain problems related to the granting of building permits in 2007. Although the construction sector is faring better in the latter half of 2008 than in the first half of the year, the weakening economic trend will probably reduce the level of construction in 2009.

In Finland, the number of housing construction permits granted in January–June 2008, in terms of cubic metres, was down by about a third on the same period the previous year. According to forecasts by Euroconstruct, there will be a further reduction in new housing construction in 2009. With the forecast growth in building renovations only partially compensating for the drop in sawnwood demand in new construction, consumption in both 2008 and 2009 will be down by 2–3% on the 2007 figure of 5.1 mill. m<sup>3</sup>.

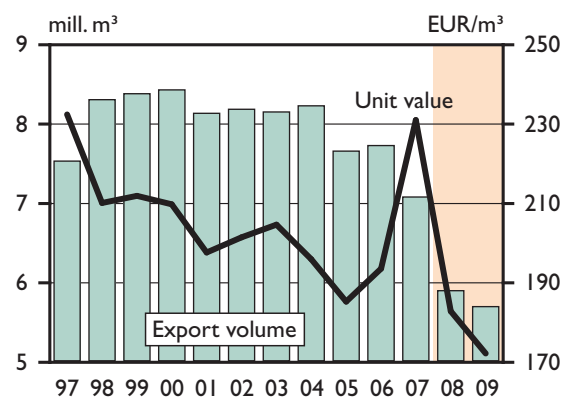
In the first half of 2008, sawnwood demand was growing in Eastern European countries with active infrastructure programmes, especially Russia, and in the oil-producing countries of North Africa and the Middle East, as well as in China. Economic growth in Russia and in

African oil-producing countries is dependent on the price of crude oil, which is on a declining trend according to various assessments.

### Slowdown in Housing Construction Keeps Prices in Check

The decline in construction seen on Western European markets towards the end of 2007 led to oversupply in the sawnwood market and a rapid drop in sawnwood prices. This has continued during 2008 with a further decline in construction. In the near future, the pressure for a decrease in prices will focus particularly on construction sawnwood. The falling level of world trade accompanying the deterioration in economic trends is creating downward pressure on the price of packaging grades, whereas the supply of weaker sawnwood grades is plentiful because storm-damaged wood is still being milled in Europe. The profitability of exports to markets outside Europe has fallen as a result of the rising shipping costs and the strong euro.

Export prices of Finnish sawnwood have been falling in 2008. Figures for January–July 2008 show that the year-on-year fall in export prices was 12% in the case of spruce sawnwood and 15% for pine sawnwood, and the nominal export prices for sawn softwood returned to their summer 2006 level. According to the HWWA index of sawnwood prices, the prices of sawnwood in Europe were still on the decline in August 2008. This decline is likely to slow in



Source: National Board of Customs

Volume and unit value of sawnwood exports, 1997–2009 at 2007 prices (wholesale price index).

the latter half of the year, when production limits begin to result in lower sawnwood stocks. The unit price of Finnish sawn softwood exports for the full year 2008 is expected to be 18% below the average for the whole of 2007.

The volume of Finnish sawnwood exports has fallen significantly during 2008, down by 18% in January–July compared with the same period the previous year. The fall in export volumes has been particularly marked for spruce sawnwood, both to Europe and to non-European destinations. The supply of spruce sawnwood in Europe has been plentiful because of supply of storm-damaged wood in early 2007. Sweden, a key competitor country for the Finnish forest industry, has been able to increase its exports of spruce sawnwood on account of the volume of storm-damaged wood and the favourable exchange rates. Finnish exports of pine sawnwood fell by less than those of spruce sawnwood. More than half of Finland's pine sawnwood exports went to markets outside Europe, especially Egypt, Algeria and Israel, whose combined share of all sawnwood exports rose to one fifth. Sawnwood demand on the main European markets will continue to be weak in the latter half of 2008, bringing the drop in Finland's sawnwood exports to about 18% for the year as a whole in comparison with 2007.

### Gentle Rise in Sawnwood Prices in 2009?

The main factors affecting the sawnwood export market in 2009 will be the reduced level of GDP growth and housing construction in Western Europe and, indirectly, the increases in Russia's roundwood export duties. The economic outlook will also remain poor in North America and Japan. Although economic growth in the Middle Eastern and North African countries will continue to be good, exports to these markets will not be sufficient to compensate for the decrease in Finland's exports to markets in Europe.

The fall in sawnwood prices in Europe has reduced the profitability of sawnwood production, and this has led producers in Finland and elsewhere to issue warnings of possible further cuts in production before the end of 2008. In Canada, sawnwood production was down in January–May 2008 by 23%, and in the United

States by 16%, in comparison with the same period a year earlier. In the first half of 2008, the production cuts turned the US sawnwood price trend back onto a rising track, following its decline since 2006.

The production cuts made in Europe and North America are expected to slow the fall in sawnwood prices in the near future. A further factor affecting prices will be Russia's increase in its roundwood export duties at the start of 2009, which is likely to bring an end to exports of Russian roundwood. In Finland, the efficiency of roundwood procurement has been improved in anticipation of the end of sawlog imports from Russia, whereas the Japanese wood products industry and China's massive furniture industry are dependent of imports of Russian wood because of the scarcity of their own forest resources. China has attempted to reduce its import dependency by investing in Russia's wood products industry.

With Russian roundwood no longer available on the world market in 2009, some of Japan's and China's roundwood needs will probably be met through increased imports of processed and converted products, such as sawnwood and plywood. This is likely to increase the demand for products of the North American, Russian and European wood products industries, which would lead to a slight rise in sawnwood prices in Europe too during 2009. Russia's scope for expanding its supply of sawnwood exports to any significant degree is limited in the short term, as the country's current programmes for promoting housing construction will increase the need for wood products on its domestic market. However, with construction expected to slow further in Europe during 2009, the rise in sawnwood prices will not be significant. Finnish export prices are expected to follow the strengthening price trend in Europe in the latter part of 2009. The rise in prices will nevertheless be so gentle that the average price of Finnish exports will still show a fall in 2009 in comparison with 2008, and the volume of exports is forecast to be down by about 3%.

Most forecasts indicate that GDP growth and the construction sector will not begin to pick up significantly in Europe and the United States until 2010. The sawnwood market may

then see a rapid increase in prices similar to that experienced in the economic upswing that began in summer 2006. Besides demand, a key factor in the cyclical trends in the sawnwood market in recent years has been the fluctuations in raw material availability. In addition to Russia's export duties, the volume and price of wood raw material available could be affected considerably by factors such as the amount of storm damaged wood on the market.

### Decline in Profitability Reduces Sawnwood Production

The profitability of Finnish sawnwood production has fallen significantly during 2008 on account of falling sawnwood prices and high raw material costs, and the situation is rather similar in the Baltic countries and in Central Europe. The increase in Russia's roundwood export duties at the start of 2009 will mean that the import of Russian roundwood will no longer be profitable. With this in mind, imports principally of spruce sawlogs from Sweden, Germany and elsewhere have already begun in order to bridge the shortfall.

The drop in sawnwood prices has meant an unfavourable trend in the price relation between softwood sawlog and sawn softwood for the Finnish forest industry in the first half of 2008. Sawmilling profitability has also declined elsewhere in Europe as sawnwood prices have fallen. Given the current cyclical decline in demand, there is a need for production limits in Europe in order that the imbalance in demand and supply can be redressed.

With the decrease in sawnwood demand and prices, Finnish production was down in January–July 2008 by one fifth on the previous year's figures. The drop in spruce sawnwood production was 29%, and in pine sawnwood production 14%. Finnish sawnwood production for the full year 2008 is estimated to be approximately 9.9 mill. m<sup>3</sup>, or about 20% below the 2007 total. A relative reduction in sawnwood production levels of the same magnitude was seen in 1981–1982, when export price competitiveness was improved by a devaluation of the Finnish markka.

*Forecasts of production and exports in the sawmilling and plywood industries, 1000 m<sup>3</sup> (percentage changes from previous year are shown below the respective volumes).*

	Production			Exports		
	2007	2008	2009	2007	2008	2009
Sawnwood	12 400 2	9 900 -20	9 800 -1	7 081 -8	5 800 -18	5 600 -3
Plywood	1 410 0	1 350 -4	1 280 -5	1 239 -1	1 170 -6	1 110 -5

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

	2007	2008	2009
Sawnwood	23 (231 €/m <sup>3</sup> )	-18	-3
Plywood	5 (547 €/m <sup>3</sup> )	6	-1

*Export prices are nominal unit values*

In addition to the production cuts already made in 2008, the latter part of the year is expected to bring announcements of production unit closures, when companies prepare for the increase in Russian roundwood export duties. There has, however, already been a substantial drop in sawlog imports from Russia. In 2007, Russian imports accounted for only about 6% of the Finnish sawmilling industry's spruce sawlog consumption, and about 7% of its pine sawlog consumption.

Sawmilling profitability is expected to remain poor in 2009 as well. Although the export price of sawnwood is expected to start rising gently in 2009, it is likely to remain below the 2008 level. Sawlog prices are forecast to remain relatively high, which, together with the rise in other production costs, will do little to improve profitability in the sawmilling industry. Indeed, Finnish sawnwood production in 2009 is expected to be slightly below the 2008 figure.

### Two-Track Plywood Market

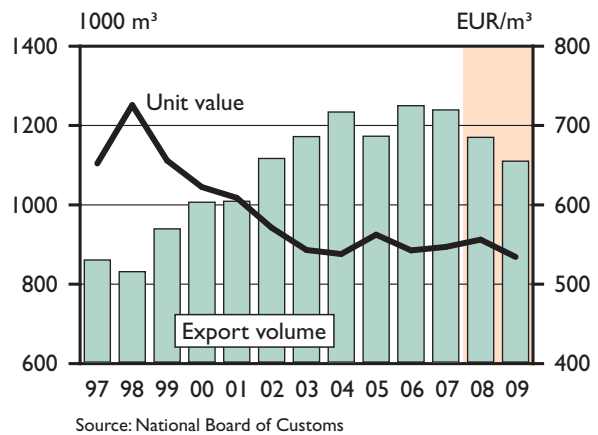
As with sawnwood, the market for plywood varies greatly from one part of the world to another. In North America, plywood consumption has fallen with the contraction in the construction sector,

and production has been cut. This trend will probably continue in 2009 as well. In Europe, plywood consumption grew by 8% in 2007, and plywood production by a similar level. In 2008, this growth is expected to tail off in the markets of Western Europe, however, and a reduction in consumption is forecast for 2009, due to the weakened state of the economy and the construction sector.

The construction downturn in Europe is having an adverse impact on the demand for softwood plywood in particular, resulting in a drop in softwood plywood prices in Europe. This is already evident in the price of Finnish softwood plywood. The monthly average price of exports has been declining slightly since the end of 2007, but export volumes in January–June 2008 are more or less unchanged from the same period a year earlier. By contrast, monthly prices of birch plywood have been higher than in 2007: in January–June 2008, the export price was an average of 17% higher than a year earlier. Production of high-quality birch plywood in Europe is relatively small, and so the growth in demand, which has been greater than the increase in supply, has raised the price. The main competitors on the market are Finland, the Baltic countries and Russia, though China has also increased its supply of birch plywood to Europe in recent years.

The deteriorating economic conditions have nevertheless begun to adversely affect the demand for birch plywood, and exports of Finnish plywood to the main markets in Western Europe began to decline in the first half of 2008. The drop in exports is also due to the cuts in birch plywood production because of raw material availability and especially the higher price of imported birch sawlogs. In January–June 2007, birch plywood accounted for 48%, and in January–June 2008 for 44%, of all plywood exports. The total volume of plywood exports in 2008 will be about 6% below the 2007 level on account of the drop in exports of birch plywood. The average unit price of plywood exports in 2008 will be up by about 6%, due to the upward price trend for birch plywood in the first half of the year.

In birch plywood production, there will be a problem with raw material availability when



Volume and unit value of plywood exports, 1997–2009 at 2007 prices (wholesale price index)

Russia raises its export duties on roundwood in 2009. Imported softwood sawlogs accounted for about 10% of the Finnish plywood industry's softwood sawlog consumption in 2007, and imported birch for about 29% of the birch sawlog consumption. In birch plywood production in particular, the proportion of imported birch has fallen markedly in comparison with earlier years: in 2005, imported sawlogs accounted for more than 45%. The full replacement of imported Russian birch sawlogs with imports from other sources may prove to be very difficult if not impossible, which will inevitably mean a reduction in birch plywood production in Finland. In 2009, a further contraction in the amount of construction activity and in GDP growth will lead to lower demand for both softwood and birch plywood on the domestic market and on export markets. Finland's production and exports of all plywood are thus forecast to decrease in 2009 by 5%.

Finland is the largest plywood producer supplying the Western European market, though a considerable volume of plywood is supplied by Russia, and smaller amounts by the Baltic countries. The supply of less expensive construction grades from China and from South America has increased in recent years too. China's growing plywood production has been reliant on imports of Russian sawlogs, and so the imposition of Russia's export duties in 2009 will have the effect of reducing the supply of China's plywood to Europe. The growth in construction in

central parts of Eastern Europe and in Russia has boosted plywood demand. In Russia, for example, the consumption of plywood was up by almost one third in 2007. Russia has increased its production of wood-based panels substantially since 2000, and in plywood production the increase has been about 40% since 2003. A significant proportion of this production growth has been based on raising the utilisation rate of existing capacity as far as possible. Russia has also invested considerably in plywood production in recent years, and with the completion of new production facilities its plywood production volumes are expected to further double by 2010. Finnish companies too, such as UPM and Koskinen, are investing in plywood production in Russia.

In 2009, plywood prices are expected to fall as demand declines in Western Europe. The greatest fall in prices is expected to be in softwood plywood, which means that the average price of Finnish plywood exports will also fall in nominal terms by about 1%. High-quality birch plywood grades will be subject to less downward pressure on prices than softwood plywood, due to scarcer supply. In Russia, the focus on housing construction will ensure that consumption growth continues in 2009, eliminating the prospect of any growth in Russian plywood supply to Western Europe in 2009.

## 2.2 Production and Exports in the Pulp and Paper Industry

*Paper industry capacity has been cut in Finland and elsewhere in Europe in recent years as a result of the protracted period of oversupply and the weak trend in prices. Despite this, new mills have come on stream in Europe and the sector is still affected by oversupply in relation to the level of demand. The significant reduction in GDP growth and the attendant weakening in the demand for paper have led Finnish forest industry companies to announce further closures of production facilities and machines in autumn 2008, to take effect at the end of 2008*

*and in 2009. With substantial cuts in production capacity, Finland's production and exports of paper are expected to be down by about 6% in 2008, and production and exports of paperboard by about 2%, compared with the previous year's figures. Although export prices of paper and paperboard in 2008 have risen a little on a month by month basis from the levels they reached at the end of 2007, the average nominal price for the full year will be about the same as in 2007 because of the weaker demand.*

*The declining GDP growth in export markets will weaken the demand for paper in 2009. With the forest industry making further cuts in its production capacity in Finland, production and exports of paper and paperboard will experience a further decrease. Production and exports of paper are forecast to be down by about 4%, and paperboard by about 3%. Despite significant cuts in capacity in the paper industry, the impact on prices will be small because of the declining demand. Nominal average export prices of Finnish paper and paperboard in 2009 are forecast to remain at around their 2008 levels.*

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### Oversupply of Paper and Paperboard on European Market Since 2000

Growth in paper consumption on the main European markets for the Finnish paper industry has been very slow since 2000. Although there have been capacity closures in Europe, capacity has grown overall because new production facilities have also been opened. The paper industry in Finland and elsewhere in Europe has suffered oversupply throughout the period since 2000. In 2007, paper consumption in Europe was up by an average of 2.3%, although the growth in paper consumption in the member countries of the Confederation of European Paper Industries (CEPI) was only 1.2%. At the same time, consignments from Europe to non-European markets fell by 1%, although imports to Europe from such markets were up by about 20% in 2007, adding to oversupply in the market. Imports of paper and paperboard from Asia were up by

	Chemical pulp	% of production	Paper	% of production	Paperboard	% of production
Production	7 699	100	11 272	100	3 063	100
Domestic use*	5 344	69	757	7	422	14
Exports:	2 355	31	10 515	93	2 641	86
EU	1 698	22	6 816	61	1 472	48
Asia	355	5	839	7	414	14
Africa	29	0	133	1	95	3
United States	84	1	1 051	9	194	6
Russia	24	0	439	4	183	6
Other	165	3	1 237	11	283	9

\* Estimated domestic use = production – exports

Sources: Finnish Forest Industries Federation and National Board of Customs.

almost 100%, accounting for 13% of the imports of the CEPI countries.

According to the Association of European Publication Paper Producers (Cepiprint) and the European Association of Fine Paper Manufacturers (Cepifine), the estimated consumption of newsprint and fine paper in Europe during January–July 2008 was down by 3%, and uncoated magazine paper by 1%. By contrast, consumption of coated magazine paper rose by about 2%.

In the United States, the reduction in the consumption of newsprint and other printing and writing papers has led to cuts in production capacity since 2000, and growth has occurred only in the consumption and production of packaging and other papers. Substantial cuts have been made in newsprint capacity. Between 2000 and the start of 2008, the reduction in capacity amounted to about 30%, from the 2000 figure of 6.8 mill. tonnes. The reductions in capacity have permitted an increase in paper prices, but prices have also been affected by the weakening of the dollar. In 2007, US paper and paperboard consumption declined by 2.5% and production by 0.6%, whereas prices of pulp, paper and paperboard products were at a historical high. Prices continued to rise as the US dollar weakened in the first half of 2008, despite the impact of the economic slowdown on demand.

In Asia and Eastern Europe, the growth in paper demand has been extremely high, in contrast to other regions. Demand for printing and writing papers in Asia has continued to increase

during 2008. In China, the demand for paper has grown by at an annual rate of about 13% in recent years, and the country is now the world's second largest producer and consumer of paper, exceeded only by the United States. The growth has been so high that China's need for imported paper will long continue, despite the increase in its domestic production. As production capacity has increased, Asia has experienced oversupply in coated fine papers, and paper has been exported to European markets and elsewhere. China is no longer a net purchaser of coated fine papers but has instead become a net supplier.

In Russia and in the other CIS countries, the consumption of paper and paperboard in 2007 grew by 7%, but production was up by only 1.5%, with imports up by 10%. Russia's own production of paper, paperboard and pulp has grown steadily since the late 1990s but at a slow pace, which has meant that the need for imports has remained. Russia imports primarily the more expensive processed and converted paper and paperboard grades.

### Substantial Cuts in Paper Industry Production Capacity

In 2007, with the trend in paper prices continuing to be weak and costs rising, Finnish companies introduced cuts in their paper and paperboard capacity in order to improve profitability. Capacity was reduced in Finland by a total of about 200 000 tonnes, and 100 000 tonnes of magazine

paper production was converted to produce specialised papers. In 2007, Finnish companies closed considerably more production capacity at their sites in other countries.

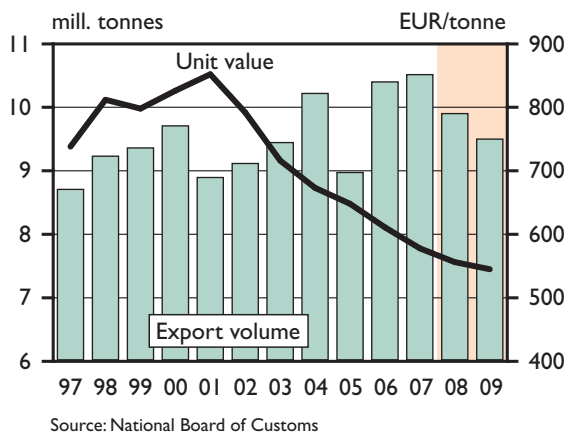
Production facility closures have continued in Finland during 2008. In January, Stora Enso closed its Summa paper mill (capacity: 80 000 tonnes p.a. magazine paper, 270 000 tonnes p.a. newsprint), and in March it closed the PK 2 machine at Anjala (155 000 tonnes p.a. magazine paper). UPM took the decision to close its PK 4 machine at Kajaani (capacity: 240 000 tonnes p.a. newsprint) in February 2008 until the end of the year, and M-real closed its PK 2 machine (100 000 tonnes p.a. coated magazine paper) at Kangas from the start of 2008. The closures mean a reduction in the paper industry's annual production capacity in Finland of about 800 000 tonnes. In addition, Finnish companies have taken decisions to close mills and introduce production cuts at sites abroad.

In September 2008, UPM and Stora Enso announced further major closures of paper industry capacity. The reason given for the cuts in paper industry production is poor profitability due to the continuing overcapacity in Europe and the exceptionally high price increases in roundwood, energy and fuel over the past two years. In addition, the companies are preparing for the cessation of roundwood imports from Russia. UPM aims to close its entire paper mill at Kajaani (capacity: 640 000 tonnes p.a. newsprint and magazine paper) before the end of 2008. Stora Enso, for its part, aims to close

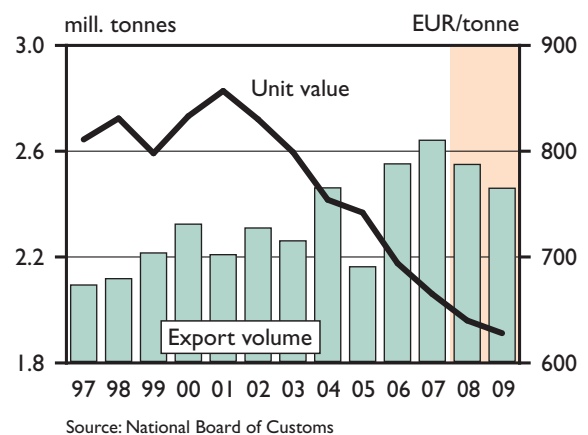
its Corenso core board machine (110 000 tonnes p.a.) at Varkaus before the end of 2008, and one of its paperboard machines (180 000 tonnes p.a.) at Imatra by the end of 2009. Stora Enso is also cutting its paper and paperboard production capacity abroad by a total of about 300 000 tonnes. At the start of October 2008, M-real announced the sale of its European magazine and fine paper mills to the South African corporation Sappi Limited. According to the announcement, the Finnish-based paper mills at Kirkniemi and Kangas, which are among those being sold, will continue production as normal despite the change of ownership.

### Slower GDP Growth Worsens Paper Market Outlook in Late 2008

More than half (2007: 57%) of the paper exported from Finland is magazine paper. A number of attempts have been made to raise prices over the past three years, but with little success. Prices of magazine paper and newsprint have now risen somewhat, but this falls far short of the rise in production costs and the wishes of paper producers. The state of the market varies considerably from one paper grade to the next. The demand for magazine papers continued to be relatively good in the first half of 2008, and Finnish exports were up in January–July by about 0.5% on the same period in 2007. Although the monthly average export price has risen since the end of 2007, the average price in January–July 2008



Volume and unit value of paper exports, 1997–2009 at 2007 prices (wholesale price index).



Volume and unit value of paperboard exports, 1997–2009 at 2007 prices (wholesale price index).

was nevertheless almost 1% lower than a year earlier. The demand for newsprint and fine paper was already on a downward track in the first half of 2008, following the slackening of growth in export market economies. The average price of newsprint exports in January–July was down by 5% on the same period the previous year, and the volume of exports plummeted by 24%. In fine paper exports, the average price in January–July 2008 was unchanged from a year earlier, although the volume of exports fell by 3%.

The average unit price of Finnish paper exports as a whole for January–July 2008 was similar to the figure for the same period a year earlier, and was almost 2% higher than the average price for the full year 2007. Taking into account the falling demand for paper on export markets as GDP growth declines towards the end of 2008, the average export price for 2008 is forecast to be up by only 1% on the 2007 average. The average price of paperboard rose in the first part of 2008 by about 2% and is expected to be up for the year as a whole by about 1%.

Finnish paper production and exports in the full year 2008 are forecast to shrink by about 6% on the 2007 figure, due to the cuts in production capacity. Paperboard production in the first half of 2008 was down by 3% and export volumes were at approximately the same level as the first half of 2007. The deteriorating economic situation has nevertheless begun to be felt in the packaging industry's production, with a consequent fall in the demand for paperboard. Paperboard production and exports are forecast to be down by about 2% in 2008.

### Pulp Demand and Prices Up, But Production and Exports Down

Although paper mills have been closed in Europe, paper production and pulp demand remained more or less unchanged in 2007. Europe's pulp production was down by about 1%, due to the closure of a number of smaller pulp mills. However, figures from the Confederation of European Paper Industries (CEPI) show that pulp capacity decreased in Europe in 2007 by only about 0.2%, despite the drop of 2.4% in the number of mills. Pulp exports from the

*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		
	2007	2008	2009	2007	2008	2009
Chemical pulp	7 699 -3	7 500 -3	7 350 -2	2 355 -7	2 200 -6	2 100 -5
Paper	11 272 1	10 600 -6	10 200 -4	10 515 1	9 900 -6	9 500 -4
Paperboard	3 063 3	3 000 -2	2 900 -3	2 641 3	2 600 -2	2 530 -3

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

	2007	2008	2009
Chemical pulp	6 (480 €/t)	1	0
Paper	-2 (578 €/t)	1	0
Paperboard	-1 (665 €/t)	1	0

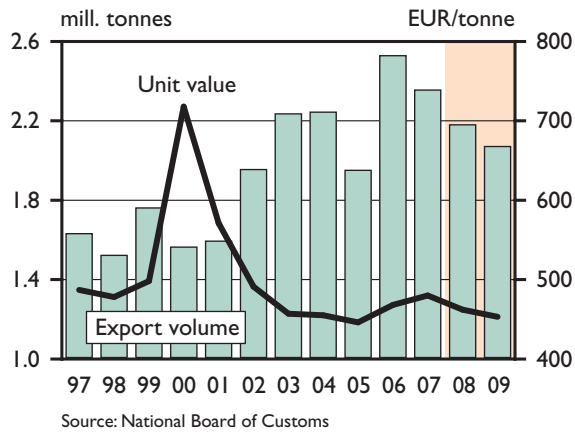
*Export prices are nominal unit values.*

CEPI countries were down by 5% and imports to these countries by about 1%. Some 50% of the imported pulp was from South America and 40% from North America.

The demand for pulp on the European market has been good during 2008 and the price of pulp has risen. New pulp capacity has nevertheless been brought on stream on the world market. A new pulp line (900 000 tonnes p.a.) was opened in Brazil in autumn 2007, and Metsä-Botnia's pulp mill (capacity: 1 mill. tonnes) in Uruguay has started operations successfully, producing 430 000 tonnes in January–June 2008. The majority of production from these new pulp mills is intended for export to Europe.

Among the Finnish corporations, Stora Enso closed its Kemijärvi pulp mill (235 000 tonnes p.a. bleached softwood pulp) at the end of April 2008, and M-real closed its Lielähti CTMP mill (105 000 tonnes p.a.) during the year. In September, UPM announced that it is to close its Tervasaari pulp mill (210 000 tonnes p.a.) by the end of 2008.

The euro PIX price of softwood pulp in mid-September 2008 was about 4% higher than at the start of the year, and the PIX price



Volume and unit value of pulp exports, 1997–2009 at 2007 prices (wholesale price index).

of hardwood pulp about 10% higher. No further price increases are anticipated during 2008, since the demand for paper is on the decline due to the economic downturn. The average export price of Finnish pulp in the first half of 2008 was about the same as the average price for the full 12 months of 2007. Pulp prices are expected to rise in the latter part of 2008, bringing the average price for the full year to a level 1% above the 2007 figure.

Pulp production was down in the first half of 2008 by 1% on the same period in 2007. The closure of the Kemijärvi mill will further reduce total pulp production in the second half of 2008, and the full-year production is expected to be down by 3% on the previous year's total. Pulp exports were up by 6% in the first half of 2008, but the drop in production will reduce export volumes in the latter half of the year. Pulp exports for the whole of 2008 are forecast to be down by 6%.

### Production and Exports Also Down in 2009

On the mature European markets, the growth in paper and paperboard consumption has been small and is now set to be even lower due to the economic downturn. The Finnish forest industry aims to improve profitability by cutting production capacity in 2009 as well. With the cuts in capacity, Finnish paper production and exports are forecast to be down by about 4% in 2009. Production and exports of paperboard are

forecast to be down by 3% as the demand on export markets weakens.

Capacity cuts in pulp production will reduce the production total in 2009 by about 2%. Exports will be down by 5% on the 2008 figure, as pulp will be used principally for domestic paper production, following the end of Russian pulpwood imports. The production and export forecasts for the paper industry are based on the assumption that the timing of the production cuts already announced will be as stated and that no significant new production cuts will be made in 2009.

Profitability in the paper industry has been weak for a number of years already and has further deteriorated during 2008. Besides low prices, the paper industry's poor profitability is also attributable to the high roundwood costs in 2008 as well as the price of pulp and the high cost of energy and transportation.

The rise in costs has led many companies to announce price increases during 2008. Success in raising paper and paperboard prices is essential for the profitability of the entire paper industry. With major capacity cuts planned in Finland and elsewhere in Europe, the right conditions are in place for an increase in prices, but the current economic climate in the paper industry's main export markets will not permit this. The average export prices of paper and paperboard in 2009 are forecast to remain at around their 2008 levels. The export price of pulp is also forecast to remain at the 2008 level. The price forecasts are based on the assumption that there will be no significant change in the euro and dollar exchange rates.

## 2.3 Costs and Profitability in the Finnish Forest Industry

*The profitability trend in the Finnish forest industry is on a downward track in 2008. Among the various subsectors, the greatest deterioration in profitability is in the wood products industry. This is especially due to the disproportionate trends in sawnwood and wood raw material*

prices. With the continuing fall in sawnwood prices, the decrease in domestic sawlog prices has diminished and imported sawlogs have risen significantly in price. No real relief is expected for the profitability trend in the wood products industry until 2010, when construction activity is likely to pick up on both the Finnish market and export markets.

In the pulp and paper industry, profitability is down only slightly on the 2007 level, despite the trend in product prices being weaker than anticipated. Contributory factors in this are the production cuts and cost-saving measures aimed at raising profitability, which have gradually redressed the demand-supply imbalance for certain paper grades in Europe. The stronger US dollar has also improved the sector's competitiveness and profitability. For some paper grades there is nevertheless still overcapacity on the market. The continuing deterioration in the economic outlook is also jeopardising the prospects of successfully raising export prices of paper, which is essential for profitability. No significant improvement is expected in the pulp and paper industry's profitability in 2009.

Russia's decisions on its roundwood export duties will have a significant impact on the operating environment of the Finnish forest industry in 2009. Imposition of the increases in export duties will lead to considerable changes in the Finnish forest industry's roundwood procurement. Finding alternative raw material sources may prove difficult and so further cuts in production capacity are likely. The cessation of Russian roundwood exports, especially softwood sawlogs, will hamper raw material availability not only in Finland but also in many other European countries, and particularly in China and Japan too. This will reduce the supply of sawnwood and could raise sawnwood prices on export markets by more than expected, which would have a favourable effect on the wood product industry's profitability in 2009. For the Finnish-based pulp and paper industry, the roundwood duties will have a purely negative effect.

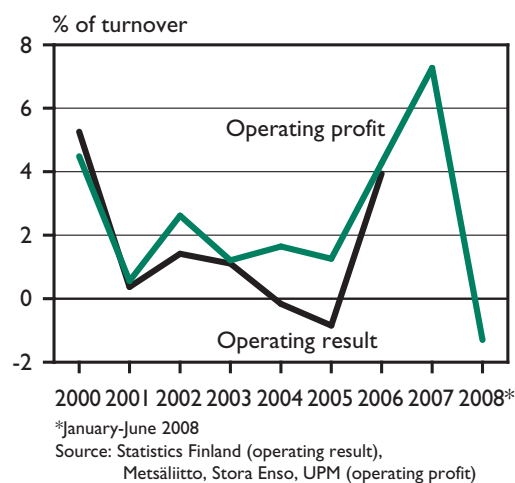
## Substantial Decline in Profitability in the Wood Products Industry

Based on the figures for operating profit as a percentage of turnover presented in the financial statements of the major Finnish forest industry corporations (Metsäliitto, Stora Enso and UPM), profitability in the wood products industry rose in 2007 by more than in any other year of the present decade. However, the profitability trend had already turned onto a downward track at the end of 2007 and the decline has been sharp in the first half of 2008. The biggest single reason for this is the substantial drop in sawnwood export prices following the end of the cyclical upswing on the sawnwood export markets. Figures for January–July 2008 show that the nominal unit price of pine sawnwood exports fell by 15%, and spruce sawnwood by 12%, on the same period the previous year. By July 2008, the drop in prices from the autumn 2007 peak had reached as much as 29% for pine sawnwood and 24% for spruce sawnwood. By contrast, wood raw material prices remained relatively high: the stumpage price for domestic pine sawlogs in January–July 2008 was only 6.6% lower, and for spruce sawlogs 8.9% lower, than a year earlier. The drop in stumpage prices from their autumn 2007 peak levels had nevertheless reached almost 20% for both pine and spruce sawlogs. Some of the highest stumpage prices in 2007 did not become evident in costs until 2008, however, because of the difference in timing between roundwood sales, felling and final payment.

The price of imported sawlogs was up in the first half of 2008 by 20%, for both pine and spruce. Besides imported sawlogs, the costs of wood harvesting and transportation are also key elements of wood raw material costs, which altogether account for an average of about 30% of total costs in the wood products industry and over 50% in the sawmilling industry. Harvesting and transportation costs have risen with the increase in fuel prices, thus pushing up wood raw material costs. The disparity between sawnwood unit export prices and wood raw material cost trends has turned the profitability of the major Finnish forest industry corporations' wood products businesses into a loss in 2008.

Based on the financial statements database maintained by Statistics Finland, which also includes small and medium-sized companies, and the figures for operating result calculated using this database, the profitability trend in the wood products industry has accorded with what might be expected on the basis of operating profits for the wood products businesses of the three largest forest industry corporations. The operating result is based on adjusted financial statements, and the operating profit (less extraordinary items in the accompanying figure) on unadjusted financial statements, and so they are not fully identical as profitability indicators in terms of their accounting basis. In addition, the data from Statistics Finland includes only the operations of Finnish-based production units, whereas the data from the major forest industry corporations' financial statements also includes operations outside Finland, which in certain subsectors can be significant. The decrease in sawnwood prices has particularly affected major export-oriented sawmills, and estimates suggest that the profitability of small and medium-sized sawmills focusing on the domestic market will be better in 2008 than that of export-oriented sawmills. The drop in construction activity is also having an adverse impact on sawnwood prices in Finland, and so profitability will begin to fall for small and medium-sized sawmills too.

Among the subsectors of the wood products industry, the profitability of plywood production has remained reasonably good in 2008 despite the rise of 5.2% in the stumpage price of birch sawlogs (raw material in high-quality plywood) and the huge 65% rise in birch sawlog import prices during January–July 2008 compared to the previous year. In the same period the unit price of birch plywood exports nevertheless increased by 17%, which explains the positive profitability trend for plywood. The downturn in construction in Europe has been evident in the gentle decrease in the export price of softwood plywood, which has nevertheless not yet weakened the profitability of plywood production to any great extent. The favourable situation for plywood production has almost no effect on the average profitability of the wood products industry, however, because

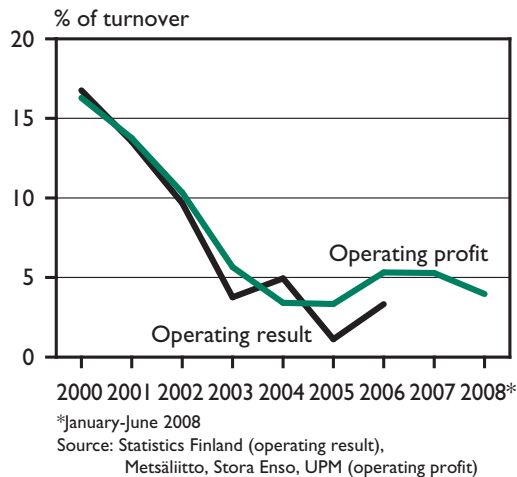


*Profitability in the wood products industry, 2000–2008, measured in terms of operating result and operating profit.*

plywood and other wood-based panel production accounts for only about 16% of the industry's turnover. Export demand for plywood is expected to start declining in Europe before the end of 2008, which will adversely affect the profitability of plywood production. In 2009, birch plywood production will also be threatened by the availability of wood raw material as Russia raises its roundwood export duties at the start of the year. Russian birch sawlogs have at times accounted for over 40% of the total consumption of birch sawlogs in plywood production, and in 2007 the figure was still more than 25%. Finding raw material sources to replace Russian imports may thus be difficult.

### **Pulp and Paper Industry Profitability Remains Weak**

Paper export prices have been falling throughout almost the whole of the present decade, even though economies have been booming on the main export markets. This has weakened the profitability of the pulp and paper industry. To break this cycle and bring demand and supply into balance on the paper market, the major Finnish forest industry corporations have introduced various efficiency and cost-cutting programmes, which have also included production unit closures. Despite these measures, a deterioration



*Profitability in the pulp and paper industry, 2000–2008, measured in terms of operating result and operating profit.*

in the sector's profitability is again looming in 2008, and substantial new cuts in capacity are being planned.

The profitability trend in the pulp and paper industry does nevertheless conceal differences within the industry. The profitability of magazine paper production is up in 2008, as demand has risen slightly in Europe and prices have increased. By contrast, demand has fallen in North America, although dollar prices of magazine paper have risen. On other export markets too, the prices of magazine papers in their invoicing currencies have been on the increase. Paperboard demand, the prices of paperboard and the profitability of production have remained above the average for the sector.

The sluggish market for newsprint and fine papers has been a key factor in the decreasing profitability of the pulp and paper industry in 2008. The decrease in profitability has affected newsprint production in particular. Newsprint demand in Europe and North America has weakened and prices have fallen, whereas demand has continued to grow in Asia. The strong euro is nevertheless adversely affecting exports to destinations outside Europe, which is suffering overcapacity. The market for fine papers is very similar to that for newsprint. The poor profitability trend for newsprint and fine papers will reduce profitability in the pulp and paper industry by more than the profitability increase

arising from the improved profitability of magazine papers. However, a positive feature in the sector is that a change has finally been brought about in the profitability trend for magazine paper production.

Roundwood costs in the pulp and paper industry, which account for more than 13% of total costs, remain high in 2008. In January-July 2008, the stumpage prices of domestic pine and birch pulpwood were up by 6.6% and 5.4%, respectively, whereas the stumpage price of spruce pulpwood was down by more than 4% in comparison with the same period in 2007. However, in August 2008, the stumpage prices for all categories of pulpwood were below their levels of a year earlier. A major factor in the rise in roundwood costs in the pulp and paper industry in 2008 is the significant increase in the costs of imported roundwood. Import prices of pine and spruce pulpwood at the border in January-July 2008 were more than 30% higher than for the same period the previous year. The price of imported birch pulpwood was up by almost 50%. At the same time, the volume of imported pulpwood grew by almost 40% as the sector prepared itself for Russia's proposed increases in roundwood export duties at the start of 2009. For this reason, the sum paid by the pulp and paper industry at the border for imported roundwood is for the first time exceeding the stumpage costs paid for domestic roundwood. Wood raw material nevertheless accounts for a fairly small (just over 13%) proportion of the pulp and paper industry's costs, and the price trend for other raw materials has a greater effect on costs.

The non-roundwood raw material costs account for a significant proportion of the pulp and paper industry's costs, currently about a quarter of the total. The production costs of these different minerals, chemicals and other materials, which are needed mainly in pulp production and bleaching and in paper making and coating, have risen considerably as a consequence of the rise in oil prices. The cost item comprising these other raw materials is, however, very heterogeneous, and gaining a detailed picture of trends in this cost item from publicly available information sources is very difficult.

## Rapid Rise in Energy Costs

The costs of energy purchased from extra-industry sources account for about 3% of total costs in the wood products industry, and a little under 10% in the pulp and paper industry. Energy costs have accounted for a growing share of total costs in the forest industry in recent years, and in 2008 the increasing cost of energy has been cited more often than the price of wood raw material as the reason for the deteriorating profitability trend. Electricity constitutes the largest component of energy costs, and its price trend in 2008 has been fairly moderate due to the mild winter and the favourable status of the water resources in Scandinavia. There are nonetheless pressures to increase electricity prices again, for instance to meet the targeted cuts in emission allowances. The price of market electricity has tripled since 2005, and estimates of the increases for 2009 are even as high as 30–40% or more. The forest industry's self-sufficiency in energy, and especially in the pulp and paper industry, is high, however, in terms of power and heat, which helps reduce the cost impact of fluctuations in the market price of electricity. On average, power generation by the Finnish forest industry accounts for more than 40% of the industry's electricity consumption, and a significant proportion of the purchased electricity is from energy companies owned in part by the Finnish forest industry corporations. The rising cost of electrical energy is thus felt more acutely by the small and medium-sized companies in the industry.

The biggest single reason for the increase in energy costs in 2008 has been the rise in the price of crude oil. The crude oil price has been at a record high for some time and this has been evident in the prices of oil-based fuels and heating produced using oil. In summer 2008, the price of crude oil (Brent, USD/barrel) was double the price of a year earlier. Forecasts indicated a continued rise in oil prices, but the global economic slowdown has curbed the rise in prices during autumn 2008. In the forest industry, efforts have been made to use biofuels as a replacement for fossil fuels, and wood-based fuels now account for a larger share of all the energy consumed.

However, the trend in oil prices tends to be reflected in the prices of alternative fuels too.

Besides energy prices, the oil price also affects the forest industry's costs via many other cost items. These items include roundwood harvesting and transportation costs, other raw materials (especially chemicals, transportation and manufacturing costs) and freight costs for final products. In the pulp and paper industry in particular, the indirect effects of the oil price on total costs are considerable. Sea freight charges (BDI), for example, were almost 30% higher at the start of 2008 than a year earlier. By contrast, the year-on-year change in freight charges levelled off during the summer, despite the considerable rise in crude oil prices. This was due to the slowdown in the global economy and the associated drop in demand for freight. Freight charges have fallen rapidly during autumn 2008, which is good news for the competitiveness of Finnish forest industry products on export markets.

## Product Prices Play Key Role in Profitability Trend

The Finnish forest industry has sought to reduce production costs through continuous improvements in the efficiency of production processes and operating methods. In real terms, production costs have in fact fallen, although at the same time production volumes have been rising until recently. The profitability trend has nevertheless remained weak, especially in the pulp and paper industry.

Raw materials and products whose prices are determined on the world market constitute a major share of the pulp and paper industry's costs, and the forest corporations have no scope for influencing those prices. The reason cited for the deterioration in profitability has most often been the price of roundwood, usually without specifying whether price refers to domestic stumpage prices, the border price of imported roundwood or even the mill price. By contrast, much less attention has been given to the long-established imbalance between the growth rates of production volume and demand, and the

consequent unrelenting fall in product prices on the paper market. There may even have been an expectation that this trend would change. Only now, with the uncertainty over the future of roundwood imports, is there an awareness of the inevitability of structural change.

The capacity cuts announced in 2008 and for 2009 are painful, but are essential for the future of the sector. Finland is situated far from the main export markets of the pulp and paper industry, which means that production can be profitable only in the most efficient and most favourably located production units, especially in the case of standard products.

The pulp and paper industry has been accused of conducting too little research and development work and of being prejudiced towards new

product innovations. Publicly proclaimed strategies and concrete action to improve profitability through new products such as smart paper and especially biofuels, are likely to be indicative of a change in outlook, however. Even though new product innovations will not bring a quick solution to the sector's current problems, the focus on these is a sign of the faith in the future of the industry. For years, the wood products industry has sought to increase the output of higher value added products by shifting away from low value added sawnwood and plywood products to laminated wood beams, interior boards and joinery products. This partially explains the sector's relatively favourable long-term profitability trend compared with that of the pulp and paper industry.



## 3 Forestry in Finland

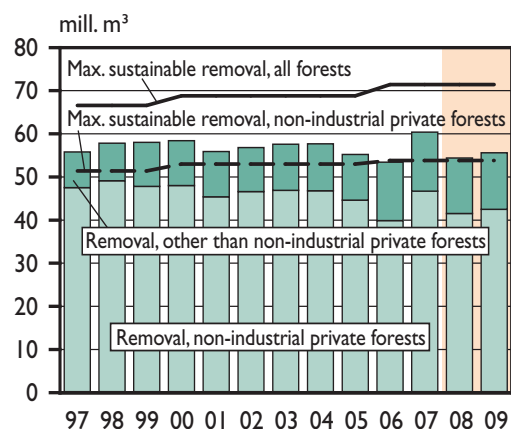
### 3.1 Utilisation of Wood Resources

*In recent years, almost a quarter of the Finnish forest industry's roundwood procurement has consisted of imported roundwood, even though Finland has abundant forest resources. This situation is now changing, because roundwood imports are forecast to drop dramatically. If there is a substantial decrease in birch imports, it will not be possible to compensate for this by procuring similar volumes domestically. In 2005–2007, the industry used an average of 73 mill. m<sup>3</sup> of roundwood annually, of which 55 mill. m<sup>3</sup> was domestic roundwood. The industry's roundwood consumption in both 2008 and 2009 will be significantly less than this.*

Finland has almost 23 mill. ha of forest, and the total volume of growing stock is approximately 2200 mill. m<sup>3</sup>. Pine accounts for 50% of this, spruce for 30%, birch for 17% and other broad-leaved species for 3%. The annual increment in the growing stock is about 99 mill. m<sup>3</sup>. Some 1.8 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. m<sup>3</sup> with an annual increment of approximately 96 mill. m<sup>3</sup> (or 4.6%). Growing stock drain amounts to about 68 mill. m<sup>3</sup> p.a. (or 3.3%), and so roundwood reserves are increasing by a small amount each year.

The maximum sustainable removal is approximately 71 mill. m<sup>3</sup> of useful wood per year, while the maximum justifiable in silvicultural terms (maximum potential removal) is as much as 98 mill. m<sup>3</sup>, taking account of all tree species. The annual removal of roundwood meeting the dimensional requirements for industrial wood in recent years (see figure) has been about 56 mill. m<sup>3</sup>, or 79% of the calculated maximum sustainable removal. In non-industrial private forests, the proportion of the maximum sustainable removal harvested is slightly higher.

Some 61% of Finland's commercial forests are in the possession of non-industrial private owners, 24% are owned by the state (Met-sähallitus), 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



Source: Finnish Forest Research Institute

*Removals of industrial wood and maximum sustainable removal, 1997–2009.*

stock for the state's holdings is low compared with forests in other ownership. Forests in non-industrial private ownership account for 68% of the growing stock increment, state-owned forests for 15%, company-owned forests for 11% and the rest for 6%. The non-industrial private forests are of crucial importance for the industry's roundwood procurement, as about 80% of the domestic roundwood (and almost 60% of all roundwood, both domestic and imported) consumed by the forest industry is from such forests. The volume of imported roundwood has risen and now accounts for 25% 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 widespread in Finnish forests. Spruce harvests, for example, have been very high in recent years, and spruce reserves have decreased slightly since 2000.

Due to high export charges, the import of Russian softwood, plywood birch and aspen will cease in 2009, and imports of Russian birch pulpwood in 2011. Though Finnish roundwood resources are easily sufficient to replace imported Russian pine, there will be a scarcity of spruce, and domestic birch will only be sufficient to replace a proportion of imported Russian birch. As part of its process of adjustment, the industry has begun to replace birch with pine.

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

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

Tree species	Consumption 2005–2007, mill. m <sup>3</sup> /yr		% of maximum sustainable removal	
	Domestic wood	Wood total	Domestic wood	Wood total
Pine	24.6	27.7	75	84
Spruce	23.3	27.2	93	109
Birch	6.8	14.4	61	129
Total	54.7	69.3	79	100

*In addition, the industry consumed 3.6 mill. m<sup>3</sup>/yr of aspen and unspecified imported wood.*

*Source: Finnish Forest Research Institute*

small-sized trees are chipped into energy wood. The tax exemption granted on sales from first commercial thinnings in April–August 2008, which was granted in order to reduce the backlog of such thinnings, has increased sales and resulted in more of this wood being despatched for industrial use.

The aims of the newly published National Forest Programme 2015 include an increase in the use of domestic industrial wood and energy wood. This aim has now risen in prominence considerably, as the prospect of a collapse of roundwood imports from Russia is now clear. The National Forest Programme states that this aim will require forest owners to engage more actively in advisory services on the potential of their holdings.

Overall use of domestic industrial wood has not grown since 2000, although it did increase to a record level in 2007 (59 mill. m<sup>3</sup>), falling again during 2008 with the decline in the industry's production at a time when there is still a plentiful supply of imported wood. By contrast, the use of wood chips (mainly felling residues from clear cutting) for energy purposes has risen rapidly in the current decade. In recent years, approximately 3 mill. m<sup>3</sup> in wood chips has been used annually 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

Total commercial fellings in Finland in 2008 will amount to 51 mill. m<sup>3</sup>, a reduction on the previous year's total due to the decrease in sawnwood and paper production. Commercial fellings in non-industrial private forests are down by 13%, whereas fellings in company-owned forests and in forests owned by Metsähallitus are down by about 5%. Imports of roundwood are expected to be approximately the same as in 2007, at just over 18 mill. m<sup>3</sup>. Despite the reduction in fellings, stocks of harvested wood are up considerably.

The rapid drop in the demand for sawnwood was already having an adverse effect on softwood sawlog stumpage prices in 2007. The decrease in sawnwood production will mean a reduction in softwood sawlog demand in 2008 too, and the nominal stumpage prices of softwood sawlogs are expected to be some 12–15% below the average for 2007. By contrast, the stumpage price of birch sawlogs will be up by 3% due to the favourable state of the market for birch plywood and the scarcity of birch sawlogs. The stumpage prices of pine and birch pulpwood are rising slightly as a result of the increase in pulp demand and export prices in the first half of 2008 in comparison with the previous year's figures. Pulpwood prices will also be affected by the drop in sawmilling production, as this means that the reduced volume of sawmill chips will be partially replaced by pulpwood removals. The price of spruce pulpwood has fallen due to lower demand as magazine paper production has been cut, and further cuts are expected.

In 2009, forest industry production will decline further, reducing the industry's demand for roundwood. Commercial fellings will be up slightly, however, as the increase in Russia's roundwood export duties will mean an end to imports of Russian roundwood (excluding birch pulpwood and chips). With the drop in sawnwood production, the nominal stumpage prices of softwood sawlogs are forecast to continue to decline slightly, and at the same time the tax relief on roundwood sales revenue will boost the supply of roundwood. The birch sawlog

stumpage price is expected to be at the 2008 level. Although birch plywood production is expected to decrease, the demand for domestic birch sawlogs will be up because of the almost complete cessation of imports. Stumpage prices of softwood pulpwood will remain at close to their 2008 levels, when the reduced volumes of imported roundwood and sawmill chips are replaced in the paper industry with domestic pulpwood. The stumpage price of birch pulpwood is expected to be up by about 5%. The total volume of roundwood imported from all sources is forecast to be down in 2009 by at least 40%, to about 11 mill. m<sup>3</sup>.

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### Strong Demand for Pulpwood in 2008

During 2008 a key characteristic of the roundwood market has been the reduction in demand for softwood sawlogs as sawmilling production has fallen and the forest industry has introduced capacity cuts as part of its preparations for the substantial reduction in roundwood imports when Russia's forthcoming roundwood export duties take effect. Exceptional features of the market have been the stronger position of delivery sales and the Finnish Government's use of the tax instrument to stimulate roundwood sales.

The substantial increase in demand for softwood sawlogs reached a peak in June 2007, after which it began to tail off in the autumn, when sawnwood prices and production began to decline sharply. With pulp and paper production remaining high, pulpwood demand was also high, boosted by the need to replace the reduced volume of sawmill chips with pulpwood. A very challenging situation has arisen on the roundwood market during 2008 as a result of the second successive mild winter (2007/08) for roundwood harvesting and the wet summer of 2008 that followed: there has been a scarcity of thinning stands with summer access or good access under wet, unfrozen ground conditions, and there has also been a shortage of suitable harvesting equipment and capacity.

Given these circumstances, the volume of pulpwood delivery sales has increased considerably, and delivery sale prices of pulpwood have strengthened in relation to the corresponding stumpage prices. In January–August 2008, pulpwood delivery sales were up by 43–81% on the previous year's figures, the percentage varying according to the tree species in question. Such delivery sales are very important in thinning removals. The responsibility for organising roundwood harvesting under these conditions, and for any harvesting damage, rest with the forest owner. In addition, the forest corporations also harvested more of their own wood during summer 2008 than would normally be the case.

The exceptional nature of the roundwood market can be illustrated by comparing the volumes of sawlog and pulpwood sales in non-industrial private forests. Whereas monthly sales volumes of domestic sawlogs and pulpwood are normally at similar levels, in November 2007 the volume of pulpwood sales began to climb in relation to sawlogs. In January 2008, the volume of pulpwood sales was already double that of sawlogs. This is the first time that there has been such a pulpwood-dominated sales structure since monthly records were first kept in 1986. As it is impossible to obtain pulpwood without purchasing a certain amount of sawlogs, the industry is also having to buy sawlogs. Roundwood sales are expected to return towards normal in the

latter part of 2008, when pulpwood sales will only be slightly above sawlogs sales.

Stumpage prices of softwood sawlogs are expected to be significantly down on the 2007 level on account of the drop in sawnwood production and prices. The price of pine sawlogs will be down by 12% and spruce sawlogs by 15%. The drop in the volume of softwood sawlog roundwood sales was even greater than this until the Government's forest taxation decision on 23 July 2008, which has increased sales volumes. In the plywood industry, the market for birch plywood in particular has been good, which has served to raise the demand for birch sawlogs. The 2008 stumpage price of birch sawlogs is expected to be up by about 3%, aided in part by the reduction in birch sawlog imports from Russia following the substantial increase in import prices.

The end of the tax exemption on first thinnings in August 2008 brought a record amount of pulpwood onto the market. The last week of August was particularly noteworthy, as roundwood sales rose to 2.6 mill. m<sup>3</sup>. In September, roundwood sales were reasonably high given the gloomy economic news for the forest industry. The difference in the structure of roundwood demand and supply will, however, mean a reduction in the level of sales. The demand for stands with good access under wet, unfrozen ground conditions is high but the supply of such stands is low, whereas the mild winters have led to low

*Commercial fellings, roundwood imports and end-of-year stocks of harvested wood, 2007–2009.*

Roundwood type/ Ownership group	2007 mill. m <sup>3</sup>	2008 mill. m <sup>3</sup>	Change %	2009 mill. m <sup>3</sup>	Change %
Commercial fellings, total	57.7	51.1	–12	51.6	1
Non-industrial private forests <sup>1</sup>	46.4	40.3	–13	40.6	1
Company and state-owned forests <sup>2</sup>	11.4	10.8	–5	10.9	1
Sawlogs	28.0	22.1	–21	22.9	3
Pulpwood	29.7	28.9	–3	28.7	–1
Roundwood imports	18.0	18.7	4	11.2	–40
Commercial fellings and roundwood imports, total	75.7	69.8	–8	62.8	–10
Stocks of harvested roundwood	7.7	12.9	68	12.0	–7

<sup>1</sup> Includes municipalities, parishes, etc.

<sup>2</sup> Metsähallitus manages state-owned forests

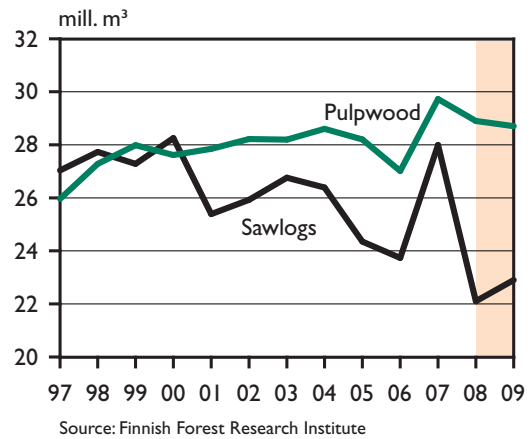
Sources: Finnish Forest Research Institute and National Board of Customs.

demand for winter stands but at the same time a plentiful supply of these. Many companies' reserves of winter stands marked for cutting are already good due to previous roundwood sales. Fellings have not slowed by as much as roundwood sales, and so reserves of marked stands have decreased.

The decrease in paper production during 2008 has reduced the need for pulpwood. This demand varies from one tree species to another, however, and the trend in pulpwood prices is expected to be divided into two categories. The prices of pine and birch pulpwood are expected to be up by about 2% for 2008 as a whole, as the demand for pulp and fine paper has remained at a reasonable level. This demand has also been boosted by the drop in sawmill production, because the reduced amount of sawmill chips has been replaced with pulpwood. The fall in magazine paper production capacity has reduced the demand for spruce pulpwood, however, and further capacity closures are anticipated. UPM, for instance, plans to close its Kajaani mills before the end of 2008. The 2008 stumpage price of spruce pulpwood is expected to be about 9% below the 2007 figure.

Prices of imported roundwood have risen substantially since the early part of 2007, and have remained high during 2008. In January–June 2008 softwood sawlog prices were up by around 20%, and softwood pulpwood prices by 34–38%, in comparison with the first half of 2007. The price rise for imported birch was much greater still: 69% for sawlogs and 57% for pulpwood. Contributory factors in this have been not only the export duties on Russian roundwood but also the higher cost of roundwood imported from elsewhere. The prices of imported softwood sawlogs in the first half of 2008 were only slightly up in comparison with prices of domestically procured sawlogs. By contrast, import prices of birch sawlogs and all pulpwood types were about 50% higher than their domestic equivalents.

Given these circumstances, imports of softwood pulpwood from Sweden, which has had to store significant volumes of storm-damage wood, were up in the first half of 2008 to about 25% of all imported softwood pulpwood and



Commercial fellings of sawlogs and pulpwood, 1997–2009.

more than 10% of all imported roundwood. At the same time, competition for Finnish roundwood resources has increased, because the forest industry corporations have expanded their roundwood procurement in Finland. There is also a new company procuring Finnish roundwood: Harvestia Oy, jointly owned by Myllykoski and Powerflute, which began operating in July 2008; the roundwood procurement of these two companies was previously conducted by Metsäliitto.

Total commercial fellings in 2008 will be down by 12% to 51 mill. m<sup>3</sup> as a result of the reduction in forest industry production. Commercial fellings in non-industrial private forests are down by 13%, whereas the combined total of fellings in company-owned forests and in forests owned by Metsähallitus is down by 5%. Commercial fellings of sawlogs are down by 21% on account of the weak sawnwood demand and drop in production.

Paper production is also down in 2008, but pulpwood fellings will be decreased to a lesser extent, by only 3%, to 29 mill. m<sup>3</sup>. The availability of Russian roundwood has been good, with imports up by an overall 4% on the 2007 total. Despite the reduction in commercial fellings, imports are almost unchanged, with stocks of harvested roundwood expected to be up by almost 70%, to 13 mill. m<sup>3</sup>. This indicates the industry's preparation for an uncertain market in 2009. This level of stocks is exceptional, as such a high level has not been seen since 1995.

## Roundwood Imports from Russia Remain High Prior to Collapse

The Finnish forest industry's increased roundwood consumption has relied heavily on imported roundwood since the 1990s. Imports peaked in 2005, when the forest industry imported a total of 21.5 mill. m<sup>3</sup> of wood, of which 17 mill. m<sup>3</sup> was from Russia. Sawlogs accounted for 5 mill. m<sup>3</sup> of this total. In 2005 and 2006, imported roundwood accounted for more than a quarter of all roundwood consumed by the Finnish forest industry.

The decision to introduce a programme to raise roundwood export duties was made by the Russian government in early 2007, and the result of these increases is that it will no longer be financially viable to import Russian roundwood. The aim of the export duty increases is to allow Russia's own forest industry to develop and to raise the proportion of value added products in Russia's exports. In recent years, Russia's total annual exports of roundwood have amounted to approximately 50 mill. m<sup>3</sup>. The main importers of Russian roundwood have been China (20–25 mill. m<sup>3</sup>), Finland (10–17 mill. m<sup>3</sup>) and Japan (5 mill. m<sup>3</sup>). Exports to China have been increasing in particular, and Russia's share of China's total roundwood imports is very considerable.

In Finland, the forest industry corporations began to reduce their dependence on increasingly expensive roundwood imports in 2007, and to prepare themselves for the increase in Russia's export duties. The forest industry corporations have sought to adapt to the coming

circumstances through various means including strengthening Finnish roundwood procurement organisations, switching from birch to pine in pulp making at selected mills, and closing production lines.

In 2007, the proportion of imported roundwood in the forest industry's roundwood consumption was 22%, down by 4% on the previous year's figure, and Russian roundwood accounted for 66% of this, compared with 78% the previous year. Sawlog imports accounted for less than half of their peak-year levels, totalling 2.3 mill. m<sup>3</sup>. Imports of Russian roundwood in the first half of 2007 were adversely affected by the ground conditions for roundwood harvesting and transportation, which partly explained the reduction in imports in the first six months of the year.

Roundwood imports have nevertheless continued to be high in 2008, and by the end of July a total of 11.6 mill. m<sup>3</sup> of roundwood had been imported. This increase was in pine and birch pulpwood and chips, whereas softwood sawlog imports were down by about 45%. A clear majority of the roundwood imports were again from Russia, but this proportion was continuing to decline, accounting for 63% in the first half of 2008. Imports are expected to fall slightly in the second half of the year, as purchasers of Russian wood will be seeking to avoid the possibility of felled roundwood remaining behind and thus being subject to the new export duties. It is estimated that roundwood imports for the full year 2008 will be just below 19 mill. m<sup>3</sup>.

In 2009, roundwood imports from Russia will collapse when the roundwood export duty

*Duties for roundwood exported from Russia.  
Duties, % on export value, or at least EUR/m<sup>3</sup> o.b.*

Date	Softwood		Birch, over 15 cm		Birch, under 15 cm		Aspen	
	%	€/m <sup>3</sup>	%	€/m <sup>3</sup>	%	€/m <sup>3</sup>	%	€/m <sup>3</sup>
1.7.2007	20	10	20	10	-	-	10	5
1.4.2008	25	15	25	15	-	-	10	5
1.1.2009*	80	50	80	50	-	-	80	50
1.1.2011	80	50	80	50	80	50	80	50

\* On 12 November 2008 it was announced that these export duty increases will be postponed by 9–12 months.

Source: [www.idanmetsatieto.info](http://www.idanmetsatieto.info)

rises to EUR 50/m<sup>3</sup>. Imports of softwood and birch sawlogs will cease completely, but the situation for birch pulpwood is less certain. If Russian birch of a diameter less than 15 cm can be sorted successfully in Russia, imports will continue until the end of 2010. Imports of Russian wood chips (2007: 1.3 mill. m<sup>3</sup>) are expected to increase because of the growing number of sawmills in the country. The chipping of pulpwood that would have to be done to avoid the higher export duties is not expected to be carried out on a significant scale for the time being because of the costs involved.

In all, roundwood imports in 2009 are forecast to be just over 11 mill. m<sup>3</sup>, down by 40% on the 2008 total. This includes about 3 mill. m<sup>3</sup> of Russian birch pulpwood (5.5 mill. m<sup>3</sup> imported in 2007). If the sorting of Russian birch pulpwood by diameter for export purposes is unsuccessful, the total volume of roundwood imports will fall to 8–9 mill. m<sup>3</sup>, which is equivalent to a drop of 50–60% on the 2008 level.

### Roundwood Market Will Adapt in 2009

The declining price trend for softwood sawlogs will continue in 2009 as the sawnwood market remains weak and production decreases. A revival in sawnwood demand will not be seen before the latter part of 2009, and so sawlog demand will remain low. By contrast, there will be a plentiful supply of sawlogs because forest taxation policy will give greater emphasis to final cutting in roundwood sales. To ensure that half of the revenue from roundwood sales is eligible for tax exemption, forest owners must conduct their roundwood sales in the period 1 April 2008 to 31 December 2009. The tax relief on roundwood sales in 2010 will be 25%.

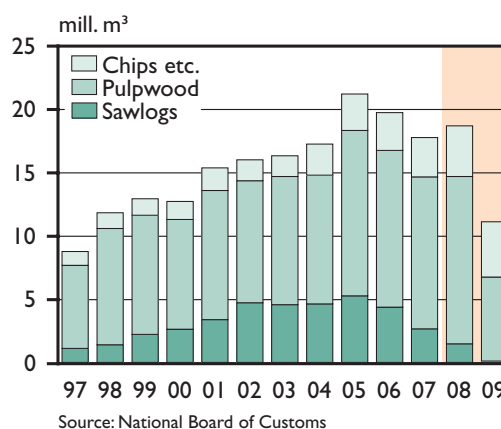
The roundwood market is suffering from oversupply of winter stands, while at the same time there is a shortage of stands with summer access and especially of stands with good access under wet, unfrozen ground conditions. This is because of the harvesting limitations associated with the terrain and the residual growing stock. According to information collected by

Metsäteho, about 10% of the volume of roundwood in non-industrial private forest stands can be harvested when there are wet, unfrozen ground conditions, about 40% during summer and about 50% when the ground is frozen.

A normal winter will use up the oversupply of winter stands marked for cutting and reduce stumpage prices. Most winter stands are thinning stands in which the stumpage price will be lower than in final cutting stands. In 2009, softwood sawlog stumpage prices are expected to be 4–5% down on the level for 2008. Due to the reduction in birch plywood production, the stumpage price of birch sawlogs is barely expected to be up at all in comparison with the 2008 level.

Sawlog commercial fellings are forecast to be up in 2009 by about 3%, to almost 23 mill. m<sup>3</sup>. The almost complete cessation of softwood sawlog imports and the need for top pulpwood and sawmill chips in pulp and paper production will mean an increase in fellings, even though sawnwood production will be down slightly on the 2008 figure.

The decrease in production and exports in the paper industry will reduce the need for pulpwood. Softwood pulpwood prices are forecast to be down only a little for the year as a whole, however, as domestic demand will be maintained by the drop in import volumes and the poorer availability of sawmill chips. In the case of birch pulpwood, the industry is adjusting to using domestically procured wood and smaller volumes of imported wood.

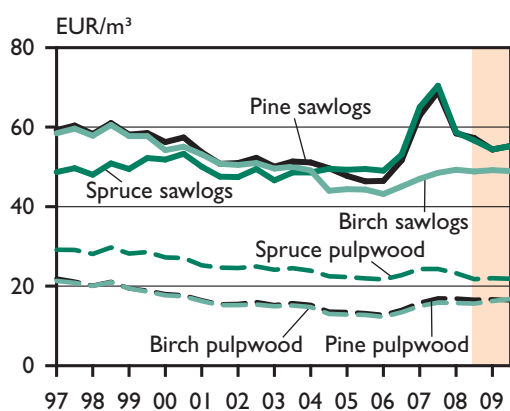


Volume of imported roundwood by category, 1997–2009

Average stumpage prices in non-industrial private forestry, 2007–2009.

Roundwood	2007 EUR/m <sup>3</sup>	2008 EUR/m <sup>3</sup>	Change %	2009 EUR/m <sup>3</sup>	Change %
Pine sawlogs	65.6	57.5	-12	54.9	-5
Spruce sawlogs	67.3	57.1	-15	54.9	-4
Birch sawlogs	47.7	49.0	3	49.0	0
Pine pulpwood	16.3	16.7	2	16.5	-1
Spruce pulpwood	24.3	22.1	-9	21.9	-1
Birch pulpwood	15.4	15.7	2	16.5	6

Source: Finnish Forest Industries Federation and Finnish Forest Research Institute



Source: Finnish Forest Research Institute

Semiannual stumpage prices by roundwood category, 1/1997–2/2009 at 2007 prices (cost of living index)

For example, any production shutdowns at the smaller line in Stora Enso's Enocell pulp mill and at the Sunila pulp mill jointly owned with Myllykoski will depend on the availability of birch pulpwood.

The average 2009 stumpage price of birch pulpwood will be up by 6% on the 2008 figure on account of the scarcity of birch, but at the same time the industry's consumption of birch pulpwood will decrease. The partial replacement of birch sulphate pulp with imported hardwood sulphate will continue. Imports of hardwood sulphate pulp in the first half of 2008 were running at 30–35 tonnes per month, which is equivalent to a monthly felling of approximately 150 000 mill. m<sup>3</sup> of birch pulpwood.

Total commercial fellings of pulpwood in 2009 are forecast to be unchanged from 2008, at 29

mill. m<sup>3</sup>, whereas import volumes will be down. In total, commercial fellings from non-industrial private forests and from company-owned forests and forests owned by Metsähallitus are forecast to be up by 1%, to almost 52 mill. m<sup>3</sup>.

The combined total of commercial fellings and imported roundwood in 2009 will be about 63 mill. m<sup>3</sup>, representing a drop of 13 mill. m<sup>3</sup> on the total two years earlier, in 2007. The most significant of the other changes anticipated include an increase in the industry's stocks of harvested roundwood and an increase in the volume of wood from delivery fellings. By importing a steady volume of roundwood it has been possible to reduce the need for domestic stocks of roundwood, as the need for future stocks on account of seasonal fluctuation in domestic roundwood harvesting has been relatively small.

The previously weak demand for roundwood from delivery fellings has meant that it has not been worthwhile for forest owners to maintain machinery needed in thinnings, which has in turn reduced the amount of wood from delivery fellings brought to market. This has also been exacerbated by the ageing of the forest-owning population, which has been accelerated by postponements in the generational transfer of ownership: according to the Work Efficiency Institute, the number of forest owners conducting delivery fellings is about 50 000–70 000, compared with about 100 000 forest owners at the end of the 1990s. However, the supply of roundwood from delivery fellings has grown in the case of contractors offering delivery felling services.

Although roundwood imports are set to be down by at least 40%, or by 50–60% in the worst-case scenario for birch pulpwood imports, this change is occurring at a time when the forest industry's end-product markets are weakening. The increase in the demand for domestic roundwood will not be great enough to raise prices. This is supported by the fact that despite a significant reduction in imports, the industry's stocks of harvested roundwood are forecast to be down by only 7% by the end of 2009, and will again be at a high level compared with previous years.

### 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 2008 will rise to over EUR 200 mill. As a result of the increase in the surface area for forest regeneration, investment in 2009 will climb further to about EUR 210 million, of which almost one third will be financed using the support available for financing sustainable forestry. Stumpage earnings in 2008 will be just below EUR 1.6 billion, or about 25% below the record level of 2007. In 2009, stumpage earnings will be down slightly on the 2008 figure.

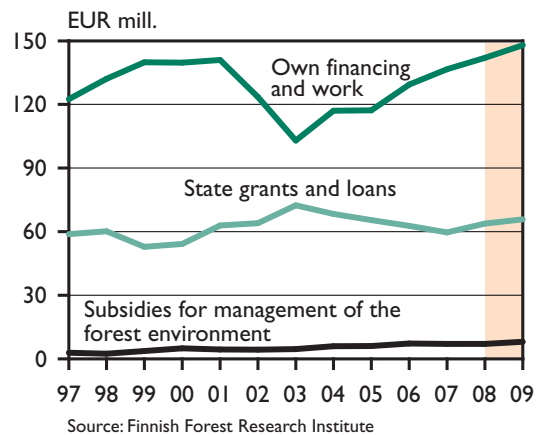
The decrease in activity on the sawnwood market is clearly visible in the operating profit in non-industrial private forestry, which will be down on the peak level reached in 2007, to below EUR 100/ha in both 2008 and 2009. Due to the drop in stumpage prices, the real return on assets in timber production in 2008 will be minus 10%.

#### Regeneration Relies on Self-Financing by Private Forest Owners

Total investment in timber production in Finnish non-industrial private forestry for the full year 2008 will rise to over EUR 200 mill. Investment in 2009 will increase further, to about EUR 210 mill. The level of EUR 200 mill. has only been reached in real terms in 2001 and in the early years of the 1990s.

The amount of financing and work input by private forest owners in timber production investments in 2008 amounts to more than EUR 140 mill., which is about 9% of the stumpage earnings in non-industrial private forestry. In 2009, the corresponding figure will rise to almost EUR 150 mill.

The level of public financing used in non-industrial private forestry during 2008 totals



State and forest-owner funding of investments in non-industrial private forestry, 1997–2009 at 2007 prices (cost of living index).  
Source: Finnish Forest Research Institute

almost EUR 64 mill., up about EUR 4 mill. on the 2007 total. Including financing by the forest owners themselves, this brings the total input in state-supported silvicultural and forest-improvement works to approximately EUR 100 mill.

#### National Forest Programme 2015 Raises Performance Targets

In spring 2008, the Government adopted the National Forest Programme 2015 and the related Forest Biodiversity Programme for Southern Finland (METSO). A key target of the National Forest Programme is to raise annual felling volumes permanently by 10–15 mill. m<sup>3</sup>. The METSO programme is intended to bring a halt to the adverse trends in forested ecosystems and forest species and to establish a favourable trend in natural biodiversity by the year 2016. Both programmes require a considerable increase in funding for their successful implementation.

Achievement of the National Forest Programme targets will require an increase in the amount of silvicultural and forest-improvement works in all forest ownership categories. The greatest targets for additional input in relative terms are in ditch cleaning and supplementary ditching and in forest fertilisation.

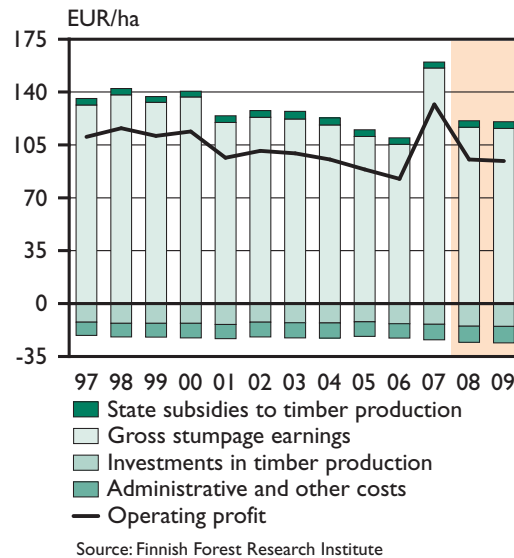
## Half of Subsidies Go to Tending of Young Stands

The Government's budget proposal for 2009 includes a total of about EUR 66 mill. in grants and loans for securing the sustainability of wood production. The most important funding target is still the tending of young stands and the closely related job of harvesting fuelwood. The funds available for these will be increased by EUR 2 mill. on the 2008 level.

The 2009 budget proposal includes an allocation of nearly EUR 43 mill. for forestry organisations that promote and monitor forestry, which is almost EUR 5 mill. more than in 2008. The justification given for this is the targeted increase in fellings outlined in the National Forest Programme 2015, which calls for an immediate increase in the use of advisory services by forest owners, and for more efficient collection and use of forest resource data. The new METSO programme is evident in the efforts to promote management of the forest environment. In the 2009 budget proposal, a sum of about EUR 8 mill. is reserved for management of the forest environment, which represents an increase of EUR 1 mill. on the 2008 total. Almost EUR 5 mill. of the budget allocation will be used for environmental support and support for sites with notable natural value, thus ensuring retention of biodiversity across about 8 000 ha of forest habitat by the end of 2009.

## Stumpage Earnings Falling Sharply

High stumpage prices and record fellings combined to boost gross stumpage earnings in non-industrial private forestry to a record EUR 2.05 billion in 2007. However, in 2008 the stumpage prices of pine and spruce sawlogs in particular have fallen significantly on the previous year. Commercial fellings have also decreased significantly since 2007. Gross stumpage earnings of private forest owners in 2008 will amount to almost EUR 1.6 billion, down about 25% on the accrued earnings for 2007. A further small reduction in stumpage earnings is anticipated in 2009.



*Earnings, costs and operating profit in non-industrial timber production, 1997–2009 at 2007 prices (cost of living index).*

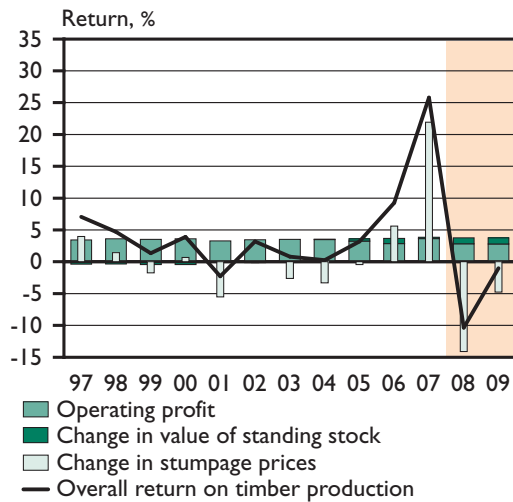
*Non-industrial private forestry balance sheet calculation for 2007 and forecast for 2008 and 2009, EUR/ha.*

	2007	2008	2009
<b>Gross stumpage earnings</b>			
Whole country	155.9	116.6	115.9
Southern Finland	201.5	147.8	147.0
Northern Finland	61.1	51.8	51.2
<b>– Gross costs</b>			
Whole country	24.1	25.7	26.1
Southern Finland	28.0	29.9	30.4
Northern Finland	15.8	16.9	17.2
<b>+ Subsidies</b>			
Whole country	3.9	4.4	4.5
Southern Finland	3.6	4.0	4.1
Northern Finland	4.5	5.1	5.2
<b>= Operating profits (before taxes and external capital costs)</b>			
Whole country	135.7	95.3	94.3
Southern Finland	177.1	122.0	120.7
Northern Finland	49.9	40.0	39.2

*Northern Finland is defined as the Provinces of Oulu and Lapland*

*Source: Finnish Forest Research Institute*

Total annual investment in timber production in non-industrial private forestry in 2007 amounted to about 9% of gross stumpage earnings. The corresponding investment rate for 2008 will rise to just over 13%, largely due to the drop in stumpage earnings. In 2009, investment in non-industrial private forestry will be up and forest earnings will be down, pushing the investment rate up to about 13.5%.



Source: Finnish Forest Research Institute

Overall real return on timber production, 1997–2009 at 2007 prices (cost of living index).

Southern Finland costs have risen to EUR 30/ha, and in Northern Finland to EUR 17/ha.

The pre-tax operating profit in non-industrial private forestry for the full year 2008 will be EUR 95/ha, which is significantly below the average for the previous five years (EUR 104/ha), and EUR 40 below the peak of 2007. In 2009, the tax reduction is expected to maintain roundwood sales at a high level, and so fellings will be up slightly despite the drop in stumpage prices. The operating profit will be down a little in 2009 due to the drop in stumpage prices for different roundwood categories, and because of the increased pulpwood emphasis in fellings. The Government's 2008 decision on a 50% tax reduction will increase the net income for forest owners by approximately EUR 14/ha.

### Operating Profit from Timber Production Less Than EUR 100/ha

Per-hectare gross stumpage earnings for 2008 will be down to less than EUR 120, more than EUR 30 below the 2007 peak, thanks to the fall in stumpage prices, the reduction in fellings and the greater emphasis on pulpwood. In 2009, earnings will be down slightly on account of the fall in stumpage prices.

The increase in forest management work and the rising costs in 2008 will mean that the per-hectare costs of timber production are up by about EUR 2 on the 2007 total of EUR 24/ha. In

### Negative Return on Timber Production

In 2007, the sharp rise in prices for softwood sawlogs led to a rise in the real return on assets in timber production, to a record 26%. A boom in the economy is normally followed by a downturn, and in 2008 stumpage prices will be down by an average of over 10% on the previous year's figure. The real return on investment will be down to minus 10%, because of the fall in stumpage prices and the relatively high inflation. In 2009, the return will still be negative, at about minus 2%, on account of the lacklustre stumpage price trend.



## Featured Topic

### Pellet markets on the increase

Lauri Sikanen and Antti Mutanen

#### Western Europe – the largest pellet consumer

Wood pellets have become an important fuel in heat production during the last decade. Pellets are globally significant in the bioenergy sector since they are one of the first wood based fuels which are profitable to transport even over long distances. The energy density of pellet is higher and it is easier to handle compared to wood chips or firewood. The user friendliness of pellets has been a clear marketing advantage. Especially in Central Europe, pellets are considered an important biofuel. As a result, subsidies to compensate the higher investment costs compared to a e.g. oil heating system are available.

The world's ten largest pellet producing countries together produced approximately 8.5 million tonnes of pellets in 2007 (Figure 1). However, it is notable that the largest pellet users are not necessarily the largest pellet producers. The high energy content of pellets and the growing demand in Europe have increased the exports of pellets across the Atlantic. For example, in 2007, Canada exported roughly half of its production to European markets, a total of 765 000 tonnes. Furthermore, pellet trading within Europe is also increasing steadily. The largest flows of pellets are from Germany, Finland, Austria, Poland and Russian towards Italy, Sweden and Denmark.

From a European perspective, Russia is a significant player on the pellet market. Currently, the by-product market of the sawmilling industry in Russia is undeveloped, and as a result, plenty of low cost raw material in the form of sawdust is available. As a result, about 20 pellet plants have already been established and many new plants are currently under planning in North-West Russia. Moreover, the Russian sawmilling capacity is growing and pellet plants are built in connection with the new sawmills. The situation is similar in Germany where pellet plants are commonly built in conjunction with new sawmills.

The growing demand of pellets has naturally increased the pellet supply. The future development of demand and its growth on the markets is difficult

to predict. Especially in Central Europe, private house builders and owners are playing a key role in increasing the demand for pellets. As a result, a possible slump in the construction business would have a direct effect on the growth of pellet demand in the future. On the other hand, during the last few years, also larger sized heating and CHP-plants have been established which use pellets as a primary fuel source. In this respect, Sweden is leading the way, where about 60% of all pellets used in the country are consumed in heating plants.

#### Pellet production has grown considerably in Finland

In Finland, pellet production has been increasing rapidly in 2006 and 2007. For example in 2007, the level of production reached 330 000 tonnes, which represented a growth of 70% compared to the year 2005. However, during the last four years, the growth in domestic consumption has been more moderate 20 000 tonnes per year. Total domestic consumption reached approximately 120 000 tonnes in 2007. Today, Finland is exporting about 65% of the total pellet production with the largest shares going to Sweden and Denmark.

In the future, it is expected that pellet production will continue to grow in Finland. According to estimations

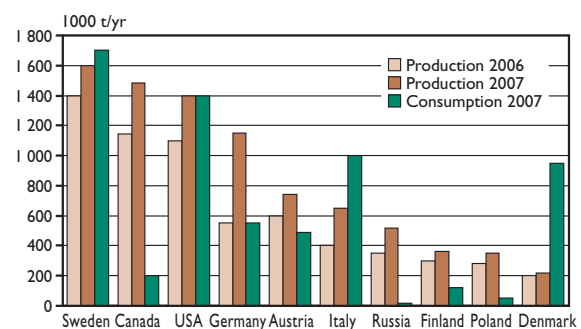


Fig 1. The pellet production and consumption of the leading pellet countries in 2006-2007.

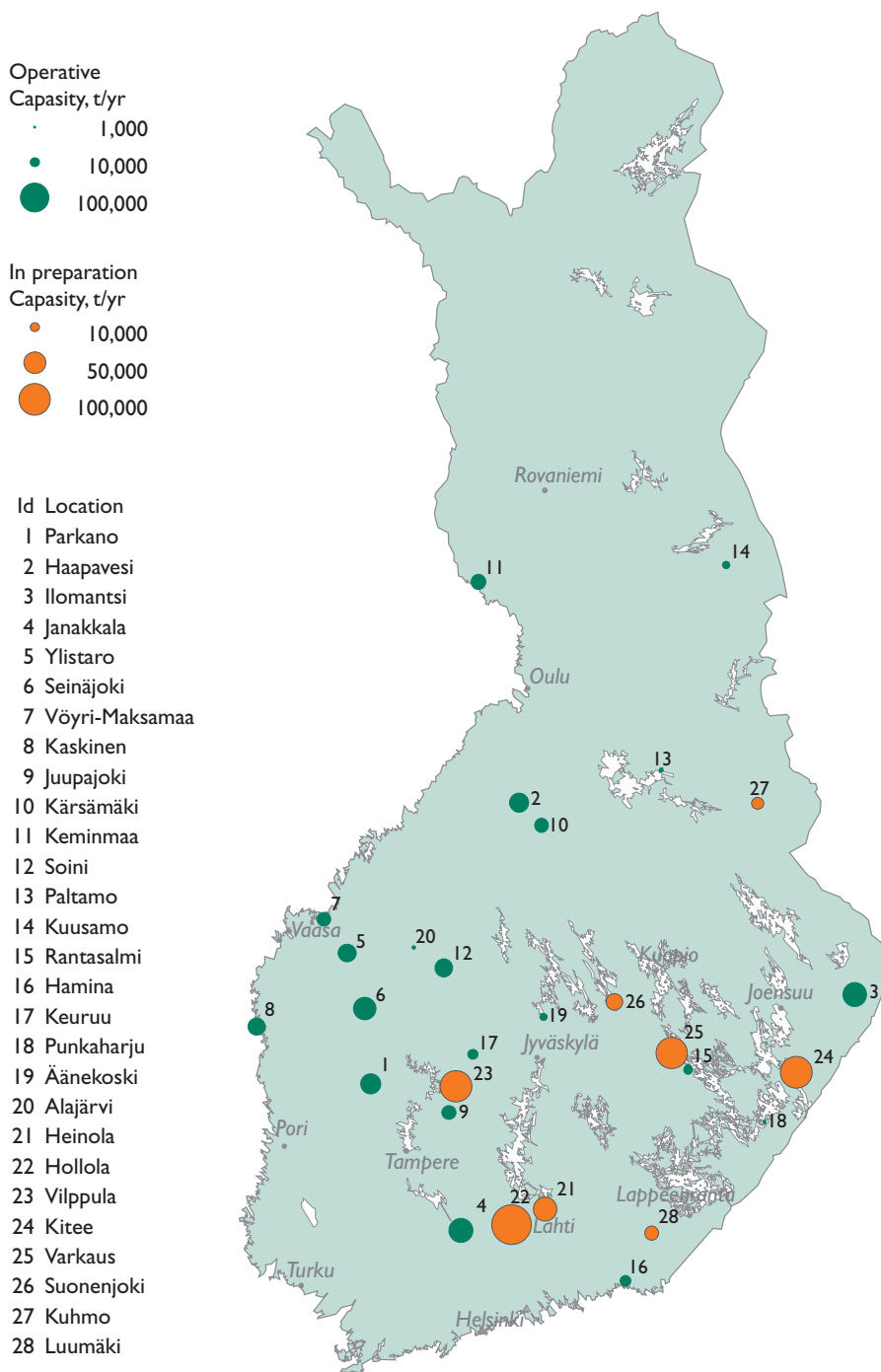


Fig 2. Existing and forthcoming pellets plants in Finland in 2008.

of the Finnish Pellet Energy Association, total production could increase to one million tonnes by the year 2010. The North Karelia University of Applied Sciences and the Finnish Forest Research Institute (Metla) have created a database of existing and forthcoming pellet plants in Finland in 2008 (Figure 2). The capacity of forthcoming plants on average will be higher than the existing plants with an annual production capacity of around 500 000 tonnes. However, capacity and actual

production can differ remarkably in the early stage of the production.

### Many factors affecting price development

The price development of pellets has been an important issue in particular for private households who have chosen a pellet heating system. The reason for the active ongoing discussion about the price of pellets is prob-

ably the mistaken concept that wood energy is cheap energy. However, pellets are only one fuel, though renewable and domestic, among other fuels and therefore their price development is connected to general energy prices on the market. From the pellet industries standpoint, the production must be profitable and the pellet price must cover at least the production costs. The increase in prices of raw material and other production inputs, as e.g. electricity or transportation cost are putting pressure on the pellet manufacturers and finally these costs are handed to the consumer. Nevertheless, from the consumer's point of view the price of pellets must be competitive since the switch to pellet heating systems requires expensive investments in equipment that should be compensated by a lower pellet price compared to traditional fuels such as oil, gas or electricity. The price development of pellets has, to some extent, differed from the expectation of the consumers which explains the fact that the popularity of pellet heating system in new detached houses in Finland has remained marginal with only 4% of detached house builders choosing a pellet heating system in 2007.

In Finland, the price of pellets has followed the price of heavy fuel oil. In June 2008 the price of heavy fuel oil was 40 €/MWh and for wood pellets 34 €/MWh. At the same time, light fuel oil was 71 €/MWh. In the future, the price will be defined by the ratio of demand and supply on a European level as well as the price of alternative energy sources, mainly light fuel oil. Domestic consumption of pellets will certainly be smaller than production for the coming years. If the planned pellet plant investments are realised, they will increase the supply of pellets, the number of actors in the industry and finally competition. This should, to some extent, calm the price development of pellets in the future. The domestic price of pellets is foremost affected by the price level in the main export markets and whether Finnish pellets are competitive in these markets.

### Pellets have unutilised market potential

Along with climate change, the bioenergy sector and as a result also pellet production is seen as a growing line of business. The domestic pellet discussion is marked by the disappointment of consumers about promises of easy to use and cheap heating system. Depending on the used system, it is true that pellet heating systems need more maintenance compared to traditional electric or oil heating systems. However, the technological development of pellet heating systems has been rapid and today systems with a very high degree of automation are available on the market. Furthermore, quality issues in pellet production have also been improved considerably. The increase in the price of pellets has encouraged new investments also by new actors. This increase in competition forces entrepreneurs to improve their effi-

ciency, develop production engineering and to shift the focus towards improved customer service. These are all positive developments for the entire pellet industry. It has to be kept in mind that the pellet industry is only in its infancy in Finland and competitive market structures are under constant development.

The cheap price of pellets has often been used as a marketing tool for pellets. However, the increasingly important debate about climate change and its consequences as well as limited amounts of fossil fuels have become additional important arguments to use an environmental friendly and sustainable source of fuel such as pellets. Usually pellets are produced of domestic and renewable raw materials, and that fact has been increasingly used as a marketing tool. The message that has to be conveyed to the end user is that they are using a maintenance free heating system and at the same time contributing the reduction of CO<sub>2</sub> emissions to the atmosphere by replacing fossil fuels. Finally, in doing so they are actually saving money and supporting local communities.

In Finland, the use of pellet heating systems in detached houses has been much slower than anticipated. The situation in heating plants is not much different with only limited growth over the course of the last years. However, the potential to increase the use of pellets in the future is tremendous. If all the plants currently under planning are realised, Finland will become one of the largest pellet producing countries. Nonetheless, the increasing production of pellets cannot be solely based on the assumption of ever-increasing export growth. The competitiveness of Finnish pellets is facing challenges in the future. Firstly, raw material, production and transportation costs are increasing partly due to rising fuel prices. Moreover, Russian pellet production is also growing steadily. Consequently, actions to increase the domestic use of the pellet are vital for the industry. According to Vapo, the biggest pellet producer in Finland, almost 20 TWh of energy derived from oil is used to heat buildings in Finland. Direct electric heating is used in over 500 000 detached houses. If 100 000 detached houses would change from oil (consumption 2000 l/year) to pellet heating, the consumption of pellets would increase by 400 000 tonnes annually.

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