2.1 Export, Production and Prices of Wood Products Industry

Finland’s production and exports of soft sawnwood are estimated to increase by about 4 per cent during the current year compared with 1997. Next year the growth of demand for wood industry products will be slowed down by the negative effects of the Asian and Russian crises on economic growth in Europe. The domestic construction sector is the engine of growth for sawnwood production, with production increasing by one per cent, whereas exports will remain at the 1998 level. Production and exports of plywood will grow by about 3 per cent during the current year, and by about 2 per cent next year. As a result of the general uncertainty in the market, the price of sawnwood has not recovered as expected and in annual terms the unit price of Finland’s exports of soft sawnwood will decline by about 8 per cent this year and by about 3 per cent in 1999. Plywood prices have developed more favourably, with the average export price of plywood rising by 12 per cent during the current year. Next year, the price is projected to remain at the 1998 level.

Exports of Wood Products Industry Increase in 1998

Housing construction has increased in the first half of the year in many of Finland’s major European export markets. Accordingly, Finland’s exports of soft sawnwood increased by 12 per cent in the first six months of the year, compared with the same period last year. The growth of exports will slowdown towards the end of the year. Exports of birch plywood have also developed favourably during the current year, whereas exports of spruce plywood have declined. The EU countries are still the most important export market both for sawnwood and plywood. In 1997, about half of Finland’s production of sawnwood and more than 70 per cent of its plywood production went to the EU countries (Table 3).

Following the decline in demand in Japan, Finland’s exports of sawnwood to Asia have dropped by about 30 per cent during the first half of the current year, compared with the same period last year. The decline in exports to Asia has been balanced by increased exports to Europe and Africa. Exports of plywood to Asia declined in the same period by about 10 per cent, as demand for spruce plywood has gone down. The competing suppliers, Sweden and Canada, have also redirected their exports: Sweden to its main markets in Europe, and Canada to the domestic market and the United States. Finland and Sweden have also strongly increased their exports of sawnwood to United States in the first half of the year, though export volumes have been comparatively small.
The growth of production in European producer countries, combined with the decline in exports to Asia, has resulted in oversupply of sawnwood in the European market, in spite of the reasonably good growth of consumption. According to Japanese estimates (Japanese Forest Agency), demand for imported sawnwood from Europe is expected to decline by a total of about 40 per cent during the current year compared with 1997. The poor growth of demand in Japan has affected the European sawnwood market, in spite of the fact that the 2 million cubic metres of sawnwood exported from Europe to Japan equals only about 6 per cent of the Europe’s total sawnwood exports.

The collapse of sawnwood demand in Japan has also led to oversupply in the United States and Canada, though strongly increasing housing construction in North America has resulted in increased consumption of sawnwood. In addition, the situation in Canada is complicated due to the Softwood Lumber Agreement between Canada and USA, which restricts duty free exports of sawnwood from Canada to US. Thus, the agreement makes it more difficult for Canada to increase its market share in the United States. Of Russia’s total exports of 4 million cubic metres of sawnwood, Japan takes about 11 per cent, so in absolute terms the volume is so small that any decline in exports is virtually insignificant for the trade flows.

Though housing construction has expanded in many of Finland’s major export markets, estimates published by Euroconstruct in June 1998 show that the growth of housing construction in Europe will slowdown slightly during the current year. In the United Kingdom signs of a decline in construction were already to be seen at the beginning of the year, and the weak performance can be assumed to continue for the rest of the year. However, according to projections by Deutsche Bank Research, Germany’s investments in housing construction will grow in real terms by 0.2 per cent during 1998. The development is encouraging compared with a decline of 2.5 per cent in 1997. Construction confidence indicators also show improved prospects for construction.

The declining trend in sawnwood prices, caused by the oversupply of whitewood in the summer of 1997, has continued in Europe during the first half of the current year. In North America, too, the oversupply of sawnwood has caused prices to decline.

| Table 3. | Finland’s Sawnwood and Plywood Industry in 1997 (1000 m³). |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                | SOFT SAWNWOOD  | % of production | PLYWOOD         | % of production |
| Production      | 10 600          | 100             | 987            | 100             |
| Domestic use*   | 3 090           | 29              | 108            | 11              |
| Exports         |                 |                 |                |                 |
| EU              | 5 219           | 49              | 727            | 74              |
| Asia excl. Japan| 372             | 4               | 27             | 3               |
| Japan           | 553             | 5               | 15             | 1               |
| Africa          | 1 135           | 11              | 1              | 0               |
| North America   | 23              | 0               | 35             | 4               |
| Russia          | 5               | 0               | 2              | 0               |
| Others          | 203             | 2               | 72             | 7               |

Source: Finnish Forest Industries Federation
* Domestic use = production - exports
since May 1997, being now 25 per cent below last year’s price level. Declining prices have also affected Finnish exports, causing the unit price of exported whitewood to decline by 20 per cent from July 1997 to May 1998, and that of redwood by 6 per cent in the same period. However, the declining trend appears to have been broken in the summer. Whitewood prices have traditionally fluctuated more widely than those of redwood, among other things because of their different end uses. Most of the spruce is used as structural timber and for temporary constructions in the cyclical construction industry, whereas pine, for example in the United Kingdom, is widely used in joinery products (e.g. for windows), which are in good demand in the continuously growing housing renovation market.

Export prices of Finnish plywood have developed better than the export prices of sawnwood. Exports of plywood from the United States to Europe have decreased because of growing domestic demand. The price level of plywood has gone up both in Europe and the US. The average export price of Finnish spruce and birch plywood has risen by about 10 per cent in the first half of the current year compared with the same period of 1997. The average price of total plywood exports has risen even more strongly because of the increased export share of birch plywood, which is about twice as expensive as spruce plywood. During the current year, birch plywood has accounted for 58 per cent of total plywood exports.

Boosted by the growth of construction activity in Europe, Finland’s exports of sawnwood will grow during 1998 by nearly 4 per cent. The weak trend in export prices will continue, and the Finnish mark unit price of soft sawnwood is estimated to decline by about 8 per cent in 1998 compared with last year. The growth of plywood exports will also slowdown compared with last year as a result of weakening demand for spruce plywood. Plywood exports will grow by about 3 per cent in 1998 and the average plywood export price will rise by 12 per cent compared with 1997.

Figure 3. Export Volumes and Real Export Unit Value for Sawnwood in 1987–99F.

Figure 4. Export Volumes and Real Export Unit Value for Plywood in 1987–99F.
Demand For Sawnwood Remains Moderate in 1999

No major changes are expected in European housing construction in 1999 compared with this year’s activity. Housing construction will increase slightly in Germany and France, while in the United Kingdom prospects continue to weaken. A favourable feature in the European construction sector is the growth in renovation construction activity, which will grow by an average of 3 per cent in the EU area in 1999. A growth of this magnitude was last recorded in 1994.

In view of the development in the construction sector, demand prospects for sawnwood in Europe will be reasonably good during 1999, but the price development is weak. In Europe, any strengthening of prices is unlikely, unless demand recovers in Japan. In addition, the economic growth in the United States is expected to slowdown in 1999, which will depress the region’s demand for forest products, adding to the downward price pressure. In the case that demand in the United States will contract, the supply of Canadian sawnwood to Europe may increase, if also demand in Japan remains depressed.

The repercussions of the Asian turmoil are also making themselves felt in the plywood market. The Asian region produces and consumes about half of the world’s plywood. Because Asia’s real competitiveness relative to European and North American producers has improved as a result of the depreciation of the region’s currencies, there is a possibility, that for example, Indonesia will direct its exports to Europe. This is bound to put downward pressure on plywood prices. About 40% of Indonesia’s plywood has traditionally been exported to Japan. So far, an increase in the Asian plywood industry’s export supply has been hampered by rising costs for freight and imported production inputs, and by a shortage of short-term loan financing.

Russia’s economic recession, in combination with the development in Asia, is likely to cause growing price pressures in forest products markets. Because Russia’s export products are priced in US dollars, the devaluation of the ruble does not necessarily have any immediate effect on the export prices of Russian sawnwood. If rising inflation does not outweigh the competitive advantages obtained through the devaluation, exchange rate adjustments may also be used in Russia to reduce dollar prices.

### Table 4. Forecasts for Production and Exports of Sawnwood and Plywood, 1 000 m³ (percentage changes are shown below the respective figure).

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<thead>
<tr>
<th></th>
<th>PRODUCTION</th>
<th></th>
<th>EXPORTS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SAWNWOOD</td>
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<td>11 000</td>
<td>11 100</td>
<td>7 511</td>
</tr>
<tr>
<td></td>
<td>+4</td>
<td>+1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLYWOOD</td>
<td>987</td>
<td>1 020</td>
<td>1 040</td>
<td>879</td>
</tr>
<tr>
<td></td>
<td>+3</td>
<td>+2</td>
<td></td>
<td></td>
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</tbody>
</table>

### Table 5. Forecasts for Nominal Export Prices of Soft Sawnwood and Plywood (change on the previous year, %).

<table>
<thead>
<tr>
<th></th>
<th>1997 change, %</th>
<th>1998F change, %</th>
<th>1999F change, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sawnwood</td>
<td>19</td>
<td>–8</td>
<td>–3</td>
</tr>
<tr>
<td>Plywood</td>
<td>5</td>
<td>12</td>
<td>0</td>
</tr>
</tbody>
</table>

* export prices are export unit values in Finnish mark
However, because of Russia’s production and logistic problems, it is unlikely that Russia would be able to exploit the potential advantages of the devaluation to any major degree and significantly increase its exports to Europe. Sweden’s competitiveness has also improved as a result of the depreciation of the Swedish krona during the current year. According to Riksbanken, the decline of the krona will, however, stay temporary because of the country’s favourable economic development.

As the value of euro is projected to appreciate with respect to other currencies during 1999, Finland’s competitiveness can be expected to decline in the markets outside the EMU, where the most common trading currency is the US dollar. Still, the relative share of exports outside the EMU is relatively small compared with the wood products industry’s total production. In the sawmilling industry, this share is smaller than the domestic share.

In 1999, Finland’s exports of soft sawnwood are predicted to remain at last year’s level, assuming that European construction activity will remain at roughly the level achieved in 1998. The export unit price is estimated to decline 3 per cent. Plywood exports are predicted to grow by about 2 per cent as a result of increased exports of birch plywood, and the unit export price is expected to remain at the 1998 level.

### Sawnwood Demand Growth Continues in Finland

Domestic demand for sawnwood will increase by 5 per cent in 1998 from the last year’s level (2.9 million cubic metres) as a result of increasing housing construction, the growth in share of one-family houses and increased renovation activity. According to the August 1998 review of the Confederation of Finnish Construction Industries, the volume of housing starts will grow by 10 per cent in 1999, with building renovation and modernization activity growing by 5 per cent.

About 80 per cent of the domestic consumption of sawnwood in Finland is used for construction purposes, especially for construction of one-family houses. The construction of one-family houses is estimated to grow by 13 per cent this and next year (in terms of the number of houses). Due to the growth of construction, Finland’s consumption of sawnwood is estimated to grow by 5 per cent in 1999, reaching a level of about 3.2 million cubic metres.

Domestic consumption of sawnwood and increased exports will increase Finland’s production of sawnwood in 1998 by about 4 per cent compared with 1997, when sawnwood production reached a record of 10.6 million cubic metres. In 1999, the production will grow by about one per cent compared with 1998 as a result of growing domestic demand.

Plywood production will grow as a result of increased exports from 987 000 cubic metres in 1997 to slightly over one million cubic metres in 1998. In 1999, plywood production is forecasted to grow by 2 per cent. Finland’s plywood production capacity has expanded during the 1990s from about 0.6 million cubic metres to the current level of more than 1.2 million cubic metres, boosted in particular by the increased production of softwood plywood. Based on investment plans for the period 1997–99, the plywood production capacity is expected to increase by slightly less than 100 000 cubic metres.

### 2.2 Export, Production and Prices of Pulp and Paper Industry

Finland’s exports of paper increased by 18 per cent in the first half of 1998 as a result of good demand situation and due to successful increasing of market shares. The growth of exports have slowed down towards the end of the year. Paper production is projected to increase by an average of 10 per cent during 1998 and chemical pulp production by 4 per
cent. **Owing to the reasonably favourable economic growth within the European Union, exports of paper and paperboard are forecasted to increase by 2 per cent in 1999. However, exports of market pulp will go down in 1999, as the production will be increasingly used in domestic paper production. Should the euro currency become as strong as predicted at present, the competitors outside the EMU, primarily Sweden and Canada, are likely to get a slight competitive edge in the paper markets next year. Because of the appreciation of the currency and the repercussions of the Asian crisis, Finnish mark export prices of paper are projected to remain at this year’s average level. Export prices of paperboard are expected to grow by 2 per cent in 1999.**

The European Union is still the most important export market for Finland’s pulp and paper industry, absorbing nearly two-thirds of the production (Table 6). The EU region’s apparent consumption of newsprint increased in 1997 by 4 per cent, and the consumption of other printing and writing papers by 12 per cent. Finland supplied 16 per cent of the EU region’s imports of newsprint and an average of 30 per cent of its imports of other printing papers. Finland’s exports of paper to the former Soviet Union and East-European countries increased strongly during 1997. For example exports of fine paper to Russia were more than 30 per cent up on 1996, and exports of magazine paper to Poland and Hungary more than doubled. However, the export volumes to these regions are still relatively modest.

**Chemical Pulp Inventories Building Up During 1998**

The NORSCAN inventories of the five biggest chemical market pulp producer countries continued to grow in the summer, amounting to slightly less than 1.8 million tons at the end of September 1998. Producers’ attempts to raise market pulp prices have failed. The inventory level is about 0.2–0.3 million tons higher than the market equilibrium, in which prices typically begin to rise. According to Utipulp’s statistics, chemical pulp buyers’ inventories have already started to go down in July and August 1998.

The HWWA index, which describes the world market price of softwood market pulp, has gone down by 20 per cent during the first ten months of 1998. The PIX pulp price index maintained by the

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**Table 6. The Finnish Pulp and Paper Industry in 1997 (1 000 tons).**

<table>
<thead>
<tr>
<th>CHEMICAL PULP % of production</th>
<th>PAPER % of production</th>
<th>PAPERBOARD % of production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>6 620</td>
<td>9 543</td>
</tr>
<tr>
<td>Domestic use*</td>
<td>4 965</td>
<td>859</td>
</tr>
<tr>
<td>Exports</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EU</td>
<td>1449</td>
<td>5 998</td>
</tr>
<tr>
<td>Asia</td>
<td>128</td>
<td>712</td>
</tr>
<tr>
<td>United States</td>
<td>5</td>
<td>630</td>
</tr>
<tr>
<td>Russia</td>
<td>5</td>
<td>85</td>
</tr>
<tr>
<td>Others</td>
<td>68</td>
<td>1 259</td>
</tr>
</tbody>
</table>

Source: Finnish Forest Industries Federation

* Domestic use = production – exports
Finnish Options Exchange (FOEX) declined in November 1998 to 460 dollars per ton, which is more than 20 per cent below the year-ago figure of 590 dollars. The pulp market is, however, likely to pick up towards the end of the year and the price level may begin to recover gradually, provided that also inventories go down. The Finnish mark price of chemical pulp exported from Finland has risen by as much as 15 per cent during the first half of 1998, in spite of declining world market prices.

The foreign currency-based prices of coated magazine paper have increased in the first half of 1998 by nearly 10 per cent in the UK market and by nearly 20 per cent in the French and German markets, compared with 1997. The market prices of newsprint and uncoated magazine paper also increased by 10–20% in the first half of the year. Among various paper grades, the oversupply situation is most prominent in fine paper. Nevertheless, Finnish paper producers announced price increases of 4–8% for October 1998 shipments. However, these price increases are unlikely to go through as such because of the growing uncertainty over world economic development. In spite of the uncertain situation in the Asian market, there have been no major increases in the supply to Europe from outside suppliers.

According to paper industry statements during this year, the close links between pulp and paper prices have ceased to exists, primarily to the extent that the price development of market pulp no longer would have any immediate impacts on paper prices. Though value added in the manufacture of paper products has increased, chemical pulp is still a key component in the paper industry’s production costs. The price of chemical pulp is reflected in the price of fine paper – the product most closely linked to chemical pulp – and the effect is then transferred to other paper grades as a result of the substitution between grades. Against this background, the long-term interdependencies of paper and pulp prices are unlikely to disappear. Unless the price of chemical pulp begins to rise clearly, paper prices are not going to change much, either.

The Finnish paper industry’s competitive position in the main market in Western Europe has been most clearly enhanced by the fact that Canada’s exports of paper and paperboard to Europe (of which newsprint accounts for 70%) have declined by 14 per cent during the period of January-August 1998. This decline has occurred in spite of the competitive advantage that Canada has enjoyed through the depreciation of its currency, e.g. against the pound sterling, the German mark, the Swedish krona and Finnish mark. Imports of chemical pulp from Canada to Europe decreased during January-August by only one per cent compared with the same period last year. The Finnish mark has appreciated relative to the competing countries’ currencies: by 14 per cent against the Canadian dollar, eight per cent against the US dollar and six per cent against the Swedish krona during January-October 1998. Though this has impaired the nominal competitiveness of the Finnish forest industry, its real competitiveness is still good.

Figure 5. Chemical Pulp Export Volume and Real Export Unit Value in 1987–99F.
**Finland's Paper Production Increases Strongly in 1998**

Spurred by capacity expansions and high capacity utilisation rates at the mills, the production of paper increased by 13 per cent in the first half of the year, with exports increasing by 18 per cent. The production of chemical pulp increased in the same period by slightly over 5 per cent. The development is expected to be slightly weaker in the second half of the year, and on this basis the total production of paper in 1998 is estimated to increase by an average of 10 per cent and that of chemical pulp by 4 per cent. The production of paperboard is estimated to increase by about 4 per cent in 1998. The reason why paper exports increase more than pulp exports is, among other things, the good demand for magazine paper, the product category with high relative share of mechanical pulp in the papermaking furnish.

Finland’s exports to Asia have declined in all major product categories during the first half of 1998, coated magazine paper making the only exception. Exports of pulp and paper to the economies in transition in eastern Europe increased during the first half of the year, though in absolute terms the export volumes are comparatively small.

The Finnish mark export prices of paper are projected to rise by an average of 5 per cent during 1998, and the prices of paperboard, for which market growth is generally slower, by 2–3%. The Finnish mark price of chemical market pulp will rise by about 4 per cent over the average level achieved in 1997, as a result of the weaker development during the summer and early autumn.

**Slow Growth of Paper Production in 1999**

Viewed against the background of the economic growth in the export markets and the development of production capacity, the pulp and paper industry’s prospects for next year are reasonably good. Private-sector consumption in the EU countries is predicted to grow at an average rate of two per cent in 1999. Though economic growth is slowing down in the United Kingdom, the decline is balanced by the
improvement in Germany and France. It is difficult assess the development in export markets outside Europe, because the severity and speed of any con
tagion from the Asian crisis and Russia’s economic turmoil are difficult to foresee. Most probably, there will hardly be any possibilities for increased exports outside Europe, perhaps with the exception of the US market. The competition for market shares will also intensify in Europe. The possibility for increased exports from Finland is therefore primari
cly based on the comparatively favourable situation in European markets, and above all on the limited growth of competing supplies in the market for high-
quality printing and writing papers.

According to the FAO’s projections, the growth of production capacity for woodpulp in the period 1999–2000 will be slower than in the past few years, averaging 0.6 per cent, with the production capacity for paper and paperboard growing by 1.4 per cent on average. Accordingly, Finland’s exports of paper will grow more than the total supply. Because the biggest investment projects in Finland have been completed and the capacity is nearly ful
tly utilised, any increase in production will be a couple of percentage points, at the most.

The euro is projected to appreciate next year against the US dollar and the pound sterling, which is likely to boost the price-competitiveness of competitors outside the EMU, notably Sweden and Canada, in the paper market in 1999. The fact that Finland’s real competitiveness has improved by a third during the 1990s will balance any differences in competitiveness. In spite of possible exchange rate advantages achieved by the competitors, Finland’s exports of paper and paperboard are forecast to increase by about 2 per cent in 1999, because demand growth will be best for Finland’s most important export products, printing and writing papers. Among the various grades, export growth is likely to be fastest for magazine paper, estimated at about 4 per cent. Exports of market pulp are estimated to continue to decline in 1999, because minor increases in production will be primarily directed to domestic paper production.

On the basis of the estimated demand-supply situation, and in view of the increased uncertainty about economic development, paper product prices are unlikely to rise next year compared with this year’s average prices. In addition, the low rate of inflation in the EU region will keep pressures for higher prices at a moderate level. The expected appreciation of the euro e.g. in relation to the US dollar, the pound sterling and the Swedish krona is also going to reduce euro-based prices. About half of the Finnish pulp and paper industry’s export income for next year is expected to be paid in other currencies than the euro. The euro/Finnish mark price of chemical pulp is predicted to stay on this year’s average level, unless producers decide to cut back their production more than estimated in order

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<td>+2</td>
<td></td>
<td>+10</td>
<td>+2</td>
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</tr>
<tr>
<td>PAPERBOARD</td>
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<td>2 750</td>
<td>2 094</td>
<td>2 140</td>
<td>2 180</td>
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<td>+2</td>
<td></td>
<td>+2</td>
</tr>
</tbody>
</table>

Table 7. Pulp and Paper Industry Production and Export Forecasts, 1 000 tons (change on the previous year, %, shown below the respective figure).
to raise the price level. Should the downward pressure on world market prices grow, also capacity utilisation rates may decline compared with this year’s, as forest products companies strive to counteract price declines by capacity shut-downs.

In the paperboard industry, domestic demand is more important than in the paper industry, because the domestic market absorbs about one fifth of the production. In addition, the paperboard market is characterised by smaller price and volume fluctuations than the paper market, and slower overall growth. In line with the growth of demand in the European packaging industry, paperboard exports are predicted to grow by 2 per cent in 1999. Export prices for paperboard are estimated to rise by a couple of per cent in 1999, though the economic problems in Russia and the possible devaluation of the Chinese currency are causing growing uncertainty (Russia and Asia accounted for nearly 20% of Finland’s exports of paperboard in 1997).

### 2.3 Costs and Profitability of the Forest Industry

The Finnish forest industry’s costs have continued to develop at a moderate pace. The industry’s unit labour costs for this year have been nearly one third below the OECD countries’ long-term average. The forest industry’s production capacity is nearly fully utilised and its economic result for this year will be good, slightly better than last year’s. However, the uncertainty concerning the future will be reflected in the industry’s financial performance and in the companies’ share prices. Provided that the worst-case scenarios for the Asian and Russian crises do not come true, profits will continue to develop satisfactorily during next year. The international restructuring of major forest industry companies is likely to continue, which will strengthen these companies’ position in the globalising forest products market.

### Wood Costs Increase Moderately

The degree of mechanisation in wood harvesting by the industry and the Forest and Park Service has risen during the past decade from about 50 per cent to nearly 90 per cent. According to statistics, this has caused unit costs to go down, even in nominal terms, by nearly one quarter. Nominal unit harvesting costs (FIM/m³) declined last year by 3.5 per cent, while the degree of mechanisation in harvesting in industry- and state-owned forests rose from 86 per cent to 89 per cent. At the same time, long-distance transport costs of wood rose by slightly over 3 per cent, whereas forwarding costs remained unchanged.

Harvesting and transport account for slightly less than one third of the mill net price of wood, with stumpage thus accounting for two thirds. The forest industry’s wood supply costs increased last year by about 4 per cent. Taking into account the projected stumpage prices, wood costs are predicted to rise by about 2 per cent this year. Next year, wood costs will stop rising as a result of declining stumpage prices.

The industry has increased its imports of wood significantly and they are projected to reach a record level of about 12 million cubic metres this year. Imports are expected to remain high next year as well. The possible appreciation of the euro
against the US dollar would cause a reduction in the price of US dollar-based wood imported from Russia.

**Minor Changes in Labour Costs**

The moderate two-year collective wage agreement puts a ceiling on wage increases up to January 2000. As a result, labour cost increases will be moderate. Annual incomes of paper industry workers had risen by slightly over 2 per cent by the end of the first half of 1998 and in the wood products industry by slightly below 2 per cent. The high rate of unemployment continues to retard any additional wage increases, and even the strike by salaried forestry employees would not seem to affect labour costs to any major degree. Still, the industry’s favourable earnings development has somewhat contributed to wage drift.

Energy prices have shown a declining trend. Import prices of petrochemical products went down by as much as 17 per cent in the year to August 1998. The world market price is at an eight-year low. Electricity tax and the tax on fuels for heat generation based on their carbon content were raised at the turn of the year by 20 per cent. However, electricity generated with wood and wood-based fuels was later granted a compensatory subsidy intended to make up for the electricity tax, which helped to reduce the forest industry’s tax burden. The additional tax on electricity and fuels was again raised in September 1998 to finance income tax cuts. As a result of the changes in taxation in 1998, the forest industry’s energy taxes for 1999 are estimated to total about FIM 650 million, which is slightly over FIM 100 million more than in 1997.

This year’s US dollar price of crude oil is projected to be lower than last year’s average price. The possible appreciation of the euro against the US dollar would result in a further decrease in the prices of petrochemical products in Finland. All in all, no major changes are expected in the world market prices of raw materials during next year.
High Capacity Utilisation Rates

The consistently strong demand has resulted in high capacity utilisation rates in the forest industry. The capacity utilisation rate in the forest industry as a whole is estimated to reach 96 per cent for the current year. Based on production forecasts for next year, capacity utilisation would remain high at 95 per cent in 1999. Still, the increased uncertainty over the future market development may cause strong fluctuations in production figures, and thereby also in capacity utilisation rates.

In particular, the strong activity in the domestic construction sector contributes to high production levels of sawnwood, plywood and joinery products. Spurred by the record production, capacity utilisation in the sawmilling industry rose to 92 per cent in 1997. In line with the production forecast of about 11 million cubic metres, the capacity utilisation rate would rise this year to 94 per cent, going down slightly to 93 per cent in 1999 because of the slower growth of production.

Export prices of sawnwood have recently gone down slightly, also affecting the industry’s earnings development. The domestic prospects for next year appear favourable owing to the continued brisk activity in the domestic construction market. In contrast, the uncertainty in the Asian market may also be reflected in the Finnish sawmilling industry – directly through declining exports to Japan and indirectly via the North American and EU market.

In the paper market, demand for magazine paper has continued to grow steadily both in coated and uncoated grades. As a result, capacity utilisation rates have slightly improved during the first half of the current year compared with 1997. Basically the same also applies to newsprint. The overcapacity in coated fine paper has decreased somewhat compared with the situation at the beginning of the year. Along with the growing demand in Europe, this has boosted the industry’s overall capacity utilisation rate. Based on current production forecasts, the capacity utilisation rate for this year is estimated at 97 per cent and at 96 per cent for 1999.

In the packaging products group (cartonboard and liner) production figures have continued to develop at a stable pace and prospects are generally favourable. The production capacity has been in virtually full use this year and is expected to remain so next year. Based on current production forecasts, the capacity utilisation rate of the paper and paperboard industry as a whole is estimated at up to 95 per cent. The high capacity level is maintained in spite of the fact that the weak market situation for chemical pulp and fine paper has forced the industry to resort to temporary production cutbacks. Also, next year the capacity utilisation rate is likely to reach a level of 95 per cent.

Uncertainty in the Market Overshadows Next Year’s Profits

According to statistics, forest products companies’ earnings after financial items doubled compared with last year, amounting to a total of about FIM 10
billion. Still, earnings fell short of the record achieved in 1995 by about FIM 2 billion. The combined turnover of the companies covered by the statistics amounted to nearly FIM 115 billion, of which the domestic production plants accounted for about FIM 90 billion. The return on investment was 11.5 per cent.

In spite of declining prices for chemical pulp and sawnwood and overcapacity for fine paper, the forest industry is expected to achieve better earnings than last year. Though the earnings development of the biggest forest products companies has deteriorated in the second quarter of the year compared with the first quarter, earnings for the first six months of this year were still nearly one and a half times the earnings in the same period last year.

The forest products companies’ comparable earnings after financial items for this year are estimated at about FIM 13 billion, and the return on investment at about 13 per cent. The combined turnover of domestic business units is estimated at slightly below FIM 100 billion. The forest industry’s solvency is estimated to improve further. All of the three biggest forest product companies have an equity ratio of about 40 per cent.

The unstable price development of forest products and the restructuring of the industry make it difficult to work out comparable numerical estimates of next year’s earnings development. However, the industry’s turnover is estimated to increase by 2 per cent, which results in a turnover of FIM 102 billion for the industry’s domestic business units. In spite of the increased uncertainty in the market and the probable slight appreciation of the euro, the industry’s profitability is expected to remain at this year’s level.

In early June, Finnish Enso and Swedish Stora decided to join forces to create the world’s biggest paper and paperboard group, Stora-Enso. The group’s combined production capacity for paper and paperboard is about 13 million tons a year, and this year’s turnover is estimated at FIM 65–70 billion. Enso’s turnover for last year was slightly over FIM 29 billion.

The forest industry’s investments in Finland declined from slightly over FIM 10 billion in 1996 to about FIM 6 billion in 1997. Capital expenditures are likely to decline further this year to about FIM 5 billion, and no major growth is foreseen for 1999. On the other hand, most of the forest industry’s production machinery is technically in top condition, so the need for investing in existing capacity is relatively small. Accordingly, the Finnish forest industry is already allocating over half of its investments to production plants outside Finland.

2.4 Labour Force in the Forest Industry

Employment in the forest industry will increase slightly in 1998, following a prolonged decline. However, the employment situation varies between sectors. Employment will increase most in the paper industry and in the closely related paper and paperboard products industries, and in the publishing and printings sector. In the mechanical wood products industry, the employment situation will remain unchanged and especially the joinery industry will continue to shed jobs. The improvement in the employment situation is a cyclical phenomenon, so because of the expected slowdown in growth of the forest industry’s production and exports in 1999, the employment situation is predicted to return to 1997 levels.

Minor Changes in Employment

The forest industry’s employment will improve in 1998 by nearly 3 per cent. If the furniture and publishing and printing industries are included, employment will improve by more than 4 per cent. In 1998, the forest industry will employ 75 000 persons. Including also the furniture and publishing and
printing sectors, the total amount adds to 124 000 persons. The growth of the forest industry’s production in 1999 is forecast to slow down to a level below the long-term trend of the industry’s productivity growth. Therefore, demand for work in the forest industry and, accordingly, employment will contract slightly in 1999 compared with this year.

The mechanical wood products industry is estimated to employ a total of 33 000 persons in 1998, which is basically the same as in 1997. The pulp and paper industry is estimated to employ a total 42 000 persons in 1998, which is five per cent more than in 1997. Publishing and printing industry is estimated to employ a total of 35 000 persons, which is three per cent more than in 1997. The number persons employed in the furniture industry will increase to 14 000 during the current year, which is 17 per cent more than in 1997.

Employment in the forest industry as a whole is predicted to deteriorate slightly in 1999, returning roughly to the 1997 level as a result of slower average growth of production and exports. Employment will primarily decline in the mechanical wood products industry, because its production is estimated to decline or remain unchanged. In the pulp and paper industry, the favourable employment situation is likely to prevail in 1999. In sectors producing mainly to the domestic market, such as the furniture industry and publishing and printing, the employment situation is predicted to remain good in 1999 because of good consumer confidence and continued favourable demand prospects. In the publishing and printing industry, however, the development of exports to Russia brings an element of uncertainty.

**Wood Products Industry**

The total number of jobs in the mechanical wood products industry in 1998 will on average remain at the previous year’s level. In 1999 employment is expected to decline by about 3 per cent as a result of improved productivity. However, the employment situation will vary a lot between different sub-sectors. In the sawnwood industry employment is expected to increase by about 8 per cent, to a total of about 13 000 man-years. No major increases are foreseen in the inputs of salaried employees or entrepreneurs, so the increase will be entirely due to an increase in the total number of workers from about 8 000 to more than 9 000. In 1999, the growth of the sawnwood industry’s production is predicted to slow down to one per cent, causing employment to deteriorate in 1999 roughly by as much as it improved in the previous year, thereby returning to the situation that prevailed in 1997.

The rate of unemployment in the sawnwood industry was 11 per cent in 1997 and it is estimated to decrease to about 10 per cent in 1998. In 1999, the unemployment rate will rise again slightly as result of the predicted decline in employment.

Employment in the plywood and wood-based panel industry is estimated to improve by about 3 per cent in 1998. It remains unchanged in 1999 in
spite of capacity expansions, due to the industry’s good productivity growth in relation to its existing capacity. On this basis, the number of employed would be about 6 000. In contrast, the joinery industry’s employment would seem to go down by about 8 per cent in 1998, resulting in a total of about 14 000 employed. In 1999, the joinery industry’s employment is predicted to remain at this year’s level as a result of the favourable prospects for domestic demand.

The combined employment in the wood products and joinery industry is estimated to equal 47 000 man-years in 1998. Out of this total, primary processing, i.e. sawnwood, plywood and wood-based panels manufacture, will account for 19 000 man-years (40%), and further processing of wood into joinery products and furniture for 28 000 man-years.

**Paper Industry**

Employment in the paper industry is estimated to increase by about seven per cent in 1998. In pulp and paperboard production the number of employed will remain the same as in 1997. The pulp, paper and paperboard industries together will employ four per cent more persons in 1998 than in 1997. In addition, the paper and paperboard industry will employ 14 per cent more persons and publishing and printing industry five per cent more. In view of the market prospects in export markets and at home, employment in paper production and converting is unlikely to increase in 1999 in spite of the production growth of 2 per cent, and it will remain at the current year’s level.

In 1998 woodpulp production is projected to employ 15 000 persons, paper production 16 000 persons and paperboard production 4 000 persons. The paper and paperboard products industry is forecasted to employ 7 000 persons and publishing and printing industry 35 000 persons. On this basis, the pulp and paper production and converting will employ a total of 77 000 persons, which is 62 per cent of the total number of persons employed in the forest industry, with the mechanical wood products industry employing the remaining 38 per cent.

According to preliminary estimates, the rate of unemployment in the paper industry in 1998 is likely to remain at the previous year’s level of five per cent, which is quite low as such. However, at the same time, the general employment situation in the industry is improving, with the greatest increase in the number of wage earners. This situation probably reflects the disparity between demand and supply in the labour market, with the recruitment of new employees directed at persons with different qualifications from those that are unemployed. In contrast, the unemployment rate in publishing and printing industry will go down from about 8 per cent in 1997 to 6 per cent in 1998, following an overall improvement in employment in this sector.

No major changes are expected in the unemployment rates of the paper industry or the paper products sector during 1999, because the general employment situation in these sectors is predicted to remain on average at the current year’s level.

**Figure 12. Employment in the Pulp and Paper Industry in 1987–99F (1 000 persons).**

Source: Statistics Finland
Megatrends and Prospects for the Finnish Forest Sector

The future of the forest sector is dependent on a number of external forces, megatrends, which can be divided into general and sectoral trends. General trends have so far been mainly related to changes in population and income levels, which have had a comparatively direct effect on forest products demand. In addition, technological development has been an important driving force also in the forest sector.

The relative growth of the world’s population has started to slowdown in recent years. However, population growth will continue at least until the middle of the next century. Still, the time has come to get gradually used to the thought that declining population growth will also mean declining growth of demand for forest products.

Besides the changes in population growth, it has become increasingly important also to take into account the population and family structure. The proportion of over 60-year-olds is growing notably in a large number of countries, particularly in Western Europe. Moreover, the number of single-person households in proportion to the total population is growing. For example, the demand for a number of goods, such as magazines, advertisements and many packaging products, is equally dependent on the number of households as on the number of people. Thus, the possible decline in the growth of demand for forest products in the next few decades will be slower than the mere decline in population growth would give reason to believe.

The income levels of the world’s population will continue to rise. An important trend related to income development is the growth of the middle class, which plays a dominant role in consumption.

The technology related to the forest industry’s processes and products has been largely imported to Finland. However, the Finns have been very good at applying technology developed elsewhere. This particular skill is most unlikely to disappear. In future also domestic innovations will become more likely, because inputs into research and development are growing and a national system for promoting innovations is under development.

One of the megatrends influencing the future of the forest sector is the requirement for resource efficiency. Generally referred to as Factor Four, this means that twice the output is achieved with half the resources. Thus, fundamentally this constitutes a demand for economic efficiency. The strive for resource efficiency also leads to a trend from raw material-based production to knowledge- and skill-based production. In practice, this means an increase in the value added processing.

Environmental values have long been an important megatrend affecting the development of the forest sector. They will be equally important in the future. Their effects will be seen both in the use of forest resources and in the production processes.

In the future, globalisation and liberalisation of international trade, and partly related to these, tightening competition, are megatrends which will become ever-more important. The tightening competition will lead to more efficient production and lower prices for standard products.

When examining trends in individual product segments in the forest sector, the forest industry’s production is often divided into two categories, paper and paperboard on the one hand, and wood products on the other. However, these categories are not comprehensive, and a division originating from raw materials and industrial processes makes it difficult to distinguish any megatrends, which are largely determined by the final products markets. Therefore, in order to identify megatrends, the forest products industry must be viewed in a market-oriented perspective, which means it has to be divided into industrial sectors based on 1) printed media, 2) packaging, and 3) construction and furnishing. In addition, the energy production sector can be regarded as an important determinant of the forest sector megatrends.

So far, electronic media have not been able to replace printed media. Though traditional books and magazines, or documents printed on paper, will not disappear, the development of information technology and new habits related to reading and information processing may result in declining growth of demand for traditional printing and writing paper, even within the next few decades. A generation which has been surrounded by new technology ever since childhood does not necessarily continue parents’ habits, especially as rapidly developing information technology is making it continuously easier to implement functions that demand very little or no paper at all.

Though the megatrends seem to pose a threat to the demand for current printing and writing papers, future development also offers new opportunities for
flexible and innovative producers. Digital printing technology, more widespread use of electronic filing, and possibly even recyclable books or magazines printed with erasable ink, require paper-based products that differ clearly from those available today, most of which do not even exist today.

In Finland, the production of wood-based packaging material is clearly smaller than the production of paper. However, at a global scale, the forest products industry’s production of packaging materials, measured in tonnage terms, is as important as paper production. The demand for packaging materials is largely determined by the food and drink industry. This means that relevant megatrends must be sought within this industry. At present, the situation appears favourable from the forest sector’s viewpoint. This favourable outlook is supported by the fact that increased electronic trading will lead to increased mail order sales and growth of demand for packaging materials.

The wood products industry, including production of converted timber products, has traditionally been growing slowly. From a global viewpoint, customers’ preferences for certain materials are tied to local cultures. For example, the geographical differences between timber and brick housing are quite clear. These cultural differences are unlikely to change quickly. In the Finnish suppliers’ traditional markets in Western Europe, new building activity is limited, whereas renovation still offers opportunities.

Globally, more wood is used for energy production than for manufacture of industrial products. Most of this fuelwood consumption is concentrated in developing countries. In Finland, the share of wood-based energy is greater than in other industrialised countries, primarily because energy is being recovered from industrial processes (mainly chemical-pulp process). Consequently, it is difficult to achieve any major increase in the use of wood for energy, but the bioenergy available in the forests, which is not very efficiently used at present, offers huge potential.

A Vision of the Finnish Forest Sector’s Prospects
The megatrends and developments described in the foregoing are rather general, but they can be used to draw at least subjective conclusions regarding the Finnish forest sector’s future development.

In spite of the abundant physical cutting potential, industrial use of wood raw material based on current quality requirements will only grow very slowly. On the other hand, the use of logging waste for energy production is growing rapidly. Wood from first thinnings is also likely to find profitable industrial use in future. The industry will continue to use imported wood at least in current quantities, and it may also begin to import high-quality hardwood pulp.

Due to the declining growth of demand for traditional forest products and the relatively high utilization level of domestic roundwood resources, the production of paper in Finland will grow at a slower pace than in the past. However, because of the increasing value added processing and production of special paper grades, the value of the production will continue to grow virtually unabated. The production of high-quality packaging board requiring a strong know-how input may also increase, especially if the industry will be able to develop new unique products.

The output of sawn timber will remain at most at current levels. In contrast, the wood products industry’s converting production will finally get on the growth track, and will soon employ more people than the paper industry.

The production of the forest industry in Finland will be controlled by two or three major forest products companies. They will continue to grow through international mergers, and consequently, will belong to the world’s 15 biggest companies. Before long, they will all be mainly in foreign ownership. The companies will, however, continue operations also in Finland, where advanced know-how and a developed infrastructure are available.

The forest cluster concept will be more widely adopted, and the know-how related to the cluster will result in new, high-value-added production. If investors come to regard the forest cluster as a sufficiently attractive investment opportunity, and new funds will start fuelling its development, the future of this sector may turn out to be totally different from what can be foreseen today. For example, giant chemical companies with their huge financial resources, coupled with biotechnology and genetic engineering, constitute a combination with may revolutionise future prospects. This does not mean only changing current processes, but also introducing totally new wood-based products.

The Forest Industry’s Cost Structure

The cost development and income distribution in the forest industry attract the attention of all its stakeholders, from forest to stock markets. How much will there be left to the forest owner, paper industry worker, sawmill owner, taxman and investor? Individual sources of information often give different and disputable views.

The enclosed graphs, based on official statistics, are intended to give an overall view of how the forest industry’s costs were distributed in 1996. The cost structure has been computed from the data published by Statistics Finland (Financial Statement Statistics of Industry and Construction, Statistics on the Structure of Industry and Construction), and the data published by Finnish Forest Research Institute (statistics related to wood use, costs and prices). The cost structure analysis presented is a preliminary comprehensive attempt to outline the forest industry’s cost structure on the basis of official statistics. There are still many shortcomings in the cost distribution and the analysis related to it. For this reason, it should be seen as the first step towards a more and more accurate cost calculation.

The pulp and paper industry includes, in addition to pulp, paper and paperboard manufacture, also the manufacture of converted pulp and paper products, such as corrugated board, household papers and other products. However, the graphics industry is not included. The pulp and paper industry is characterised by intensive use of inputs such as capital and energy, chemicals and fillers.

The mechanical wood products industry includes, in addition to the sawmilling and wood-based panel industries, the manufacture of joinery products, wooden boxes and other similar wood products. This sector of industry is clearly more labour-intensive than the pulp and paper industry. Because of the prominent role of the sawmilling industry, wood costs account for a bigger share of the costs than in the pulp and paper industry.

In view of the industry’s favourable financial performance in the past few years, 1996 was an exception, which is reflected in the relatively small share of capital costs. In 1996, the forest industry’s business units situated in Finland had a combined turnover of FIM 89 billion, based on data derived from the Statistics on the Structure of Industry and Construction. The net earnings of the entire industry amounted to 2.5 per cent of turnover. The return on investment declined to 8.6 per cent, compared with 15.9 per cent year before, and 11.5 per cent in 1997. The mechanical wood products industry recorded a slight loss in 1996. The forest industry’s effort to keep its indebtedness under control is reflected in the fact that net financial expenses remained under 3 per cent of turnover.

Wood Saving Trend

In accordance with the graphs, wood costs account for slightly over a third of total costs in the mechanical wood products industry and only slightly over one tenth in the pulp and paper industry. The low share of wood costs reflects the increased degree of value added processing. In the production of standard sawn timber, wood costs account for about two thirds of total costs and in the production of market pulp for nearly one half. However, the wood costs do not include the overhead costs in wood procurement, which would raise wood costs by less than 10 per cent, or below two percentage points. Over the years, the share of wood costs has been reduced, e.g. by moving debarking from the forest to the mill and, as reflected in the statistics, by the reduction in logging and transport unit costs.

The declining role of domestic wood in the industry’s wood supply is reflected in the rapid increase in wood imports and by the fact that chemicals and fillers accounted for a cost of more than FIM 5 billion in the pulp and paper industry in 1995, whereas the stumpage earnings amounted to a total of only FIM 3 billion in the same year. Depending on the paper grade, the share of fillers may even account for over one third of the raw material costs.

In the mechanical wood products industry, the share of other materials and supplies is about twice, and in the pulp and paper industry nearly three times the wood cost. In the pulp and paper industry, imported wood already accounts for nearly a fifth of total wood costs and in the forest industry as a whole for about one tenth of total wood costs. According to
the most recent input-output tables dating back to 1993, all imported production inputs combined accounted for over one tenth of total costs in the mechanical wood products industry and one fifth in the pulp and paper industry.

**Energy Costs Relative Small**
The pulp and paper production is a particularly energy-intensive industry. However, energy costs account for only slightly over 10 per cent of total costs in this industry. The industry produces a large part of its energy from wood by burning pulp mill waste liquors, which does not show up in the energy costs. Against this background, part of the industry’s wood cost could be allocated to energy costs, which would reduce even further the share of wood costs directly tied to end products.

**Less Labour in the Mill, More in the Cluster**
In the mechanical wood products industry, labour costs amount to slightly less than one fifth and in the pulp and paper industry slightly over one tenth of total costs. In the pulp and paper industry, labour productivity has been increasing rapidly for a long time. In the mechanical wood products industry, especially the sawmilling industry, labour productivity did not begin to increase clearly until the 1990s, when new technology was finally introduced at a major scale.

The decrease in labour costs has also been partly due to structural and cultural changes in major forest products companies. Previously, inside the mill and throughout the mill community, maintenance, service and repair functions and other supporting services were strictly in the hands of the forest products companies. A large part of the social services – housing, fire-fighting, and even schools and shops – were taken care of by the forest products companies.

Today, these functions are mostly handled outside the company, with the forest industry concentrating on its core businesses. Around these businesses, a network of companies and organisations- a forest cluster – has been created for providing services and production inputs to the industry. This trend is reflected in the low proportion of labour costs but also in the high proportion of other costs.

On the one hand, the high proportion of other costs is due to the fact that companies’ business units do not always report their costs very accurately for official statistics. As a result, a part of the costs are booked under other expenses, though they should be booked under a totally different cost category. On the other hand, other costs include items which have become increasingly important for the company’s development. Examples of such new and increasingly important cost items include research and product development, computer services, training and charges related to patents, licenses and royalties.

**Better-for-Cheaper**
The analysis gives an indication of the Finnish forest industry’s clear strategy towards an ever higher degree of value added processing and efficient use of resources. The industry’s development in the immediate past was dominated by changes in product demand and the development of the relative prices of production inputs. For example, the availability of low-cost energy resulted in rapid growth of mechanical pulping process (printing papers), which is a particularly energy-intensive production process.

Apart from influencing the prices of tangible production inputs, the diversification of the market may also have a growing impact on the industry’s future development; on the one hand, the market demands inexpensive, cost-effectively manufactured goods; on the other hand, consumers’ changing environmental values are ever more strongly directing the future development. However, both these trends are controlled by a common factor, which is the strive for resource-efficient, environmentally friendly production technology and know-how: better-for-cheaper, as the saying goes.

In the cost structure, this development will be reflected so that the direct cost shares of wood and labour will continue to go down. Still, wood will be at the core of the forest sector. The proportion of labour of the business units’ direct costs will continue to decrease, but the cost of labour will be divided between other cost categories.

The share of other costs will increase, and accurate specification of these costs will become ever more important for assessing the sector’s future development. A high enough net income and expectations regarding its favourable development secure investors’ interest in the forest sector and thereby the realisation of investments to safeguard its future growth.