2.1 Exports, Production and Prices of the Wood Products Industry

In the current year, housing construction has continued to grow in Finland as well as in the major export countries of the Finnish wood products industry with the exception of Germany. Consequently, the production and exports of Finnish sawn softwood will increase by two per cent this year, while the production and exports of Finnish plywood will surpass last year’s volumes by as much as eight per cent. In 2000, construction activity may slow down in the United States. In contrast, housing construction is projected to increase in Europe, with the United Kingdom showing particularly rapid growth, and the Japanese construction sector is also recovering. The wood products industry will remain competitive, and the exports of Finnish sawnwood and plywood will increase by two per cent in 2000. In the beginning of 1999, the export price of plywood was considerably lower than at the same time the previous year. The prices have rebounded, however, and with a further increase next year, they will be back at last year’s average level. Export prices of sawnwood will rise by two per cent on average both in 1999 and 2000.

Sawn Whitewood Exports Continue to Grow

Seventy per cent of Finnish sawnwood exports were directed to EU countries in 1998. Asia accounted for a good ten per cent and Egypt continues to be an important export market for sawnwood with her almost ten per cent share. As for plywood, more than 80 per cent is exported to EU countries, with Germany as the most important single export country. In 1998, Japan’s share shrank by a couple of percentage points from 1997 down to about five per cent. During 1999, Japan’s import demand for sawnwood has, however, recovered considerably, which has led to an increase in Finnish sawnwood – particularly sawn whitewood – exports to Japan. Japan’s import demand is boosted by the yen’s strengthening against the US dollar and the euro, as well as by the recovery of housing construction. The number of housing starts in Japan has increased from last year, particularly over the summer months of 1999.

Japan’s sawnwood and plywood imports have grown steadily throughout the 1990’s, while the production of the country’s domestic wood products industry has been tailing off. Since import demand for sawnwood and plywood has also increased steadily in the United States during the past few years, Canadian sawnwood and plywood producers have found export markets outside Europe. In consequence, Finnish and Swedish sawnwood producers have been able to expand their exports in Europe although the European consumption of sawnwood has grown very little during the past couple of years. As a result, Finland’s
market share has increased considerably on European sawnwood markets between 1998 and 1999. The decrease in Russian exports has also facilitated the expansion of Finnish and Swedish exports. In contrast, Russian plywood exports have increased although the production has tapered off.

During the first half of 1999, the volume of sawnwood exports has grown by one per cent and decreased in value by one per cent in comparison with the same time period last year. Plywood exports, in turn, have grown by six per cent in the first half of the current year, whereas export value has dropped by four per cent. The growth of plywood exports hinges on softwood plywood, whose export volume rose in the first half of the year by over 25 per cent whereas birch plywood exports declined by almost seven per cent. The weakening of the euro in relation to both the Swedish krona and the U.S. dollar has enhanced Finland’s competitiveness. Swedish and German sawnwood exports to Europe declined in the beginning of 1999, whereas the Baltic countries’ exports picked up.

In the beginning of 1999, North America’s sawnwood and plywood production showed a rapid growth of between 5 and 8 per cent from last year. Construction activity was in good shape during the first half of 1999, but signs of the growth slowing down began to be seen by August and September. Prices of sawnwood in North America took a turn downwards in late summer.

### Growth in the Construction Sector Increases Sawnwood Demand in Europe

Sawn whitewood has been in increasingly strong demand on the export markets, whereas demand for sawn redwood has been sluggish. The situation has affected the price relation of these two commodities so that the price of sawn whitewood almost reached that of redwood by the autumn months of 1999. During the first six months of 1999, the Finnish markka export prices for sawn redwood were ten per cent lower than the previous year. In contrast, sawn whitewood export prices were on average five per cent higher than in the first half of 1998.

Economic development continues to be favourable in Finland’s major export markets this year and the next. This development is also reflected in construction activity, which is expected to increase in 1999 and 2000. According to Euroconstruct’s

### Table 3. The Finnish Sawmilling and Plywood Industries in 1998 (1000 m³).

<table>
<thead>
<tr>
<th></th>
<th>Sawn Softwood</th>
<th>% of production</th>
<th>Plywood</th>
<th>% of production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>11 300</td>
<td>100</td>
<td>992</td>
<td>100</td>
</tr>
<tr>
<td>Domestic use*</td>
<td>3 011</td>
<td>26</td>
<td>161</td>
<td>16</td>
</tr>
<tr>
<td>Exports:</td>
<td>8 289</td>
<td>74</td>
<td>831</td>
<td>84</td>
</tr>
<tr>
<td>EU</td>
<td>5 848</td>
<td>52</td>
<td>685</td>
<td>69</td>
</tr>
<tr>
<td>Asia excl. Japan</td>
<td>435</td>
<td>4</td>
<td>32</td>
<td>3</td>
</tr>
<tr>
<td>Japan</td>
<td>433</td>
<td>4</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Africa</td>
<td>1 336</td>
<td>12</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>North America</td>
<td>38</td>
<td>0</td>
<td>36</td>
<td>4</td>
</tr>
<tr>
<td>Russia</td>
<td>5</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Others</td>
<td>217</td>
<td>2</td>
<td>68</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: Finnish Forest Industries Federation  
*Domestic use = production – exports; export figures include sawn hardwood
projections, construction will grow by 2.4 per cent in the EU countries in 1999 and 2.1 per cent in 2000. However, construction development is poor in Germany, the biggest constructor in Western Europe and the largest buyer of Finnish sawn-wood; it is forecast to remain at last year’s level in 1999, but to grow by about one per cent in 2000. Germany’s construction activity is hindered by a low rate of industrial and commercial construction and the persisting sluggishness in the public construction sector. In Eastern Germany construction activity is still declining. British housing construction has been boosted by the fast recovery of the U.K. economy. In France, too, construction activity is expected to pick up towards the end of 1999.

The inventories of European sawnwood buyers have diminished in the current year, and if demand increases towards the end of the year, sawnwood prices may experience a substantial rise. This will be reflected on the price level of Finland’s exports. If the yen remains strong and Japan’s construction sector recovers, Finnish exports of sawnwood to Japan will continue to grow at the end of 1999. It is estimated that the total volume of Finnish sawn-wood exports and export prices will both increase by two per cent in the current year.

Driven by exports and domestic consumption, Finland’s production of sawnwood is forecast to grow by two per cent this year. The export volume and production of plywood are expected to reach an eight-per-cent increase in 1999, while export prices remain at last year’s level. Finland’s domestic consumption of sawnwood is projected to amount to 3.3 million cubic metres.

**Bright Prospects for Construction in 2000**

Euroconstruct forecasts that housing construction will grow by as much as five per cent in the United Kingdom in 2000. This will have a positive effect on Finnish sawnwood exports since the UK’s share of total sawnwood exports amounts to about 20 per cent. The German construction industry may also achieve slight growth. Furthermore, Japanese construction is also projected to recover, which will spur exports to Asia. In China the construction sector showed some signs of overheating this year, which
had a positive impact on sawnwood imports. Next year looks uncertain for China, especially if the overheating in the construction sector continues.

The growth of housing construction that has continued for a long time in the United States may decline next year if interest rates go up and consumer confidence in economic development takes a turn downwards. Japan’s strong import demand is likely to restrain the interest of Canadian sawnwood exporters to increase exports to Europe.

In 2000, an increase in supply on Europe’s sawnwood markets will probably be mainly of European origin. Sweden’s production capacity has increased somewhat, and Germany’s sawnwood exports have also been waiting for an opportunity to expand over the past few years. In addition, Eastern European and Russian exports are expected to increase next year.

Exports of Finnish sawnwood are projected to grow by two per cent in 2000. Export prices will also show an average increase of two per cent. The competitiveness of Finnish sawnwood exporters should remain reasonably good next year, particularly as the Swedish krona is generally expected to strengthen. The introduction of a Pan-European forest certification system (PEFC) in Finland’s sawnwood production will probably add some extra cost to the Finnish producers, but in the long run it will have a positive effect on the competitiveness of Finnish sawnwood exports. In 2000, exports of plywood are projected to grow by two per cent and export prices by one per cent from this year’s level.

**Growth of Finnish Construction Contributes to Sawnwood Demand**

The growth of Finnish sawnwood production is spurred by domestic construction activity as well as exports. The Confederation of Finnish Construction Industries (RTK) forecasts that housing construction will increase by a good four per cent in the current year and just under four per cent in the next. In 2000, Finland’s sawnwood consumption will grow by two per cent from this year’s level, totalling 3.4 million cubic metres. Booming domestic consumption together with increasing exports is expected to cause a good two-per-cent growth in sawnwood production in 2000.
2.2 Exports, Production and Prices of the Pulp and Paper Industry

In the first half of 1999, the exports of Finnish paper products experienced a downturn compared to the same period in 1998. Furthermore, despite the devaluation of the euro, the Finnish markka export prices also fell sharply. The pulp prices have been low, whereas exports exceeded those of the first half of 1998. The strong rise in prices that began in late spring is expected to continue until the end of 1999 and to even out in 2000. The rise in pulp prices can be expected to lead to an increase in paper and paperboard prices at the end of the current year and throughout next year. The 1999 paper exports will fall one per cent short of last year’s level. In 2000, the growth in most important European economies is projected to be higher than in the current year, which will create an opportunity for a two-per-cent increase in Finnish paper and paperboard exports. A potential decline in the United States’ economic growth and an appreciation of the euro will cause the price rise in paper products exports to be limited to three per cent, while the rise in pulp prices is likely to amount to ten per cent on average.

Low Pulp Inventories Affect the Outlook for the Sector

The main market for the Finnish pulp and paper industry is still the European Union. Measured in terms of export volumes, EU countries absorbed 89 per cent of the country’s pulp exports, 70 per cent of paper exports and 65 per cent of paperboard exports. In the first half of 1999, however, exports to Finland’s large export partners such as Germany, the United Kingdom and France have diminished considerably compared with the same period last year.

In 1998, Asia’s share of Finland’s paper exports shrank by a couple of percentage points down to six per cent of total exports, and yet the continent increased its share of paperboard exports. The United States’ share of paper exports increased to over ten per cent. The decline in Asia’s share of paper exports has been caused by the recession of Asian economies, whereas rapid economic development in the United States is reflected in the country’s paper consumption and imports. However, in the first half of the current year, paper imports from Finland to the United States have shown a considerable downturn from what they were at the same time last year.

In the end of 1999, prospects will favour price increases of pulp. Price increases will be likely because of the solid economic situation, and the low level of NORSCAN inventories brought about by restrictions on production. The NORSCAN inventories dropped in September by 190 000 tons to 1.27 tons i.e. below the "optimal inventory level" of 1.5 million tons, a usual trigger level for price increases. The market will remain very tight as there will be extensive downtime during the last months of 1999. According to Utipulp statistics, in
In September 1999 the consumer inventories fell to a level that corresponds to 38 days of supply. Measured by the PIX pulp price index maintained by the Finnish Options Exchange (FOEX), the price for bleached softwood pulp remained at the very low level of 460 U.S. dollars per ton from December 1998 till March 1999. By summer, the price had risen to 520 dollars per ton, and in August it started to grow rapidly, reaching 590 dollars per ton by the beginning of September. The price development of hardwood pulp has shown a similar rising tendency, ending up at 535 euros per ton in the beginning of November. The HWWA index of pulp has also taken a clear upward turn, although from January till October 1999, it was still about five per cent lower than in the corresponding period last year.

Companies have announced further increases in pulp prices for the autumn of 1999. Expectations are that these price rises will go through, and the price of pulp is likely to rise to 600 dollars per ton by the end of the current year. In 2000, the price of pulp will exceed 600 dollars. However, pulp prices will be held back by the dragging paper prices and by some investments in pulp production in Asia which will bring more supply on the markets once completed. In contrast, pulp capacity in Europe will not be growing much in 2000.

**Paper Prices Rise in the End of the Year**

The Finnish markka prices of the various paper grades were lower in the first half of 1999 than in the same period last year. The price of newsprint was down by about three per cent, magazine paper by almost 14 per cent and fine paper by about 9 per cent, and the price of paperboard also declined by about six per cent from last year. The increase in pulp prices towards the end of the year and throughout 2000 will put pressure on raising the prices of paper, particularly fine paper. On long-run there is still a clear interdependence between prices of pulp and prices of fine paper in particular, and because of substitution between different paper grades, the rise in pulp prices will also lead to an increase in the prices of wood-containing papers. In the light of the PIX indexes, it seems that fine paper prices will follow pulp prices. Moreover, several forest product companies have announced increases for the prices of

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<td>Production</td>
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<td>Domestic use*</td>
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<td>Exports:</td>
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<td>EU</td>
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<td>Asia</td>
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<tr>
<td>Africa</td>
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<tr>
<td>United States</td>
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<tr>
<td>Russia</td>
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<td>Others</td>
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Source: Finnish Forest Industries Federation

*Domestic use = production – exports
newsprint and coated fine paper for the near future. These rises are likely to go through because of the development in pulp prices. Also the increased demand for printing papers due to the millennium effect will support rises.

Slight Downturn in Finnish Paper Production and Exports in 1999

Finland’s production of pulp has increased by one per cent, whereas paper production has tailed off by 4.5 per cent and paperboard by almost five per cent during the first half of 1999 compared with the same period last year. The production of wood-containing paper in particular has shown a marked decrease. However, because the markets have picked up a little, the decrease in paper production slowed down during the second quarter. In the second half of the current year, production has taken a turn for the better again, and this year’s production level is projected to fall only one per cent short of last year. Exports of magazine paper from Finland to Germany have been brisk but otherwise Finnish paper exports as a whole have not reached last year’s level as yet and are projected to decrease by about one per cent on a yearly basis.

The yearly production of pulp is expected to grow by about one per cent in 1999. The Finnish pulp exports increased by an average of 22 per cent in the period between January and June in 1999, although export value only grew by about four per cent owing to the low prices of pulp. Due to a sharp rise in the beginning of the year, pulp exports are projected to increase by ten per cent in all from last year. Judging by the first six months of the current year, softwood pulp exports have been particularly brisk. Because of downtime on production, Finland’s paperboard production will fall by three per cent this year, but exports will exceed last year’s level by a narrow margin.

Because the U.S. dollar price of pulp has taken a turn upwards, the average Finnish markka export price will reach last year’s level although the beginning of the current year was weak. As regards to papers, the price rises this autumn will increase the prices of fine papers in particular, but the average Finnish markka price level in paper exports will remain a few per cent below that of 1998. The price development of paperboards follows that of paper.
The year 2000 looks promising from the point of view of Finnish paper exports. Economic growth in the most important European markets will accelerate from 1999 and production capacity will not limit export growth to any significant extent. In 2000, the increase in paper consumption is projected to be nearly three per cent in the euro area and even higher in the United Kingdom. This will be made evident as demand for paper and paperboard increases in Europe. Moreover, the Asian economies are growing again, which will also have a positive effect on the development of Europe’s paper and pulp markets.

The positive development of the markets is also spurred by the moderate growth of paper supply. Especially in Europe, the expansion of paper capacity will remain relatively minor in 2000, because new capacity investments will involve reductions to existing capacity. Finland’s position is improved further by the strong demand for paper in the United States and Japan, which should reduce Canadian supply on Finland’s principal market area in Europe. The competitiveness of Finnish producers will remain strong even if the euro appreciates a little. The Swedish krona is also projected to strengthen against the dollar next year.

The favourable development of Finland’s export markets could be threatened by uncertainties in the Chinese economy, for example. The economic prospects of Russia and Latin America are also very uncertain, and exports to these areas cannot be expected to increase. The economic development of the United States next year is also to some extent uncertain.

In 2000, Finland’s export volumes of paper and paperboard will rise by an average of two per cent from 1999, whereas pulp exports are forecast to increase by one per cent compared to this year. Finland’s market pulp production capacity would allow even larger export volumes, but now that the prolonged period of low pulp prices has finally come to an end, producers would hardly wish to jeopardise the current rising price development by major production increases. Next year’s projected

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**Table 7.** Pulp and Paper Industry Production and Export Forecasts, 1000 tons (per cent changes from previous year below the respective figure).

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</thead>
<tbody>
<tr>
<td>Pulp</td>
<td>6 718</td>
<td>6 785</td>
<td>6 920</td>
<td>1 555</td>
<td>1 711</td>
<td>1 728</td>
</tr>
<tr>
<td>Paper</td>
<td>10 116</td>
<td>10 000</td>
<td>10 200</td>
<td>9 226</td>
<td>9 130</td>
<td>9 310</td>
</tr>
<tr>
<td>Paperboard</td>
<td>2 586</td>
<td>2 560</td>
<td>2 610</td>
<td>2 118</td>
<td>2 140</td>
<td>2 180</td>
</tr>
</tbody>
</table>

**Table 8.** Forecasts for Nominal Export Prices* of Pulp, Paper and Paperboard (per cent change from the previous year).

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Pulp</td>
<td>–3</td>
<td>0</td>
<td>+10</td>
</tr>
<tr>
<td>Paper</td>
<td>+8</td>
<td>–2</td>
<td>+3</td>
</tr>
<tr>
<td>Paperboard</td>
<td>+2</td>
<td>–2</td>
<td>+3</td>
</tr>
</tbody>
</table>

*Export prices are export unit values in FIM.
increase in paper and paperboard exports will mean a return to the 1998 level.

Export prices of paper and paperboard are projected to rise by an average of three per cent next year. The prices of fine papers will show the greatest increase, having already taken an upward turn in the autumn of 1999. The magazine paper prices will follow the fine paper prices on their upward curve somewhat later.

2.3 Costs and Profitability of the Forest Industry

There are no major changes in sight for the forest industry’s cost development in 2000. Nominal wood costs are projected to rise by two to three per cent in 2000 mostly due to increasing volumes of imported wood. The cost of labour is estimated to remain below the growth of labour productivity, i.e. at about four per cent. If the projected increase of total demand in the forest industry’s major export markets is realised and the export product prices rise, the industry’s utilisation rate will grow and its profits will improve in 2000.

Minor Changes in Wood Costs

The Finnish forest industry’s wood costs consist mainly of stumpage and import-wood expenses. Stumpage prices make up a good two thirds of the factory price of wood and timber harvesting and transportation slightly less than one third. Owing to good weather and an increased degree of mechanisation, nominal costs of wood production will not rise in the current year. The degree of mechanisation has increased strongly in Finnish forestry in the 1990’s, reaching the level of 91 per cent in the harvesting of forestry companies and the Finnish Forest and Park Service last year. However, mechanisation is expected to decelerate in Finland during the next few years. Furthermore, the costs of long-distance transportation are projected to remain at last year’s level in real terms. Stumpage prices and costs of timber harvesting will abate a little this year. A slight rise in wood costs is due to an increase in volumes, especially as regards imported wood.

In 2000, the Finnish forest industry’s wood costs are projected to rise by between two and three per cent compared to the current year. The cost increase is mainly due to growing wood import volumes, but the costs of wood of domestic origin will also increase as stumpage prices rise a little. In addition, the declining development of harvesting costs is projected to come to a halt in 2000, and the costs of long-distance transportation may rise even in real terms. In 2000, imported wood is estimated to account for a good 15 per cent of Finland’s forest industry’s wood costs.

Moderate Growth in Labour and Energy Costs

Since the 1997 collective wage agreement determines standard wage rates up until January 2000, the increase in the cost of labour has been very moderate in Finland this year. Having committed themselves to the general incomes policy settlement, both the wood products industry and the pulp and paper industry will experience a rise of about four per cent in labour costs in 1999. In addition, high unemployment figures have continued to retard wage drifts. Forthcoming wage agreements will determine the development of wages in the future, including those in the paper and wood products industries. Forest industry’s labour productivity has increased rapidly due to continuously increasing production and relatively stable number of jobs over the past couple of years. However, EMU membership requires moderation in wage agreements.

A steep rise in the world market prices of oil has caused the oil products wholesale price index to escalate by 18 per cent between January and August 1999. Meanwhile, the wholesale price index of elec-
Electricity, gas and heat has decreased by about two per cent in Finland. The world market price of oil is projected to continue its growth next year, but the expected appreciation of the euro against the US dollar will curtail the price rise in oil products in Finland. All in all, increased oil prices will raise energy costs slightly in 1999 and 2000.

**Capacity Utilisation Rates**

Heightened demand will increase Finnish forest industry’s capacity utilisation rate. Nevertheless, owing to low production volumes in the beginning of the year, the utilisation rate will shrink from last year’s 94 per cent to 92 per cent in 1999. However, capacity utilisation rates vary greatly from one branch of the forest industry to another. These differences are due to demand factors and the fact that the paper industry has increased its capacity more rapidly than the wood products industry.

The strong growth of construction activity in Finland has accelerated production in the wood products industry. In consequence, new sawnwood production record was set both in 1997 and 1998. Production continues to increase in 1999 as Finnish exports to Europe and Japan pick up speed. It is estimated that in 1999, the capacity utilisation rate of Finland’s sawmilling industry will grow by an average of one per cent from last year’s 94 per cent. In contrast, the Finnish markka export prices were about ten per cent lower in the summer of 1999 than at the same time last year. Moreover, the high price of sawlogs will weaken the profitability of Finland’s sawmilling industry in spite of expectations for an increase in sawnwood export prices.

Finland’s pulp industry is currently experiencing its third consecutive year of growth. Even though 1999 began sluggishly, the demand for pulp has picked up towards the end of the year and its prices have also increased. Finland’s market pulp production capacity has grown, however, and, in consequence, its utilisation rate is projected to drop to 85 per cent. After a long period of downward development, a continued increase in pulp prices would make a positive contribution to the Finnish pulp industry’s profitability.
The declining trend in the demand for papers and price development, especially in the beginning of 1999, has led to downtime in paper production. Moreover, Finland’s production capacity for fine papers and magazine paper has grown. Therefore, the capacity utilisation rate is likely to remain below last year’s level, i.e. at about 90 per cent. There are great differences between the various paper grades, however. For example, the demand for fine paper already took an upward turn in the spring and its output will top last year’s performance by several percentage points. As for magazine papers, demand continues to look weak, but the markets are expected to pick up next year and make a positive contribution to utilisation rates. A parallel development trend can be seen in the demand for newsprint in 1999. As in the case of papers, paperboard has been in poor demand and production has shrunk by several percentage points. There has only been a slight increase in Finland’s paperboard production capacity, but its utilisation rate will drop by one per cent on average, nonetheless.

**Weak Price Development Depresses Profits in 1999, but 2000 Promises Improvement**

In 1998, the earnings of Finnish forest products companies amounted to FIM 13.8 billion (EUR 234 million) after financial items, topping the record set in 1995 by almost two billion. Compared to the preceding year, Finland’s forest industry improved its earnings by more than a third in 1998 despite the drop in sawnwood and pulp prices and the overcapacity for fine paper production. The 1998 turnover of Finnish forest industry amounted to FIM 155 billion, of which about 100 billion were accounted for by domestic business units. Returns on capital employed were 11.6 per cent, i.e., almost the same as the previous year.

Poor paper demand in the beginning of the current year and a decline in export prices since the first half of last year will reduce the earnings of Finnish forest products companies in 1999. In the end of the current year, improving export prospects and increasing prices of papers will have a positive impact on earnings, but they will fall slightly short of last year’s level nonetheless. The demand for Finnish forest industry products as well as the industry’s earnings and turnover are projected to grow in 2000. Moreover, profitability is also expected to improve from the current year’s level as long as the appreciation of the euro remains moderate.

The corporate composition of the Finnish forest industries has changed greatly in order to safeguard competitiveness and increase returns to scale. Paper production has been concentrated in the three largest companies (Stora Enso, UPM-Kymmene and Metsäliitto-Group), and these companies also cover about half of Finland’s sawnwood production. Increased efficiency in product development and raw-material procurement has also been the motive behind UPM-Kymmene’s and Metsäliitto-Group’s respective decisions to incorporate their sawmilling and wood-based panel industries. According to its corporate strategy,
Stora Enso concentrates on its core function, which is paper production.

According to the Finnish Forest Industries Federation, the forest industry’s investments amounted to about FIM 17 billion altogether in 1998 of which 66 per cent was placed in foreign investments. Domestic investments have remained at the average yearly level of six billion between 1997 and 1998. In the current year and the next, domestic investments are estimated to amount FIM 5–6 billion. Since the forest industry’s production machinery in Finland is mostly in top condition technically, the need to invest in existing capacity is relatively small.

The adjoining graph, based on official statistics, is intended to give an overall view of how the forest industry’s costs were distributed in 1997. The pulp and paper industry comprises, in addition to pulp, paper and paperboard production, also the manufacture of converted pulp and paper products such as corrugated board, household papers and other products. The publishing and printing industry, however, is not included. The pulp and paper industry is characterised by a heavy use of inputs such as capital, energy, chemicals and fillers.

In addition to the sawmilling and wood-based panel industries, the wood products industry includes the manufacture of joinery products, wooden packaging and other similar wood-based 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 constitute a larger share of the total costs there than in the pulp and paper industry. In 1997, primary processing accounted for 76 per cent of the total turnover of the entire woodworking industry, while the corresponding figure in the pulp and paper industry was 95 per cent.

According to the Financial Statement Statistics published by Statistics Finland, the 1997 combined turnover of companies in the pulp and paper industry totalled FIM 79 billion. As regards the wood products industry, the corresponding figure was FIM 26 billion. The former increased by 14 per cent from the previous year, and the latter by over 27 per cent.

Both sectors showed clearly positive net profits after financial items and depreciation. Return on capital employed amounted to 4.8 per cent in the pulp and paper industry and as much as 15.3 per cent in the wood products industry.

Wood raw material costs (stumpage prices, harvesting and transportation costs) constitute a considerable part of the costs of the first processing phase, especially in the wood products industry. In 1997, wood raw material accounted for 34.5 percent of the wood products industry’s costs, whereas its portion in the pulp and paper industry was only 11.4 per cent.

In the pulp and paper industry, other raw materials and supplies constitute a larger cost item than in the wood products industry. Since both industries convert products of the first processing phase in their secondary processing, it is evident that products from their own respective sectors make up a large part of other raw material costs.

The cost item of other materials has grown as the forest industry has begun to focus more on its core business by externalising some of its services and auxiliary activities. Apart from purchases of merchandise, the largest cost items include transportation, storage, administration and repairs, and in the case of the pulp and paper industry also advertising and marketing expenses. The energy costs of the pulp and paper industry are considerably larger than those of the wood products industry.

Sources: Statistics Finland, Finnish Forest Research Institute
Costs of the Pulp and Paper Industry in 1997, FIM 79 billion

Costs of the Wood Products Industry in 1997, FIM 26 billion

Estimate: Metla
2.4 Labour Force in the Forest Industry

Employment in the forest industry will increase by about two per cent in 1999 in spite of production downtime in the beginning of the year. The average unemployment figures in the forest sector will shrink from seven per cent to six, which is about four percentage points lower than the projected average unemployment rate of the Finnish economy in the current year. In comparison, the unemployment figures of the sawmilling industry are still high, about eight per cent. In the pulp and paper industry, however, unemployment has been reduced to only four per cent. Since economic prospects are looking up, the employment situation may remain relatively positive in 2000.

Employment Situation Unchanged in the Wood Products Industry

In 1999, the employment situation of the Finnish wood products industry will change very little from last year. Despite a production growth of two or three per cent, employment figures will remain unchanged in the sawmilling industry. The plywood industry, which has experienced the strongest growth in the sector, will increase the number of workers by about ten per cent. In other branches of the panel industry employment will continue to decline slightly.

The production volumes of particle board and fibreboard have been on a downward curve for the past two decades in Finland. During the past ten years, production has been cut by 30 per cent. At the same time plywood output has increased by 50 per cent and it is clear that the wood-based panel industry is specialising in plywood production.

The workforce of the Finnish joinery industry as a whole will remain at last year’s level, i.e., at an average of 13 000 persons. Among the sub-sectors, construction joinery is employing more people this year because demand has grown as a result of increasing construction activity. Other branches of joinery, in contrast, will have to continue to cut back their labour force. In the beginning of the 1990’s, employment in the manufacture of wooden packaging and other wood-based products plummeted from 11 000 employees to about 4 000, and so far the industry has not been able to rebound from this level.

The unemployment rates of Finland’s sawmilling and joinery industries will remain above the average level in the forest industry, i.e., at about eight per cent. The respective numbers of salaried employees, wage-earners and entrepreneurs out of the total number of people employed in this sector will remain unchanged. The number of entrepreneurs will stay at the average figure of 1 200 persons, which constitutes ten per cent of the persons employed in the sector. In the joinery industry, the number of entrepreneurs will average 2000, i.e., about 15 per cent of the total number of employees.

In 1999, the Finnish wood products industry will provide employment for about 32 000 persons altogether, and the closely related furniture industry an additional 14 000 persons. The share of entrepreneurs is 20 per cent in the furniture industry, which exceeds that of other sectors in the wood products industry.

Employment Improves in the Pulp and Paper Industry

During the first half of the current year, the number of people employed in the Finnish pulp and paper industry has increased by about four per cent compared to the corresponding period last year. This growth has taken place despite production downtime and reduced output. It is the pulp and paper industry proper that has increased the number of workers, since the paper products industry still employs the same number of people as last year. The
sector’s unemployment rate has dropped from five to four per cent, which can be regarded as a very low figure. Since the publishing and printing industry that is closely connected to the pulp and paper industry has also increased the number of its employees by four per cent, these branches have created about 3000 new jobs in all.

So far, the number of employees in Finland’s pulp and paper industry has not changed in 1999. In all branches of the paper industry, the greatest increase in employment figures has occurred in the number of salaried employees, which has grown by about 2000 people, thus raising their share from 30 to 35 per cent of the total. The escalating number of salaried employees has been explained by an increase in the amount of marketing, research and production development tasks, as well as by a need to hire more salaried employees to reduce the great amount of overtime work. As regards the publishing and printing industry, where half of the employees are salaried, the number of jobs for salaried employees and wage earners has increased to an equal degree.

In 1999, the pulp and paper industry’s employment rate is reckoned to total 42 000 persons and the publishing and printing industry’s 36 000. Together with the wood products industry and forestry, the entire forest sector in the broad sense of the word will employ an average total of 147 000 persons. In 1998, the corresponding figure was 146 000 persons. While the employment figures of the Finnish economy as a whole have augmented by 63 000 persons in one year, the portion of employment provided by the forest sector has decreased from 6.5 per cent to 6.4.

In the light of the foreseeable economic development it seems that the positive employment situation of the Finnish forest industry and the entire forest sector may continue in 2000. This is due to a projected two-per-cent average rise in production in all the principal branches of the forest industry next year.
Between 1997 and 1999, a working group called “Workforce 2017” appointed by the Ministry of Labour drew up estimates for medium-, long-, and very long-term development in labour demand and supply to provide a foundation for the strategy and courses of action to be followed in Finland’s future labour policy. As a basis for these labour estimates, alternative curves were drawn for development in the economy and society. In this forecast, the forest sector was defined as consisting of forestry, wood products industry, furniture industry, pulp and paper industry and publishing and printing industry.

A forest sector employment forecast that follows the base curve of Finnish economic development works on the assumption that the forest industry will remain a significant source of livelihood and retain its current position in the national economy. In the medium-term forecast reaching up to 2005, the starting point is the projected growth of the forest industry’s capacity due mainly to renewal investments, which corresponds to the projections of the National Forest Programme, for example. Due to increased capacity annual fellings are predicted to increase by between five and ten million cubic metres by 2010. It is presumed that silviculture will remain at its current high level, and that the use of wood as a source of energy will escalate. Moreover, it is also expected that the objectives of programmes such as Puu-Suomi (Wood Finland) and Puun Aika (Time for Wood) concerning the development of the mechanical forest industry will be realised at least in part.

Due to a marked increase that is forecast to take place in the use of wood, employment will not lessen in the forest sector in the first half of the next decade, and even after that its decrease will be considerably more moderate than during the previous decades. According to the very long-term projection, the forest sector’s share of employment in Finland will have dropped to five per cent by 2030. Jobs in forestry are expected to continue their decrease a little faster (by c. 30 per cent) than in the forest industry (by c. 20 per cent). This is due to the fact that it is possible for the forest industry to expand by importing more raw material and by increasing the degree of processing in its products, whereas in the case of forestry there are physical limitations to production expansion. Finland’s employment rate as a whole is projected to rise by a couple of per cent in the same time period. The forest sector employment forecast that follows the base curve and is the most likely of all to be realised is shown in the adjoining table.

As regards the level of the Finnish economy as a whole, model calculations were also made for a fast-growth curve which exceeds the rate of economic-

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**Table. Employment in the Forest Sector in 1998 and a Forecast for the Period between 2000 and 2030. Number of Persons Employed.**

<table>
<thead>
<tr>
<th>Year</th>
<th>Forestry</th>
<th>Forest Industry</th>
<th>Forest Sector</th>
<th>Finland’s Economy</th>
<th>Share of Forest Sector %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>24 000</td>
<td>122 000</td>
<td>146 000</td>
<td>2 222 000</td>
<td>6.6</td>
</tr>
<tr>
<td>2000</td>
<td>23 000</td>
<td>114 000</td>
<td>137 000</td>
<td>2 271 000</td>
<td>6.0</td>
</tr>
<tr>
<td>2005</td>
<td>22 000</td>
<td>114 000</td>
<td>136 000</td>
<td>2 346 000</td>
<td>5.8</td>
</tr>
<tr>
<td>2010</td>
<td>20 000</td>
<td>110 000</td>
<td>130 000</td>
<td>2 347 000</td>
<td>5.5</td>
</tr>
<tr>
<td>2017</td>
<td>18 000</td>
<td>106 000</td>
<td>124 000</td>
<td>2 323 000</td>
<td>5.3</td>
</tr>
<tr>
<td>2030</td>
<td>17 000</td>
<td>96 000</td>
<td>113 000</td>
<td>2 255 000</td>
<td>5.0</td>
</tr>
</tbody>
</table>

growth indicated by the base curve by about one percentage point. In relation to the base curve, the fast-growth curve shows a higher growth of labour productivity which would mean that, at best, only half of the increase in economic development would be manifested in improved employment figures. Nevertheless, Finland’s labour resources will not be able to meet the demand once the large post-war age groups have retired, even though the participating rate in working life is projected to increase. The fast-growth curve will, therefore, lead to a strong net immigration need in the 2010’s.

In the forest sector, the fast-growth curve would result in a full use of the industry’s capacity, an increase in productivity, and a growing use of imported raw material and labour. Even if the world market demand for forest industry products was to grow, for example according to the FAO’s projections, augmentation of capacity would not be a viable option owing to a general shortage of labour and the fact that wood resources would already be used to the full because of replacement investments. In the fast-growth scenario, economic growth would be likely to shift to fields other than the forest sector, whose relative importance to Finland’s economy would shrink faster than indicated by the base curve.

According to the slow-growth calculation curve, the rate of economic growth would sink because of problems in the international economy, and finish up about one percentage point lower than in the baseline scenario. Declining growth would cause a slowdown in the growth rate of labour productivity, and labour supply would also remain weaker than that indicated by the base curve. Unemployment would take an upward turn again in the first decade of the 21st century and remain at the level of 300,000 people up until the 2010’s.

The effects of a decline in growth would first and foremost be felt in the service sector, and employment programmes based on Finland’s natural resources might subsequently become topical again. The forest sector’s relative importance to the Finnish economy would become evident again according to the slow-growth alternative.

The development indicated by the base curve, which the working group who compiled the forecasts consider as the most likely scenario, is, from the point of view of the forest sector, fairly optimistic on the one hand and conservative on the other. In accordance with the basic presuppositions that shape the curve, there will be no major, unexpected changes. Among other things, attempts to expand the forest sector’s traditional production by means of renewal and repair investments are expected to come off according to plan – exactly as projected in the National Forest Programme.

Source

Figure.
The Forest Sector’s Share of Finland’s Total Employment Rate between 1945 and 1998, and a Forecast for the Period between 2000 and 2030.