



**INDUSTRY  
COMMISSION**

**ADDING FURTHER VALUE TO  
AUSTRALIA'S FOREST PRODUCTS**

**REPORT NO. 32**

**15 SEPTEMBER 1993**

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15 September 1993

Honourable George Gear MP  
Assistant Treasurer  
Parliament House  
CANBERRA ACT 2600

Dear Assistant Treasurer

In accordance with Section 7 of the *Industry Commission Act 1989*, we have pleasure in submitting to you the report on *Adding Further Value to Australia's Forest Products*.

Yours sincerely

Bill Scales  
Chairman

Neil Byron  
Associate Commissioner



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## ABBREVIATIONS

Main abbreviations used in this report are listed below:

ABARE	Australian Bureau of Agricultural and Resource Economics
ABS	Australian Bureau of Statistics
ANM	Australian Newsprint Mills Limited
APM	Australian Paper Manufacturers
APPM	Associated Pulp and Paper Mills
ASIC	Australian Standard Industrial Classification
BEK	bleached eucalypt kraft (pulp)
CALM	Department of Conservation and Land Management (Western Australia)
CFMEU	Construction, Forestry, Mining and Energy Union
CIS	Commonwealth of Independent States
CRC	Co-operative Research Centre
CSO	community service obligation
EC	European Community
ESD	ecologically sustainable development
FAFPIC	Forestry and Forest Products Industry Council
FAO	Food and Agriculture Organisation
FIMEE	Federation of Industrial, Manufacturing and Engineering Employees
GATT	General Agreement on Tariffs and Trade
GDP	gross domestic product
GERD	gross expenditure on research and development
IAC	Industries Assistance Commission
IC	Industry Commission
LVL	laminated veneer lumber
LWC	light weight coated (paper)
MDF	medium density fibreboard
NAFI	National Association of Forest Industries
NFITC	National Forest Industries Training Council
NFPS	National Forest Policy Statement
NPAC	National Plantations Advisory Committee
OECD	Organisation for Economic Co-operation and Development
PPMFA	Pulp and Paper Manufacturers Federation of Australia
PSA	Prices Surveillance Act
R&D	research and development
RAC	Resource Assessment Commission
TPA	Trade Practices Act

## **TERMS OF REFERENCE**

### **Adding further value to Australia's forest products in the woodchip, sawn timber, plywood and panel, pulp, paper and paper packaging industries**

#### **INDUSTRY COMMISSION ACT 1989**

I, JOHN SYDNEY DAWKINS, under Section 7 of the Industry Commission Act 1989:

1. refer as an Industry Development reference, the potential for adding further value to Australia's forest products in the woodchip, sawn timber, plywood and panel, pulp, paper and paper packaging industries, for inquiry and report within twelve months of receiving this reference (though the Commission may give consideration to providing a series of reports if it is impractical to report within twelve months on the entire range of the above industries);
2. specify that in making its recommendations the Commission aims to improve the overall economic performance of the Australian economy;
3. request that the Commission report on:
  - (a) emerging trends in local and global markets for the industries;
  - (b) the current structure and competitiveness of the industries (including cost structure and potential cost savings);
  - (c) the potential for further development of the industries - including strengths and weaknesses, export potential and import replacement potential - and the time frame for likely development under current circumstances;
  - (d) any measures which could be undertaken to remove impediments or overcome constraints to the efficiency, growth or export development of the industries, in ways that are consistent with the principles of ecologically sustainable development and efficient resource use in the economy taking account of the polluter pays principle (covering such issues as regulation, market structure, workforce skill, property rights, or economic, budgetary, industrial, environmental, technological, social, or other factors): and
  - (e) the effects on the industries, and the economy in general, of any measures recommended by the Commission;
4. request that, where appropriate and without disclosing material provided in confidence, the Commission report on examples of past success and failure in the industries, both in Australia and elsewhere, by way of case study or other means;
5. request that the Commission quantify the extent of any assistance provided to the industries, identify if it is offered in a discriminatory manner within the industries and report on ways in which:
  - (a) that assistance could be better used to promote the long term development of the industries and economy; and
  - (b) the costs of adjusting to lower levels of assistance can be minimised; and
6. specify that the Commission have regard to the established economic, social and environmental objectives of governments.

John Dawkins  
18 September 1992

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# OVERVIEW

*Increasing demand during the 1990s will provide growth opportunities for Australian producers of forest products in both the domestic and export markets. Immediate steps must be taken to improve Australia's international competitiveness to enable local producers to fully exploit these emerging opportunities. This will require on-going actions by governments to improve competitiveness and the attractiveness of Australia for new forestry investments, as well as initiatives by companies to lower processing costs and develop products that match changing market needs.*

This report responds to one of the first of the Government's new industry development references. The references are intended to provide opportunities to investigate growth prospects, as well as to expose impediments to improved performance.

## *Market conditions*

As major world economies emerge from recession, there will be growing opportunities for producers of forest products during the remainder of the 1990s. Fuelled by increasing industrialisation in developing nations, rising construction activity and further expansion in the stock of automated office equipment, world demand for forest products is likely to continue to outstrip growth in economic activity generally.

Growth is likely to be particularly strong in Asian countries. Consumption of forest products by Asian countries has increased steadily over the last decade. Nonetheless, per capita consumption of wood and paper products in the region is substantially below that of western nations (eg per capita consumption of paper products in Indonesia is only 8 kg compared with over 300 kg in the US). Although there has been some expansion in processing capacity in Asian countries, the region's reliance on imports has increased. In 1991, imports of wood and paper products by Asian countries amounted to \$25 billion, while exports totalled only \$14 billion.

Demand in Australian markets is also expected to grow. With imports well established in most market segments, market growth will provide opportunities for both Australian and foreign suppliers.

While demand for forest products is expected to increase, the capacity of some major exporting countries to satisfy demand may be limited. For example, log prices in the United States have escalated rapidly over the past two years or so.

Much of the increase has been attributed to the curtailment of logging activity in the Pacific north-west region surrounding the habitat of the northern spotted owl. Reductions that will be required in other regions in order to reduce felling to sustainable levels will further increase the pressure on log prices. Similarly, in Canada, the availability of wood — and, hence, log prices — is likely to be affected by government decisions to set aside additional areas of forest for conservation purposes and to ensure that forest resources are managed on a sustainable yield basis. These factors will reduce both the competitiveness and the capacity of the United States and Canada — the world's two largest exporters of forest products — to satisfy demand in Asia and other international markets.

Diminishing availability of wood is also likely to reduce the supply capacity of some traditional Asian producers — such as Malaysia, the Philippines and Thailand. The lower volumes of wood available in these countries reflect more stringent government restrictions on logging and on exports, as well as high levels of felling over past years.

While reduced wood availability in many traditional supplying nations will create growth opportunities for Australia's forest products industries, it will also stimulate new investment in other countries. There is already significant new capacity under construction in developing countries such as Indonesia, Brazil and Chile which will help meet the expected shortfall by traditional supplying nations. At this stage, it is not clear whether projects presently under way — and other projects still in the planning stage — will fully compensate for falling supply capacity in other countries.

### *Factors affecting future development*

Considerable differences between firms and regions — as well as in the nature of processing operations, the products and the markets served — complicate assessments of the future potential for Australia's forest products industries. Nonetheless, it is possible to identify a number of factors common to most wood processing activities which will help shape the industries' future development.

Some factors appear to be 'strengths' which will generally assist Australian producers to improve their competitiveness. These include:

- *wood resources*: Australia is fortunate to have ample land and climatic conditions well suited to growing trees. There is an expanding hardwood and softwood plantation estate. Increasingly, public forests used for wood production are being managed on a sustainable yield basis, with wood harvesting being governed by established environmental codes. Many other producing nations do not have similar measures in place. This could

diminish the future availability of wood in those countries and, in some instances, reduce international demand for their products (eg rainforest timbers).

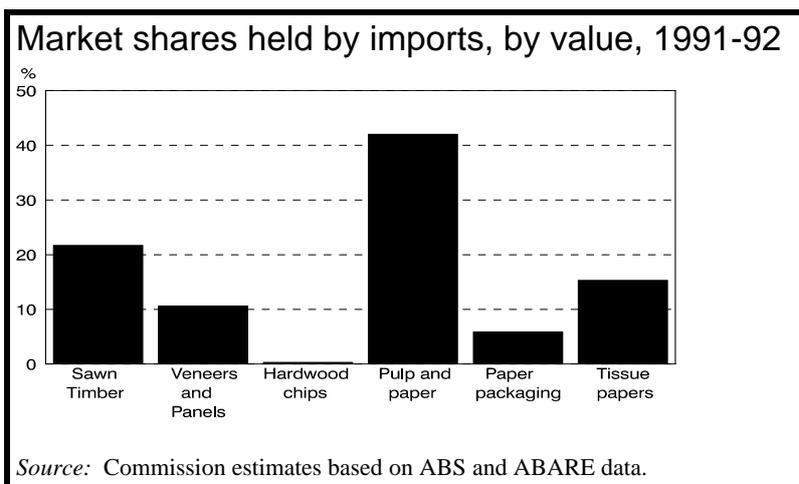
- *labour resources*: significant labour market improvements have been achieved, or are in train. They have increased the flexibility of the workforce and improved labour productivity. Some larger producers now claim that workplace arrangements (and costs) in Australia compare favourably with those in other leading developed nations (eg the United States and Canada).
- *proximity to Asian markets*: although most processing plants are located in southern regions of Australia, local producers are closer to growing Asian markets than are most other major trading nations (eg North American and Scandinavian countries).
- *political stability*: Australia offers investors a stable political environment in terms of national security and economic management compared with some alternative locations.
- *scope for import replacement*: in many market segments, imports hold a significant

market share (see Box). For many forest products, this creates considerable scope for expansion in a market which is sheltered, to varying degrees, from

competition by tariff assistance and international shipping costs. Additional advantages accrue to those products where it is beneficial for suppliers to be located in close proximity to users (eg because delivery times are shorter and order sizes can be smaller).

The advantages which these factors bestow on local wood processing industries have to be weighed against a number of other elements (ie 'weaknesses') which reduce the ability of Australian producers to compete against their overseas counterparts. These include:

- *resource security*: domestic producers perceive limited resource security and dwindling access to native hardwood resources as major obstacles to



investment in new projects that rely on wood supplied from public native forests.

- *small domestic market*: for many products, the relatively small domestic market restricts opportunities to install plant of world scale to those ventures able to sell profitably a large proportion of the additional output on international markets.
- *high input costs*: chemical costs are high by international standards while, in some regions, wood and energy costs are somewhat higher than those in some (but by no means all) major producing nations.
- *transport costs*: inefficiencies in internal transport, coupled with high international shipping costs, negate much of the advantage that Australia stands to gain because of its proximity to Asian markets. They also reduce, or in some cases offset, the transport cost advantages Australian producers should have in supplying more distant domestic markets.
- *industry structure*: although some rationalisation is occurring, in most regions the hardwood sawmilling sector remains fragmented. The majority of mills have limited capacity to: take advantage of scale economies; to finance new investment; and to develop more sophisticated marketing techniques.

Two additional factors, which are more appropriately considered as threats rather than as weaknesses, could also impede the future development of Australia's forest industries. First, large expansions of capacity are under way or planned in some developing countries (eg there is a possibility of six new pulp mills in Indonesia). Second, in some countries, producers benefit from relatively high levels of government assistance. High levels of assistance provided by overseas governments reduce both the access and competitiveness of Australian producers in international markets. They also assist our competitors to compete in Australian markets.

### *The competitiveness of Australia's forest products industries*

The international competitiveness of most industries appears to have improved since the mid-1980s. Although modest relative to total domestic production, exports have generally increased. In the face of declining tariff protection, local producers' market shares in major product categories have been maintained. Analysis of the comparative costs of Australian and overseas producers confirms that improvements have been achieved in a number of sectors.

Product categories in which Australia appears to be most competitive and those in which competitiveness appears least are shown in the opposite box. The categorisation is broadly based and needs to be interpreted with care. It does *not* imply that (say) *all* woodchip operations are internationally competitive, or that *all* Australian production of sawn hardwood and of

### Competitiveness of Australia's forest products

#### *Most competitive sectors*

- hardwood woodchips
- particle board
- packaging and industrial papers
- hardwood pulp

#### *Least competitive sectors*

- hardwood plywood
- sawn hardwood
- commodity printing and writing papers

printing and writing papers is uncompetitive. Some local woodchip operations may compare poorly with international suppliers. Similarly, certain printing and writing papers (eg specialty papers) and sawn hardwood (eg higher value products targeted at niche markets) may be highly competitive.

Although competitiveness has improved, the available information suggests that on-going improvements will be required if the increases in competitiveness are to be translated into higher levels of output and/or a greater degree of processing in Australia. Many of the measures available to improve competitiveness in Australia are also available to overseas competitors. Consequently, the challenge is not just to improve efficiency and competitiveness: it is to improve at a rate beyond that achieved by our competitors.

#### *How can competitiveness be improved?*

Many of the measures required to improve performance need to be undertaken by the firms themselves. However, governments play a far more significant role in shaping the development of Australia's forest product industries than they do for most other industries. Consequently, improvements in competitiveness are contingent on actions by both industry and government.

### *Industry strategies*

The considerable diversity among firms and products in Australia's wood processing industries implies that there is no common strategy for increasing competitiveness. In practice, strategies will vary between firms (and, in some cases, between products within firms) according to the circumstances of each firm and its perception of market conditions. The optimal strategy for one producer may be totally inappropriate for others, even if they produce identical products.

For most firms, improving competitiveness is not simply a matter of lowering costs. The optimal development strategy is more likely to comprise a 'package' of measures that seeks to increase market acceptance of a firm's products, as well as lowering processing and input costs. Components of the package will reflect the potential gains from a wide range of possible initiatives such as: improving process technology; increasing utilisation or scale of plant; improving management and workforce skills and practices; developing new products and new markets; and introducing new marketing strategies.

An additional measure which is integral to many firms' future strategies is the development of programs to improve product quality and to ensure that products are appropriate to users' needs. In this context, many in the industries consider they can no longer afford to be 'supply driven', and that a more market oriented philosophy is needed to promote competitiveness and growth.

### *The role of governments*

The competitiveness of the forest products industries is closely linked to the performance of governments. Governments are major suppliers — and in some cases the sole suppliers — of important inputs such as wood, energy, rail and port services. They also provide essential infrastructure (eg roads) and regulate (or otherwise oversight) many facets of the industries' operations (eg the development of new projects, the export of logs and woodchips, and the level of environmental emissions). Given this high level of involvement, it is clearly *not* feasible to lift performance to the maximum possible extent unless governments also become internationally competitive.

The performance of Commonwealth and, in particular, State Government agencies which impact on the operations of the forest products industries needs to be improved. Many factors which are directly controllable by governments are presently detracting from, rather than enhancing, the industries' competitiveness.

If the international competitiveness of Australia's forest products industries is to increase, and the available growth opportunities are to be fully exploited, it is essential that governments take *immediate* steps to address existing shortcomings. To their credit, governments have been introducing reforms that will increase competitiveness (eg in some states, significant progress has been made in improving the efficiency of forest management agencies and government bodies which service the forest industries, such as electricity authorities). However, the extent and pace of change vary considerably. Prompt action by governments could eliminate or substantially reduce existing inefficiencies in many areas within the next one or two years.

The most important area of change relates to government involvement in wood supplies. Measures necessary to support the commitments made by governments in the National Forest Policy Statement (NFPS) to improve resource security need to be put in place as soon as possible. To improve the efficiency of wood production and to reduce the scope for government intervention, publicly owned plantations should be privatised. In addition, government bodies responsible for the management of public native forests used for wood production should be corporatised. The work required to implement these changes needs to commence immediately.

Export controls on logs and woodchips restrict export market development opportunities. Perhaps more importantly, they also undermine the viability of other wood processing activities by reducing the cost savings available from integrated logging and processing operations. Some perceive the export controls as a means of pursuing environmental objectives. However, environmental objectives are more efficiently addressed by measures which impinge on all logging operations (eg codes of logging practice), not just logging operations associated with the production of logs and woodchips destined for export markets.

The Commission has been unable to identify any benefits associated with the present export controls. Wood is left to rot on the forest floor: royalties and export revenues are forgone. All export controls should be abolished immediately. This action, in conjunction with the implementation of the initiatives outlined in the NFPS, would provide a clear and unambiguous signal to local and foreign investors of Australia's commitment to the development of viable forest products industries.

It needs to be recognised that the removal of the current export restrictions would not preclude Commonwealth Government involvement at some future time. The powers provided the Commonwealth under the Constitution to control exports would allow it to intervene at any time should it determine such action necessary.

Governments can also improve the forest industries' competitiveness by accelerating the pace of reform of the electricity and gas industries, and of government instrumentalities responsible for the provision of transport services and associated infrastructure. Governments also need to revamp environmental and project approval processes to eliminate problems posed by the existing poorly defined, fragmented and costly administrative processes.

There is also a need for governments to review a number of matters affecting the performance of the forest industries. These include: the taxation treatment of private wood growers; the level and allocation of government funds available for training; and building regulations which currently restrict the use of timber in multi-storey structures.

The major initiatives that need to be taken by governments are summarised in the box on the following page.

Although governments have implemented some changes to promote competitiveness and growth, there is a danger that the benefits of some measures, and other changes advocated by some groups in the community, will be outweighed by costs associated with their introduction. For example, government initiatives to coerce producers to increase output of higher value added products may be counter-productive. They could encourage investment in activities which are not commercially viable, at the expense of more profitable investment in activities entailing lower levels of processing. This could result in the forest products industries contracting rather than expanding. Value added is more likely to be enhanced if governments focus on removing barriers to the production of higher value added products (eg improving project approval processes, removing restrictions which retard trading in logs purchased from state forestry agencies and introducing reforms to lower input costs), and allow individual firms to assess investment opportunities on normal commercial grounds.

Governments should also resist pressures to introduce measures such as mandatory recycling targets and selective taxation exemptions to increase consumption of recycled paper. Such measures distort patterns of supply and demand, and can undermine the competitiveness of other sectors of the forest industries. It is more appropriate for governments to address the causes of the problem rather than the symptoms (eg underpricing of waste disposal to landfill).

Major actions governments need to take to increase competitiveness		
<i>Objective</i>	<i>Action</i>	<i>Responsibility</i>
Improve resource security	<ul style="list-style-type: none"> <li>• Implement commitments outlined in the National Forest Policy Statement</li> </ul>	Commonwealth and State Governments
Increase efficiency of public wood production	<ul style="list-style-type: none"> <li>• Privatised public plantations</li> <li>• Corporatise public forestry agencies</li> <li>• Allow log entitlements to be divisible and tradeable</li> </ul>	State Governments
Increase efficiency of private wood production	<ul style="list-style-type: none"> <li>• Clarify existing taxation arrangements</li> <li>• Create a means for separating ownership of trees and land</li> <li>• Discourage discriminatory actions by local government</li> </ul>	Commonwealth and State Governments
Improve project and environmental approval processes	<ul style="list-style-type: none"> <li>• Establish and publish clear guidelines</li> <li>• Streamline administrative procedures</li> </ul>	Commonwealth and State Governments
Improve efficiency of government business enterprises	<ul style="list-style-type: none"> <li>• Accelerate pace of reform programs</li> </ul>	Commonwealth and State Governments
Increase workforce skills	<ul style="list-style-type: none"> <li>• Review the level and allocation of training funds</li> </ul>	Mainly the Commonwealth Government
Remove inefficient regulations	<ul style="list-style-type: none"> <li>• Abolish export controls</li> <li>• Remove sales tax exemptions on recycled paper</li> <li>• Review building regulations</li> </ul>	Commonwealth Government State Governments
Promote access to overseas markets	<ul style="list-style-type: none"> <li>• Engage in trade negotiations to reduce tariff and non-tariff barriers</li> </ul>	Commonwealth Government

### *Assistance*

Most participants accept the current program of tariff reductions. However, some consider that, in the present economic circumstances, a pause in the program would facilitate changes being made by the industries to improve competitiveness.

Selectively slowing, or halting, planned tariff reductions on wood and paper products may promote growth in the forest products industries. On the other hand, this would be at the expense of other groups in the community (eg users who would be deprived of cheaper wood and paper products). It would also defer adjustments which eventually must be made if competitiveness is to be improved.

In the past, the assistance available to the forest products industries has differed markedly, mainly because of varying levels of tariff assistance. Some products (eg plywood and certain printing and writing papers) have benefited from high tariff levels, while others (eg newsprint), have received no tariff assistance. Similarly, while most products sold domestically have been afforded at least moderate levels of assistance, relatively little has been available to exported goods.

Disparities of this nature can impose significant economic costs on the community. However, the phased reductions in tariffs have substantially reduced these disparities. While some undesirable differences persist, the Commission considers that the most appropriate way of overcoming the remaining problems is to continue with the announced program of phased tariff reductions. This will provide the industries with levels of tariff assistance similar to those available to most other manufacturing activities.

### *Benefits from improved competitiveness*

Although some microeconomic reforms (eg the introduction of more efficient road user charges) are likely to disadvantage local producers of forest products, other reforms made by governments and changes initiated by the firms themselves will reduce costs. The extent to which this will translate into increased international competitiveness will, in part, depend on movements in exchange rates and on Australian producers' capacity to improve non-price factors which influence competitiveness (eg product quality and delivery times). Perhaps more importantly, it will depend on the rate at which overseas competitors improve their competitiveness. Consequently, the magnitude of the benefits that will be derived from efficiency improvements is closely related to the speed with which change is implemented. The sooner the changes are made, the greater is the likelihood that we will gain an advantage over our competitors.

Many of the changes cannot be introduced overnight. Investment in new plant and the development of new products and new markets all take time. Nonetheless, firms can make significant changes in important factors such as labour productivity and marketing relatively quickly. Governments also have the capacity to make significant changes in relatively short time periods. For example, some measures could be implemented within a few months (eg the abolition of the export controls and the sales tax exemption that applies to some papers made from recycled fibre). Other measures recommended in this report — such as corporatising forestry agencies, selling public plantations, implementing the already announced initiatives to improve resource security and introducing more efficient project approval processes — will take longer. Nonetheless, given the necessary commitment, it should be possible to make substantial progress towards achieving these goals within a 12-month period.

Growth prospects will obviously vary and will not be necessarily correlated with competitiveness. For example, local production of each of those products assessed above as ‘most competitive’ satisfies virtually all domestic demand. Consequently, the growth potential may be higher for products which are slightly less competitive, but have expansion opportunities in the domestic market, as well as in international markets.

The major factor that is likely to prevent growth in hardwood sawmilling — and more than likely lead to reduced activity levels — is not so much competitiveness against imported hardwood, but increasing competition from both local and imported sawn softwood. The potential for growth in tissue products and packaging made from paper (eg cardboard cartons and boxes) also seems limited. Because of their low value relative to volume, transport costs are high and international trade is relatively small. Hence, despite some recent increases in exports, growth opportunities are likely to be mainly confined to those available in the domestic market — the overwhelming bulk of which is already satisfied from domestic sources.

### *Social and environmental impacts*

Further workforce rationalisation appears inevitable. Consequently, employment growth will lag behind increases in the industries’ output. Indeed, if little or no improvement in competitiveness is achieved, employment will decline. Given the decentralised nature of wood processing operations, this would impact most severely on rural centres.

An increase in the output of higher value added products would, in most instances, imply an increase in processing operations and in employment opportunities. This would reduce the decline in employment which would otherwise be expected to accompany future initiatives to improve productivity.

The extent of any increase in output of higher value added products is, however, difficult to determine. It will largely depend on the extent to which Australian processing costs can be reduced, although other factors will also come into play (eg relatively high tariffs on processed forest products imposed by some countries which constrain market access).

The environmental guidelines which currently apply to the industries are intended to reduce the likelihood of their future development giving rise to significant adverse environmental impacts. Nonetheless, as new products and new technologies are developed, environmental guidelines may also need to be modified.

The trend towards increased sourcing of wood from plantations and private property should, in the medium to longer term, reduce the demand for wood from public forests. This would also increase the stock of trees in Australia and help reduce greenhouse gases. To the extent that Australian wood and paper products produced from forests and plantations managed on an ecologically sustainable basis displace similar products produced from wood sources not managed on a sustainable basis, there could also be global benefits.

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# FINDINGS AND RECOMMENDATIONS

## FINDINGS

1. The forest products industries comprise an important component of Australia's manufacturing sector. The industries employ about 40 000 people and have an annual value added of around \$3 billion. This represents a little over 4 per cent of both manufacturing employment and value added. However, in many regions (eg Mt Gambier and Gippsland), the industries constitute a far more significant proportion of economic activity.
2. Most sectors of Australia's forest products industries have considerable growth potential. For most, there is scope for displacing imports in domestic markets. Increasing international and domestic demand will create growth opportunities, as well as scope for expanding production of higher value added products.
3. The potential for the development of the hardwood sawmilling industry may be limited as some of its traditional markets are likely to be subject to on-going competition from sawn softwood. Its future prospects will largely depend on further rationalisation and on producers' ability to develop higher value niche markets. As domestic consumption of tissue products and paper packaging is mainly satisfied by local producers, and as relatively high transport costs limit export opportunities, development opportunities for these products are likely to be closely linked to growth in domestic demand.
4. The capacity of the forest products industries to capitalise on the available growth opportunities will largely depend on their ability to increase international competitiveness. This will require actions by the Commonwealth, state and, to a lesser extent, local governments to remove impediments to growth, as well as measures by individual producers to improve efficiency.
5. International competitiveness varies significantly between firms, plants and products within each forest products industry. However, in broad terms, international competitiveness with existing plant appears to be greatest in the production of hardwood chips, particle board, pulp and packaging and industrial papers, and least in hardwood plywood, sawn hardwood and certain printing and writing papers.

6. Government action is required to overcome factors directly controllable by governments which presently reduce both the industries' competitiveness and growth opportunities. Government initiatives are required to, among other things:

- improve resource security;
- improve the efficiency of wood supply by privatising public plantations and corporatising government bodies responsible for the management of public native forests used for wood production;
- clarify the taxation arrangements applying to private plantations;
- abolish export controls on logs and woodchips;
- accelerate the reform of government business enterprises, including electricity, gas and transport agencies;
- establish clear guidelines and streamline administrative procedures necessary to obtain project and environmental approvals; and
- abolish sales tax exemptions which apply to certain recycled papers.

7. Government actions that prescribe how wood is utilised may be counter-productive to the development of the forest products industries. Decisions made on commercial grounds by individual producers are more likely to maximise the benefits to both individual firms and the community as a whole than are measures by governments that force producers to increase output of relatively high value added products. Government could help increase the output of higher value added products by focussing on removing impediments to their production.

8. The most appropriate actions that need to be taken by producers of forest products to improve competitiveness will vary, not only between the industries, but also between different firms within industries. However, the available information suggests that initiatives to: increase capacity utilisation; increase scale of plant; increase workforce productivity; develop new markets; and improve product quality and marketing will be central to most development strategies.

9. Disparities in the levels of assistance provided to different products, and products sold domestically compared with those exported, are most efficiently addressed by maintaining the current program of phased tariff reductions.

## SPECIFIC RECOMMENDATIONS

The Industry Commission recommends that the following actions be taken by governments at the earliest possible date to help promote efficiency and growth in Australia's forest products industries.

### *1 Resource security*

To decrease uncertainty and facilitate efficient investment decisions:

- Commonwealth, state and territory governments accelerate the implementation of measures announced in the National Forest Policy Statement to improve resource security.
- The processes needed to implement the National Forest Policy Statement be fully enunciated, and a timetable for implementation be established.

### *2 Public wood supplies*

To improve the efficiency of wood supplies:

- Plantations owned by state and territory governments be progressively offered for sale to private sector interests.
- Management of any remaining government owned plantations in each state and territory be made the responsibility of one or more corporatised government bodies.
- Management of crown land used for wood production in each state or territory, other than government owned plantations, be undertaken by one or more corporatised government bodies.
- Corporatised forest management agencies neither be obliged, nor permitted, to discriminate between wood processors on the basis of location, to make sales conditional on wood not being acquired from other sellers, or to engage in other discriminatory practices.
- Corporatised bodies be subject to the provisions of both the Trade Practices Act and the Prices Surveillance Act, required to pay all relevant taxes and charges, meet a rate of return requirement and pay a dividend to government. Non-commercial functions which they may be required to undertake be specifically identified and separately funded. Corporatised forestry bodies should not be responsible for regulatory functions.
- Licences and associated log entitlements issued by state governments be both divisible and tradeable.

- Governments cease to use log royalties, log allocation procedures or any other instrument to direct output of the forest products industries towards the production of higher value added products.

### **3 *Private wood supplies***

To reduce the impact of factors which may unnecessarily restrict private sector investment in plantation development and agroforestry:

- The Commonwealth Government request the Australian Taxation Office to clarify the application of the *Income Tax Assessment Act 1936* as it applies to sellers of immature plantations.
- A legal basis be established for separating the ownership of land and the trees grown on that land.
- State governments act to dissuade local governments from using measures such as planning controls which discriminate between plantation developments and other agricultural activities.

### **4 *Regulatory matters***

To remove inefficient regulation and other government policies which have the capacity to impede efficient development:

- All Commonwealth, state, territory and local government controls on exports of logs and woodchips, and the research levies applied by the Tasmanian and Western Australian Governments to export woodchips, be abolished.
- The Tasmanian Government legislate to remove licensing restrictions which limit competition in the provision of road freight services, and remove requirements that a fee apply to logs (and other designated goods) carried on routes served by Tasmanian railways. Consideration be given to modifying regulations to allow the use of B-doubles and to further extend operating hours.
- Building standards and associated codes be reviewed to ascertain whether the present restrictions on the use of wood in multi-storey dwellings are appropriate, and amended as necessary. Wherever possible, standards be performance based and, where appropriate, harmonised with international standards.
- Sales tax exemptions applying to certain recycled papers be abolished.
- Mandatory recycling targets and government procurement policies not be used to artificially stimulate demand for paper made from recycled fibre.

- Clear guidelines and more efficient administrative procedures be introduced to remove inefficiencies associated with existing project and environmental approval processes.

### **5 *Reform of government business enterprises***

To help ensure that goods and services provided by government business enterprises are produced and priced efficiently:

- The Commonwealth, state, territory and local governments accelerate the pace of microeconomic reform, particularly in the areas of land transport, sea transport and energy supply.

### **6 *Training***

To help overcome any deficiencies in the availability of management and workforce skills:

- The level and allocation of government funds available for training relevant to the needs of the forest products industries be reviewed.

### **7 *Research and development***

To improve the basis for the funding of research and development:

- The levy to fund the activities of the new Forest and Wood Products Research and Development Corporation not be applied to imported forest products.

Attention is drawn to the Commission's comments on:

- the desirability of having more than one corporatised body in each state responsible for commercial wood production to increase competitive pressures in wood supply (Section 6.2);
- compensation payments by governments for actions which cause existing contracts between forest industries and wood suppliers to be breached, or which prevent the harvesting of trees grown for commercial purposes on private land (Section 6.3);
- the need to proceed with the announced program of tariff reductions (Section 10.2);
- the developing country preferences accorded imports of paper (Section 10.2);
- the need for the Commonwealth Government to continue negotiations to lower barriers to international trade (Section 10.2);

- the focus of research undertaken by the new Forest and Wood Products Research and Development Corporation (Appendix I);
- the possible role of the Forest and Wood Products Research and Development Corporation in disseminating information about log sales (Appendix I); and
- a methodology for establishing research priorities (Appendix I, Attachment I.1).

# **PART A**

## **BACKGROUND INFORMATION**



*The introductory chapters provide background information to the issues discussed in the remainder of the report, as well as some information about inquiry processes.*

- *Chapter 1 briefly outlines the inquiry procedures and the broad approach adopted by the Commission.*
- *Chapter 2 considers international aspects of the forest products industries and their markets, as well as identifying some emerging trends.*
- *Chapter 3 profiles the Australian forest products industries. It identifies key characteristics and documents some of the more important structural changes that have occurred over the last two decades.*



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# 1 INTRODUCTION

This report is about the Australian forest based industries which produce sawn timber, wooden panels, woodchips, pulp, paper and paper packaging. The industries constitute an important component of Australian manufacturing activity — around 4 per cent in 1989–90. Largely because of Australia's relative abundance of land, climatic conditions favourable to the growing of trees and the capital intensive nature of the production processes, many have for some time regarded the industries as well suited to Australian conditions and as having unrealised growth potential. Although there is a need to ensure that the industries' operations are compatible with environmental objectives, recognition of the environmentally benign characteristics of the industries' products — they are biodegradable, recyclable and based on a renewable resource — has reinforced such perceptions.

This introductory chapter provides background information about the origins of the inquiry, the terms of reference, the approach adopted by the Commission and certain procedural matters.

## **Origins and nature of the inquiry**

This inquiry is one of the first of a new style of reference — industry development references — announced by the Treasurer in May 1992. The new references differ from the traditional style of reference in that they are industry specific in nature and are intended to promote the development of strategies which will foster growth and enhance employment opportunities.

In keeping with traditional references, industry development references provide opportunities to expose impediments to better performance. In addition, they require the Commission to identify measures which can be undertaken by government and the industries themselves to improve efficiency and to enable growth opportunities to be fully exploited.

Most domestic producers participating in this inquiry see the reference as primarily a means of expediting government action to overcome impediments to the industries' development. In this regard, there is an expectation by many in the industry that the report will lead to governments adopting measures which, first, improve resource security, second, remove what is perceived as inefficient regulation in a number of areas (eg export controls) and, third, reduce input costs by accelerating the pace of microeconomic reform. Most producers do not seek additional direct government assistance (eg tariff assistance, subsidies or

taxation concessions), nor do they seek the development by governments of policies and strategies which prescribe how they can best exploit growth opportunities. In essence, most producers participating in this inquiry consider that, if governments can remove inefficient regulation and improve the delivery of services by government bodies, the development of appropriate growth strategies is best left to individual firms.

There is greater variation in the outcomes sought by participants representing other interest groups. For example, participants representing foresters and research/training bodies generally sought increases in government funding, while the Australian Conservation Foundation argued for the removal of “subsidies” in the native forest area (eg under-recovery of costs by government forestry agencies).

### **The inquiry’s terms of reference**

The reference requests the Commission to assess the potential for adding further value to products produced by a number of important Australian forest products industries. Industries specified in the terms of reference are those engaged in producing:

- hardwood and softwood sawn timber;
- plywood and wooden panels;
- woodchips;
- pulp and paper; and
- paper packaging.

Additional matters on which the Commission has been asked to report include: the competitiveness of the local industries; impediments to efficiency and growth; the industries’ potential for development; and certain matters relating to the level and distribution of assistance provided to the industries. The terms of reference, which require the Commission to submit its final report to the Commonwealth Government by 21 September 1993, are set out in full on page viii.

### **The Commission’s approach**

The Commission recognises that there have been many inquiries involving Australia’s forests and the forest products industries in recent years. Most have focussed on forest management issues. In contrast, it is the downstream value adding activities which are central to this current inquiry. Nonetheless, as wood

is an integral input into all the activities covered by the inquiry, some overlap between the matters examined in previous studies and those explored in this report is inevitable. However, in accordance with its terms of reference, the Commission has tried to avoid duplicating the work of previous inquiries wherever possible.

Two terms whose meaning are central to the reference are ‘value added’ and ‘impediments’.

‘Value added’ is a measure of the value which a firm’s (or industry’s) prime factors of production (ie the land, labour and capital it uses) generate from the activities undertaken. Broadly, it is the difference between a firm’s total value of production and the costs of all the material inputs and purchased services which it uses.

Value adding is an important concept in determining the efficiency with which resources are used throughout the economy. This is because the sum of the value added by all firms (plus taxes minus subsidies) makes up a country’s Gross Domestic Product which is the standard measure used to indicate its total economic activity.

While all manufacturing operations add value to material inputs, it is common to equate high value added with the production of more highly processed products. As a result, some community groups advocate policies designed to promote downstream processing operations as a growth strategy for many of Australia’s resource based industries. It is seen as a way of increasing employment opportunities and, by broadening the range of products produced, reducing the exposure of Australian industries to fluctuating world commodity prices. In the context of the forest products industries, some also see it as a means of maintaining employment levels while reducing logging in state forests.

While more extensive processing of materials may be associated with relatively high levels of value added, it is important to recognise that this is not necessarily the case. The value added by the prime factors of production employed in the manufacture of some relatively lightly processed products (eg woodchips) can be just as high — or even higher — than the value added which may result if logs are subject to more extensive processing (eg used to produce panel products). To the extent that relatively lightly processed products are less labour intensive, a higher proportion of their value added would be in the form of profits, and less would accrue to labour as wages.

It is also important to recognise that further processing is not the only means of increasing value added. Value can be added to the prime factors of production in a variety of ways. For example, an increase in value added is achieved if:

- aggregate output expands (ie production increases from (say) 100 units to 120 units of output);
- unit input prices fall; or
- average selling prices increase.

For the purposes of this report, the Commission has interpreted the term ‘adding further value to Australia’s forest products’ to encompass all means of increasing value added.

In this report, the term ‘impediment’ is used to depict those barriers to improved economic performance which are directly controllable by governments, other than measures which relate to the management of the economy as a whole. Thus, impediments may encompass the provision of goods and services by government agencies (eg wood and transport services), as well as specific government policies and regulations which impact on the forest products industries. On the other hand, government measures intended to influence interest rates or exchange rates relate to economic management generally and, while they may adversely affect the forest products industries, they are not considered to be impediments for the purposes of this report.

In keeping with its policy guidelines, the Commission has adopted an economy-wide view. Thus, existing arrangements and options for change have been assessed having regard to the implications for other industries, users, taxpayers and the Australian community as a whole, and not simply from the perspective of the forest products industries.

The Commission’s policy guidelines also require it to have regard to the desire of the Commonwealth Government to encourage the development of efficient industries, facilitate structural adjustment, reduce unnecessary industry regulation and recognise the interests of other industries and consumers generally. In addition, the Commission is required to report on the social and environmental consequences of any recommendations it makes. The terms of reference for this inquiry require that measures proposed by the Commission be consistent with the principles of ecologically sustainable development.

## **Inquiry procedures**

In preparing this report, the Commission has drawn on participants’ submissions, information tendered at public hearings, reports of previous inquiries and discussions with producers, importers and users of forest products, and with relevant government agencies. A staff member visited Canada and the United States to gather information about recent international developments and other factors which will influence the future development of the Australian

forest industries. Jaakko Pöyry Pty Ltd was engaged by the Commission to prepare a report on the international competitiveness of the Australian sawn timber and wooden panel industries.

A list of organisations and individuals that appeared at public hearings held in Perth, Sydney and Melbourne in December 1992 and in Perth and Melbourne in July 1993, along with those submitting written submissions only, is at Appendix A.

### **Structure of the report**

The report is divided into four parts. This initial part contains background information about the inquiry, a brief resume of international aspects of the forest products industries and a profile of the Australian industries covered by the reference. Part B examines the international competitiveness of Australia's forest products industries. The following part discusses impediments to competitiveness. The final part — Part D — explores the industries' potential for further development.



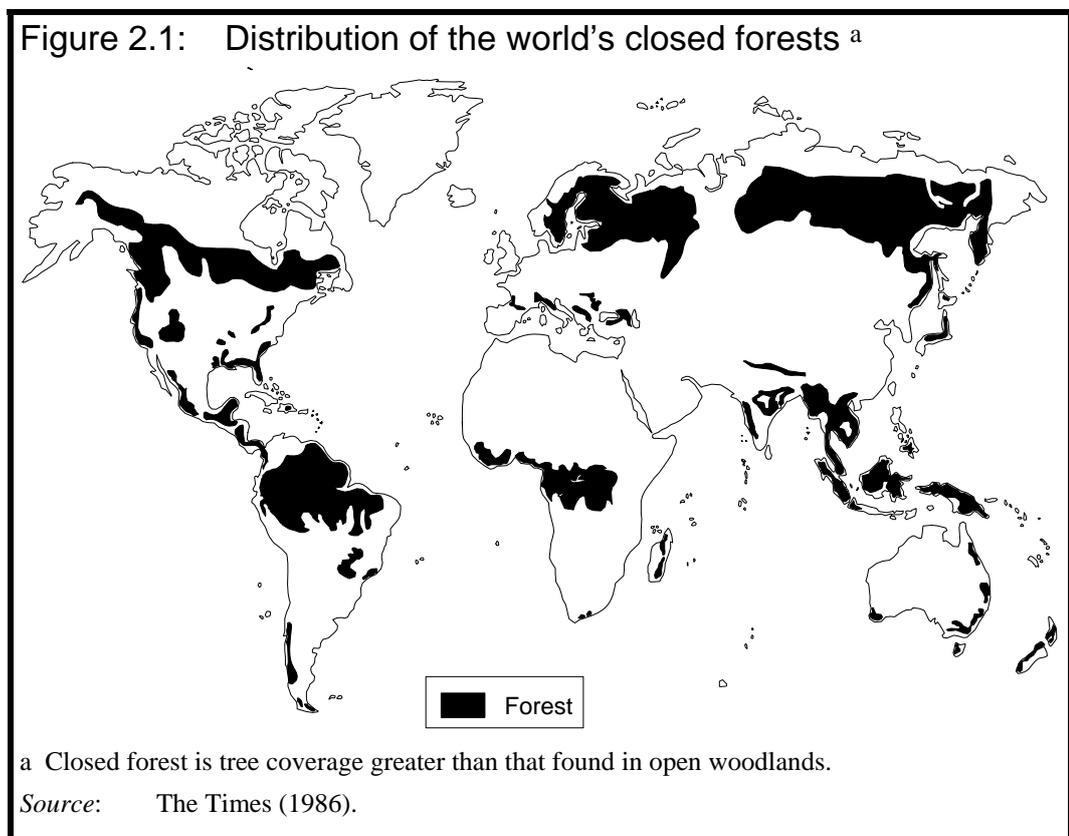
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## 2 INTERNATIONAL PERSPECTIVE

The future of the Australian forest products industries is closely linked to developments in international markets. This chapter considers international aspects of the forest products industries and their markets. It commences by discussing the extent and location of the key resource — forests — and subsequently considers the structure of the industries, the major markets and emerging trends. This discussion provides a basis for assessing the implications for Australia of recent international developments (see Chapter 9).

### 2.1 Forest resources

Around one-fifth of the Earth's land area is covered by closed forest (see Figure 2.1). This amounts to over 2800 million hectares of land, of which approximately 70 per cent is considered viable for the harvesting of wood. The remainder is unproductive due, primarily, to problems of access. As shown in Table 2.1, the Russian Federation accounts for the largest area of forest, although South America represents the greatest source of available wood.



The species mix of the global forest is roughly 60 per cent hardwoods (broadleaf) and 40 per cent softwoods (coniferous). South America has the most significant proportion of the world's hardwood resource. The former USSR and North and Central America account for around 85 per cent of the world's softwood resource. While the USSR contains the largest softwood forests — mainly in Siberia — considerable upgrading of infrastructure is required before a significant increase in regional supply can be expected.

Plantations represent less than 5 per cent of the total forest area, but provide higher yields than native forests. Two-thirds of the world's plantation resource is of softwoods.

**Table 2.1: Closed forest areas**

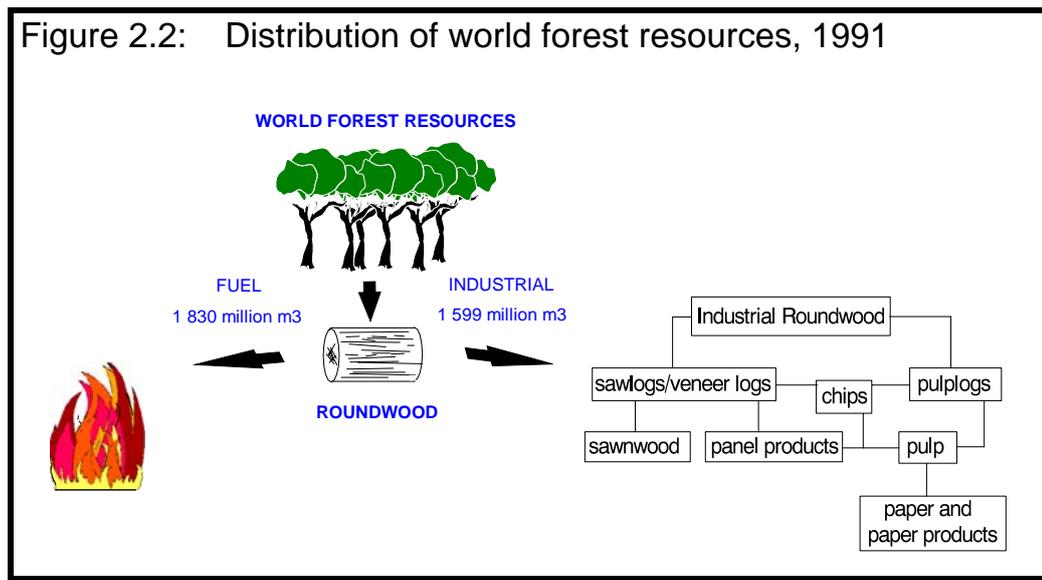
	<i>Coniferous (softwood)</i>	<i>Broadleaf (hardwood)</i>	<i>Total closed forest</i>	<i>Productive forest area</i>
	million ha			%
South America	26	666	692	26.9
USSR	645	147	792	20.4
Nth & Central America	301	168	469	20.0
Asia	69	388	457	15.1
Africa	3	216	219	8.1
Europe (excluding USSR)	75	57	132	6.5
Oceania	6	70	76	3.0
<b>TOTAL</b>	<b>1125</b>	<b>1712</b>	<b>2837</b>	<b>100</b>
- of which plantation is:	62	31	93	

*Source:* Edgar, Lee and Quinn (1992).

The global removal of roundwood (wood in the rough) is in excess of 3.4 billion cubic metres per annum. As shown in Figure 2.2, under half of this is processed as industrial roundwood — the basic input for the forest products industries. The remainder is used mainly for energy-related purposes, such as cooking and heating. Hardwood is the major species used for fuel, while softwood accounts for two-thirds of industrial roundwood (ie sawlogs, veneer logs and pulp logs). Nearly 90 per cent of fuelwood is produced and consumed in developing countries.

The majority of industrial roundwood is harvested in North and Central America (37 per cent) and Europe (18 per cent). Over the last two decades, the USSR's share of production has fallen from 23 to 17 per cent, while removals of timber for industrial uses have increased significantly in Asia and South America.

Figure 2.2: Distribution of world forest resources, 1991



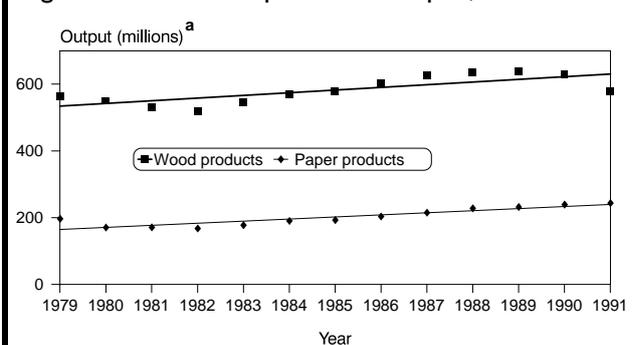
## 2.2 Industry characteristics

The forest products industries are substantial international industries, producing a wide range of products using a common raw material — wood fibre. This section considers the size, location, recent performance and structure of the industries.

### Size and location

Forestry and the production of wood and paper products account for a significant part of the world's resource and manufacturing base. According to Wardle (1990), forestry and forest products have a global output of around US\$ 300 billion, contributing 2.5 per cent to world GDP. As shown in Figure 2.3, the trend for both wood and paper products has been one of increasing output during the 1980s.

Figure 2.3: Forest products output, 1979-91

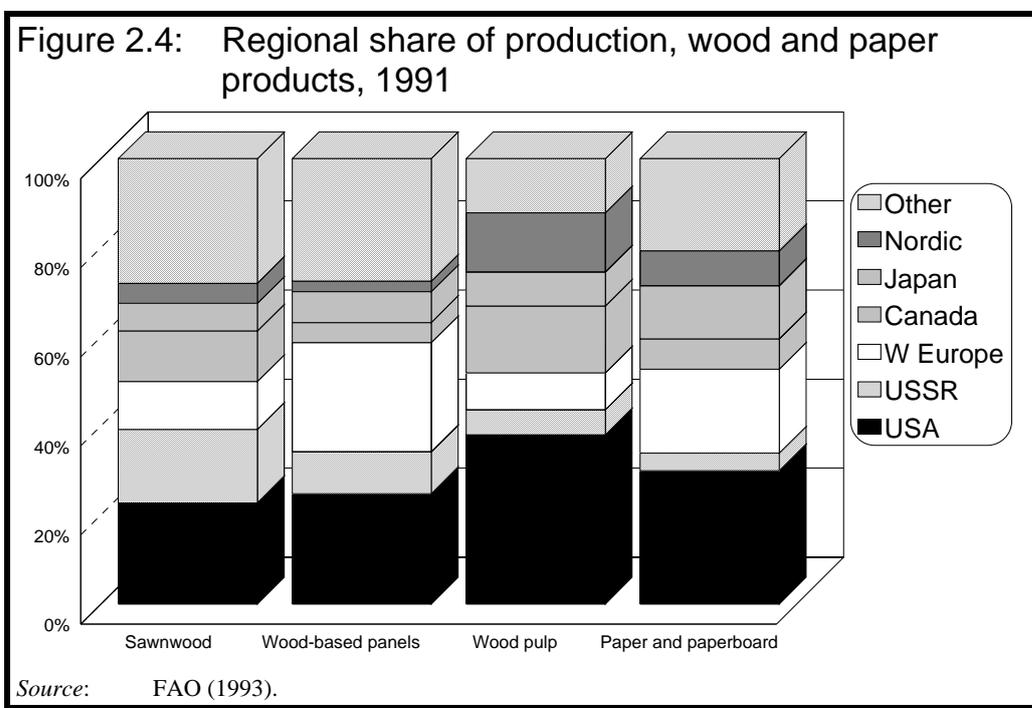


a Wood products (cubic metres); paper products (tonnes).

Source: FAO (1993).

In some regions, the forest products industries constitute the major component of the economy. For example, in Finland and Sweden, which are close to Western European markets and have large resource bases, forestry accounts for over 40 per cent of GDP contributed by the agriculture and mining sector. In addition, the production of wood and paper products represents close to 30 per cent of manufacturing GDP in both nations.

On a worldwide basis, however, total production of forest products has traditionally been dominated by the United States. While Asian and South American countries are emerging as important producers of roundwood and some wood and paper products, the overwhelming bulk of value-adding processing continues to be undertaken by the United States and other developed nations (see Figure 2.4).



Information on the growth in output and emerging trends for some of the more important wood and paper commodities is set out in Table 2.2.

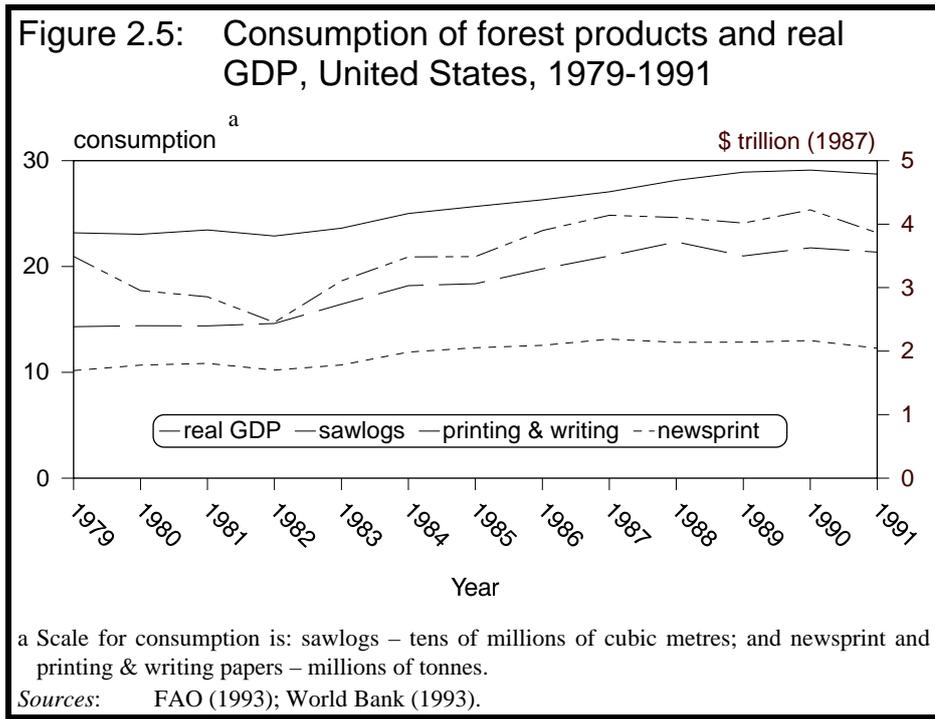
Table 2.2: Output for major forest-related commodities, 1980 to 1991

<i>Product</i>	<i>Major producing nations</i>	<i>Annual growth in output 1980-1991 (%)</i>	<i>Comments</i>
Sawn softwood	United States USSR Canada	1.2	Russia has recently reduced output by 30-35% following the USSR's break-up. Production in the US and Canada fell considerably in the late-1980s.
Sawn hardwood	United States India USSR	1.7	Indonesia more than doubled output over the 1980s. It is now one of the five largest producers.
Particleboard	United States Germany USSR	3.1	Particleboard is the major wood-based panel. In recent years, output in Italy and Portugal has increased rapidly.
Plywood	United States Indonesia Japan	2.4	Over the period, Indonesia increased output from 1.0 to 9.2 million cubic metres per annum. Little significant production occurs in Western Europe.
Fibreboard	United States USSR China	2.7	China more than doubled output, while Sweden reduced production by 40%. Output of non-compressed fibreboard fell over the period.
Veneer sheets	Italy Canada Malaysia	0.9	World production peaked in the mid-1980s. Italy has been one of the few nations to increase output in recent years.
Chemical pulp	United States Canada Japan	2.5	US output is more than four times larger than Canada. Bleached kraft (BK) is the major grade. Output of BK grew by 4.5% per annum.
Mechanical pulp	Canada United States Finland	3.3	Although not major producers, there was significant expansion in India, the UK, Australia and Mexico.
Newsprint	Canada United States Japan	2.7	North America accounts for close to half of world production. Canadian output fell by 9% in the two years to 1990.
Printing & writing	United States Japan Germany	5.5	Output grew fastest in developing countries. Major expansions occurred in Sth Korea and Japan.
Packaging	United States Japan Germany	3.7	Production more than doubled in Sth Korea.
Tissue	United States Japan Germany	4.0	Output from developing countries grew by 6.6% per annum.

*Sources:* FAO (1993); Payne (1992).

### Recent performance

Activity levels in the forest products industries are linked to the level of economic activity generally (see Figure 2.5). For example, demand for most timber products is reliant on construction activity which, in turn, tends to reflect general economic activity. Similarly, the consumption of most paper products bears a strong relationship to overall levels of economic growth (further discussion on factors affecting demand for forest products can be found in Chapter 9).



Largely because of this relationship, the forest products industries are generally characterised by pro-cyclical fluctuations in output. During the late-1980s, for example, the industries experienced a sustained period of prosperity and expansion, in line with strong growth in most of the world’s major economies. This was followed by a significant slowdown and a ‘shake-out’ within the industries, resulting in many firms restructuring and rationalising operations during the early-1990s.

The downturn resulted in falling sales for most companies, particularly those with operations in the sawnwood sector. This was largely attributable to reduced building activity in North America and many European countries. In 1991, for example, the construction of new homes in the United States fell by 16 per cent to its lowest level in over 45 years. In the paper and paperboard sector, Japanese production in 1992 fell by 2.5 per cent to 28.3 million tonnes. This was the first decline in output since 1981.

The majority of the world’s largest forest products companies experienced lower returns in 1991 (see Table 2.3). The most severe falls in earnings were recorded by firms in North America and the Nordic countries. For example, publicly listed Canadian forestry companies moved from a combined net profit of C\$ 2.4 billion in 1989 to a net loss of C\$ 2.5 billion in 1991. Only two of Canada’s top 20 companies returned an after-tax profit in 1991. Losses for 1992 were approximately C\$ 1.2 billion, while a smaller loss — C\$ 0.5 billion — is

forecast for 1993. In Finland, where similar losses were incurred, 1991 ranked as the worse year for the industries since World War Two (Rinne 1992).

Table 2.3: The world's 20 largest forest products companies, 1991 <sup>a</sup>

	<i>Base Nation</i>	<i>Total sales</i>		<i>Return on assets</i>		
		<i>1991</i>	<i>1990</i>	<i>'91</i>	<i>'90</i>	<i>'89</i>
		US\$ m		%		
International Paper	USA	12 703	12 690	1.2	4.2	7.5
Georgia-Pacific	USA	11 524	12 665	-1.3	4.2	9.4
Stora	Sweden	11 136	10 534	0.6	3.0	3.7
Weyerhaeuser <sup>b</sup>	USA	7 096	7 406	-1.1	4.0	na
Kimberly-Clark	USA	6 777	6 407	9.0	8.2	8.6
<b>Fletcher Challenge <sup>b</sup></b>	<b>NZ</b>	<b>6 621</b>	<b>6 730</b>	<b>0.6</b>	<b>2.5</b>	<b>na</b>
Repola	Finland	5 527	6 041	-6.5	1.1	3.7
Svenska Cellulosa	Sweden	5 435	5 257	1.9	2.9	5.3
Stone Container	USA	5 384	5 756	-0.7	1.4	4.6
Scott Paper	USA	4 977	5 356	-1.1	2.1	6.5
Champion International	USA	4 786	5 090	0.5	2.7	5.7
Oji Paper	Japan	4 757	4 486	2.2	3.8	4.1
Mead	USA	4 579	4 772	0.2	1.0	5.9
James River	USA	4 562	5 950	1.4	3.9	4.6
Arjo Wiggins Appleton	UK	4 396	4 638	6.2	7.7	10.3
Jujo Paper	Japan	4 034	3 854	1.2	2.6	2.8
Boise Cascade	USA	3 950	4 186	-1.7	1.6	6.5
Noranda Forest	Canada	3 564	3 903	-3.5	-1.6	3.3
<b>Amcors</b>	<b>Aust</b>	<b>3 451</b>	<b>3 363</b>	<b>6.1</b>	<b>4.7</b>	<b>4.3</b>
Honshu Paper	Japan	3 420	3 135	0.9	1.0	0.8

<sup>a</sup> Companies must be publicly listed and derive at least 50% of sales from forest products although, unless otherwise indicated, figures are for all operations. The survey excludes companies based in Eastern Europe, Russia and China. The year is the fiscal year ended 31 December, apart from companies based in Australia and New Zealand (year ended June 30) and Japan (year ended March 31).

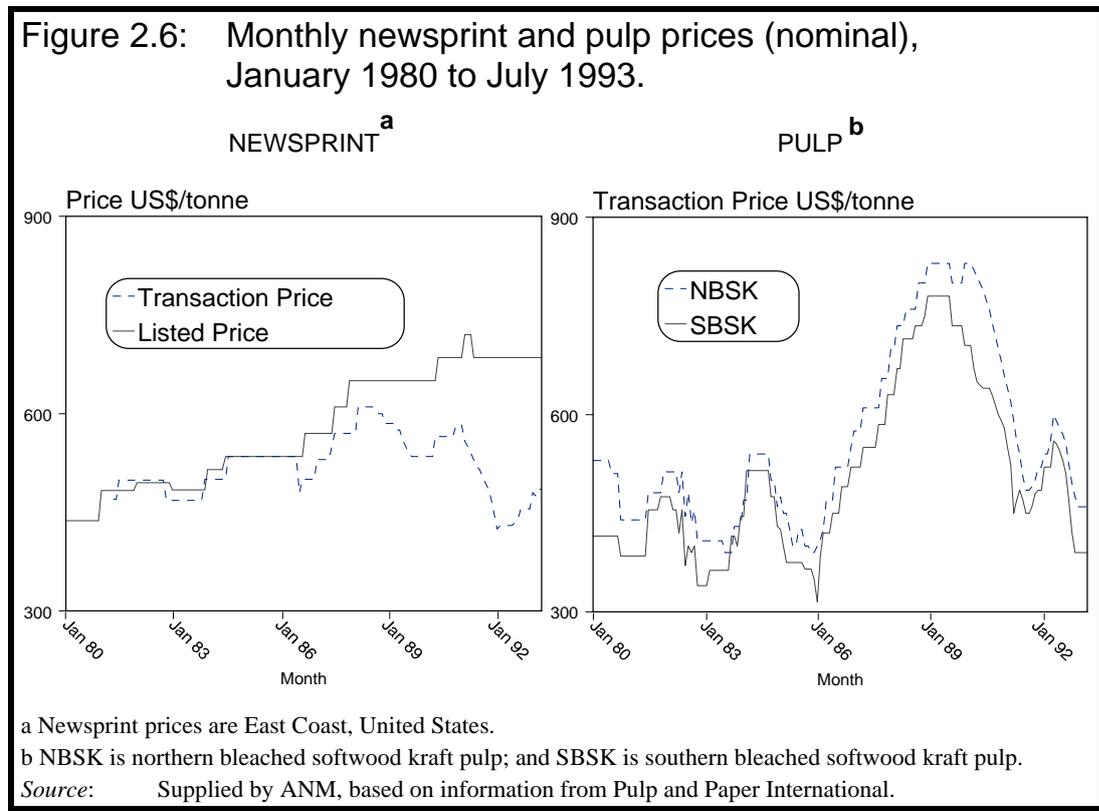
<sup>b</sup> Excludes all non-forestry operations.

Source: Price Waterhouse (1992).

Over-capacity in the pulp and paper industry during the early-1990s — estimated at 2 million tonnes for newsprint alone — has put considerable downward pressure on prices and led to falls in capacity utilisation. In Japan, for example, average capacity utilisation fell to 74 per cent in 1991 from a peak of 94 per cent in 1989. In response, many plants have been mothballed. In Canada, 800 000 tonnes of newsprint capacity and 300 000 tonnes of pulp capacity have been decommissioned in the last three years.

Prices of major traded items — such as market pulp and newsprint — have plummeted in the last three years. As shown in Figure 2.6, the level of discount offered on traded newsprint (the difference between the listed and transaction price) since 1990 is unprecedented for the last decade, while the drop in pulp prices has been more dramatic than previous falls. Between April 1990 and November 1991, for instance, northern bleached softwood kraft (NBSK) pulp

fell by 38 per cent. This compares with falls of 23 per cent in downturns occurring in 1977-78 and 1982-83, and a 27 per cent reduction during 1984-85.



The fluctuating fortunes of the industries over the last few years have created pressure for restructuring in several major producing nations. In general, restructuring has been associated with:

- the adoption of more integrated production arrangements;
- the introduction of more capital-intensive manufacturing processes; and
- a greater recognition of the need to adopt a global rather than a regional outlook.

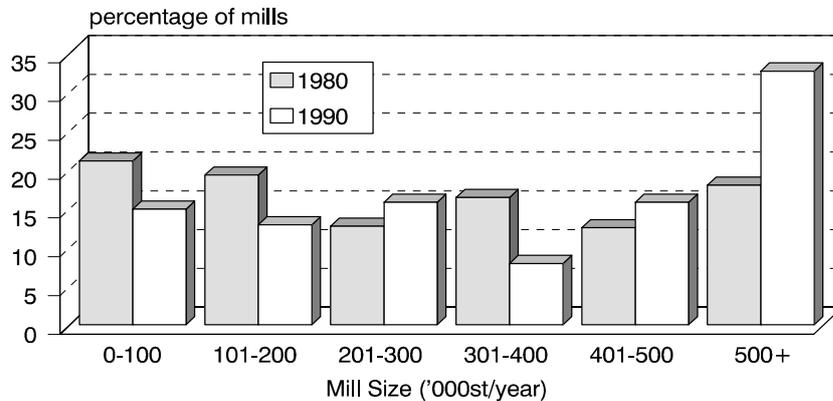
The OECD (1989, p. 24) indicated that these developments reflect:

External pressures emerging from changing raw material supplies, alterations in demand, growing environmental concerns and technological advance, as well as internal pressures related to surging financial requirements for investment, rapidly increasing economies of scale, and the need to control energy and production costs...

The trend toward larger scale production is typified by developments in the United States pulp and paper sector. As shown in Figure 2.7, mills with an annual capacity of 500 000 short tons or more accounted for the largest

proportion of paper and paperboard capacity in 1990. In contrast, the smallest mill category (100 000 short tons and less) predominated in the 1980s.

**Figure 2.7: Distribution of paper and paperboard capacity in the United States, 1980 and 1990**



Note: Mill size is based on short tons. One short ton equals 0.907 tonnes.

Source: Slinn (1992b).

Apart from acquisitions and construction of overseas plant, there is also evidence that forest product companies are looking beyond traditional areas of supply. For example, many Nordic companies, faced with little scope for expanding local supplies, are increasingly sourcing wood from European countries, such as Germany, France and Italy. Similarly, companies in the United States and Japan are investing in holdings of wood in South America, Australia and New Zealand (see Box 2.1).

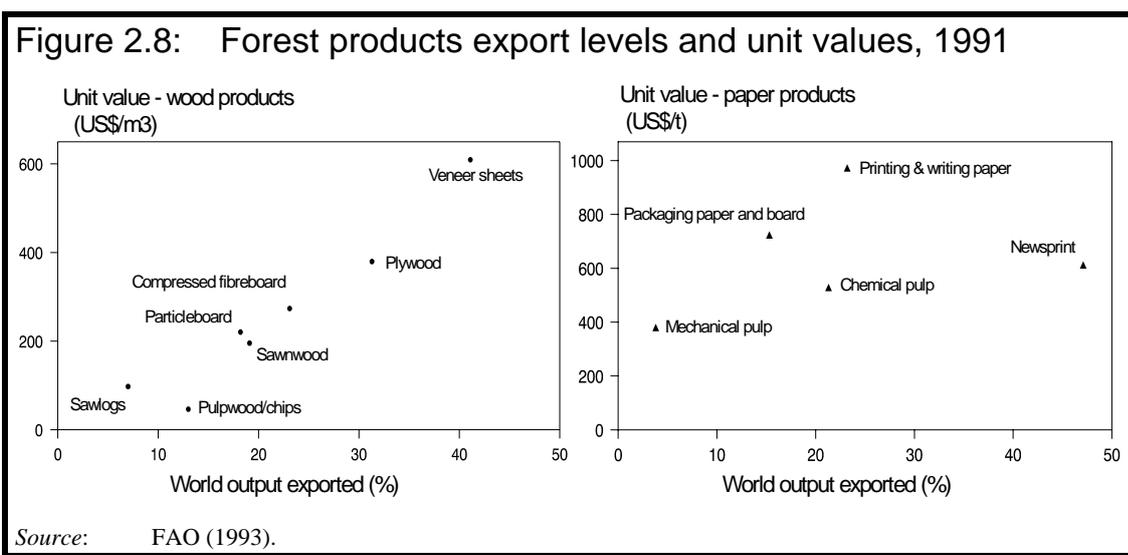
### Box 2.1: The globalisation of the forest products industries

- During the 1980s, Fletcher Challenge acquired companies with newsprint mills in British Columbia, Chile and Australia.
- The Japanese company, Oji Paper, and Korean-based, Hansol Forest Products, have both announced plans for plantation developments in Western Australia (see Chapter 6 for more details).
- In 1991, the American company, International Paper, gained a 16 per cent share in Carter Holt Harvey (CHH) through a joint venture with Brierley Investments. CHH has considerable forestry interests in Chile and New Zealand.
- International Paper (US), Kimberly-Clark (US), Svenska Cellulosa (Sweden) and Scott Paper (US) all have operations in 18 countries or more. Kimberly-Clark, for example, has operations in Australia, Colombia, Indonesia, Mexico, the Netherlands, South Africa and Thailand. In terms of tissue production, around 58 per cent of its total capacity is presently located in plants outside North America.
- The reform process in Eastern Europe is providing further opportunities for forest products companies to expand internationally. International Paper, for example, has acquired an 80 per cent share in the Kwidzyn pulp and paper mill in Poland. The mill, which is the second largest producer of paper in Poland, represents the third such sale to foreign interests.

### 2.3 Trade in forest products

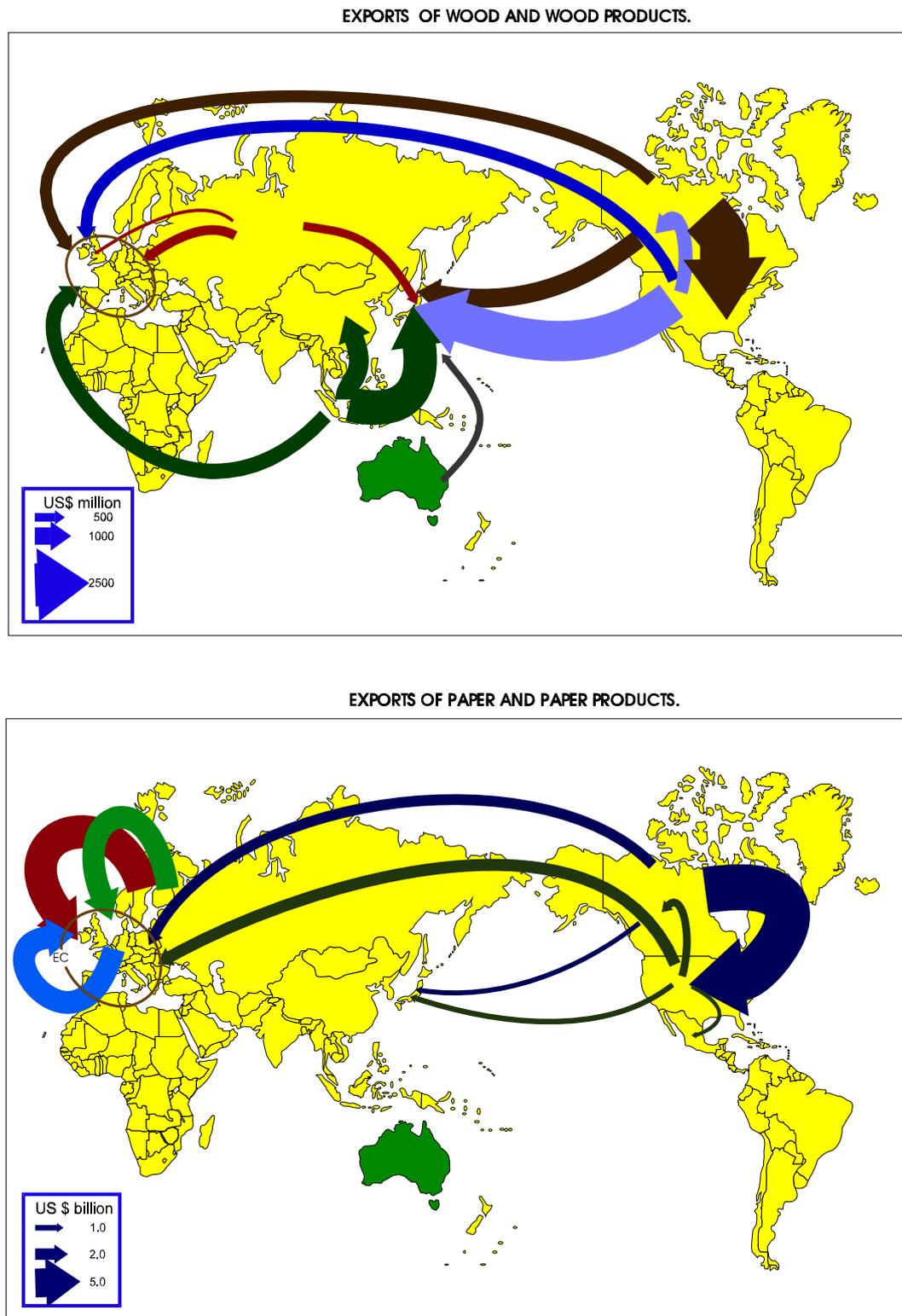
Between 1969 and 1991, international trade in forest products, as a proportion of the volume of world production, increased from 8 to 14 per cent. In 1991, trade in forest products amounted to more than US\$ 100 billion, with some two-thirds of this attributable to paper and paper products. In the Asian region, trade is worth around US\$ 24 billion and is growing faster than in most other areas of the world.

For some forest-based commodities, trade constitutes a significant proportion of production. As shown in Figure 2.8, the portion of output which is traded is closely related to unit value. In general, higher value products are traded more extensively because transport costs constitute a smaller proportion of unit value. Thus, over one-third of the world production of veneer sheets and plywood is traded, compared with 18 per cent for lower-value particleboard. Newsprint is an exception. Whilst close to half of all output is traded, the unit value of basic newsprint (around \$600/tonne) is low relative to other paper products, such as printing and writing papers (\$970/tonne).



The pattern of trade in wood products is dominated by flows between Canada, the United States and Japan (see Figure 2.9). In the case of paper products, the most significant trade flows are from Canada to the United States, and from the Nordic countries to Western Europe. The major exporters and importers of the main forest-based commodities, in terms of volume, are shown in Table 2.4.

Figure 2.9: World trade in forest products



Source: United Nations International Trade statistics.

Table 2.4: Major exporting and importing nations, 1991

(US\$ million)

	<i>Softwood sawnwood</i>	<i>Hardwood sawnwood</i>	<i>Wood-based panels</i>	<i>Woodchips</i>	<i>Pulp</i>	<i>Paper</i>	<i>Packaging</i>
<b>EXPORTERS</b>							
<b>World exports</b>	<i>12 132</i>	<i>5 247</i>	<i>10 196</i>	<i>1 239</i>	<i>11 138</i>	<i>51 514</i>	<i>4 755</i>
Canada	4 635	Malaysia 1 248	Indonesia 3 061	USA 499	Canada 3 833	Canada 7 715	Germany 1 051
Sweden	1 744	USA 923	USA 825	<b>Australia</b> 418	USA 2 291	Finland 6 959	USA 549
USA	1 436	France 297	Germany 806	Chile 245	Sweden 841	Sweden 6 402	Netherlands 372
<b>Australia</b>	2	Yugoslavia 216	Finland 575	Canada 126	<b>Australia</b> 8	USA 4 599	France 334
		<b>Australia</b> 6	Belgium Lux 516			<b>Australia</b> 129	Belgium-Lux 332
			<b>Australia</b> 17				<b>Australia</b> 17
<b>IMPORTERS</b>							
<b>World imports</b>	<i>13 007</i>	<i>5 877</i>	<i>10 462</i>	<i>2 095</i>	<i>12 067</i>	<i>53 845</i>	<i>4 709</i>
USA	2 991	Japan 776	Germany 1 246	Japan 1 701	USA 2 052	USA 7 766	France 545
Japan	2 062	Italy 429	Japan 1 199		Germany 2 015	Germany 7 292	Netherlands 523
UK	1 403	Germany 661	UK 1 146		Japan 1 173	UK 6 505	Germany 470
<b>Australia</b>	243	Taiwan 448	USA 1 137		France 931	France 4 546	UK 349
		Korea RP 503	China 652		<b>Australia</b> 93	Italy 3 553	Belgium-Lux 306
		Spain 487	<b>Australia</b> 62			<b>Australia</b> 821	USA 263
		<b>Australia</b> 95					<b>Australia</b> 24

Notes: Countries listed here are responsible for more than 50 per cent of world trade of the product groups considered. Due to difficulties in data collection, export figures may not necessarily match imports of the same products. Figures in italics are estimates based on UN data.

Figures for "Germany" are for the unified Germany.

Exports from Chile and Canada are based on imports into Japan.

Source: Derived from United Nations International Trade Statistics

Countries such as Canada and Sweden are major exporters of many forest-based commodities. However, exports by most nations are confined to one or two product categories. Furthermore, they are often off-set by considerable imports of other forest products. Germany, for example, is a significant exporter of paper and paperboard — especially high-quality papers — but is also a major importer of sawnwood, pulp and most wood products. Some Asian nations (eg Malaysia) are net exporters of many wood products, but are reliant on imports for most paper products.

The United States is unusual in that it is both a major exporter and importer of most wood and paper products. In the case of wood pulp, for example, it is the world's largest importer and second-largest exporter (see Table 2.4).

Australia's relatively high level of imports and limited exports has often been attributed to its small population and isolation from major European markets. Nevertheless, it is apparent that several relatively small nations have been successful in exporting forest products to distant markets (eg Finland and Canada with paper-in-bulk and Austria with coated and uncoated papers). Moreover, New Zealand, which is smaller and just as isolated as Australia, exported US\$ 700 million worth of forest products in 1991. This compares with Australian exports of around US\$ 400 million. In addition, New Zealand's exports are relatively diversified (eg sawn timber, medium density fibreboard, pulp and newsprint), whereas Australia's are dominated by woodchips.

Trends and key features of trade in products within major commodity groups include:

- *Woodchips* - Japan imports approximately 80 per cent of all woodchips traded internationally. The United States and Australia are the main suppliers of woodchips, although Australia's export share has fallen over the last few years as a result of increased exports from countries such as Chile and South Africa.
- *Sawnwood* - The United States, Canada and Japan account for around half of world trade in sawnwood. Japanese imports of sawnwood are now more than double the level of the mid-1980s. In recent years, both Chile and New Zealand have emerged as significant exporters of sawn softwood.
- *Wood-based panels* - During the 1980s, trade in wood-based panels grew by 6.8 per cent per annum. A large portion of this growth can be attributed to plywood, which averaged around 9 per cent annual growth over the period. Between 1981 and 1991, for example, Japanese imports of Indonesian plywood increased from around 30 000 to 2.9 million cubic metres per annum. This expansion was due largely to the Indonesian

Government's support for greater processing of the local forest resource, a key element of which included the banning of log exports in 1980.

- *Chemical pulp* - The volume of chemical pulp exported from chief suppliers such as Canada and Sweden has been relatively static during the 1980s. The United States, however, has increased exports in recent years. Portugal and Spain are now also important exporters of chemical grade pulp, much of which is derived from eucalypt plantations.
- *Secondary fibre* - A large amount of recycled paper and paper products is traded between North America and East Asia. In 1989, for example, Japan, Taiwan and Korea imported a total of 3.2 million tonnes of secondary fibre. Approximately 40 per cent of all secondary fibre used in paper and paperboard production in Korea and Taiwan is imported.
- *Printing and writing papers* - Trade in high-grade papers more than doubled during the 1980s. The majority of this growth was accounted for by the main exporters (ie Finland, Germany, Canada and Sweden). Nevertheless, smaller exporting nations — including the United Kingdom, Indonesia, Brazil and Belgium — have also experienced rapid growth in recent years.
- *Packaging papers* - During the late-1980s, there was a substantial increase in the trade of packaging papers within Western Europe. For most countries, both exports and imports of such papers have risen. This suggests an increasing degree of specialisation of packaging paper production within the region. Apart from regional trade, several European nations have also increased exports to Asia.

### **Institutional arrangements affecting trade**

Governments affect the level of production and trade in forest products in many ways. Two major areas of involvement have been the environment and tariffs.

#### *Environment*

Environmental regulations and guidelines which apply to the forest products industries have important implications for new investment and plant location, as well as future trade patterns. They often differ considerably, both within and between countries. As a consequence, annual commitments by firms in the area of environmental protection can vary from between 10 and 30 per cent of total capital expenditure.

In recent years, the cost associated with meeting environmental commitments has risen sharply in many major producing nations. In the United States, for example, the paper industry spent a total of US\$ 4.1 billion on capital

improvements for pollution abatement between 1980 and 1989. In the two subsequent years, however, combined expenditure was US\$ 2.6 billion.

Some of the major environmental issues currently impacting on the industries include:

- *Consumption of tropical hardwoods* - The export of timber from developing countries, such as Malaysia and Brazil, has been reduced significantly in the last two years amidst environmental concerns that former levels of production were unsustainable. With the International Tropical Timber Agreement due to expire in 1994, many European nations are presently demanding that all tropical timbers be harvested from 'sustainably' managed forests by the year 2000. The subsequent effect on demand for substitute timbers, such as temperate species, will largely depend on whether similar guidelines are applied to all other sources of timber.
- *Access to forests* - In some countries, there is an emerging concern that access to private forests and plantations may be restricted. This is a particularly important development in the United States, where 75 per cent of timber is harvested from privately owned land. According to Slinn (1992a, p. 10):

... the established perception of the rights of private forest owners is changing. Those owners are increasingly perceived as subject to public scrutiny over the management of their so-called "private property" and therefore operate under the uncertain conditions of an ill-defined social franchise.

One element of the debate in the United States is the claimed threatened habitat of the spotted owl. Supplies of wood from public forests and, to a lesser extent, private land in the Pacific-north west region of the United States, have been severely affected by government decisions to protect the spotted owl. According to the US Department of Commerce (1993), over 100 timber and panels mills in the region have closed recently due to inadequate log supply.

- *Recycling measures* - Many developed countries have policies which encourage companies to include certain levels of recycled material in paper and packaging production. The degree of obligation varies: in some cases guidelines exist while, in others, usage of recycled fibre is mandated in legislation. Requirements to incorporate specified proportions of waste have already influenced trade patterns. For example, Canadian exports of newsprint to the United States have fallen following Government action in the United States to raise the wastefibre content in newsprint. This requirement has increased the competitiveness of US producers as they are located nearer the source of waste material.

- *Emissions* - Since the mid-1980s, there has been increasing concern over emissions associated with the production of some wood and paper products — in particular, formaldehyde from the production of wood-based panels and organochlorines in waste water emitted by pulp and paper mills. In response to consumer pressures (and threats of regulation), many firms supplying pulp and paper into Western Europe — particularly Germany — are now actively marketing goods which are produced under conditions above the agreed standards (eg completely chlorine free papers).

### *Other Government policies*

Many other government policies impact on the trade patterns for forest products. The most important of these include:

- *Tariffs and duties* - Most countries apply tariffs to imported forest products. Moreover, they often vary according to the degree of processing. In Indonesia, for example, basic wood pulp attracts a 5 per cent tariff, while tariffs on imports of paper and paperboard are levied at an average rate of 25 per cent. Similarly, in Malaysia, woodpulp attracts a tariffs of 3 per cent, while kraft paper has a 55 per cent tariff.

Apart from general tariffs, some countries apply duties to specific products. For example, in an attempt to avert the introduction of US duties, the Canadian Government, in 1986, imposed a tax on exports of softwood into the United States. In 1991, the tax was abolished, following Canada's lowest penetration of the US softwood market in 13 years. However, the US has subsequently applied a preliminary countervailing duty of 6.5 per cent on Canadian softwood. The duty is based on the US claim that, by restricting log exports, Canadian provincial governments are effectively subsidising the price of logs to local mills.

- *Non-tariff barriers* - Apart from tariffs and quotas, non-tariff barriers also impede the free flow of traded forest products. For example, according to Associated Pulp and Paper Mills (APPM) (sub. 38, p. 38), in Japan “there are non-tariff barriers which have prevented large volume imports of either pulp or paper” (see Box 2.2). Non-tariff barriers also affect trade within ‘free-trade’ regions, such as the European Community. According to the GATT (1991, p. 187):

...intra-EC trade [in wood and paper products] is hampered by a large number of technical trade barriers such as national standards, major differences in approval procedures, and susceptibilities to specific aspects of use (eg emissions from components).

Government influence also extends to the export of some forest products. In Indonesia, for example, the export of newsprint is ‘supervised’ by the Ministry of Trade. Similarly, the export of Korean roundwood requires government approval.

#### Box 2.2: Exporting forest products into Japan

The OECD (1992, p. 69) reported that major Japanese non-tariff barriers to trade include “corporate groupings (*keiretsu*), restrictive business practices (cartels), complex distribution networks and excessive regulatory interference with market pricing mechanisms in more sheltered sectors”.

In 1990, Japanese imports of printing and writing papers represented around 1 per cent of local production. As expressed by Simons (1991, p. 13):

It is widely known that the Japanese pulp and paper industry is not competitive from a price point of view in the world market. For example, domestic newsprint in Japan is sold at twice the average market price and is of lower quality than the North American product. Yet, many have tried but no one has been successful in selling newsprint in the lucrative Japanese market.

In April 1992, the Japanese and United States Governments agreed to a five-year plan aimed at improving foreign access to Japanese paper markets. According to the GATT (1993), planned measures include:

- policy assistance for foreign paper producers in the areas of import incentives and direct foreign investment in Japan;
- the establishment of an internal Anti-monopoly Act; and
- the ‘promotion’ of the buyer-supplier relationship by the Japanese Government.

In addition, the Japan Fair Trade Commission is presently investigating conditions in the paper sector from a competition perspective.

- *Political reform* - The move towards a more market-oriented economy in eastern Europe and the former Soviet countries has important implications for trade in many forest products. For example, nations within the former Soviet Union have already abandoned several bilateral trade agreements with western European governments. This has significantly reduced trade of forest products between Russia and the Nordic countries.



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## 3 AUSTRALIA'S FOREST PRODUCTS INDUSTRIES

This chapter provides a brief profile of the Australian forest products industries covered by the inquiry. It discusses their economic significance, the structure of the industries and their products. A more detailed examination of each of the industries is outlined in Appendix B. Information on the markets supplied by the industries and the factors which influence the demand for forest products is provided in subsequent chapters of this report.

### 3.1 Size and significance<sup>1</sup>

The forest products industries are an important component of Australia's manufacturing sector.<sup>2</sup> In 1989–90, they accounted for 4.2 per cent of value added by the manufacturing sector and employed 4.1 per cent of the manufacturing workforce. In 1968–69, the industries accounted for 5.3 per cent of both value added and total manufacturing employment.

In 1989–90, value added by the forest products industries was around \$2.9 billion. This was slightly higher than the value added of other major manufacturing industries, such as the clothing and footwear industries and the chemical industry, and somewhat less than that of the Australian motor vehicle and the iron and steel industries (see Figure 3.1).

As a considerable proportion of activity is undertaken in country areas, the industries are far more prominent in some regional economies than they are nationally. For example, in the Mount Gambier-Portland area (the 'green

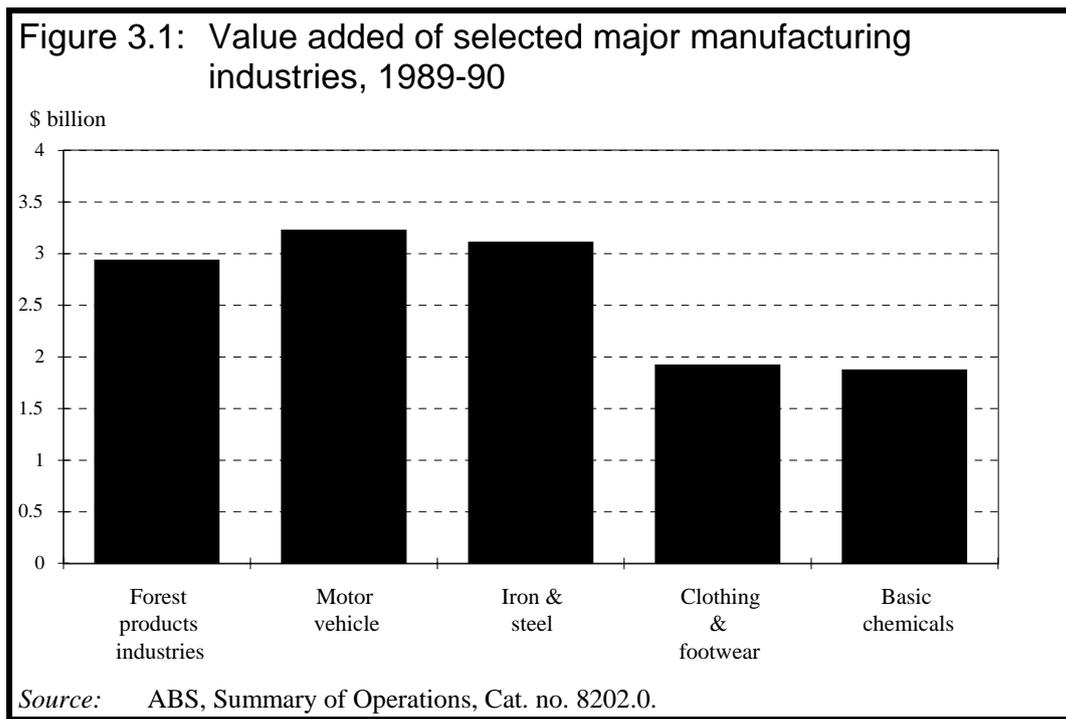
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<sup>1</sup> Manufacturing census data are available for 1990–91 but, as only a 'minor' census was undertaken, some of the more important industry aggregates (eg value added) are not available. Consequently, the ABS data used in this chapter mainly relate to 1989–90. The data exclude establishments employing fewer than four employees.

<sup>2</sup> Throughout this chapter, the term 'forest products industries' is used to describe only those forest industries under reference in this inquiry. The industries, which are based on the Australian Standard Industrial Classification (ASIC), are as follows:

- Hardwood and softwood sawmilling (ASIC 2531 & ASIC 2532);
- Veneer and wood panels (2533);
- Hardwood woodchips (2537);
- Pulp and paper (2631);
- Paper packaging (2632 & 2633 & 2634); and
- Paper products nec (mainly tissue papers) (2635).

triangle'), the Latrobe region, Northern Tasmania and in the Bathurst-Oberon region, the production of timber and paper products is the major manufacturing activity and accounts for a substantial proportion of employment in the region. The South Australian Government stated that in Millicent, in south-eastern South Australia, 92 per cent of manufacturing employment was associated with forest related activities in 1985–86.



The two largest forest products industries are sawmilling and pulp and paper, each of which accounted for around 30 per cent of the aggregate output of the forest products industries in 1989–90 (see Table 3.1). The share of total output accounted for by sawmilling has, however, declined markedly over the past 20 years, largely because of a decline in the output of sawn hardwood. In contrast, there has been a significant increase in the contribution of the pulp and paper sector to total output.

The average annual growth in real value added by producers of timber products was negligible between 1968–69 and 1989–90. Over the same period, real value added by producers of paper products increased at an average annual rate of 0.5 per cent. The corresponding figure for the manufacturing sector as a whole was 0.9 per cent.

Table 3.1: Output of the forest products industries

	<u>Value added</u>		<u>Share of industry value added</u>	
	1968-69 <sup>a</sup>	1989-90	1968-69	1989-90
	\$m	\$m	%	%
Sawmilling	879	852	35	29
Veneers and panels	239	307	10	10
Hardwood chips	55	137	2	5
Pulp and paper	467	785	19	27
Paper packaging	521	570	21	19
Tissue products etc	323	289	13	10

a In 1989-90 prices

Source: ABS, Summary of Operations, Cat. no. 8202.0, various issues.

Although real value added increased considerably, aggregate employment by the forest products industries fell by nearly 37 per cent between 1968–69 and 1989–90 (see Table 3.2).<sup>3</sup> Employment decreased in all sectors other than woodchips, in which a modest increase was recorded (about 300 persons). The decrease was most pronounced in the sawmilling sector, with employment falling by around 15 000 persons. Over the corresponding period, employment in the manufacturing sector as a whole declined by around 20 per cent.

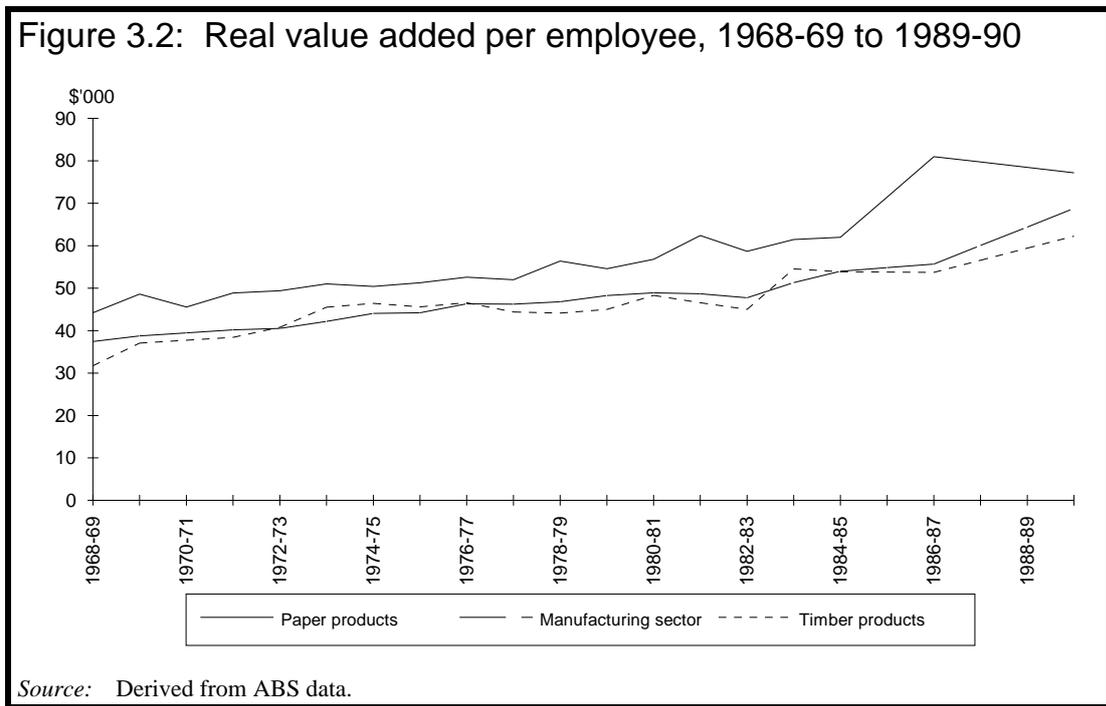
Table 3.2: Employment by the forest products industries

	1968/69	1989/90	% change
	'000	'000	
Sawmilling	29.1	14.2	-51
Veneers and panels	7.2	5.6	-22
Hardwood chips	0.7	1.0	38
Pulp and paper	10.2	7.9	-23
Paper packaging	14.3	9.0	-37
Tissue papers etc	5.1	4.4	-14
Total	66.5	42.1	-37

Source: ABS, Summary of Operations, Cat. no. 8202.0, various issues.

<sup>3</sup> Employment continued to decline in 1990–91. Total employment at the end of June was approximately 39 000.

Constant or increasing levels of real value added, coupled with falling employment, have resulted in significant increases in output per employee (see Figure 3.2 below). Between 1968–69 and 1989–90, the increase was similar for both the paper and the timber sectors (around 3 per cent per annum). However, in absolute terms, value added per employee was significantly higher for the paper products sector. Value added per employee for paper products in 1989–90 was about 12 per cent higher than the average for the manufacturing sector while, for timber products, value added per employee was about 10 per cent lower than the manufacturing sector average.



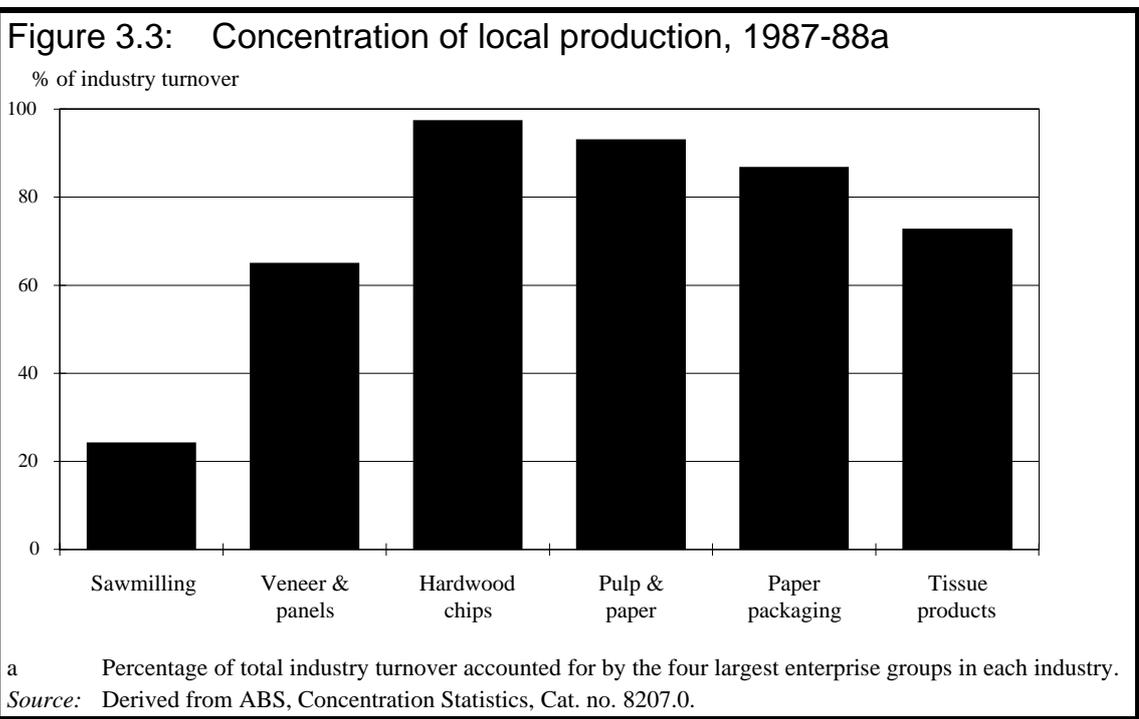
### 3.2 Industry structure

For the most part, output by each forest products industry is dominated by a small number of relatively large producers. The concentration of local production in each industry is illustrated in Figure 3.3 which shows the percentage of industry turnover accounted for by the four largest enterprise groups in each industry in 1987–88. In general, concentration is higher in the paper products sector than in timber products.

Since 1987–88, the level of concentration apparent in the paper products sector has increased. This mainly reflects rationalisation in the paper packaging

segment following the sale in 1989 by the Smorgon Group of its fibre container business and, more recently, the sale of APPM's pulp, paper and paper merchanting businesses to AMCOR — Australia's largest paper and packaging company.

A feature of the data is the low level of concentration in sawmilling compared with the other industries. Although separate data for hardwood sawmilling are not published, the available information suggests that its concentration is considerably lower than that shown in Figure 3.3 for hardwood and softwood sawmilling combined.



The companies producing forest products are predominantly Australian owned. The major exceptions are Australian Newsprint Mills (ANM), which is now jointly owned by the New Zealand-based Fletcher Challenge group and News Corporation, and a major tissue producer — Kimberly-Clark — which is jointly owned by AMCOR and the Kimberly-Clark Corporation of the United States.

Many of the larger producers have ownership links with enterprises producing other forest products.

- *Softwood sawmilling* – a few large producers, namely CSR, Boral, Brown and Dureau (owned by AMCOR), Australian Forest Industries (owned by Bowater Industries), SEAS Sapfor and plants owned and operated by the

South Australian Government in the Mount Gambier region account for the bulk of Australian production.

- *Veneers and panels* – CSR, the South Australian Government, ACI, Westralian Forest Industries, ANM and APPM, a subsidiary company of North Broken Hill-Peko, are among the larger companies engaged in the production of veneers and/or wood panels.
- *Hardwood chips* – there are nine major hardwood woodchip exporters, of which the largest are APPM — the world's largest exporter of hardwood chips — Forest Resources (owned by Boral), Harris-Daishowa and WA Chip and Pulp (part of the Bunnings group). There are also three softwood woodchip exporters. Most of the major paper manufacturers and some panel producers also produce woodchips for internal use.
- *Pulp and paper* – five producers — Australian Paper Manufacturers (APM) (part of the AMCOR group), ANM, Kimberly-Clark, Bowater and Visy Board (a Pratt group company) — produce virtually all paper and paperboard (including tissue products) manufactured in Australia.
- *Paper packaging* – companies owned by AMCOR and the Pratt group produce the bulk of Australia's corrugated packaging and folding carton needs.

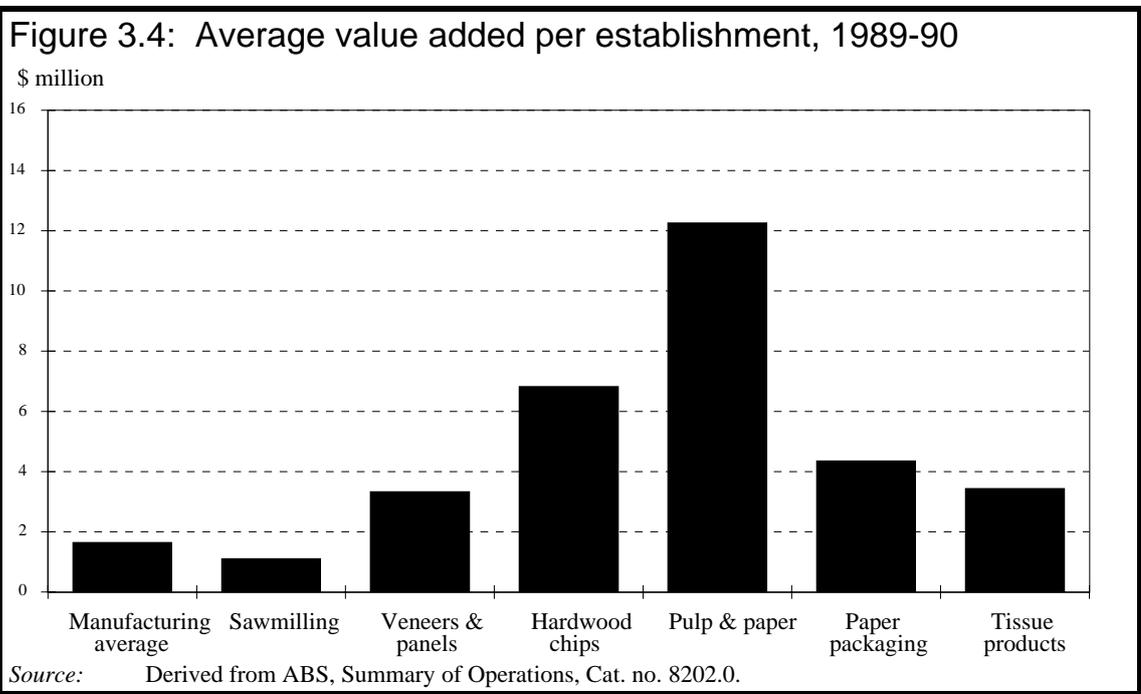
The major exception to this concentration of production is hardwood sawmilling. Although there are some large companies involved — such as Boral and Bunnings — hardwood sawmilling is fragmented and the average scale of production is small.

There have been significant reductions in the number of hardwood sawmillers in recent years. For example, in Victoria, sawmill numbers have declined by 80 per cent over the last twenty years. Nonetheless, around 80 per cent of Australian hardwood sawmills currently have an annual log intake of less than 3000 cubic metres. Collectively, however, they produce only about 25–30 per cent of all sawn hardwood. Variations in the physical dimensions and in the quality of Australian hardwood that complicate the adoption of automated processing have contributed to this fragmentation, although other factors — such as log allocation procedures and the availability of suitable logs — are also said to have delayed rationalisation.

As discussed later, the companies involved in producing forest products acquire wood from a diversity of public and private sources (eg public old growth and new growth forests, public and private plantations, and private property primarily used for general farming purposes). Some wood processing companies import all, or part, of their wood requirements.

With the exception of sawmilling, the average size of establishments in each forest products industry is considerably larger than the manufacturing sector average (see Figure 3.4). The aggregation of hardwood and softwood sawmilling activities in the one category masks a large discrepancy in the average size of sawmilling establishments. Although data are not available to quantify the difference, the average size of softwood sawmilling establishments is considerably greater than hardwood sawmills and also larger than the average for the manufacturing sector as a whole.<sup>4</sup>

One feature of the data is the high level of value added by woodchip establishments. This largely reflects relatively high returns to non-labour factors — mainly capital (see Appendix B). As expected in a capital intensive activity, the value of output accruing to labour is relatively small.



<sup>4</sup> The data shown in Figure 3.4 encompass establishments of varying vintage and scale. Consequently, they do not reflect accurately the value added by new plants presently under consideration, many of which are considerably larger than the average size of existing plant.

## Integration

To fully understand the forest products industries and their value adding potential, it is important to recognise the significance of the integrated and interrelated nature of wood processing activities. The present industry structures are characterised by extensive vertical integration. As suggested by the preceding discussion, there is also a degree of horizontal integration by larger producers.

### *Vertical integration*

Over the last decade, it has become more common for large producers of forest products to undertake tree planting programs on freehold or leased land close to their operating sites. Some have also acquired areas of privately owned native forest and some have entered into contracts with private growers. These actions have been motivated by a range of factors, including a desire by some producers to reduce their reliance on supplies from government agencies (and, hence, their exposure to political interference) and beliefs that yields can be improved and wood costs reduced if the improved species now available are grown in plantations dedicated to wood production. In some cases, new species are propagated and seedlings grown for new plantings by the companies themselves.

The investment by forest products producers in wood production is substantial. APPM, for example, has 125 000 ha of freehold land in Tasmania. About 32 000 ha is eucalypt and pine plantation, with the remainder being natural woodland and forest. APM also has large tracts of freehold and leasehold land (around 85 000 ha) committed to wood production. Large pine plantations established by wood products producers include those owned by SEAS Sapfor (about 35 000 ha) and CSR (20 000 ha) in the Mt Gambier-Portland region.

Although not as significant, some producers have also integrated production of other inputs into their core businesses. Many, for instance, generate a significant proportion of their own energy needs. Others manufacture chemicals in-house (eg Westralian Forest Industries has commissioned new resin manufacturing facilities at its particleboard and medium density fibreboard plant at Dardanup, Western Australia).

There is also considerable integration within the forest products activities covered by the inquiry. For example, all paper produced by Visy Board, Kimberly-Clark and Bowater is converted into paper products (packaging, tissues and sanitary goods) by the companies themselves. Similarly, a large proportion of APM's output is used by other AMCOR companies to produce

paper packaging<sup>5</sup> while, in the case of ANM, a considerable proportion of its newsprint production is sold to one of its joint owners — News Corporation. Following its acquisition of APPM's three paper merchanting businesses (Dalton Fine Paper, The Paper House and Tomasetti), AMCOR — which also has a 46 per cent holding in another large paper merchanting company (Spicers Paper) — now has an interest in each of Australia's major national paper merchanting companies.

Downstream integration by producers of wood products appears less than in the paper sector. In part, this may be due to the more fragmented nature of the direct users and wholesalers of sawmill products. As a result, it is more difficult for producers of sawmill products to guarantee market access for their products by participating in downstream activities. One example of extensive downstream integration is, however, provided by Bunnings. In addition to its core sawmilling activities, Bunnings manufactures a range of timber products such as roof trusses, garden furniture, parquet flooring and doors. Bunnings also engages in extensive merchandising operations through a string of company-owned retail outlets. Until recently, these operations were mainly undertaken in Western Australia, but the company has now acquired retail outlets in Victoria, South Australia and southern New South Wales, most of which formerly traded as McEwans. SEAS Sapfor also has extensive merchandising operations.

### *Horizontal integration*

There is only limited horizontal integration within the pulp and paper sector. Prior to the recent sale of APPM's pulp and paper interests, the three largest integrated pulp and paper producers (APM, APPM and ANM) had specialised in the production of packaging and industrial papers, printing and writing papers, and newsprint respectively. Kimberly-Clark and Bowater produce paper for tissue products only, while Visy Board only manufactures papers for use in its own packaging businesses.

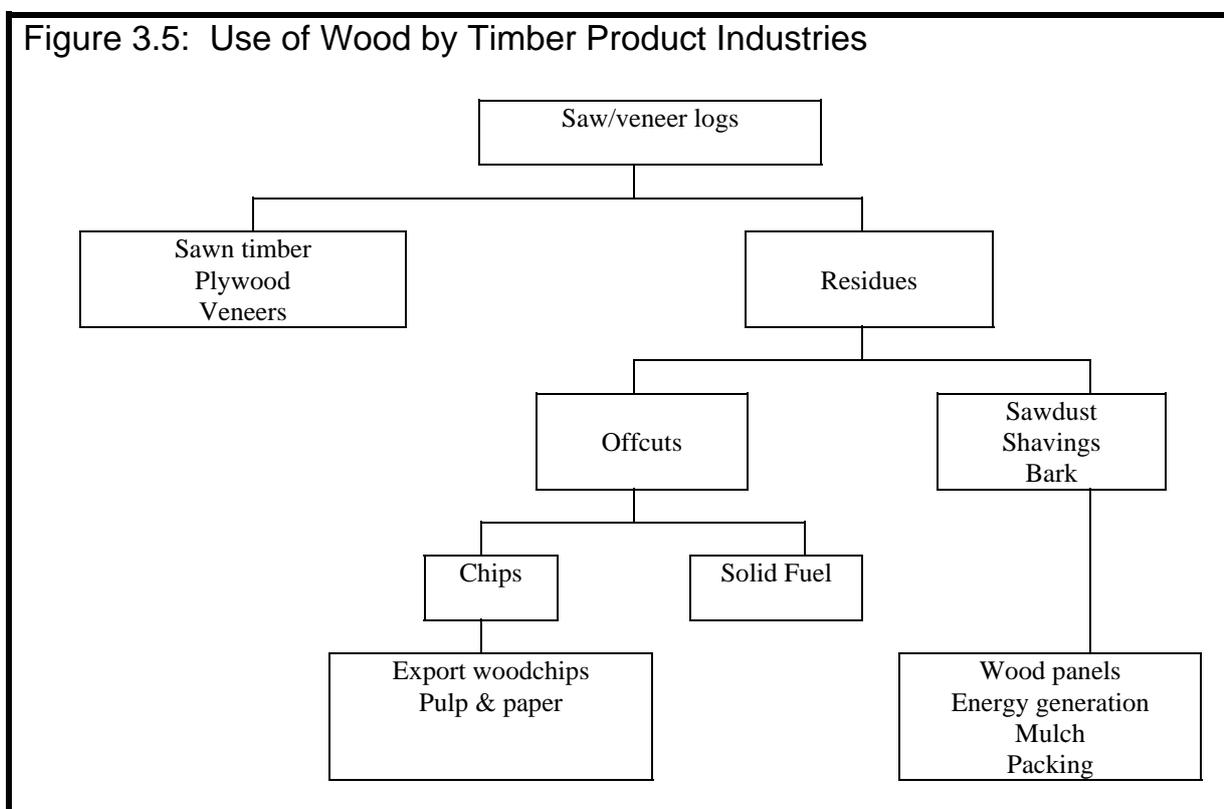
Horizontal integration is more apparent in the wood products sector. To a large extent, this is driven by a need to efficiently use wood — to optimise the quantity of sawn timber extracted from each log and to minimise waste by utilising wood residues in other wood processing operations. This is particularly important in hardwood sawmilling where sawn timber constitutes only 30–40 per cent of log volumes. Boral, for example, stated that the sawn output of its New South Wales and southern Queensland operations is about

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<sup>5</sup> AMCOR also owns Containers Packaging which operates facilities throughout Australia that produce aluminium, steel and a range of plastic packaging.

145 000 cubic metres from an annual log input of 449 000 cubic metres. This represents a recovery rate of 33 per cent of the gross log volume.

In practice, efficiency is promoted by using log residues internally (eg as fuel for electricity generating plant and for generating heat for drying kilns), for other wood processing activities (eg for producing reconstituted wood panels) or for producing other products (eg sawdust and bark are used for mulch and other garden products). Research is also being undertaken into the feasibility of producing ethanol from forest industry by-products. The end result is that there is a concerted attempt to ensure that virtually all parts of logs are productively used. The major wood flows are illustrated in Figure 3.5.



The availability of thinnings from forests and plantations servicing sawmills, coupled with the residual wood available from the sawmills themselves, has encouraged centralisation of different timber processing activities in regions close to wood supplies and, in addition, some integrated sawmilling and other wood processing operations. CSR, for example, operates sawmills, a plywood plant and a particle board plant in the Tumut region, and sawmills and a particle board plant in the Mt Gambier region. Similarly, Boral has sawmilling and export woodchip facilities in central and northern New South Wales.

### 3.3 Major products

The most comprehensive commodity statistics available are those compiled by ABARE (1992c). The data, which cover the major products produced by both timber and paper producers, are available in physical terms only.

#### Timber products

The most significant feature of the production of timber products over the ten years to 1991–92 has been a large decline in sawn hardwood and a corresponding increase in sawn softwood (see Table 3.3). Participants stated that these trends reflect resource availability (a decrease in hardwood logs and an increase in plantation grown softwood logs) and, in recent years, more aggressive marketing by softwood producers. As a result, softwood has displaced hardwood in some markets (eg for structural timber used in residential dwelling construction). Production of export woodchips increased in the five years to 1986–87, but has since remained relatively stable.

In terms of volume, local production of wood products accounts for around three-quarters of domestic consumption, with the balance being met by imports, the majority of which is sawn softwood. Market share information is provided in the following chapter.

Table 3.3: Production of Major Timber Products<sup>a</sup>

	1981-82	1986-87	1991-92 <sup>p</sup>	Change
	'000m <sup>3</sup>	'000m <sup>3</sup>	'000m <sup>3</sup>	81-82 to 91-92 %
Sawnwood				
- hardwood	1976	1708	1387	-30
- softwood	1181	1240	1560	32
Plywood	89	97	107	20
Particleboard	647	660	655	1
Hardboard	102	101	84	-18
Railway sleepers	207	195	100	-52
Export woodchips	3821	5020	5258	38

a No data are available for medium density fibreboard.

p Preliminary

Source: ABARE (1992c).

Although not revealed by the statistics, there have been on-going initiatives to increase the efficiency of log utilisation by developing new products, some of which utilise offcuts and poorer quality wood. Products developed in recent

years include laminated veneer lumber (LVL), which involves the use of veneer sheets to produce high strength, long length, structural timbers, and Valwood, a process for using mainly poorer quality timbers to produce laminated panels (see Appendix I).

### Paper products

Although their growth has been relatively small over the last decade (on average, about one per cent per annum), packaging and industrial papers are the largest component (by volume) of local paper production (see Table 3.4). Reflecting the significant increase in computers and copying machines, the highest growth has been in printing and writing papers — 67 per cent over the ten years to 1992. The increase in local production of these papers mainly reflects the entry of APM and ANM into this market segment. About one-third of the volume of Australia's paper consumption is met by imports (see Chapter 4).

The amount of wastepaper collected increased considerably in the decade to 1991–92. The quantity collected in 1991–92 represented a recovery rate of around 35 per cent.

In 1991–92, wastepaper constituted around 40 per cent of all wood fibre used in paper production. At present, virtually all recovered wastepaper is used to produce packaging and industrial papers. However, ANM plans to install a de-inking plant at its Albury mill to enable it to produce newsprint from recycled newsprint and magazine paper. In addition, the Western Australian Department of State Development (now the Department of Resources Development) stated that a newsprint mill and a plant to produce unbleached semi-chemical pulp and corrugated medium based on wastepaper are proposed to be developed in Western Australia.

	1981-82	1986-87	1991-92 <sup>p</sup>	Change 81-82 to 91-92
	'000 tonne	'000 tonne	'000 tonne	%
Pulp	753	906	1019	35
Packaging & industrial	965	1058	1105 <sup>a</sup>	15
Printing & writing	193	262	323 <sup>a</sup>	67
Newsprint	307	386	404	32
Tissue	na	na	143	-
Wastepaper collected	606	580	875	44

a 1990-91 data  
p preliminary  
Source: ABARE (1992c).

## Value added

The wood processing activities of all forest products industries involve some degree of value adding. The extent of value adding activity is largely determined by individual firms according to their perception of the returns which are achievable from products incorporating varying levels of processing. (In recent years, some governments have intervened with the aim of increasing the level of processing of Australia's forest resources — see Chapter 10.)

Participants stated that there has been a trend towards production of higher value added products. In the paper sector, this is illustrated by the increase in production of higher value added printing and writing papers. In the wood products sector, there has been a significant shift towards higher value added products by hardwood sawmillers. In the face of increased competition from softwood, increasing numbers of hardwood sawmillers are processing timber beyond the green sawn timber stage. This trend is most evident in the larger mills. For example, kiln drying techniques are increasingly being used to improve the recovery of appearance grade timber and greater emphasis is being placed on the production of higher value added dried products such as flooring, panels and specialty products. Higher value added panel products include laminated and decorative panels and medium density fibreboard panels.

Table 3.5 shows the ratio of value added to turnover for each of the forest products industries.

	1981-82	1986-87	1989-90
Sawmilling	0.47	na	0.55
Veneers and panels	0.39	0.35	0.34
Hardwood chips	0.38	0.39	0.37
Pulp & paper	0.40	0.40	0.41
Paper packaging	0.34	0.36	0.38
Tissue papers etc	0.44	0.40	0.40
na	Not available		
Source:	Derived from ABS, Summary of Operations, Cat. no. 8202.0, various issues.		

The data *cannot* be used to compare the extent of processing undertaken by different industries,<sup>6</sup> but it does provide a broad indication of changes in the

<sup>6</sup> The measure used will show, all other things being equal, lower values for downstream industries than it will for industries involved in processing raw materials.

level of processing undertaken *within* industries. The data suggest that the most significant change has occurred in sawmilling. Value added per dollar of sawn timber increased by 20 per cent to about 55 cents between 1981–82 and 1989–90. There was also a significant shift towards higher value added products in the paper packaging industry.

The data also suggest a decline in the level of processing undertaken by the veneers and panels industry. However, it is possible that its relatively heterogenous output and changes in the product mix during the 1980s impair the comparability of the data.

# **PART B**

## **INTERNATIONAL COMPETITIVENESS**



*International competitiveness refers to the ability of industries or firms in one country to compete with their overseas counterparts. Increasing competitiveness creates a capacity for industries to expand (in both domestic and export markets), and provides opportunities to raise living standards.*

*Competitiveness can always be improved by adopting strategies which 'do more with less'. The competitiveness of one sector of the economy can also be improved by adopting strategies which transfer some production costs to others in the community. For instance, the payment of government subsidies or inadequate attention by firms to the environmental consequence of production processes may benefit particular firms, but will impose costs on other sectors of the community. In either case, improved competitiveness is likely to be detrimental to the well-being of the community as a whole.*

*Traditionally, it has been argued that a country specialises in producing those goods and services which intensively use those resources which are relatively abundant. For instance, it is contended that regions having ample land will support a predominantly agricultural economy. Similarly, the existence of abundant forests has been viewed as providing a basis for a competitive forest products industry. Over time, this explanation has been refined to explain growth in intra-industry trade. For example, economies of scale may explain why a region exports newsprint, yet imports writing paper. Alternatively, transport costs can be used to explain why certain activities may be undertaken, even if not appearing to be intrinsically suited to a region.*

*More recently, the traditional models have been criticised on the basis that competitiveness is a dynamic concept; in particular, that prosperity is created not inherited. Porter (1990), for instance, argues that competitiveness depends on an industry's or, more particularly, a firm's ability to innovate and upgrade. Although not developed in the context of resource-based economies, components of this analysis apply to such economies.*

*In addressing the competitiveness of Australia's forest products industries, this part of the report examines many of the factors underlying these concepts of competitiveness. Chapter 4 documents the recent market performance of the forest products industries. Chapter 5 examines in some detail the major element determining the competitiveness of commodities which are extensively traded — costs of production in Australia relative to those of our competitors.*



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## 4 MARKET PERFORMANCE

Competitiveness is not just reflected in selling prices. It also incorporates a range of non-price factors such as quality, consistency of product and reliability of supply. Hence, assessments of competitiveness need to take account of both price and non-price factors.

Assessments of competitiveness can be based on a number of measures (eg profitability, comparisons of cost structures, productivity indicators and market share analysis). However, given the data constraints generally encountered, no single measure can provide a definitive assessment of competitiveness. Nonetheless, comparisons involving a number of these measures can provide some guide to competitiveness.

One measure which encapsulates non-price factors, as well as product prices, is analysis based on market shares. The import share of domestic consumption can provide an indication of an industry's competitiveness on local markets, while the proportion of local production that is exported can provide a guide to an industry's export competitiveness. For example, when international transport costs as a proportion of product value are high, and when imports are subject to tariff duties — as is the case with some paper and timber products — high import shares can indicate that the local industry is uncompetitive. Conversely, high levels of exports are often evidence that an industry is internationally competitive. However, since these indicators are also influenced by other factors, such as domestic supply constraints, market shares in a single year may not tell the whole story. Consequently, changes in market shares over a period of years is a better guide to competitiveness.

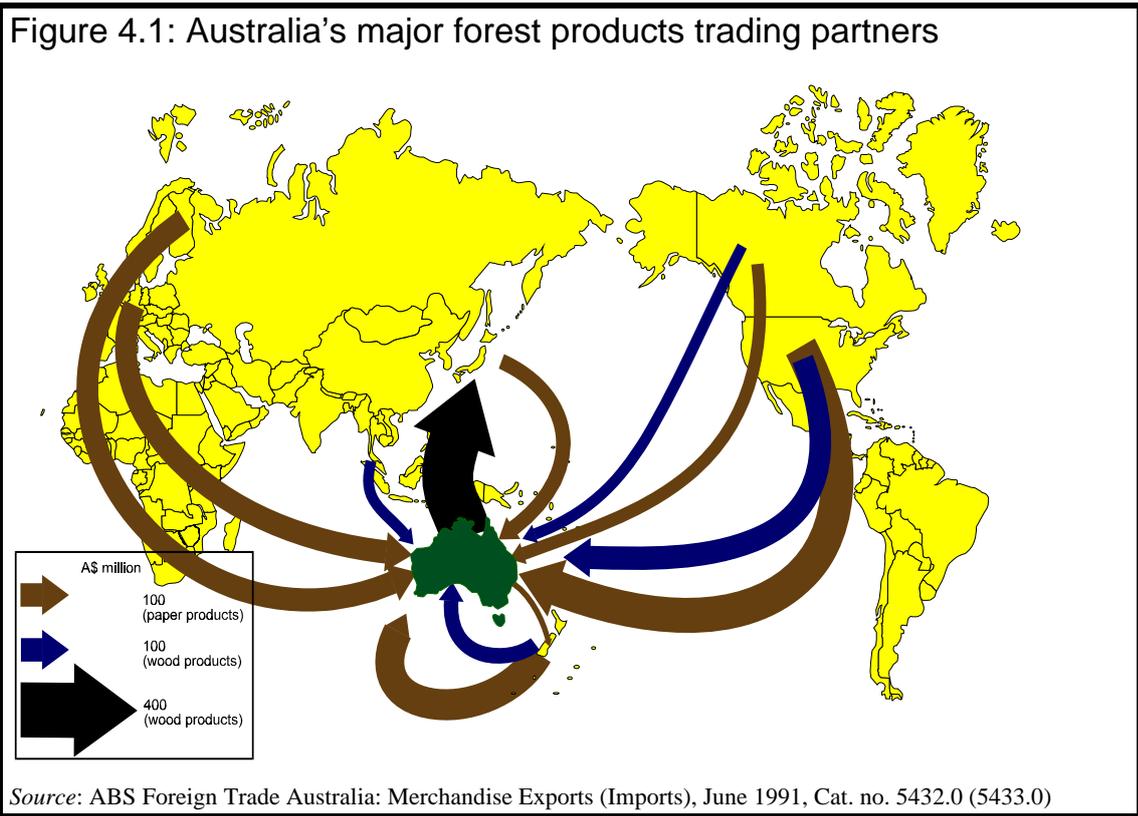
To this end, this chapter uses measures of import penetration (the share of imports in domestic consumption) and export performance (the proportion of local production that is exported) over the last two decades to help assess the competitiveness of Australia's forest products industries. The influence of non-price factors on competitiveness is also considered. The following chapter (Chapter 5) focuses on what is generally regarded as the most important component of competitiveness — comparative cost structures.

### 4.1 Australia's participation in trade

Australia is a net importer of forest products. The majority of imports (about \$1.9 billion in 1991–92) were paper products. Imports of wood products were

about \$0.5 billion. Imports represented approximately 20 and 25 per cent respectively of the value of domestic consumption of wood and paper products.

Although increasing over the 1980s, total exports of forest products are small relative to imports — around \$0.7 billion. Woodchips account for around 55 per cent of exports. The major trade flows are shown in Figure 4.1.



## 4.2 Wood products

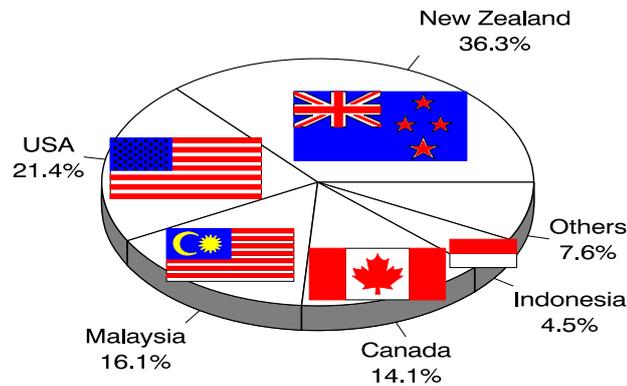
This section initially outlines market shares for all wood products as a whole. Trends in market shares are then shown for major individual wood products.

### *Aggregate market shares*

In 1991–92, consumption of wood products in Australia exceeded \$3 billion. A little less than 20 per cent (\$490 million) was satisfied by imports.

The major sources of imports were New Zealand, the United States, Malaysia, Canada and Indonesia (see Figure 4.2). Together, these countries accounted for over 90 per cent of imports.

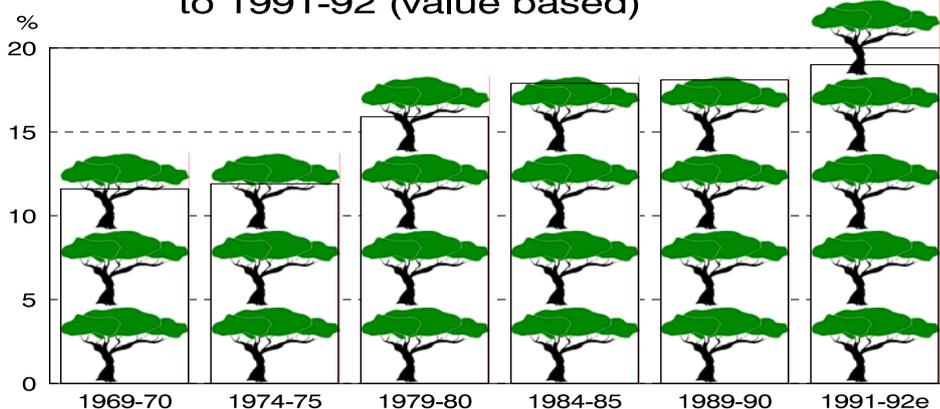
Figure 4.2: Wood products: source of imports, 1991-92



Source: ABS Foreign trade on magnetic tape, exports1 and imports3, various years

In the decade to 1985, import penetration (by value) rose 50 per cent, from around 12 to 18 per cent (see Figure 4.3). This rise was due almost entirely to a significant increase in imports of sawn softwood which, in volume terms, account for around 75 per cent of total wood products imports. The early 1980s saw domestic sawn softwood producers regain some market share, leading to a decline in softwood imports. As a result, overall levels of import penetration in the wood products sector stabilised and have remained fairly constant since the mid-1980s.

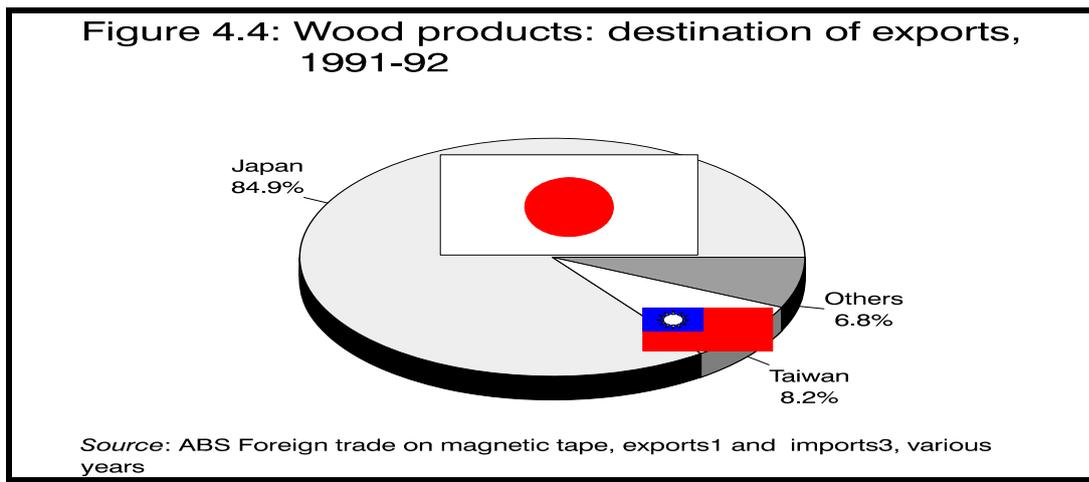
Figure 4.3: Wood products: import penetration, 1969-70 to 1991-92 (value based)



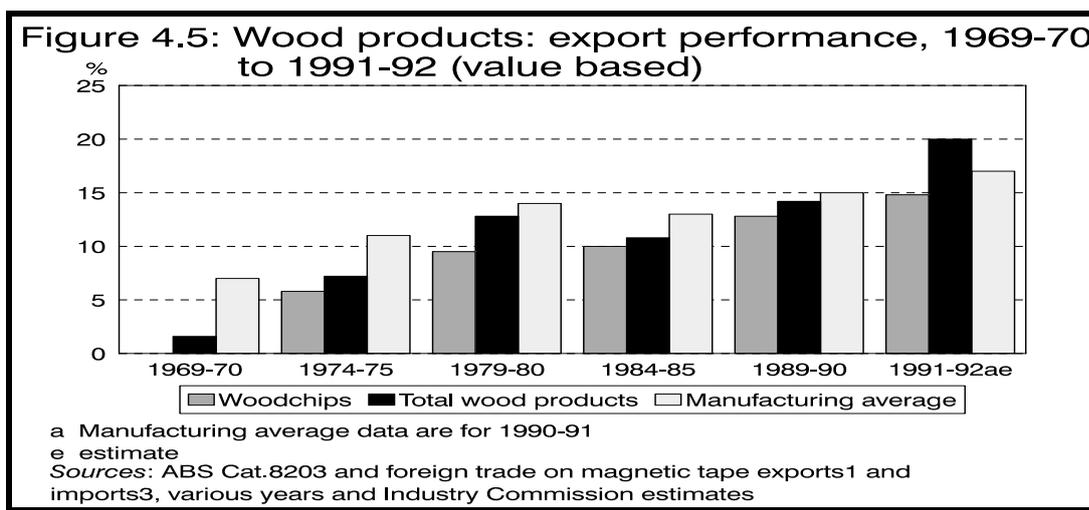
e estimate

Sources: ABS Cat.8203, foreign trade on magnetic tape, exports1 and imports3, various years and Industry Commission estimates

In 1991–92, exports of wood products amounted to \$485 million — representing approximately 20 per cent of local production. Japan is by far the major destination of Australia’s exports (see Figure 4.4). In 1991–92, Japan accounted for 85 per cent of exports. Woodchips constituted the overwhelming majority of those exports. After Japan, the next most important destination of Australian exports of wood products was Taiwan, which accounted for about 8 per cent of exports in 1991–92. Woodchips also made up the bulk of that trade.



Exports of wood products (see Figure 4.5) have increased considerably over the last two decades — from around 2 per cent of local production in the early 1970s to 20 per cent in 1991–92. This growth is almost entirely attributable to increased woodchip exports.

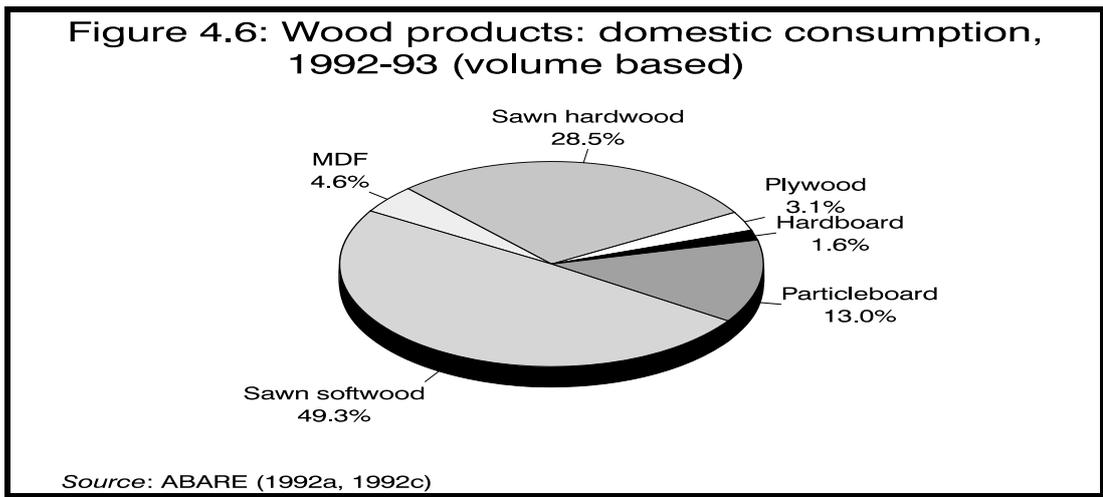


The export performance of wood products now exceeds the manufacturing average whereas, in the early 1970s, exports of wood products represented a

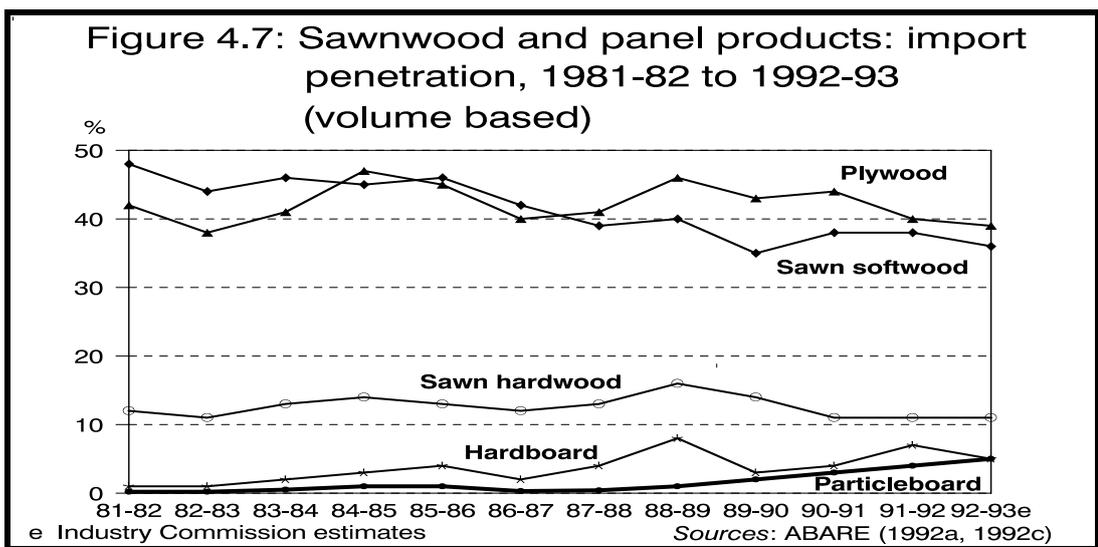
much lower proportion of production than did exports of other manufactured goods.

### Market shares for major wood products

Sawn softwood accounts for about half, and sawn hardwood about 30 per cent, of Australia's consumption of wood products (see Figure 4.6). The next largest sector is particleboard which represents about 13 per cent. Other sectors constitute only a small share of the market.



Significant variation exists in the share of the domestic market held by imports of different wood products (see Figure 4.7). Import levels have ranged from 40–50 per cent for plywood and sawn softwood to less than 10 per cent for other products such as hardboard and particleboard. Within most product categories, imports have supplied a fairly stable proportion of domestic needs.



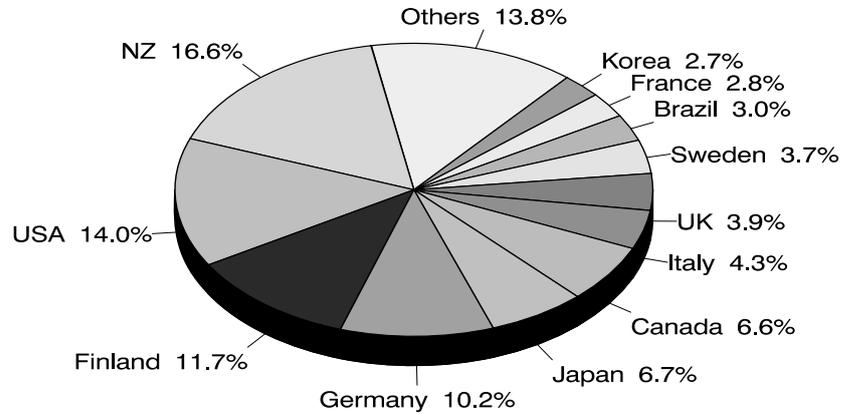
For most products, exports constitute only a minor share of domestic production (see Table 4.1). The exception is woodchips. About one-third of all woodchips produced in Australia are exported. However, most of the remainder are not sold as a final product, they are used internally for further processing (eg for pulp and paper manufacture). The woodchip data in Figure 4.1 refers only to woodchips sold as a final product, hence the extremely high export performance ratio. Exports of other wood products are small relative to woodchips. Nevertheless, during the late 1980s and early 1990s, exports of some wood products increased significantly (eg most panel products and sawn softwood).

Table 4.1: Sawnwood, panel products and woodchips: export performance, 1981-82 to 1992-93 (volume based) (per cent)												
	81- 82	82- 83	83- 84	84- 85	85- 86	86- 87	87- 88	88- 89	89- 90	90- 91	91- 92	92- 93 <sup>e</sup>
<i>Sawnwood</i>												
hardwood	2	2	2	1	2	1	1	1	0.9	1	1	1
softwood	0.2	0.2	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.2	1	1
<i>Panel products</i>												
plywood	0	0	0	0	0	0	0.9	2	0.8	3	2	1
particleboard	1	3	2	1	1	2	0	0	3	6	5	4
hardboard	3	3	6	5	6	7	11	14	3	1	23	19
softboard	0	0	0	8	8	8	0	0	0	8	0	0
<i>Woodchips</i> <sup>ab</sup>	100	100	100	99	na	100	100	100	96	na	na	na
e estimate												
a Due to different classifications for production and trade statistics, data for woodchips sold as final product often show exports exceeding production. In these cases, a figure of 100 per cent has been used as the measure of export performance.												
b Excludes woodchips produced for internal use (eg chips produced for local paper production).												
Source: ABARE (1992c)												

### 4.3 Paper products

Domestic suppliers of paper products have traditionally held a lower share of the local market than have domestic wood producers. In 1991–92, local producers supplied about 75 per cent of the \$5 billion of paper products consumed domestically, with the remainder being imported.

Figure 4.8: Paper products: sources of imports, 1991-92

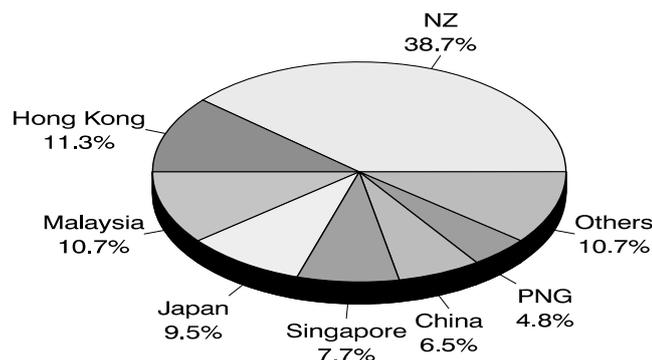


Source: ABS Foreign trade on magnetic tape, exports1 and imports3, various years

The major sources of paper imports are New Zealand, the United States, Finland, Germany, Japan, and Canada (see Figure 4.8). Collectively, these countries supplied about two-thirds of Australia's imports.

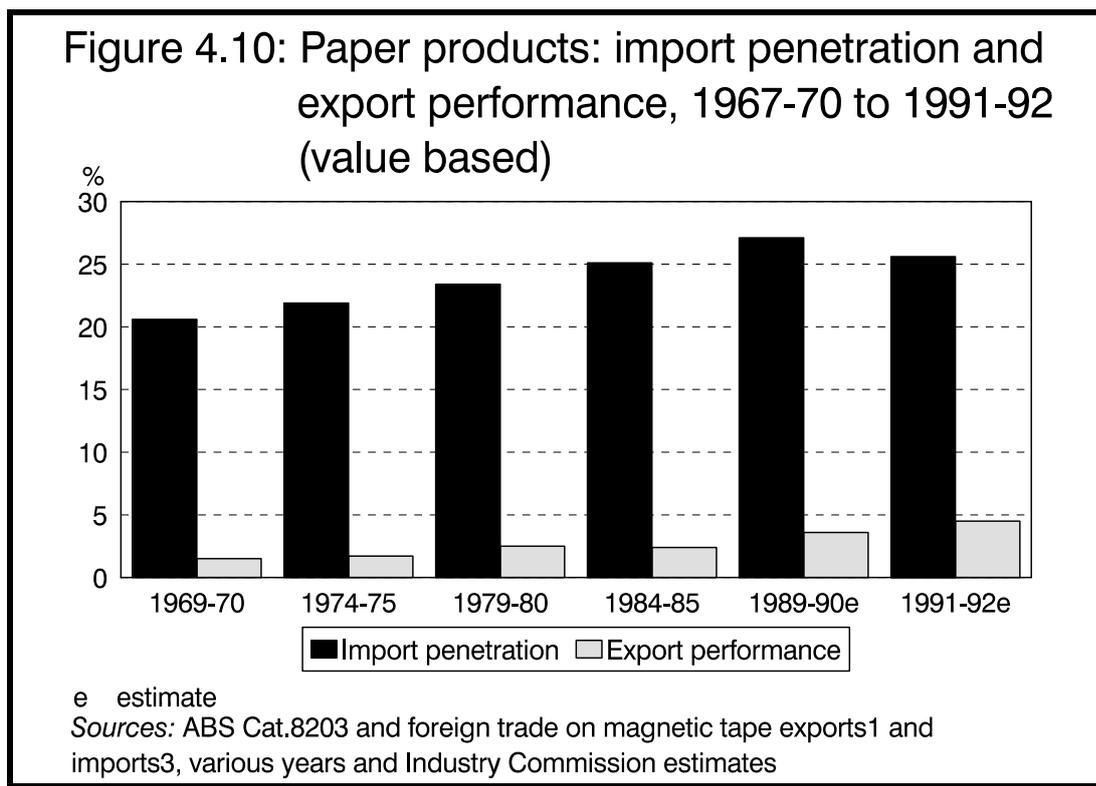
At \$168 million, exports in 1991-92 were relatively modest. The major market for Australian paper exports was New Zealand, accounting for nearly 40 per cent of all exports (see Figure 4.9). Other important markets were Hong Kong, Malaysia, Japan, Singapore and China.

Figure 4.9: Paper products: destination of exports, 1991-92



Source: ABS Foreign trade on magnetic tape, exports1 and imports3, various years

In value terms, the share of the domestic paper market supplied by imports has been relatively stable for some years at around 25 per cent (see Figure 4.10). (In terms of volume, the import share has been higher — around 30-35 per cent.)

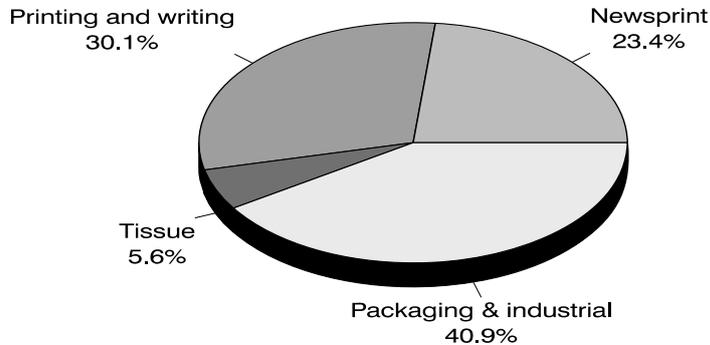


Exports, on the other hand, represented only about 4 per cent of production in 1991–92, well below the manufacturing sector average. While modest, this level is an improvement compared to the 1960s and 1970s when exports accounted for only 1–2 per cent of domestic output.

*Market shares for major paper products*

In terms of volume, packaging and industrial papers accounted for the largest share of domestic consumption of paper products — 41 per cent in 1992–93 (see Figure 4.11). The next largest sectors were printing and writing papers (30 per cent) and newsprint (23 per cent). The smallest share was held by tissues with around 6 per cent of total market supplies. Recent data based on value are unavailable. However, on a value basis, the most noticeable difference would be a significant increase in the share of the domestic market held by printing and writing papers which, on average, are much higher in value than other categories of paper.

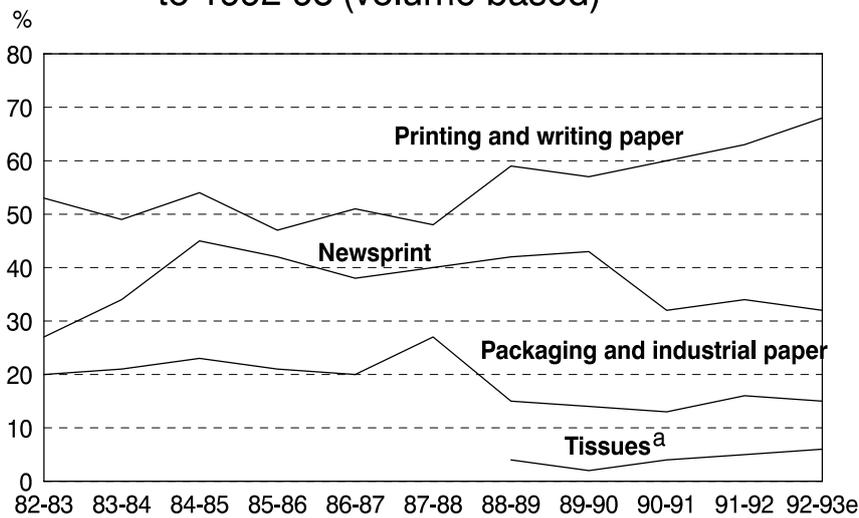
**Figure 4.11: Paper products: domestic consumption, 1992-93 (volume based)**



Source: ABARE (1992a)

The level of import penetration for paper products varies significantly, from less than 10 per cent for tissue papers, to around 15 per cent for packaging and industrial paper and up to nearly 70 per cent for the higher value printing and writing papers (see Figure 4.12). Over the 1980s, imports of newsprint generally ranged between 30 and 40 per cent of domestic consumption.

**Figure 4.12: Paper products: import penetration, 1982-83 to 1992-93 (volume based)**

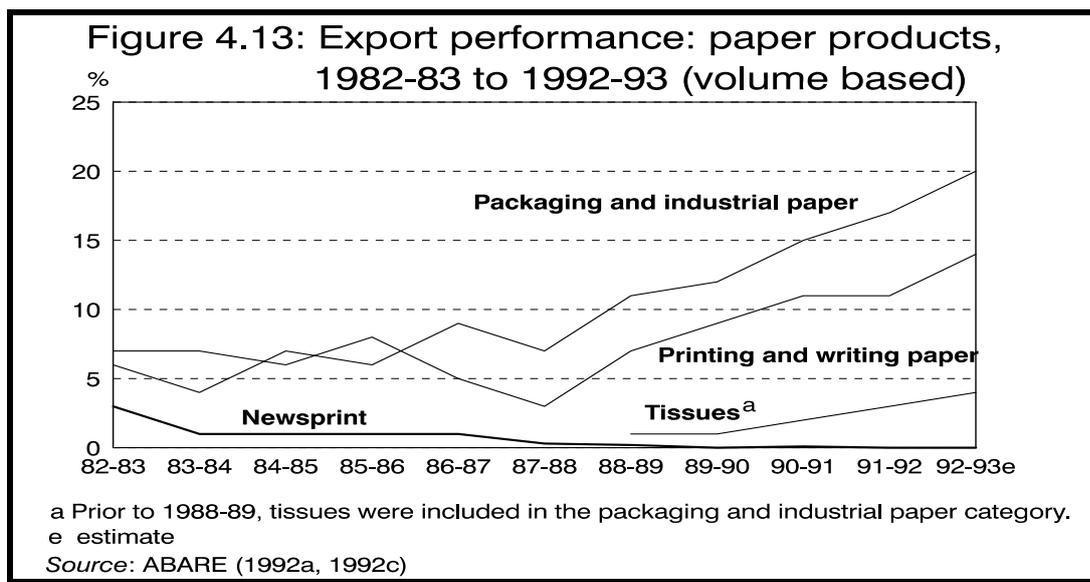


<sup>a</sup> Prior to 1988-89, tissues were included in the packaging and industrial paper category.

<sup>e</sup> estimate

Sources: ABARE (1992a, 1992c)

Exports of paper products have mainly consisted of packaging and industrial paper and printing and writing papers. Although relatively small, exports of both have increased steadily over the last five years (see Figure 4.13).



#### 4.4 Influence of non-price factors on competitiveness

Non-price factors have a significant effect on international competitiveness. Many products, in particular specialty products, are sold according to a wide range of non-price characteristics including quality, level of service, brand identity and delivery times.

Quality appears to be regarded by participants as the most important non-price factor. For commodity products, quality and other product characteristics tend to be defined in terms of broadly accepted international standards. However, in the case of specialty products, quality tends to be tailored to particular end uses, or even particular purchasers. In both instances, the ability to deliver a consistent product in terms of physical characteristics (eg the moisture content of timber or the thickness and brightness of paper) is crucial to competitiveness.

The proximity of local suppliers to users provides them with an advantage over overseas suppliers. Even if overseas suppliers are backed by extensive local merchandising arms, it is difficult for them to match the delivery times and levels of customer service local producers can provide. Smaller, quicker and more regular deliveries translate into savings for purchasers, and participants consider this to be a significant advantage of local suppliers.

According to APPM (transcript, p. 449), as local producers they were able to:

... bring certain things to the market that competitors from overseas simply can't. The speed of APPM's supply is something competitors can't match. This can be translated into greater margins for our merchants and customers because they can hold lower stocks if they buy from a local supplier.

Similarly, APM (sub. 36, p. 43) stated that:

... the very low working capital cost to our customers due to efficient local supply, and speed of service have been of major benefit to our converter customers.

There are few available data on the impact of non-price factors on competitiveness. However, according to ANM (sub. 45, p. 5), non-price factors are at least as important as price in determining competitiveness. The company stated that, “as a price taker, competitive cost and service performance is the only way ANM can survive”.

APM (sub. 36, p. 43) was able to quantify what its superiority in terms of non-price competitiveness meant in terms of its cost competitiveness.

... a range of imported board is available at prices up to 10 to 20 per cent below ours but our excellent, reliable service (maximum turnaround is 15 days) and consistent quality have enabled us to retain high market share.

Some participants consider that non-price factors are more important in export markets than in domestic markets. For example, Boral (transcript, pp. 162, 172) stated that:

We are developing export markets into the United States and ... Asia, and the further you go from home the more careful you have got to be about your quality...

It is easy to go to somewhere like the United States and peddle a bit of wood, but it is also easy to ruin a market if the ... back-up service is not there and the quality is not there. ... quality assurance ... is very important in developing export markets.

In recognition of the importance of product quality, many Australian producers have undertaken Quality Assurance programs under the Australian Standard 3902 to improve their competitiveness.

The Furniture Manufacturers Association of Australia (FMAA) argued that ‘economics of volume’ play an important part in quality improvement for some products. The Association stated that large volumes achieved by American timber producers made it possible for them to manufacture for dedicated markets with very specific product grading, resulting in more homogeneous and uniform products. According to the FMAA (transcript, p. 321):

Therefore, [US producers] are able to ... export timber to us in a very competitive way ... the reliability of that input product is [often] much, much higher [than] the local product.

The Association believes that local timber has the potential to meet these quality aspects of American timber, but that the small scale of the Australian hardwood sawmilling industry has constrained its ability to achieve the same quality characteristics as the American product.

NAFI stressed the need for companies to be more market oriented and to better understand customer needs. With regard to sawn timber, for example, NAFI (sub. 24, p. 38) stated:

... the 'commodity' approach to marketing has resulted in a lack of direct service to the end user, and acted as an impediment to better communication between producers and consumers.

Some participants contended that, in some areas, local producers are not competitive. For example, Pacific Magazines and Printing (sub. 32, p. 1) stated that:

Australian paper producers have not been able to manufacture to internationally acceptable quality standards a large range of publication papers ...

However, the available information suggests that, in domestic markets, Australian firms are generally highly competitive with their overseas counterparts in terms of non-price factors.

## **4.5 Conclusions**

Import penetration of wood products increased significantly in the late 1970s and early 1980s. Over the last decade, however, local producers have been successful in halting this trend and, in most cases, import levels have remained fairly constant. In terms of export performance, very few wood products other than woodchips were exported, although there has been an increase in exports of sawn softwood and some panel products in the last few years.

The share of the domestic paper market supplied by imports has been relatively stable. Although the late 1980s saw strong export growth of printing, writing, packaging and industrial papers, the overall level of exports of paper products remains relatively modest. One factor which may explain the relatively low level of exports is the high levels of import penetration. For many producers, this creates an opportunity to expand in the domestic market in which they enjoy certain natural advantages (eg shorter delivery times and, in some cases, tariff assistance and lower freight costs) rather than focus on sales in more competitive export markets.

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## 5 COMPARATIVE COST STRUCTURES

Comparative cost analysis is most suited to products which are sold mainly on the basis of price — products commonly referred to as ‘commodities’. Commodity products are characterised by a large degree of homogeneity and are usually heavily traded on international markets (eg sawn softwood, woodchips and pulp). As technologies become more mature and demand increases, products that were once classed as specialty products frequently become regarded as commodities. Alternatively, as market demand becomes more sophisticated, commodity markets can fragment, thereby creating market niches for ‘semi-commodities’ (eg bleached kraft linerboard).

Specialty products are usually less homogenous than commodity products. Examples include some high value writing papers and furniture-grade wood products. Demand for specialty products tends to reflect non-price factors (eg quality and appearance) as well as price. Consequently, price is generally a less important determinant of competitiveness than it is for commodity products. Given these circumstances, an examination of comparative costs in isolation may not provide a good guide to the competitiveness of specialty products.

As noted in the preceding chapter, it also needs to be recognised that relative cost is only one factor, albeit a very important one, which determines a product’s price competitiveness in the market place. Taxation arrangements, tariffs, subsidies and other forms of government assistance are other important factors which influence a product’s price.

### 5.1 Underlying determinants of cost competitiveness

Major factors which influence cost competitiveness include the exchange rate, inflation, technology, resource utilisation, economies of scale, vertical integration and the cost of inputs.

#### *Exchange rate and relative price movements*

Movements in exchange rates and differences in rates of inflation between countries can have profound effects on cost comparisons. For example, if Australia’s exchange rate falls, comparisons of Australia’s costs with overseas costs will shift in Australia’s favour.

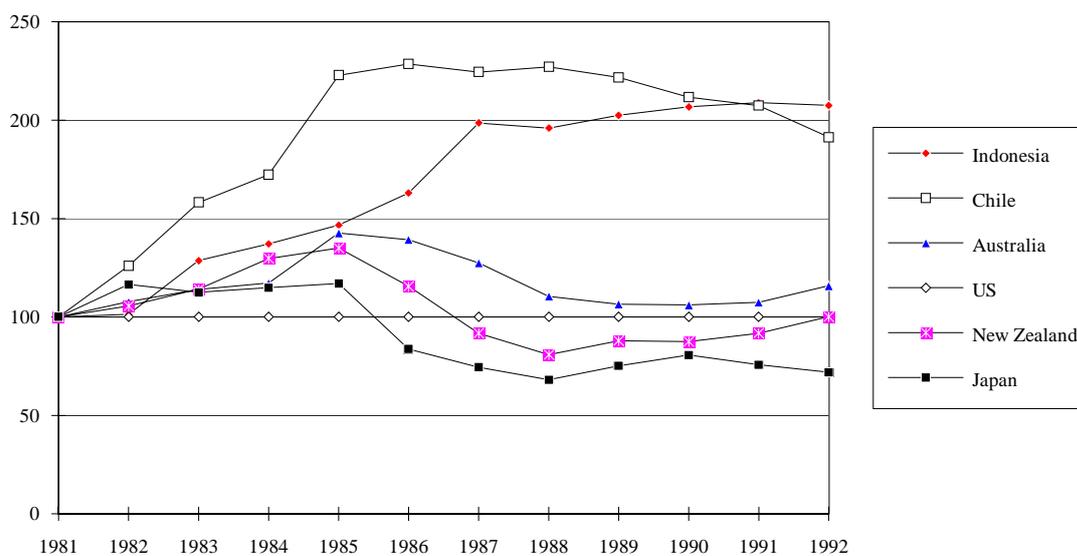
For the economy as a whole, the effects of exchange rate movements and price changes are reflected in changes in Australia’s real exchange rate. Hence, measures of real exchange rates can be used as an economy wide indicator of

changes in international competitiveness, although conditions faced by a particular industry may differ.

Figure 5.1 shows real exchange rate changes for Australia, Chile, New Zealand, Indonesia and Japan, compared with the United States. A (real) depreciation against the US dollar corresponds to a rise in competitiveness and visa versa.

Relative to the US, Australia's competitiveness improved over the first half of the 1980s when the nominal exchange rate fell from 115 to 88 US cents. However, Australia's competitiveness declined between 1985 and 1988 when the nominal exchange rate appreciated and a relatively poor inflation performance continued. By the early 1990s, the competitiveness of the Australian economy had increased relative to other major producing nations such as Japan, New Zealand and the US, but had decreased relative to developing nations with rapidly growing forest products industries such as Chile and Indonesia.

Figure 5.1: Indexes of real exchange rate movements (1981=100)



Source: IMF (1987, 1993)

While a fall in the nominal exchange rate will initially boost competitiveness, this does not necessarily imply that, in the medium to longer term, a country will be better off. This is because a fall in the exchange rate will generally lead to higher import prices and higher levels of inflation. Over time, these factors

tend to erode the initial benefits (in the form of increased competitiveness) resulting from a lower exchange rate.

### *Technology*

The technology of plant and equipment is an important factor in the manufacture of nearly all products. Improvements in technology will often result in increased efficiency and output, reduced operating costs and a higher quality product. For example, modern machines are often computer controlled, resulting in higher labour productivity. In paper production, technological improvements have given rise to wider and faster machines, significantly increasing output per hour.

### *Integration of the industry: total resource utilisation*

A factor affecting the overall competitiveness of the forest products industries is the ability to make full use of available wood resources. In particular, costs will be minimised if wood residues can be sold (or transferred) for use in other processes (eg in the manufacture of particleboard or garden products such as mulch). Furthermore, the cost of the wood itself is likely to be minimised if there is a market for thinnings. The thinning process also promotes sawlog production.

### *Economies of scale*

For most major industrial processes, the unit cost of output falls as the scale of plant increases (assuming a given level of capacity utilisation). This is referred to as economies of scale. Scale economies can arise from many sources including greater specialisation of labour and capital, and economies associated with increased input use or larger plant size.

The nature of an industry can have a significant impact on the potential for scale economies. For example, the consistent size of softwood logs lends itself to relatively large scale mechanised operations. In contrast, the lack of uniformity in much of the hardwood resource limits the potential for increased automation and the achievement of scale economies.

In some circumstances, external factors may mean that larger plants do not lead to lower production costs. For example, the additional wood requirements of a larger capacity mill may increase haulage costs to the point where additional wood costs outweigh the gains associated with larger scale plant. Likewise, higher product distribution costs may offset the benefits (in the form of lower production costs) associated with larger scale operations.

As would be expected, the scale of Australian forest products plants varies considerably. By and large, new plants are larger and more highly mechanised than older plants. Many newer plants, such as some medium density fibreboard and paper mills, while not being the largest in the world, are in keeping with the size of larger plants in major producing nations. However, one area in which Australian plant size is generally small by world standards is the hardwood sawmilling sector.

### *Vertical integration*

In some countries, competitiveness has been improved through vertical integration — the consolidation of a number of separable (but related) activities under one management.

Vertical integration need not imply common ownership. Many of the benefits of vertical integration can be gained through ‘functional integration’, or contractual arrangements between separate firms. For example, a network of small sawmills may join together to invest in (say) centralised kilns or a wood processing plant, or combine in collaborative research and development activities.

Vertical integration may lead to lower costs by: providing firms with greater control over the price and supply of inputs, or markets for outputs; reducing transactions costs between producers and suppliers; and eliminating some processing activities (eg the need for non-integrated paper producers to return pulp acquired from external sources to slush before use).

An increase in vertical integration does not preclude the possibility that some functions will be contracted out. For example, it may be more economical to contract out some non-core activities (eg wood harvesting, residue utilisation/disposal and some plant maintenance tasks).

Vertical integration in the Australian forest products industries varies. The larger producers tend to be highly vertically integrated. Bunnings, for example, is involved in plantation operations, sawmilling, downstream processing (eg drying and laminating), fabrication and assembly operations (eg the manufacture of roof trusses and garden furniture) and wholesale and retail activities. In recent years, there has been a trend towards greater vertical integration with a number of large companies undertaking plantation developments to provide them with greater control over their wood inputs.

### *Input costs*

Input costs are crucial determinants of competitiveness. A modern, world scale plant embodying the latest technology is of little benefit if input costs are

uncompetitive. A range of factors, such as tariffs on imported inputs, limited competition between suppliers and inefficient government pricing policies and regulations can inflate the costs of inputs.

The following data give an indication of Australia's competitiveness in five important areas — wood, labour, chemicals, energy and capital costs. The importance of these inputs varies depending on the product. For example, in hardwood sawmills, wood costs can represent over 50 per cent and labour costs around 30 per cent of total manufacturing costs. In paper manufacture, on the other hand, wood and labour costs are typically each around 10–15 per cent of manufacturing costs.

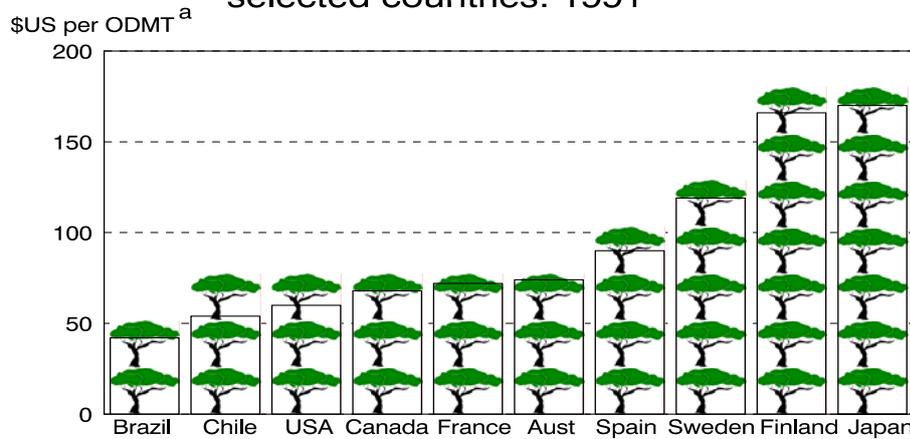
### *Wood*

It is difficult to compile data to allow meaningful comparisons of wood costs between regions within Australia, or between Australia and other nations. The difficulty arises largely because both hardwoods and softwoods can be highly differentiated depending on species and, even within species, there can be considerable differences in quality (eg the proportion of a log affected by defects such as decay, gum veins and termite damage can vary significantly). In this context, Boral (sub. 55, p.2) stated that:

Any comparison also needs to take into account the vastly differing qualities of log offered from various forests around the world. In the case of New Zealand, the *Pinus radiata* logs are of extremely high quality. In some States in Australia — notably Victoria — the logs are of extremely low quality, such that they might well not be accepted by sawmillers in other regions.

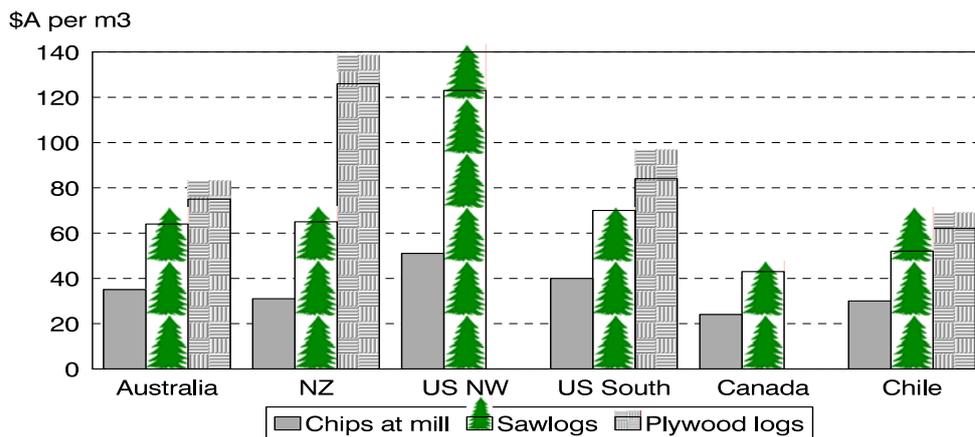
An assessment of relative wood prices is also complicated by the rapid escalation in US prices in the wake of logging restrictions imposed to protect animal habitats in the Pacific north-west. However, the data shown in Figures 5.2 and 5.3 are broadly indicative of the information available to the Commission on the relative prices of hardwood and softwood (delivered to mill) in Australia and other major trading nations.

Figure 5.2: Delivered hardwood roundwood prices for selected countries: 1991



a Oven Dried Metric Tonne  
 Source: APPM, sub. 38, p.60

Figure 5.3: International comparison of softwood prices



Source: Jaakko Pöyry 1993

*Labour*

Meaningful comparative data on Australian and overseas labour costs are also limited. However, information on labour costs in the paper sector submitted by participants and analysis contained in other studies (eg Simons 1990a, 1990b) suggests that, while Australian labour costs per unit of output are higher than those in New Zealand, they are similar or lower than those in most developed countries. Simons (1990b), for example, reported that:

Labour costs per unit of production are in line with other industrialised nations looked at in this study.

As would be expected, unit labour costs in Australia are appreciably higher than those in developing nations such as Indonesia, Brazil and Chile.

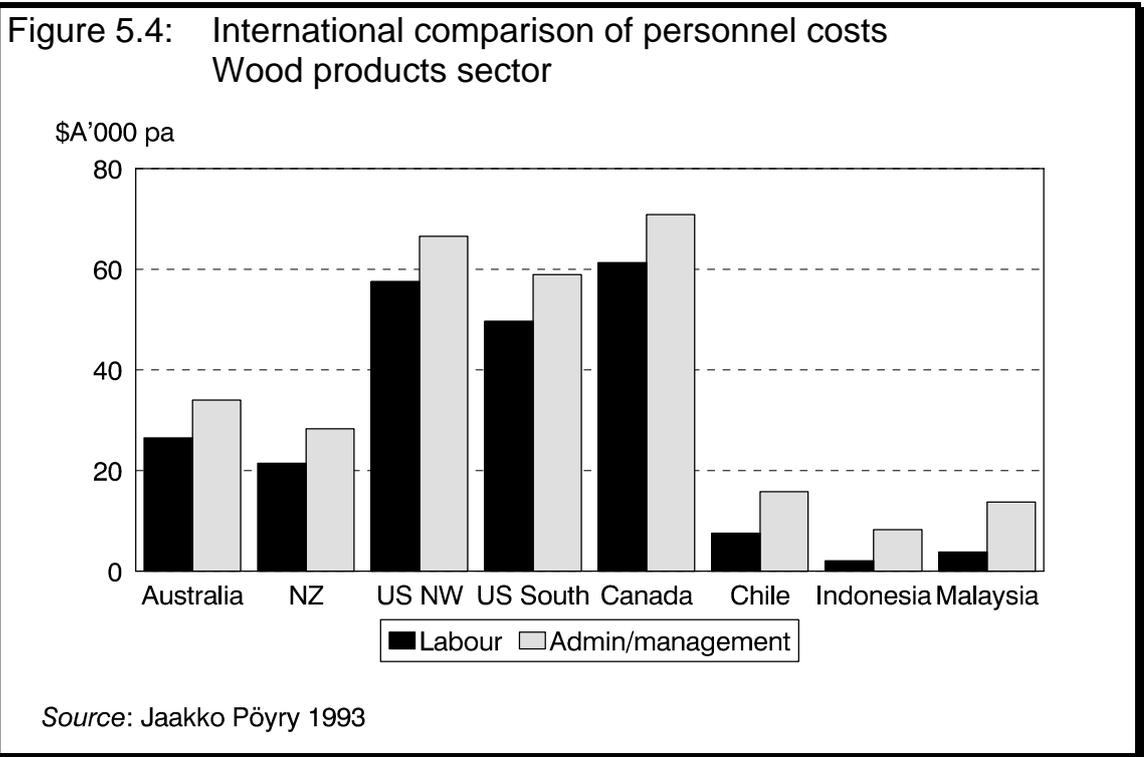
Data supplied by APM for its pulping operations — excluding those formerly operated by APPM — support these findings (see Table 5.1). APM’s average wage cost is lower than the US, but higher than Brazil and Indonesia. However, because staffing levels vary considerably, APM’s total wage cost is lower than Brazil’s (but significantly higher than Indonesia’s).

**Table 5.1: Comparison of pulp mill personnel costs (Index: APM=100)<sup>a</sup>**

<i>Personnel costs</i>	<i>APM</i>	<i>Brazil</i>	<i>Indonesia</i>	<i>USA</i>
Average cost per employee	100	37	11	107
Total employees	100	322	235	132
Total labour cost	100	119	26	141

a Excludes details of mills formerly owned by APPM  
 Source: APM (sub. 44, p.65)

Data on labour costs in the wood products sector tell a similar story. Australian labour costs appear to be slightly higher than those in New Zealand, and both countries are highly competitive against North American labour costs. As in paper production, unit labour costs in less developed countries are significantly lower (see Figure 5.4).



*Chemicals*

An international comparison of chemical costs submitted by APM suggests that Australian costs are considerably higher than those in the US and, in most instances, significantly higher than chemical costs in New Zealand and Indonesia. For example, Australian chlorine costs are 45 per cent higher than in New Zealand and over 350 per cent higher than in the US (see Table 5.2).

**Table 5.2: International comparison of chemical costs (\$A per tonne)**

<i>Country</i>	<i>Caustic soda</i>	<i>Chlorate</i>	<i>Chlorine</i>	<i>Salt cake</i>	<i>Burnt lime</i>	<i>Starch</i>
<b>Australia</b>	<b>600</b>	<b>800</b>	<b>800</b>	<b>183</b>	<b>170</b>	<b>600</b>
United States	375	600	175	131	100	350
New Zealand	na	na	550	188	122	na
South Africa	735	663	na	164	133	708
Indonesia	417	481	na	231	57	625
Chile	na	na	na	350	65	na
Brazil	625	838	313	na	63	450

*Source:* APM (sub. 36, p.26)

ANM (sub. 45, p. 22) commented on chemical costs in relation to its new de-inking plant at its Albury mill, stating that:

... the chemical costs expected for the new Albury de-inking plant are 40% higher than for similar operations in Europe and North America utilising virtually identical formulations.

The reasons for the large discrepancies in chemical costs between Australia and other countries is unclear. Tariff duties, transport costs, the extent of competition in Australia and the threat of anti-dumping action may account for some of the differential.

*Energy costs*

Care needs to be exercised in making international comparisons of electricity prices. National aggregates are often highly misleading because significant variations occur between regions, between customer classes and between firms within classes. For example, the average tariff for commercial/industrial users in Australia in 1991 was 8.4 cents per kWh. However, this figure masks an enormous variation between regions. For example, the average tariff for commercial/industrial users in the Northern Territory was 14.3 cents per kWh compared with 3.8 cents per kWh in Tasmania. Similarly, while Bunnings

presently pays 14.7 cents per kWh for electricity in Western Australia, ANM pays only 3.4 cents per kWh for electricity usage in Tasmania.

While variations of this nature complicate assessments of comparative electricity prices, aggregate data suggest that Australian electricity prices tend to be somewhat lower than those applying in many other developed countries. For example, a recent survey by National Utility Services (NUS) International (Cook 1993) estimated Australian commercial and industrial prices to be 8.57 cents per kWh. The NUS survey ranked Australia as sixth cheapest among 17 industrialised countries surveyed. Prices ranged from 5.68 cents per kWh for Canada to 18.15 cents per kWh for Japan.

### *Capital equipment*

Much of the machinery and equipment used in the forest products industries is imported. Some participants (eg APM) argued that tariff duties on such equipment placed local producers at a competitive disadvantage.

A case study of the construction costs of a BEK pulp mill undertaken for a previous Commission inquiry found that capital equipment costs for an Australian mill would be about \$45 million (around 12 per cent) higher than a Canadian mill. The report (IC 1991e, p. 157) found that these higher costs were due to:

... additional costs for export packaging, ocean and inland freight, dock charges etc ... Additionally, virtually all this imported equipment is subject to import duty. ... The cost of locally produced items (if available) is normally very similar to that of imports plus duty.

The remainder of this chapter focuses on estimates of the cost competitiveness of wood products (Section 5.3) and paper products (Section 5.4). However, prior to discussing these estimates, the following section briefly outlines the data sources used and some of the more important underlying assumptions.

## 5.2 Basis of cost comparisons

Information on the current competitiveness of wood products is based on a 1993 consultant's report prepared for this inquiry by Jaakko Pöyry<sup>1</sup>. For the paper industry, most of the information on current competitiveness was provided by Australian paper producers. Information on competitiveness in previous years is available from two earlier studies, namely: a 1985 Jaakko Pöyry report and a 1990 report undertaken by the Simons consulting group (Simons 1990a).

In most instances, the analyses of existing mills in the Jaakko Pöyry studies are based on mills which are representative of the technologies and scale of mills operating at the time in the countries examined. The analyses are intended to indicate the competitiveness of the existing industry in each country. The analysis of new mills is based on hypothetical, large scale mills using the latest technology. This is intended to provide an indication of the potential competitiveness of a new plant in each country. While information on the cost competitiveness of new timber plants was derived from the recent work prepared by Jaakko Pöyry, similar information was not available for new paper plants. The information reported is that published in Simons (1990a). According to participants, that information is still broadly indicative of the competitiveness of new plants in Australia.

The analysis in all studies was based on the average unit price required to cover all production costs and earn a specified real rate of return on investment. In the 1985 Jaakko Pöyry study, this rate of return was set at 15 per cent. The 1990 Simons study was based on an internal rate of return of 10 per cent. The 1993 Jaakko Pöyry study assumed a real rate of return of 8 per cent.

Relative prices, and hence competitiveness, also depend on the exchange rate used. The 1985 Jaakko Pöyry study used an exchange rate of \$US1.00=\$A0.66, the 1990 Simons study an exchange rate of \$US1.00=\$A0.75 and the 1993 Jaakko Pöyry report employed an exchange rate of \$US1.00=\$A0.725.

The following sections consider the competitiveness of Australian production of wood (Section 5.3) and paper products (Section 5.4). Additional information on these products is contained in Appendixes D and E.

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<sup>1</sup> Copies of this report are available from the Commission on request.

### 5.3 Wood products

This section discusses the competitiveness of major wood products, namely:

- sawn softwood;
- sawn hardwood;
- softwood plywood;
- hardwood plywood;
- particleboard; and
- medium density fibreboard.

#### **Sawn softwood**

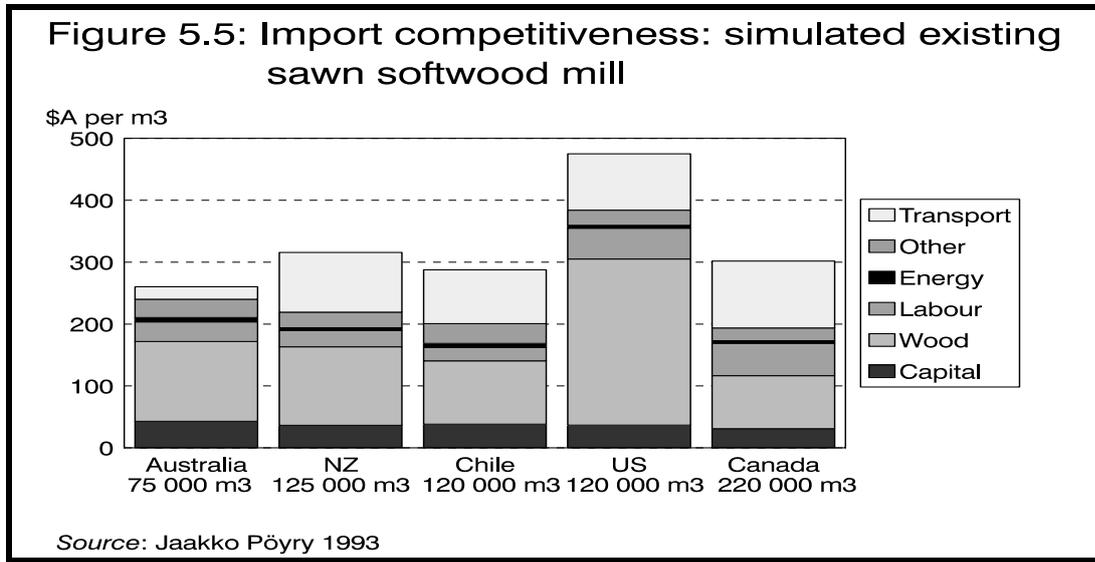
The characteristics of Australia's 240 softwood sawmills vary substantially. The vast majority are relatively small by world standards, with an average output in the order of 4–5000 m<sup>3</sup> per annum. There are about 10 mills which are far larger — with annual outputs in the range 50–125 000 m<sup>3</sup> — and which account for around 50 per cent of total industry output. These larger mills tend to be relatively new and, unlike the smaller mills, supply a variety of markets and have the potential to compete in export markets. In these circumstances, a mill representative of all softwood sawmills would tend not to reflect either category of existing sawmills. Hence, for the purposes of the Jaakko Pöyry (1993) study, a mill size of 75 000 m<sup>3</sup> pa was chosen. A mill of this capacity is representative of the newer larger mills, but not of smaller softwood sawmills.

The selection of a mill of this size has a number of implications for any analysis flowing from the data. For example, the fact that smaller mills are less competitive than the mill depicted, in part, explains why the United States (which was found to be at a significant cost disadvantage) and other 'apparently' less competitive countries (eg New Zealand and Canada) are still able to export large quantities of sawn softwood to Australia (around 40 per cent of domestic market supplies). Differences in the characteristics of the softwood species imported from the United States (mainly oregon) compared with local softwood (mainly radiata pine) also help explain the level of imported sawn softwood.

#### *Import competitiveness*

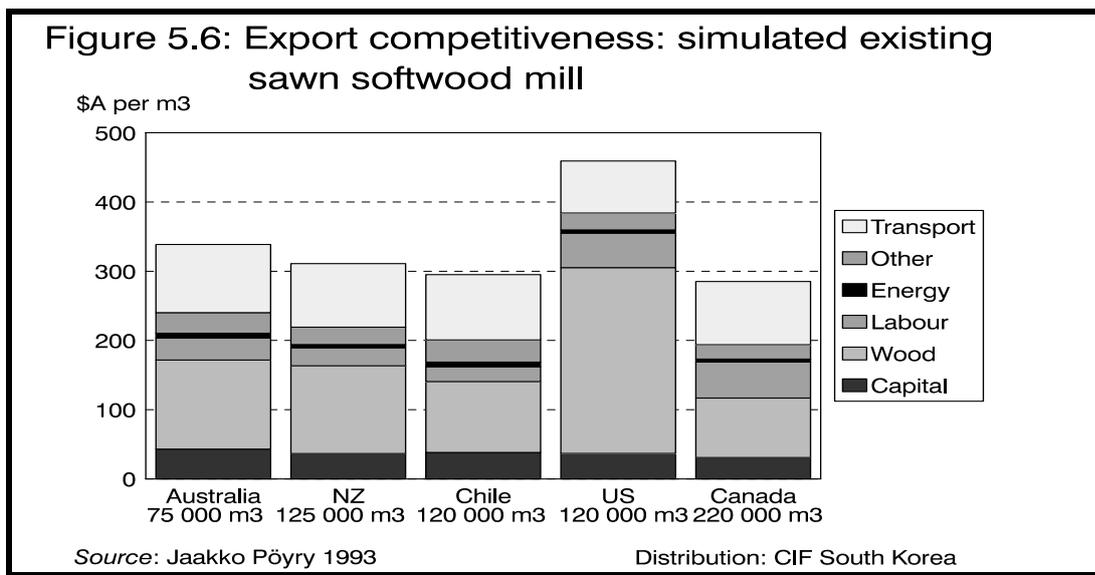
Larger Australian softwood mills were found to be the lowest cost suppliers in the domestic market (see Figure 5.5). Although production costs in Australia are somewhat higher than those in Canada, New Zealand and Chile, Australian producers derive an advantage from the relatively high transport costs faced by overseas suppliers. Significantly higher wood costs in the United States put it at

a serious cost disadvantage compared to the other countries analysed in the study.



**Export competitiveness**

Export market competitiveness is measured in relation to theoretical shipments to South Korea. In that market, Australia loses the natural protection it has in its domestic market, and its underlying cost disadvantage makes it less competitive with the larger mills presented as indicative of those in New Zealand, Chile and Canada. However, Australia is still more competitive than United States producers (see Figure 5.6).



## Sawn hardwood

Australia's hardwood sawmilling sector is quite diverse in terms of the activities undertaken, the products manufactured and the scale of mills. For the purpose of the analysis, a mill with an annual capacity of 10 000 m<sup>3</sup> was selected. It is common for a mill of this size to possess facilities to dry and dress hardwood.

### *Import competitiveness*

In the domestic market, Australia is assessed as having a cost advantage of about 10 per cent over Malaysia — the world's biggest exporter of tropical hardwood. This is attributable to the impact of transport costs on imported product. Although wood costs are much lower in Australia, lower labour and capital costs result in Malaysian production costs being lower than Australia's (see Figure 5.7).



However, the competitiveness of hardwood needs to be assessed not only in relation to imported hardwood, but also having regard to the price of softwood. Sawn softwood is a direct substitute for hardwood in many end uses (eg roof trusses and house frames). In keeping with the significant inroads made by softwood in traditional hardwood markets, the Jaakko Pöyry study suggests that local softwood producers have a significant cost advantage over hardwood producers in supplying the domestic market.

*Export competitiveness*

On export markets, the study assesses Australian hardwood to be at a cost disadvantage to both hardwood produced in Malaysia and softwood produced by Australian and major overseas suppliers (see Figure 5.8).

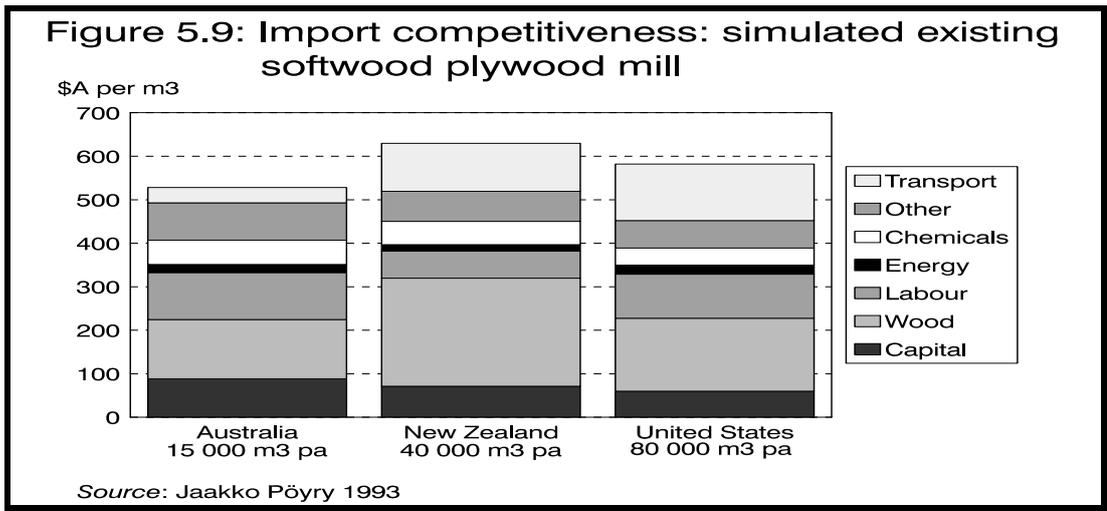


**Softwood plywood**

There are nine mills in Australia either entirely or mainly producing softwood plywood. Four of these mills have a capacity of over 10 000 m<sup>3</sup> pa and account for 65 per cent of total capacity. Hence, the assessment of local softwood plywood costs is based on a mill with an annual capacity of 15 000 m<sup>3</sup>.

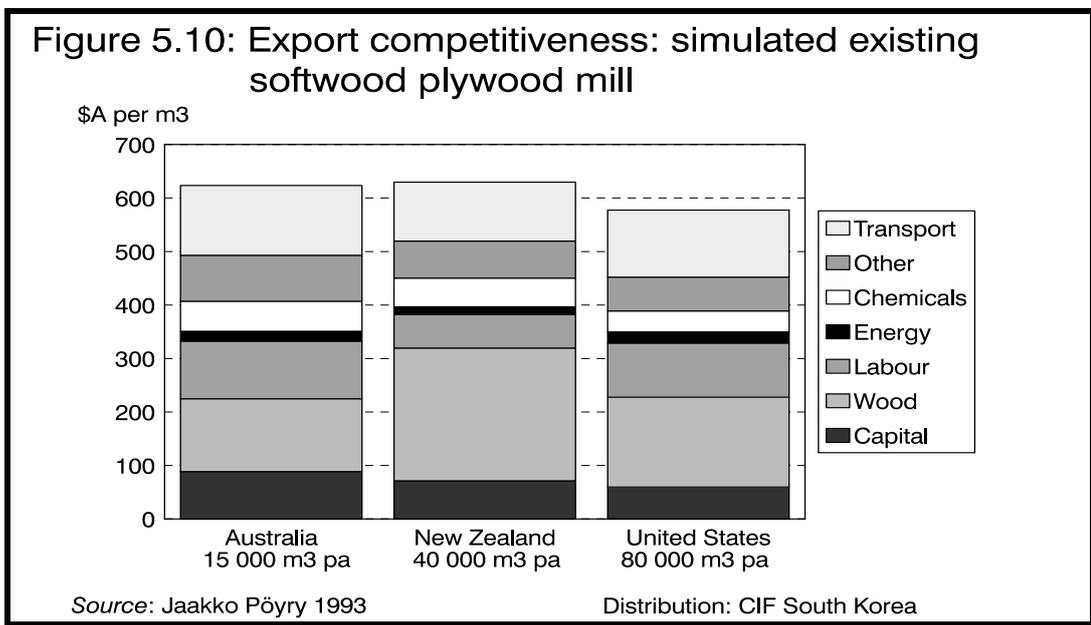
*Import competitiveness*

Australian softwood plywood producers are estimated to have a significant cost advantage in domestic markets compared to their major competitors, which are disadvantaged by transport costs (see Figure 5.9). Relatively low wood costs in Australia also contribute to the competitiveness of the local industry. Local production costs are slightly lower than in New Zealand, but higher than in the United States.



### Export competitiveness

On export markets, Australia is estimated to lose most of the competitive edge it had in the domestic market because it no longer has a transport cost advantage (see Figure 5.10). In supplying the South Korean market, Australia is estimated to be at a disadvantage to the United States, but to have a slight cost advantage over New Zealand.

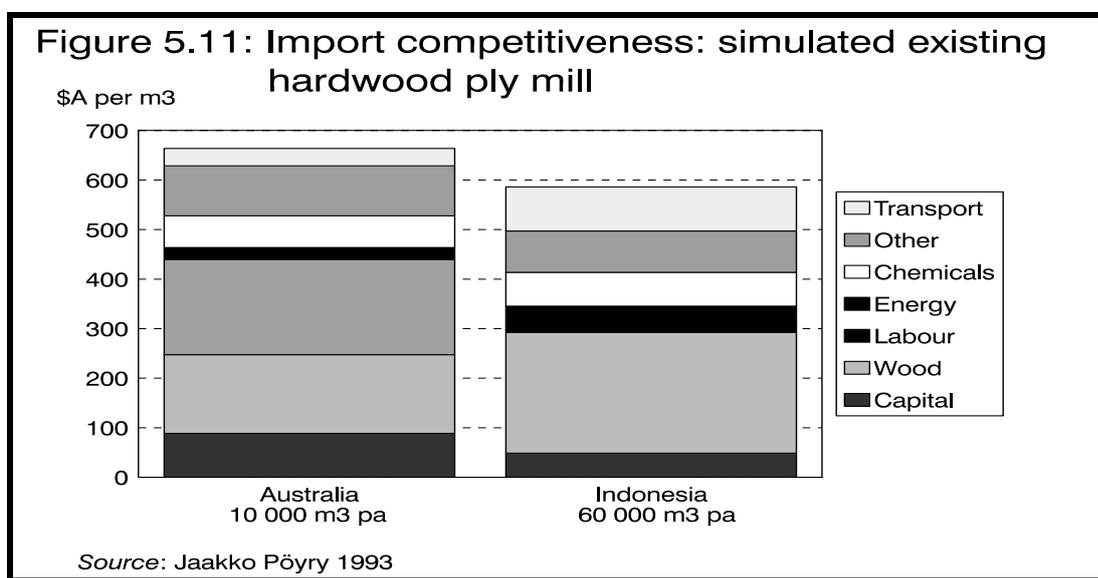


## Hardwood plywood

There are few producers of hardwood plywood in Australia. The competitiveness of Australia's existing industry was assessed on the basis of a plant with an annual capacity of 10 000 m<sup>3</sup>.

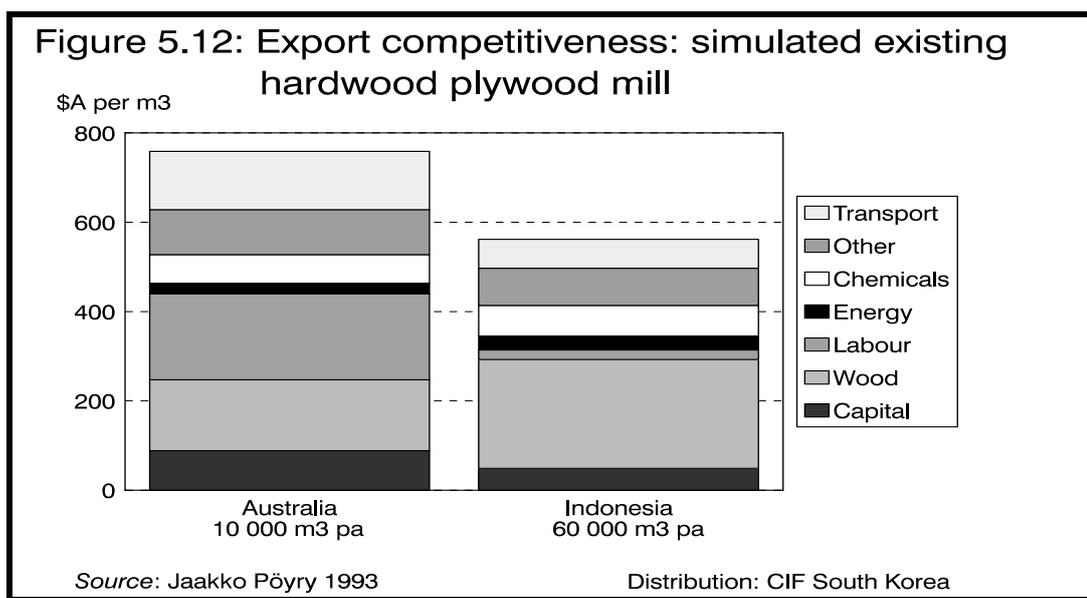
### Import competitiveness

Indonesia is the major supplier to Australia of imported hardwood plywood (nearly 30 000 m<sup>3</sup> in 1991–92). The substantially larger Indonesian mill is estimated to have a production cost advantage of around 15 per cent over Australian producers of hardwood plywood, and an advantage in delivered costs of about 10 per cent (see Figure 5.11).



### Export competitiveness

On export markets, Australia's competitive disadvantage is further exacerbated through the loss of the freight advantage enjoyed in the domestic market. In Asian markets, Indonesia is estimated to have a price advantage of about 25 per cent (see Figure 5.12). Despite this disadvantage, an Australian producer that has developed the technology to peel regrowth eucalypt — Big River Timbers — stated that it has been successful in winning export orders in Asian markets in the face of competition from Indonesian suppliers. Another company, Briggs and Sons, have also successfully exported plywood to Asia, North America and the United Kingdom.

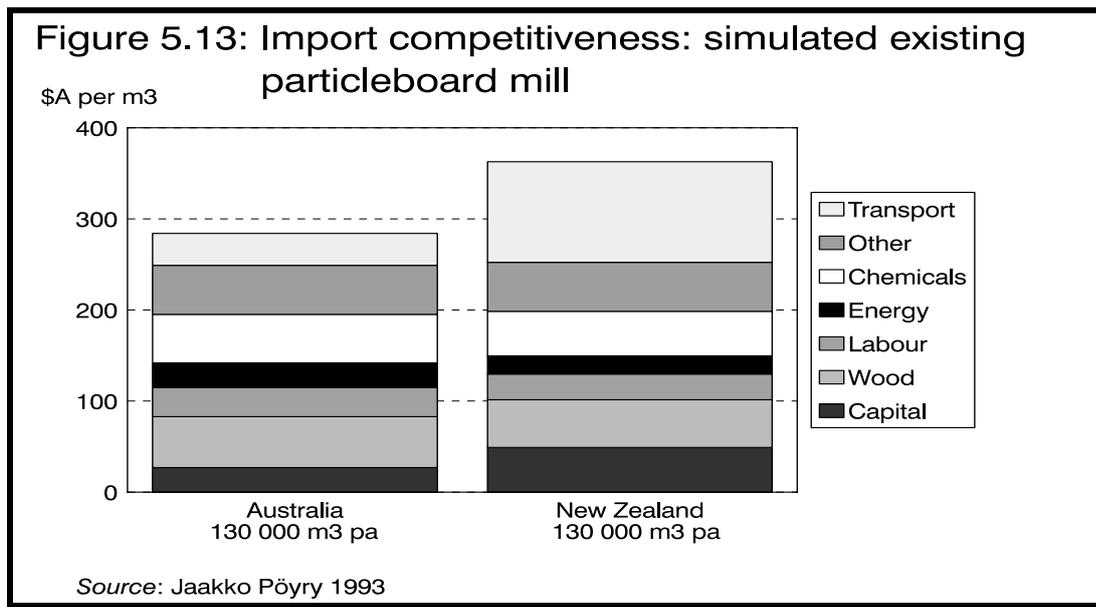


## Particleboard

There are presently seven particleboard mills in Australia, all of which use woodchip residues from sawmills as their main fibre source. This leads to a relatively high quality product compared with particleboard produced from sawdust — a common practice in other countries. The assessment of competitiveness of existing Australian mills is based on a plant with an annual capacity of 130 000 m<sup>3</sup>.

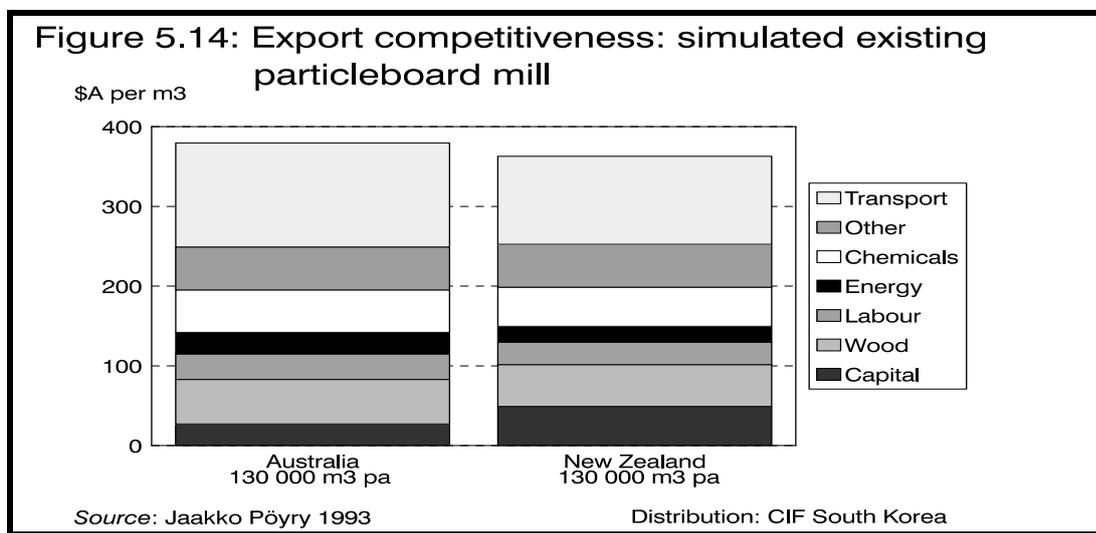
### *Import competitiveness*

Australia is estimated to have a marginal advantage in production costs compared with New Zealand, its major competitor. However, because of international shipping costs, local producers are estimated to have a significant price advantage in domestic markets (see Figure 5.13). Due to the bulkiness and relative low value of particleboard, transport costs account for 30 per cent of the landed price of New Zealand particleboard.



*Export competitiveness*

In supplying the South Korean market, Australian producers face transport costs of a similar order to those that New Zealand producers suffer in exporting to Australia. This dissipates the advantage Australia enjoys in its domestic market, leaving Australia at a slight competitive disadvantage in Asian markets (see Figure 5.14).

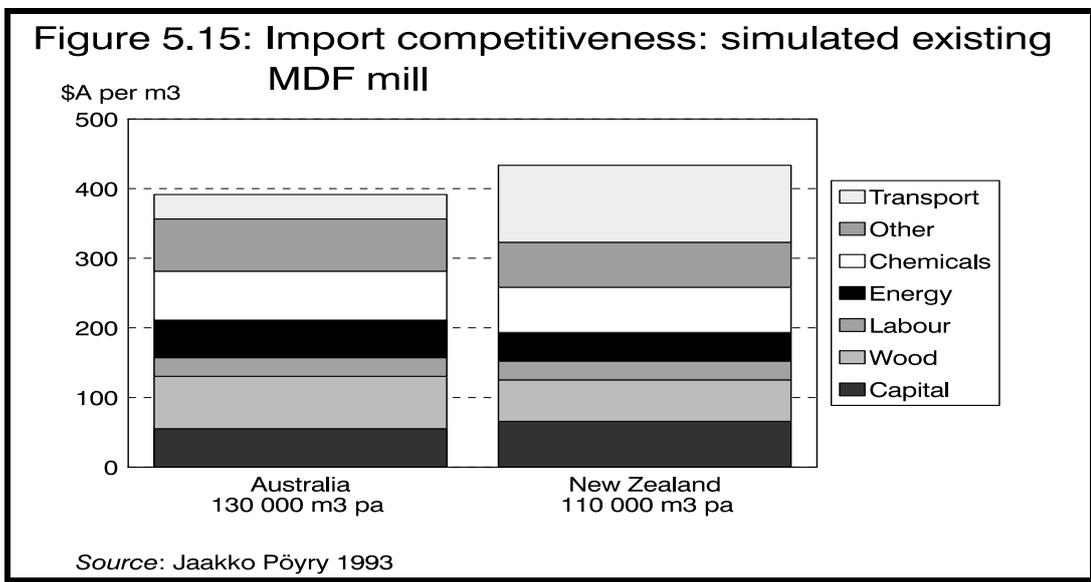


## Medium density fibreboard (MDF)

Australia has four MDF mills, all with a capacity of between 100 000 and 140 000 m<sup>3</sup> per annum. A mill with an annual capacity of 130 000 m<sup>3</sup> was used to assess the sector's current competitiveness.

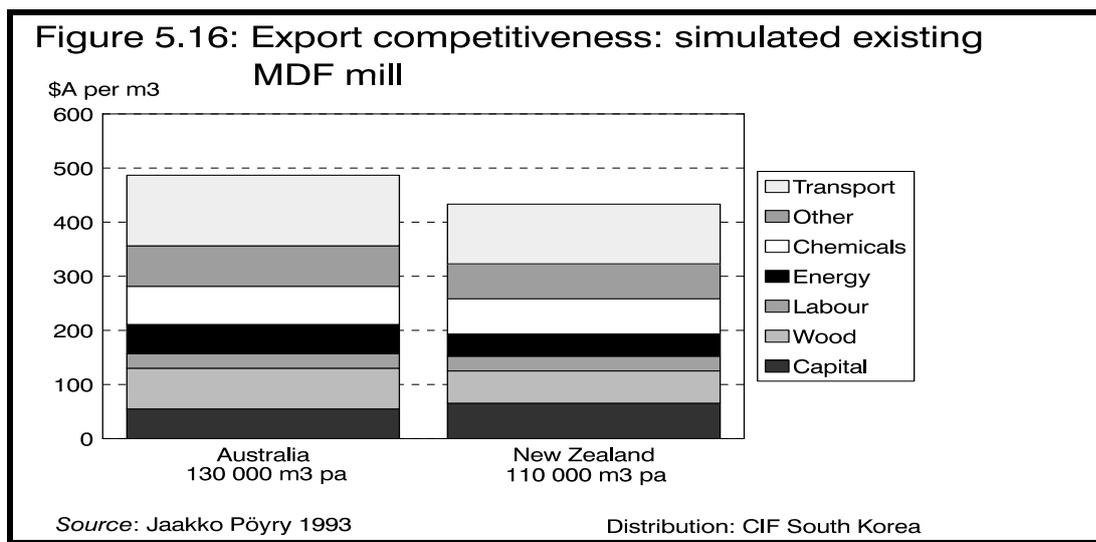
### *Import competitiveness*

Although production costs in Australia are higher than in New Zealand, Australia has a competitive edge over New Zealand in the domestic market (about 10 per cent) due to the impact of trans-Tasman shipping costs. Lower production costs in New Zealand reflect cheaper energy and wood costs (see Figure 5.15).



### *Export competitiveness*

On export markets, New Zealand's cost advantage places Australian MDF at a 10 per cent price disadvantage in supplying South Korea (see Figure 5.16).



### Competitiveness of new plant

To provide some indication of the potential competitiveness of Australian producers of wood products, the study also assessed the costs of new 'greenfield' plants in Australia compared with new plants in a range of competing nations. In all cases, it was assumed that the new plants would be of a larger scale than those used to assess the competitiveness of existing plant. Where relevant, the analysis also incorporates other factors which may enable new plants to improve their competitiveness (eg better utilisation of wood resulting from co-location with other wood processing operations and cost reductions associated with the use of improved technologies).

The study found that, with the exception of hardwood plywood and sawnwood, the use of new plant by both Australian producers and their overseas competitors would not substantially change the assessment of relative competitiveness based on existing plant. The study estimates that the competitiveness of Australian hardwood plywood would be improved significantly by new plant, although it would still rank as the least competitive sector. While the competitiveness of sawn hardwood also improves significantly, it is still not competitive against sawn softwood.

Details of the costs of new plants in Australia and overseas countries which are large international suppliers are provided in Appendix D.

### Assessment of cost competitiveness

In essence, the study undertaken for the Commission by Jaakko Pöyry found that, based on delivered costs, plants assumed to be representative of existing

Australian plants have a competitive edge (in terms of price) over leading overseas manufacturers in supplying the local market for all sectors examined except for hardwood plywood. The study also found that the cost of sawn hardwood appears to be significantly higher than its major competitor in many end-uses — locally produced sawn softwood (see Table 5.3).

**Table 5.3: Present competitiveness of Australian wood products**

<i>Competitiveness</i>	<i>Comments</i>
<b>Most competitive sector</b>	
<ul style="list-style-type: none"> <li>• Particleboard</li> </ul>	Very competitive in domestic markets, slight disadvantage in export markets.
<b>Moderately competitive sectors</b>	
<ul style="list-style-type: none"> <li>• Softwood plywood</li> </ul>	Competitive in domestic markets, slight disadvantage in export markets.
<ul style="list-style-type: none"> <li>• MDF</li> </ul>	Competitive in domestic markets, but at a slight price disadvantage in Asian markets.
<ul style="list-style-type: none"> <li>• Sawn softwood</li> </ul>	Competitive in domestic markets, but at some price disadvantage in Asian markets.
<b>Least competitive sectors</b>	
<ul style="list-style-type: none"> <li>• Sawn hardwood</li> </ul>	At a slight competitive advantage against imported hardwood in domestic markets, but in many uses is at a significant disadvantage to softwood in both domestic and export markets. Specialty niche markets may offer some opportunities.
<ul style="list-style-type: none"> <li>• Hardwood plywood</li> </ul> <p>in</p>	At a competitive disadvantage against Indonesia in domestic markets, and a significant price disadvantage in Asian markets, except for specialty markets.
<i>Source:</i> Based on Jaakko Pöyry (1993)	

In most cases, Australia's competitive advantage arises not because its underlying costs are lower, but because overseas transport costs offset higher local production costs. Thus, on export markets, where this advantage is lost, Australia is at a competitive disadvantage in the supply of all products. The disadvantage is least for softwood plywood and particleboard.

The major factors contributing to higher costs for Australian wood products producers are high energy costs compared to the United States, Canada and New Zealand and high transport costs relative to most other countries included in the study. For example, it costs about the same to ship a cubic metre of sawn softwood from Australia to Korea as it does from Chile to Korea, despite the fact that Australia is much closer to Korea than Chile. Thus, while proximity to Asian markets should be an advantage for Australia, in some cases high transport costs negate this advantage.

The simultaneous installation of new plant in Australia and in exporting nations does not substantially change the relative competitiveness of Australian producers. The major exception is hardwood plywood. Its competitiveness is estimated to improve, although it would still be at a significant cost disadvantage in both domestic and export markets.

## 5.4 Paper products

This section discusses the competitiveness of major paper products, namely:

- hardwood kraft pulp;
- newsprint;
- packaging and industrial papers;
- woodfree printing and writing papers; and
- light weight coated papers.

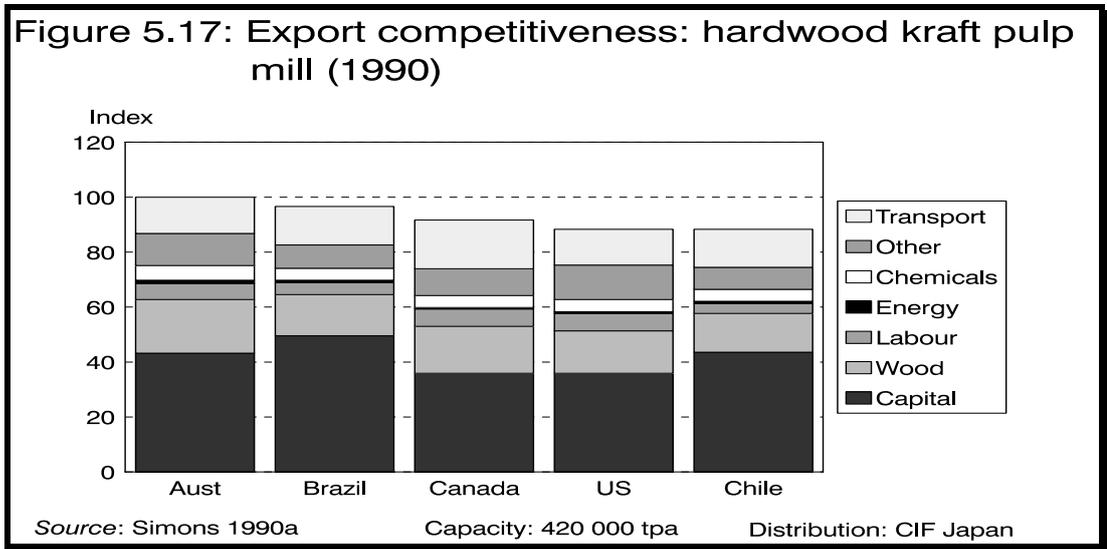
### Hardwood kraft pulp

Pulp is produced and widely traded to provide the fibre input for non-integrated paper mills. Demand for pulp is heaviest in countries which have large paper making industries, but limited domestic fibre supplies (eg Japan).

The Commission does not have data to assess the competitiveness of existing Australian pulp mills, all of which are part of larger integrated pulp and paper operations. However, Figure 5.17 shows the export competitiveness of a new, export-oriented hardwood pulp mill estimated in the Simons (1990a) study. The scale of the mill used in the analysis is similar to that proposed for Wesley Vale and under consideration elsewhere (eg in south-west Western Australia).

The 1990 study assessed that Australia would be slightly less competitive (though not uncompetitive) with new mills of the same capacity in Brazil, Canada, Chile and the United States. In contrast to some of the other commodities examined in this chapter, there is relatively little difference

between countries in the relative contribution to total costs made by each of the major cost components.



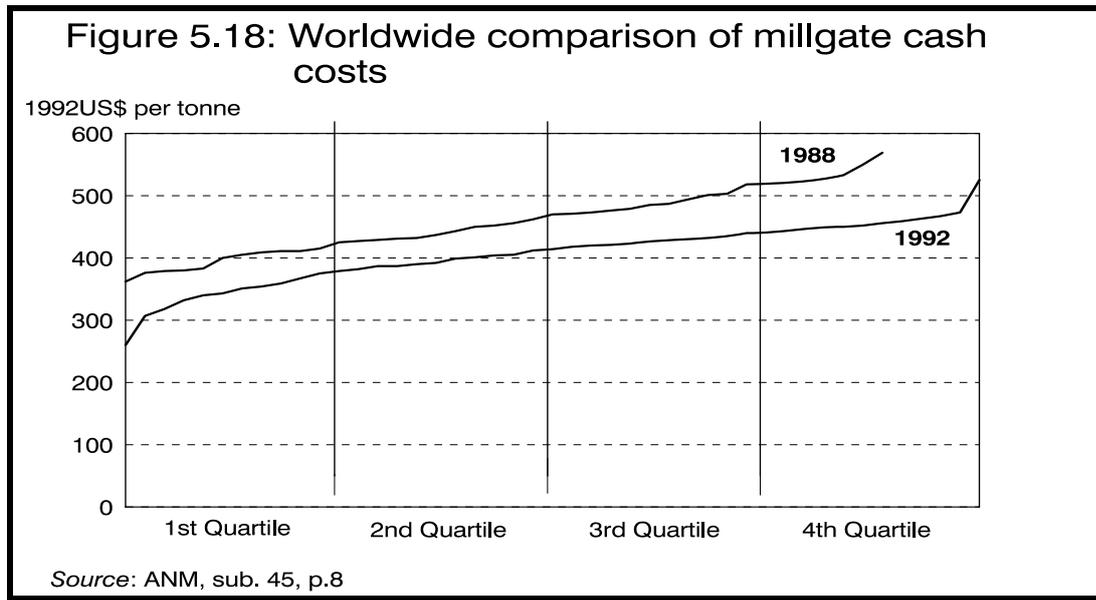
## Newsprint

Newsprint is a commodity heavily traded on international markets. World production is dominated by Canada and the United States, which collectively produce 45 per cent of world output. Australia imports 30 per cent of its domestic newsprint requirements. Most of Australia's newsprint production is undertaken by ANM.

ANM provided a summary of cost data for mills representing over 90 per cent of the world's newsprint capacity. The data, which relate to 1988 and 1992, cover around 80 to 90 newsprint mills (see Figure 5.18).

In 1988, the millgate cash costs of ANM's Albury mill were in the third quartile of all newsprint mills surveyed. Millgate costs at the mid point of the third quartile were about 15 per cent higher than costs at the mid point of the first quartile in 1988. ANM's older and smaller capacity Boyer mill was almost the highest cost mill in the survey.

Since 1988, ANM has reduced its costs, particularly in its Tasmanian operations. This is reflected in the higher ranking of both of its mills in the 1992 survey. In that survey, the Albury and Boyer mill were ranked in the second and third quartiles respectively. The 12 per cent drop in the (real) average cost of newsprint between 1988 and 1992 (as indicated by the downward shift in the supply curve in Figure 5.18), implies that the cost reductions achieved by ANM were somewhat larger than 12 per cent.



ANM stated that, as it expects the supply curve to drop by a further 15 per cent over the next four to five years, it must continue to achieve real annual cost reductions in excess of 3 per cent if it is to maintain its competitive position. According to ANM, the greatest potential for further reducing input costs is in the areas of fibre and transport costs. The company is currently installing plant at its Albury mill to enable it to manufacture newsprint from recycled fibre.

### Packaging and industrial papers

The major producer of packaging and industrial paper products in Australia is APM. In standard bulk grades (eg kraft linerboard), where international trade is significant, price is an important determinant of competitiveness. However, for some paperboard grades, board qualities (eg physical properties and printability) are important elements influencing competitiveness.

Table 5.4 ranks the competitiveness of APM's plants in both domestic and international markets. The table suggests that APM is among the most competitive ten per cent of the world's producers of kraft linerboard, corrugating medium and

Table 5.4: Competitiveness ranking of APM<sup>a</sup>

<i>Product</i>	<i>Domestic market</i>	<i>Export market</i>
Kraft linerboard	1	1
Corrugating medium	1	1
Plasterboard liner	1	1
Cartonboard	3	3

a The rankings refer to deciles, that is, a ranking of 1 indicates competitiveness corresponding to the top 10 per cent of producers.

Source: APM (sub. 44, p. 57)

and plasterboard liner. Production of cartonboard is less competitive, with the company placed in the third decile, or the top 30 per cent of producers in the world. According to APM, it is at a 10 to 20 per cent price disadvantage in the domestic market compared to imported cartonboard. However, it claims that the quality of both its service and product have enabled it to retain a high domestic market share in the face of cheaper cartonboard imports.

Table 5.5 provides a more detailed picture of the international competitiveness of packaging and industrial papers.

Table 5.5: Cost comparison: APM and other low cost producers

<i>Product</i>	<i>Market</i>	<i>Most competitive countries</i>	<i>Cost index APM</i>	<i>Cost index other competitors</i>
Kraft linerboard	Singapore	Australia, USA, Brazil	100	103
Corrugating medium	Singapore	Australia, Taiwan, Thailand	100	118
Plasterboard liner	Singapore	Australia, USA, UK	100	118
Cartonboard	Hong Kong	Australia, USA, Austria, Indonesia, Italy	100	98

Source: APM (sub. 44, supplementary paper 3, p. 2)

In Asian markets, APM has a significant cost advantage in corrugating medium and plasterboard liner compared to other low-cost producers. In the case of kraft linerboard production, APM is slightly more competitive than other suppliers. The company is at a slight disadvantage in supplying cartonboard to Asian markets.

### Woodfree printing and writing paper

Some woodfree paper grades, for example copy paper, are commodity papers, with price playing a leading role in determining competitiveness. Others, however, continue to be regarded as specialty papers. For these latter products, client service, delivery times and other non-price factors are important elements in determining competitiveness.

Woodfree papers are now only manufactured in Australia by APM. The company produces copy paper and a range of specialty grade papers.

Data on the cost competitiveness of local production are limited and exclude details of the plants formerly owned and operated by APPM. Table 5.6 compares APM's Maryvale operations with key low cost overseas producers in the production of copy paper. The data show that APM is at a slight cost disadvantage compared to the other designated countries, except Indonesia. According to APM, this cost disadvantage puts it in the second quartile in terms of cost competitiveness in domestic markets and in the third quartile in international markets. (It is generally accepted that a mill needs to be in the first quartile to be internationally competitive.)

**Table 5.6: Comparison of copy paper production costs**

<i>Country</i>	<i>No. of machines at mill</i>	<i>Combined capacity (tpa)</i>	<i>Total paper cost (Index)</i>
Australia (APM- Maryvale)	1	80 000	100
Brazil	2	148 000	95
Indonesia	1	117 000	104
South Africa	2	148 500	96
United States	1	261 000	93

*Source:* APM (sub. 44, p. 67)

### Light weight coated papers

Light weight coated paper (LWC) is only produced in Australia at the Wesley Vale mill in Tasmania. The Commission does not have any cost data to compare the competitiveness of existing plant. However, the share of the domestic market held by locally produced LWC paper has fallen in the face of increased competition from European and Scandinavian producers. This has occurred in an environment where the prices of most grades of printing and writing papers have failed to keep pace with inflation, wages and production costs.

## Assessment of competitiveness

The competitiveness of Australian paper products varies considerably between different grades. Some are highly competitive on both domestic and international markets, while others are significantly less competitive and are facing stiff competition from imports.

Although comprehensive data are unavailable for some products, overall, the evidence suggests that there have been improvements in competitiveness in many areas over recent years.

The competitiveness of different products within each category of paper differs. However, Table 5.7 summarises, in a broad manner, the thrust of the information on competitiveness available to the Commission.

<i>Competitiveness</i>	<i>Comments</i>
<b>Most competitive sectors</b>	
<ul style="list-style-type: none"> <li>Packaging and industrial papers</li> </ul>	Competitive on both domestic and international markets.
<ul style="list-style-type: none"> <li>Hardwood kraft pulp</li> </ul>	Little demand for market pulp in Australia because all paper mills are integrated. New, world scale, export-oriented pulp mill has potential to be internationally competitive.
<b>Moderately competitive sector</b>	
<ul style="list-style-type: none"> <li>Newsprint</li> </ul>	Competitive on domestic markets due to natural protection. Improvements in competitiveness required for export success.
<b>Least competitive sectors</b>	
<ul style="list-style-type: none"> <li>Most light weight coated and woodfree printing and writing papers</li> </ul>	Copy paper and many LWC papers (exceptions include some specialty papers such as those produced by APM at the Shoalhaven plant formerly owned by APPM) are under strong pressure from imports.

The major factors disadvantaging Australian paper producers relative to their overseas counterparts are high wood costs, relative to those in developing countries, and high transport costs, compared to both developing and developed countries. Labour costs generally compare favourably with other developed nations, although they are higher than in many developing countries. Factors which help influence current wood and transport costs in Australia are discussed in the following two chapters.

# **PART C**

## **IMPEDIMENTS TO**

## **IMPROVED COMPETITIVENESS**



*This part of the report discusses the major impediments identified by participants to improved economic performance by Australia's forest products industries.*

*For the purposes of this report, the Commission has defined an impediment as a factor affecting efficiency which is directly controllable by governments, other than those factors which relate to the management of the economy generally (eg interest rate policy and other elements of the Government's monetary policy).*

*The discussion of impediments is divided into three chapters:*

- *Chapter 6 explores issues relating to public and private wood supplies.*
- *Chapter 7 focuses on government provided services, namely energy, land transport and port and shipping services.*
- *Chapter 8 discusses a range of other impediments — labour market and training issues, project approval processes, government measures to promote higher levels of paper recycling, and building codes and certain related issues.*



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## 6 WOOD SUPPLIES

The significance of wood costs as a proportion of operating costs varies widely between forest products. For some products — such as green scantling and framing timber — wood is the most significant component of costs. However, for many other products, wood costs are exceeded by expenditure on other inputs. For example, the major component of operating costs in the production of lightweight coated papers, newsprint and particleboard is chemicals, energy and distribution respectively.

Notwithstanding this variation, most producers participating in the inquiry were adamant that the major factor inhibiting the future development of the Australian forest products industries is the lack of security associated with future wood supplies. Indeed, many fear that it will not be possible to sustain even the current levels of activity, let alone justify new investment, without greater resource security. The following comments are representative of the concerns expressed.

The Victorian Government (sub. 25, p. 11) stated:

... new developments dependent on the public forest resource are not likely to proceed without Government commitment to provide long-term assurance of supply. It is considered that industry concerns on this matter have related to uncertainty about Commonwealth actions rather than actions by the Victorian Government.

Briggs and Sons (sub. 7, p. 1), a sawmilling business located in the Dorrigo region of New South Wales, stated:

The company's major barrier to productivity is lack of resource security. We have now halted all new investments and research and development projects until resource security is available to NSW hardwood operations. Lack of resource security is costing the company between \$1 million to \$2 million per annum ...

The Institute of Foresters of Australia (sub. 5, p. 4) commented:

... there has been a period of several years of contradictory and adverse signals sent to forest-based industries and investors. Unfortunately, it has now reached the stage where Australia is regarded in overseas investment circles as an 'unstable' investment environment.

A recurring theme was that, although governments at all levels have contributed to perceptions of poor resource security, actions by the Commonwealth Government have been the major cause of concern. Intervention by the Commonwealth Government in the Wesley Vale pulp project was cited as the major cause of uncertainty, not only in relation to investments in pulp mills, but to new investment in all forest industries. Statements by Commonwealth

Ministers and extended powers recently assumed by the Commonwealth (eg powers provided under the endangered species legislation and the international convention on biodiversity) were also said to reduce resource security and deter new investments. For example, NAFI (transcript, p. 385) stated that:

... we see the Commonwealth role expanding very fast, and no capacity whatsoever exists to have any form of legally backed agreement for wood supplies in relation to the activities of the Commonwealth ... we have been advised by international bankers that, until that position is resolved, they are not prepared to fund forestry industry development in this country.

A number of previous inquiries (eg RAC 1992a and ESD 1991) have identified problems in determining the access of the forest products industries to wood in public native forests. Underlying the problems has been increased community concern about the need to better recognise conservation and environmental values. As a result, governments since the mid-1980s have become less willing to commit themselves to supplying wood on a medium/long-term basis. At the same time, the area of native forests designated as conservation reserves has increased significantly, thus reducing areas in which logging can occur.<sup>1</sup>

Previous inquiries have proposed measures intended to improve the objectivity and transparency of land use decisions and to reduce the costs associated with uncertainty surrounding resource security. Some measures have already been adopted. For example, the 1992 National Forest Policy Statement (NFPS), which was agreed to by the Commonwealth, State (except Tasmania) and Territory governments, outlines a broad policy framework for the sustainable management and use of Australia's forests. Most producers consider that the initiatives enunciated in the Statement will improve resource security, although there are concerns that it does not provide sufficient resource security and that the political 'will' required to implement it fully may not exist. For example, NAFI (sub 71, p. 3) stated:

The NFPS's finely balanced provisions, each conditional upon each other, is a recipe for impasse and investment uncertainty.

Similarly, the Victorian Government (sub. 84, p. 1–2) expressed reservations about the uncertainty associated with the implementation of the National Forest Policy Statement:

The Government remains concerned by the uncertainty of the Commonwealth Government's commitment to resource security ... The current lack of end points for Commonwealth requirements is unsatisfactory to the Victorian Government and to investors ...

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<sup>1</sup> The area of native forest included in national parks and reserves increased from 4.6 million hectares in 1987 to 6.2 million hectares in 1990 (ABARE 1992b). The total area of native forest in Australia amounts to 41 million hectares.

Because of the work undertaken by previous inquiries, the Commission has not attempted to replicate the analysis of some key land use issues. In particular, it has not attempted to address the criteria by which forest resources should be allocated among competing commercial and non-commercial uses, or to consider how existing institutional arrangements could be modified to reduce fragmentation and conflict within governments and to overcome coordination and duplication problems between governments. In addition, the Commission has not attempted to assess whether the levels and basis of log royalties currently charged by government agencies are ‘appropriate’. This latter matter has also been examined by many previous reports (eg IC 1991d and 1992b, RAC 1992a, ABARE 1990, CIE 1990 and Cameron and Penna 1988).

It is important to stress that the decision not to address these matters reflects only a desire to avoid unnecessary duplication. It should not be interpreted to imply that these matters are not important. On the contrary, the Commission supports the views of most producers participating in this inquiry that the early resolution of outstanding land use issues and improvements in the institutional arrangements are crucial to the industries’ future development.

*To improve resource security, the Commission considers that the Commonwealth, State and Territory Governments should accelerate the implementation of measures required to meet the commitments enunciated in the National Forest Policy Statement. Governments should outline the processes involved and announce a timetable for implementation of the various initiatives.*

There are, however, a number of important issues concerning wood supplies which the Commission has explored. These relate to corporatisation and privatisation of publicly owned forest management agencies, compensation issues, private wood supplies and government export controls. However, as an introduction to discussion of these matters, the following section considers sovereign risk — the factor which most participants consider underlies uncertainty about future wood supplies.

## **6.1 Sovereign risk**

The term ‘sovereign risk’ refers to the risk borne by entrepreneurs that governments will change ‘policy’ from that which applied at the time investment decisions are made. In recent years, some of the more controversial policy changes have related to resource-based industries, such as the mining and forest products industries. However, sovereign risk is a factor which influences investment decisions in most spheres of economic activity. For example, investors in manufacturing activities have to allow for the possibility

that announced programs of phased tariff reductions will be modified at some later date, while investors in virtually any activity can be affected by changes in taxation policy. Sovereign risk can affect most facets of an enterprise's operations, including the cost and availability of inputs, operational practices, product quality and prices, and market access.

In the context of this inquiry, sovereign risk was mainly raised as a concern in relation to the security of future wood supplies. The key issue is not about the quantities of wood that exist, but its availability to producers of forest products. For example, NAFI (sub. 24, p. 3) stated:

Contrary to popular opinion, there is no shortage of sustainable volumes of industrial wood supply ... Instead, access to this wood is constrained by political decisions, lack of infrastructure and unfavourable prices.

Even where long-term contracts exist with state government instrumentalities, producers fear that intervention by the Commonwealth Government could mean that such contracts cannot be honoured. This concern is greatest for wood requirements that are sourced from public native forests. However, in some quarters, fears are harboured that environmental concerns could lead to the introduction of regulations (Commonwealth, State or local government) which inhibit logging, not only in public forests and plantations, but also in privately owned forests and plantations, including those specifically acquired for logging purposes. (Such developments have occurred in some other countries — see Chapter 2.) One firm — APPM — also expressed concern that the Commonwealth could intervene to prevent the clearing of native vegetation to establish tree farms. The unpredictability of government administered log prices was also seen as another, albeit relatively minor, source of sovereign risk.

In many other industries, the risk of a major supplier failing to fulfil a contractual obligation may not have major consequences. It will frequently be possible to procure supply from another domestic producer or from importers. Alternatively, it may be possible to use a substitute product.

While there may be some scope for sourcing wood from elsewhere or, in some instances, substituting wastepaper for virgin pulp, these possibilities are limited for the forest products industries. In many regions, state government forestry services are the sole available source of wood supplies. Indeed, in terms of native hardwood — around which most concern centres — supply throughout Australia is largely in the hands of state government instrumentalities. The scope for using a substitute for wood is limited to certain papers, and by the availability of suitable wastepaper and transport costs. It can also require significant additional investment.

Given these circumstances, it is understandable that wood processors wish to have some guarantee of future wood supplies. At present, many have medium-to-long term contractual arrangements with state government agencies. For example, the implementation of the 1987 Timber Strategy has resulted in the allocation of 15 years sawlog licences in Victoria. Similarly, in Western Australia, legally enforceable contracts of up to 15 years duration exist. Legislated agreements under the State Agreements Act have also been used to provide resource security in Western Australia. In contrast to these arrangements, licences issued by the New South Wales Forestry Commission are generally of a much shorter duration, with entitlements being determined annually.

Despite the availability of medium-to-long term arrangements in a number of states, participants generally consider that such arrangements do not provide them with long term security, primarily because they do not preclude Commonwealth Government intervention.

Few examples of Commonwealth Government interventions and policy reversals were provided to support concerns expressed about the high level of sovereign risk associated with investment in the forest products industries. The extent of government involvement in the supply of the industries' key input, and the limited substitution opportunities, may mean that sovereign risk is higher for the forest products industries than it is for many other industries. Nonetheless, it is possible that the magnitude of the risk is overstated. However, the basis of producers' assessment is essentially a second order issue. The key issue for new investment decisions is producers' *perception* of sovereign risk. In this regard, it is abundantly clear that a wide range of producers in the forest products industries (and their financiers) consider that sovereign risk *is* high, and that this factor is inhibiting new investment. In these circumstances, there is a probability that investment opportunities will be lost, not only to the forest industries but, if investors judge sovereign risk to be lower in other countries, to Australia as a whole. As noted by Bunnings, it also tends to bias investment decisions in favour of projects with shorter payback periods.

At the same time, it is important to recognise that sovereign risk is not the only factor which inhibits new investment in forestry projects. All factors which adversely affect projected rates of return act as disincentives to new investment. For example, quantitative analysis undertaken by the Commission suggests that, even with some relatively conservative assumptions about the extent of new capacity, lower processing costs, as well as improved resource security, would be required to justify the new investment (see Appendix G).

Changes put in place by governments in recent years will reduce the exposure of the forest products industries to sovereign risk. As noted above, many of

these matters have been explored in some depth in other reports (eg means of improving institutional frameworks and government decision-making processes), and the Commission does not propose to duplicate this work. However, there are some measures relating to wood supplied by government instrumentalities which would improve efficiency, and which may also have implications for resource security, which the Commission wishes to elaborate on. These concern:

- corporatisation of public forestry bodies;
- privatisation of public forestry bodies; and
- compensation for government actions which lead to the withdrawal of log supplies.

These matters are discussed in turn below. Issues specific to private wood supplies and government export controls are discussed in subsequent sections of this chapter.

## **6.2 Improving the efficiency of Australia's forestry agencies**

Over the last few years, there has been significant criticism of a wide range of government agencies engaged in supplying goods and services to industry (eg public electricity, water and postal authorities). Reviews have concluded that, in many cases, services have not been delivered at least cost, and that pricing practices have been inappropriate. These findings have largely been attributed to limited incentives to improve efficiency and unclear, and often conflicting, objectives that many government business enterprises have been required to fulfil.

Past studies and comments made by organisations participating in this inquiry suggest that there is also considerable scope for improving efficiency in government forest management agencies. Forestry bodies have traditionally had to perform a range of commercial and non-commercial functions (eg wood production as well as the management of flora and fauna habitats, water catchment areas and recreational reserves), and have also been subject to on-going political pressures. These factors contributed to the development of a wide range of inefficient practices. For example, a 1990 report into the operations of the New South Wales Forestry Commission (Public Accounts Committee 1990) found that it lacked focus, had serious deficiencies in its management structure and had not developed adequate public consultation procedures with relevant community interest groups.

Log allocation policies employed by government agencies can be used to illustrate the inefficiencies which have existed.

Prior to the mid-1980s, the principles underlying the determination of log allocations had little in common with commercial realities. The policies were not clearly defined, and state forestry bodies were able to exercise considerable discretion. For example, forestry agencies could sell wood to whomever they saw fit. Where wood was sold by tender, forestry agencies could prohibit potential bidders from participating if they had breached conditions of earlier agreements. Similarly, allocations to mills which were not deemed to have performed “satisfactorily” could be reduced. In some cases, log allocation was contingent on licensees meeting prescribed conditions. For example, WA Chip and Pulp was required by the Western Australian Government to transport all of its woodchip requirements from its chipping mill to its stockpile areas by Westrail. In recent years, log allocation guidelines have been developed in a number of states, although there is still criticism that the administrative processes are not sufficiently transparent and allocations are not determined on an appropriate commercial basis (eg in some states, forestry agencies will not supply logs to interstate processors).

### **Corporatisation of forestry bodies**

One way of improving performance and of placing government bodies on a more commercial footing involves corporatisation.

Corporatisation refers to administrative changes made to publicly owned bodies with the object of increasing efficiency. It seeks to improve performance by compensating for shortcomings in the incentives faced by government executives to manage efficiently. Government managers, for example, seldom face the risk of takeover or insolvency and, if performance is poor, are less likely to lose their job than are private sector managers. Corporatisation attempts to address these weaknesses by introducing administrative mechanisms which are intended to replicate many of the incentives for efficient management which apply to privately owned businesses.

Broadly speaking, corporatisation can be considered as having two major strands. One involves changes to provide managers of government enterprises with greater managerial autonomy in exchange for higher levels of accountability (eg increased freedom to determine pricing and investment decisions in return for accepting responsibility for meeting prescribed performance targets). The other strand consists of initiatives to establish a more neutral market environment between government and private enterprises (eg requirements that public bodies be liable for the same government taxes and

charges as their private sector counterparts). Underpinning all initiatives is the establishment of clear and non-conflicting objectives that relate to commercial performance only. This requires that any non-commercial activity be separately identified and costed, and be funded by a direct government appropriation from the budget.<sup>2</sup>

In the Commission's view, corporatisation of government forest management bodies would increase the incentive for the efficient management of Australia's forest resources. Indeed, most governments have implemented, or are in the process of implementing, measures to corporatise, or partly corporatise, their forestry instrumentalities. For example, corporatisation of all or part of the activities of forestry agencies is currently under way in Victoria, Tasmania, Queensland, South Australia and New South Wales. However, the nature, extent and pace of reform varies considerably between states, and some have yet to make a commitment as to how far they will follow the corporatisation path.

*In the Commission's view, efficiency and resource security will be enhanced if all governments pursue corporatisation programs for forestry agencies to the fullest extent possible. This would involve implementing corporatisation packages in full, rather than selectively introducing only some of the measures.*

The initiatives which comprise the corporatisation package advocated by the Commission are set out in Box 6.1. The individual components have been discussed in some detail in previous Commission reports (eg IC 1991b and 1991c). However, in the context of the forest products industries, some issues require further elaboration. These concern: the activities which could be encompassed by corporatised forestry entities; the treatment of non-commercial requirements (ie community service obligations (CSOs)); and the basis for determining the appropriate rate of return for corporatised forestry agencies. These matters are discussed below.

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<sup>2</sup> For a more detailed discussion of corporatisation see IC (1991b, 1992a).

### Box 6.1: Components of a corporatisation package

To place public enterprises on a commercial footing, governments should:

- provide clear and non-conflicting objectives that relate to commercial performance only;
- identify, cost and directly fund any community services from the budget so as to make subsidies transparent;
- vest management in a commercial board accountable to Parliament through a minister;
- introduce performance monitoring based on financial and non-financial targets, and establish a system of rewards and penalties for managers related to performance;
- separate out regulatory functions — enterprises should not be both an umpire and a player;
- make authorities liable for all taxes and government charges;
- require dividends at levels equivalent to similar private companies;
- remove constraints such as government employment policies and advantages such as those associated with government borrowing guarantees;
- require adoption of uniform and commercial accounting practices;
- make corporatised authorities subject to the Corporations law;
- introduce effective natural monopoly regulation and remove advantages, such as exemptions from the Trade Practices Act, that do not apply to private companies; and
- remove regulatory and legislative barriers to entry.

### *Activities to be corporatised and CSOs*

Government forest management agencies are generally charged with the management of forest areas that have been set aside as conservation reserves (eg nature and recreation reserves), multiple use forests (eg forests which are managed for wood production, water catchment and recreation purposes), other crown land and state owned plantations. Of these, plantations are sometimes seen as commercial ventures while, at the other extreme, conservation resources are generally managed in the interests of the community as a whole on a non-commercial basis.

Given this diversity of functions, there are a number of corporatisation options. These included corporatising: all areas managed by government forestry agencies; all areas in which some degree of commercial activity takes place; or corporatising only these areas dedicated to wood production (eg plantations). While attractive in terms of having to deal only with commercial activities, creating a corporatised public entity to manage only public plantations would result in the bulk of the commercial activity (ie wood supply) still being produced by entities operating largely on a non-commercial basis. On the other

hand, corporatising all areas of forest management may unduly complicate the separation and funding of commercial and non-commercial activities.

*The Commission favours corporatising all areas which are managed, solely or in part, for wood production. Conservation reserves and other areas of state owned land used solely for non-commercial functions would continue to be managed by separate government funded bodies. However, because of the extensive community resources which they would control, such bodies should be required to report regularly on the estimated value of the assets which they manage. Under this option, corporatised bodies would not be responsible for regulatory functions.*

Multiple use native forests and plantations could be controlled by a single corporatised entity. However, rather than create a single corporate body in each state, it would be better to create two separate bodies — one to manage plantations and another to manage areas of native forest used for wood production. Another alternative would be to form regional timber corporations which would sell wood from all public resources within a region.

Some participants at the draft report hearings were concerned that the adoption of this proposal could lead to responsibility for public wood being fragmented between numerous public bodies in each state. However, if this option were pursued, the Commission considers that practical considerations would limit the number of agencies to two, or perhaps three, per state.

It is possible that the establishment of more than one agency in a state would increase overhead costs. However, even if some overhead costs were to increase, such costs would need to be compared with the benefits that could arise. In particular, the arrangements may permit some degree of competition to develop within the government sector, as well as between public and private wood suppliers. This would create additional pressure to function efficiently. Having more than one public corporation within a state would also provide an opportunity, for performance monitoring purposes, to draw on key operating and financial data for each to help assess comparative performance (so-called 'yardstick' competition). Victoria has already announced that its plantations and its commercial timber operations in native forests will be managed by separate entities.

Another concern that surfaced at the draft report hearings was that non-wood outputs associated with multiple use native forests (eg the maintenance of recreational areas, watershed values, historical and scenic sites) would be put at risk if such forests were managed by corporatised bodies which are required to meet commercial objectives. The Commission considers that this would not occur for a number of reasons.

- governments could specify (and separately fund) non-commercial functions that they require their corporatised bodies to perform (see discussion below);
- corporatised bodies would be subject to forestry codes to ensure that wood is harvested on a sustainable yield basis, wildlife corridors are preserved, and that environmentally sound forestry practices are employed; and
- corporatised bodies would have an incentive to adopt good management practices and develop their forest resources in order to protect their longer term commercial interests.

It also needs to be recognised that, under the Commission's proposal, corporatised bodies would not be responsible for the management of conservation and nature reserves, and of other forest areas in which logging is banned (eg certain water catchment areas).

As noted above, the creation of corporate entities based upon areas used for timber production would still entail costing and funding a number of CSOs in multiple use forests — such as the provision of picnic areas and camping grounds, and the maintenance of access roads. In the case of plantations, the extent of CSOs would be less and, in many cases, there may be none.

In practice, it is difficult to determine how much a corporatised forestry body should be reimbursed for performing CSOs. This is mainly because there are difficulties in separating costs associated with wood production from costs associated with performing CSOs. For example, difficulties exist in apportioning the cost of fire protection and road maintenance between wood production and non-wood forest uses.

Present practices are, in part, a reflection of this difficulty. For example, while corporatisation of forest agencies in Victoria is, in many respects, well advanced, some joint costs are not currently allocated.

In some instances all of the costs of activities necessary to produce commercial reserves have been treated as 'commercial' regardless of whether the primary objective of the activity was 'commercial', or non-commercial or 'shared'. This is likely to have resulted in significant overstatement of commercial costs for some native forest areas ... (DCE, 1992).

Similarly, the Western Australian Department of Conservation and Land Management (CALM) acknowledges that, at the present time, some costs which should be allocated to non-commercial activities (eg some road maintenance costs) are currently borne by wood users.

*The Commission recognises that it is difficult to apportion joint costs and that, in some cases, the allocation may necessarily be somewhat subjective. Nonetheless, it is important that all CSOs be fully funded by government rather*

*than be met, wholly or in part, by contributions from wood-using industries. This requires that all costs be allocated. To increase transparency, the basis of allocation should be described fully in published financial statements. A necessary pre-requisite is that financial accounts be operated on an accrual basis, and not on a cash basis as is current practice in some states (eg Queensland and Western Australia).*

Government requirements that forests be managed on a multiple use basis imply that the value of the amenities is greater than would be the case if such forests were managed as dedicated wood zones.<sup>3</sup> Consequently, in some circumstances (eg when governments intervene to prevent logging of certain areas within a multiple use forest), it may be more appropriate to assess CSO payments on the basis of 'opportunity costs'. This would involve basing payments on the returns forgone by corporatised forestry agencies because of the government directive.

### *Rate of return requirements*

In principle, corporatised entities should be required to meet a rate of return on assets employed and make dividend payments to their shareholders (ie governments). The rate of return target should be based on that which a private investor would seek, taking into account the relevant risks.

In practice, there are difficulties in establishing the basis and level of the appropriate rate of return target. However, some governments (eg the Victorian Government) already require that a rate of return target be met on native forest wood production.

Just as private companies' profitability varies from year to year, it would be appropriate to also expect some variation in the return achieved by corporatised agencies. Consequently, a rate of return target should be viewed as a medium term goal (ie as a return to be met, on average, over 5 years or so). Framing the requirement in this manner would allow forestry corporations some flexibility in adjusting output rates and log prices in response to changes in market conditions.

### *Exposure to Trade Practices Act and Prices Surveillance Act*

NAFI stated that there have been instances where supply by forestry agencies has been conditional on little or no wood being acquired from other sellers. It also stated that the Victorian Government has refused to allow pulplogs to be transported to New South Wales for processing. Indeed, the Commission understands that it has been commonplace for state forestry agencies (eg the

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<sup>3</sup> Wood and non-commercial activities are not always competing uses. For example, in some situations, logging can enhance both the aesthetics and the wildlife of native forests.

Queensland Forestry Service) to ‘require’ processing of all logs they sell within their own state (eg by not granting logging licences to mills located in adjacent states).<sup>4</sup>

*Corporatised forest management agencies should not be obliged, nor able, to discriminate between wood processors on the basis of location, to make sales conditional on wood not being acquired from other sellers, or to engage in other discriminatory practices.*

Most publicly owned bodies are exempt from the provisions of the Trade Practices Act (TPA) and the Prices Surveillance Act (PSA). However, since corporatised bodies are expected to operate in a commercial environment and to be subject to similar disciplines and incentives to those faced by private enterprises, they should also be subject to the provisions of the TPA and PSA.

The market power available to public forestry bodies as the major or, in many cases, the sole forest grower in a region provides an additional reason for making corporatised agencies subject to the TPA and the PSA. In the absence of some safeguard against the misuse of market power, corporatised agencies could be tempted to meet their rate of return target merely by increasing log prices (rather than also focussing on reducing costs), or by engaging in discriminatory practices.

A recent report commissioned by the Commonwealth Government (Hilmer 1993) proposed that “government owned businesses” no longer be exempt from the provisions of the TPA.

#### *Advantages from corporatisation*

The specification of clear commercial objectives, improved performance monitoring, the need to meet a rate of return target and the greater transparency inherent in the corporatisation process would provide significantly increased incentives for forests to be managed efficiently so as to maximise the return to the community. Corporatisation would also force forestry bodies to be more accountable for their performance and expose their activities more fully to public scrutiny.

The Queensland Government (sub. 83, p. 9), which plans to corporatise its commercial forestry operations by the end of 1995, stated that the primary benefits from corporatisation are likely to be:

- increased allocative efficiency as a result of more economically efficient pricing of outputs

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<sup>4</sup> The Queensland Government is presently considering a proposal to remove all trading restrictions on Crown native forest sawlog and pole sales.

- longer term performance efficiency gains ...
- transparency in the costs of providing community service obligations (CSOs)
- increased service quality as a result of performance monitoring of CSOs and core activities.

Judging by its impact on other government instrumentalities, corporatisation could result in cost savings through more efficient use of staff and through greater utilisation of contract labour to perform some functions traditionally undertaken in-house (eg road maintenance). Whether or not this results in consequent reductions in log prices would depend on the manner in which log prices are determined and on the magnitude of cost reductions compared with the impact of factors which would increase costs (eg requirements to pay all relevant government taxes and charges).

A greater commercial focus would make public wood suppliers more conscious of users' needs and of the implications of pursuing alternative marketing strategies. This could result in some forests no longer being managed primarily for sawlog production, but being managed primarily for pulp logs on shorter rotations. In some instances, the greater emphasis on commercial objectives could result in some areas no longer being used for timber production, or in some plantations not being replanted. This may be particularly so in the case of plantations because, as stated by ABARE (1990, p. 30):

... the establishment of some plantations has been influenced more by the availability of financial assistance and suitable land than by evaluation of costs and benefits.

Improved performance by forestry agencies would benefit all downstream users. While there is no information to reliably quantify the extent of the potential benefits, the effects of some assumed improvements are illustrated in Appendix G.

From the industries' perspective, the increased autonomy provided to government agencies by corporatisation should engender greater confidence that wood allocations will be less subject to political interference for non-commercial ends (eg allocations will be less influenced by regional employment considerations). From the perspective of forestry corporations, greater recognition of the mutual dependency existing between wood suppliers and using industries may increase the incentive to enter into long-term supply agreements in order to secure a guaranteed market for at least part of their future wood production. This is currently the situation in a number of other industries in which both processors and producers require security of supply (eg many fruit and vegetable industries, and most mining industries).

Increased customer orientation should also lead to greater consideration of the manner in which timber is produced from public forests. This would, for

example, involve considering the possibility of relocating wood harvesting zones to reduce distances to processing centres.

To the extent that corporatisation would remove some of the financial advantages presently enjoyed by public forestry bodies (eg limited liability to pay taxes and to pay annual dividends to governments), it would encourage the development of (or eliminate a major deterrent to) private plantations and agroforestry. This would increase the scope for the forest industries to diversify their sources of wood supply. To the extent that diversification occurs, government forestry corporations would be exposed to a degree of competition.

The transparency and basis for establishing log prices and log allocations should be improved by corporatisation. In this inquiry, many participants criticised what they perceive as ad hoc arrangements for determining log allocations, and the resultant rapid and unpredictable increases in log prices that has occurred in recent years in some states. Producers indicated that the basis for establishing log prices needs to be more transparent to enable producers to estimate future outlays with greater certainty. Producers were also critical of initiatives in some states to use log prices and allocation methods as a means of promoting higher value added activities. (This issue is discussed in Chapter 10.)

Corporatisation should encourage greater use of market-based mechanisms rather than rigid administrative procedures as a means of determining log allocations and prices. In the past, administratively determined allocations have often encompassed fixed annual supply levels and penalty charges linked to 'take-or-pay' provisions. Log prices have frequently been based on formulae which rely on historical cost factors, and which incorporate no provision for adjustment over time or for changes in product markets.

A more commercial approach would entail consideration of all supply and demand factors for both the resource itself and user industries. It would involve greater resort to pricing logs according to their residual value and, provided there are a number of potential buyers, selling a higher proportion of logs by competitive tender.<sup>5</sup> In the interim, permitting licences to be both divisible and tradeable would complement a more market-based approach to log pricing by providing greater scope for existing producers to expand (or contract) operations and for new entrants to commence operations in response to changing market circumstances. If this flexibility is not available, the scope for

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<sup>5</sup> Some states currently sell a proportion of logs harvested by tender. For example, Tasmania tendered around 60 000 cubic metres of eucalypt sawlogs in 1992. The November tender involved 38 500 cubic metres offered in 77 parcels, each of 500 cubic metres per year. The Queensland Government stated that more than 60 per cent of its Crown timber is currently sold under competitive tendering systems. It intends to extend competitive tendering to cover all major Crown wood sales.

rationalisation is reduced, as are the opportunities for improving competitiveness.

*Licences and associated log entitlements issued by state and territory government forestry agencies should be both divisible and tradeable.*

The adoption of a more commercial approach to log pricing by forestry agencies would reduce the incidence of logs being inappropriately priced. It would also help ensure that forest resources are allocated to their most efficient use. For example, if market-based pricing mechanisms do not generate sufficient revenue to enable forestry corporations to earn an appropriate rate of return on their assets, this could indicate a need to reduce logging activities. Conversely, the achievement of relatively high returns could signal a need to consider expanding commercial wood activities.

As stated above, the Commission has not attempted to estimate whether current log prices are efficiently based — this issue has been canvassed by numerous previous inquiries. One of the more recent studies — the RAC inquiry — found that, in the past, both sawlogs and pulplogs had been underpriced. However, the RAC (1992a, p. 289) concluded that, following price increases:

... significant real sawlog and pulplog price increases are unlikely to be necessary to bring log prices into line with any [efficient] price benchmark.

In contrast to this finding, a recent report into the operations of the Victorian Department of Conservation and Natural Resources (Victorian Auditor General's Office 1993, p. 137) pointed to significant underpricing of logs from native forests:

Based on the 1990-91 results, audit observed that if the loss on the sale of hardwood was to be eliminated solely through an adjustment in royalties, a 55 per cent increase would have been required. An even greater increase would be required if the target return of 4 per cent was to be achieved. Softwood royalties would need to have increased by 73 per cent in order to generate the required target rate of return.

To the extent that logs are not appropriately priced, forest resources will not be used efficiently. If logs are under-priced, user industries are subsidised and there is an incentive for harvesting rates to be higher than those required to optimise the return the community receives from its forest resources. Conversely, over-pricing of logs will result in under-utilisation of forest resources and user industries effectively being taxed.

As noted in the previous chapter, many producers participating in this current inquiry claim that log prices are now too high, and well above those paid by overseas competitors. This could suggest that Australian forestry agencies' costs and/or prices are excessive. Alternatively, it could reflect different cost structures (eg lower labour costs) or government assistance provided in other

countries. To the extent that it is attributable to different cost structures or government assistance, the scope for reducing the difference between Australian and overseas prices is limited. Greater scope exists for reducing log prices which are inflated by excessive costs or inefficient pricing practices. This section has considered one option for achieving this — corporatising forestry bodies. Another option — privatisation — is discussed in the following section.

### **Privatisation of plantations**

Corporatisation will increase the exposure of public forestry bodies to commercial pressures. However, certain market disciplines which apply to large private enterprises — such as the threat of takeover and daily monitoring associated with listing on sharemarkets — do not apply to government bodies, irrespective of whether or not they are corporatised. In addition, even with a corporatised body, there is a danger that governments will interfere in operating decisions to the detriment of commercial performance. In these circumstances, there is a case for privatising publicly owned forestry agencies to increase the incentive for efficient management and to reduce the scope for government intervention.

There are two major concerns about privatising forestry resources:

- Privatisation would create regional monopolies which would have to be scrutinised closely by governments in order to ensure that they do not misuse market power. The cost of such scrutiny could outweigh the potential benefits associated with the transfer of ownership.
- Private organisations acquiring native forests would be able to appropriate some of the benefits that accrue to non-wood users (eg by selling camping permits and charging entrance fees), but they would not be able to appropriate all of the benefits (eg the benefits, in terms of aesthetic values, experienced by passing motorists). Thus, it is argued that non-wood values of forests will be underestimated and private forest owners will have an incentive to engage in higher than (socially) optimal levels of timber harvesting.

The latter concerns suggest that the potential for privatisation may be higher for state owned plantations than for native forests. Indeed, the large and increasing incidence of private plantation ownership in Australia over the last few decades (about 30 per cent are privately owned) suggests that most benefits from plantations can be internalised. In these circumstances, it is difficult to identify an ongoing role for governments in plantation development and management.

In New Zealand, timber rights for public plantations were privatised in 1990, while the management of timber production in government forests was placed

in the hands of a corporatised government agency. The Victorian Government is considering a similar option. The Victorian Department of Conservation and Natural Resources (sub. 25, p. 2) stated:

The Government ... [aims to] largely withdraw from further expansion of public softwood plantations. The Government is to establish a plantations corporation to undertake the management of public softwood plantations and look at their possible sale.

Concerns about creating private monopoly suppliers could be overcome by subdividing plantations prior to sale. For example, as there are limited economies of scale in plantation forestry, it would be possible for many existing government plantations to be divided into a number of saleable lots. Provided there is a limit on the area which could be acquired by any single person, this could create an element of competition. The creation of a number of 'tree farms' in a region, along with disciplines provided under the TPA and PSA, would reduce the likelihood that the new owners would have opportunities to misuse market power.

In responding to the draft report, CALM (sub. 76, p. 5) opposed privatisation, in part, because plantations could be acquired by overseas buyers "whose main interest may be gaining access to a resource for export".

The Commission sees no justification in deferring privatisation on these grounds. It considers that plantation logs should be treated similarly to all other goods and services: they should be freely tradeable and not reserved for domestic processors. Indeed, to preclude overseas interests bidding for public plantations would deny the community some of the benefits associated with privatisation. The nature of these benefits is illustrated in the following comments made by the New Zealand Ministry of Forests (sub. 81, p. 2):

In the sales process, the Government also realised the importance of allowing foreign companies, as well as local ones, to bid for such assets (public pine plantations), in order to maximise the revenue received from such sales. A variety of other benefits have been realised, namely: increased market access, new capital, new technology and new management techniques.

Because of the large area of plantation involved, sales may need to be staggered over a number of years in order to maximise the returns to governments. In some instances (eg where a processor has contracted by buy all available wood for a specified period of time), sales of some plantations may have to be deferred for some years.

One concern of state governments with privatisation has been the possible diversion of revenue from states to the Commonwealth Government. This issue was addressed at the 1990 Special Premiers' Conference. In their communique, the leaders "recognised that the potential loss to State Governments of tax-

equivalent streams of income as a result of the change in ownership of enterprises could be an impediment to microeconomic reform and welcomed the Commonwealth's policy of in-principle commitment to compensation". Subsequently, compensation has been offered by the Commonwealth (in the form of retirement of state debt) for the privatisation of some state government businesses (eg the New South Wales Government Insurance Office). However, at the June Council of Australian Governments, the Commonwealth announced that it would only provide compensation on a case-by-case basis. The change was based on a study by the Commonwealth Treasury which suggests that, under certain conditions, privatisation of some public enterprises will not affect the net budgetary position of a State.

*The Commission believes that privatisation of public plantations would improve efficiency. Privatisation could encompass the sale of both land and trees or, alternatively, could involve the sale of the trees only, with the land being leased to the new owner(s) for a specified period of time.<sup>6</sup> In all instances, provision would need to be made for honouring long term contractual obligations that may exist between government agencies and wood users, and for ensuring that opportunities do not arise for the misuse of market power.*

### **6.3 Compensation payments by government**

Producers of forest products argue that, in order to obtain the security required to support large scale investment, it is imperative that log supplies are secured by legally enforceable contracts which encompass compensation provisions if government action results in contracts being breached. At present, some contracts between producers and state forestry agencies include provisions for compensation if actions by state governments prevent forestry agencies from meeting their contractual obligations. However, most do not provide compensation if the failure of forestry agencies to meet their log contracts is a direct consequence of Commonwealth Government action.

The RAC (1992a, p. 299) concluded that the Commonwealth should consider paying financial compensation where:

... a land use change resulting from a Commonwealth policy or decision causes disruption to industries reliant on the forest resource.

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<sup>6</sup> In the case of New Zealand, the Government sold the cutting and managerial rights, but not the land. The New Zealand Ministry of Forestry stated that, by the end of 1992, two-thirds of its forest estate had been sold for \$NZ 1.4 billion.

It stated that compensation should be conditional on industry paying governments for the full value of wood harvesting rights and paying for the costs of wood production in native forests.

The NFPS recognises the need for governments to facilitate resource security by establishing clear and consistent policies, and improving co-ordination between governments. It also foreshadows a range of procedures which are to be put in place to help achieve these objectives. These include the negotiation of Commonwealth-State regional agreements and co-ordinated Commonwealth-State project assessment processes for projects in which the Commonwealth has a statutory obligation. The Commonwealth has also stated that it will maintain its policy of providing assistance to facilitate structural adjustment that may arise as a result of Commonwealth actions which change land use. Commonwealth financial assistance was, for example, provided following the withdrawal of logging rights on Fraser Island.

Forest products producers generally agree that recent initiatives have provided improved resource security. For example, according to NAFI (1993, p. 1), the new National Forest Policy was “cautiously welcomed by the industry”, although there are concerns that commitments will not be carried out and that some of the new administrative procedures will “lead to further delays in forest industry development”. However, many in the industries consider they are still too vulnerable to government action — Commonwealth Government intervention in particular — that could result in the withdrawal of wood resources without any compensation.

The Commission accepts the industries’ need for a reasonable degree of resource security. However, it is widely recognised that the Commonwealth Government has certain responsibilities and powers over the use of public native forests. Consequently, unless there has been appropriate consultation with the Commonwealth Government prior to state governments entering into long term wood agreements with wood processing industries, it is difficult to argue that the Commonwealth should *automatically* provide compensation if its actions subsequently result in state governments being unable to fulfil agreed log quotas. It is probable that, in some instances, the likelihood of government intervention is factored into log supply agreements in the form of lower log prices.

The case for providing compensation for government action that prevents logging on private land is different. Where trees have been grown for commercial use, they are little different from other agricultural crops. Any actions by government that change the purpose for which land can be used and prevent trees from being harvested, should result in the payment of appropriate financial compensation.

*It is difficult to argue that forest product producers should automatically be compensated if long-term agreements with state governments for the supply of logs from public native forests are changed. While it may be appropriate to provide financial compensation, the Commission considers that it should be determined on a case-by-case basis having regard to all relevant circumstances. On the other hand, compensation should be provided if land use changes by government prevent the harvesting of trees grown commercially on private land.*

## **6.4 Private wood supplies**

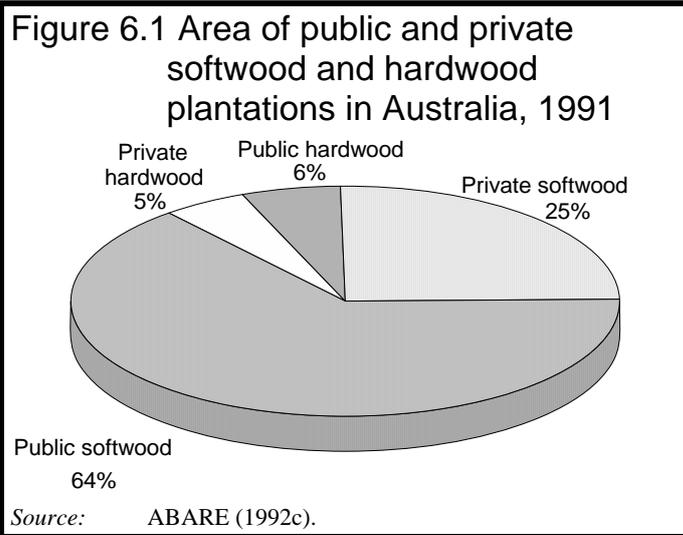
The first part of this chapter has concentrated on forests which are publicly owned — predominantly native hardwood forests, but also some softwood plantations. The following sections consider aspects of privately grown forests and plantations which collectively comprise over a quarter of Australia's forested land. While private native hardwood and softwood forests are mainly owned and managed by farmers, some two-thirds of private plantations are owned by vertically integrated forest companies.

The emphasis in this part of the chapter is on private plantation wood, although the development of agroforestry on private farmland, often referred to as integrated tree cropping, is also considered. The discussion commences with an outline of the increasing significance of plantations. Subsequent parts discuss various advantages associated with plantations and factors which impede their efficient development.

### **The plantation estate**

Plantations are defined as intensively managed stands of trees of either native or exotic species, established by the regular placement of seedlings or seed. The distinction between plantations and native forests is somewhat blurred in instances where native forests include replanted or regenerated areas.

The share of total Australian wood fibre which is grown in plantations is increasing. Australia now has a plantation estate of just over one million hectares, of which about 30 per cent is privately owned. This compares with just under 41 million hectares of native forest, approximately 27 per cent of which is privately owned.<sup>7</sup> Figure 6.1 shows that almost 90 per cent of the



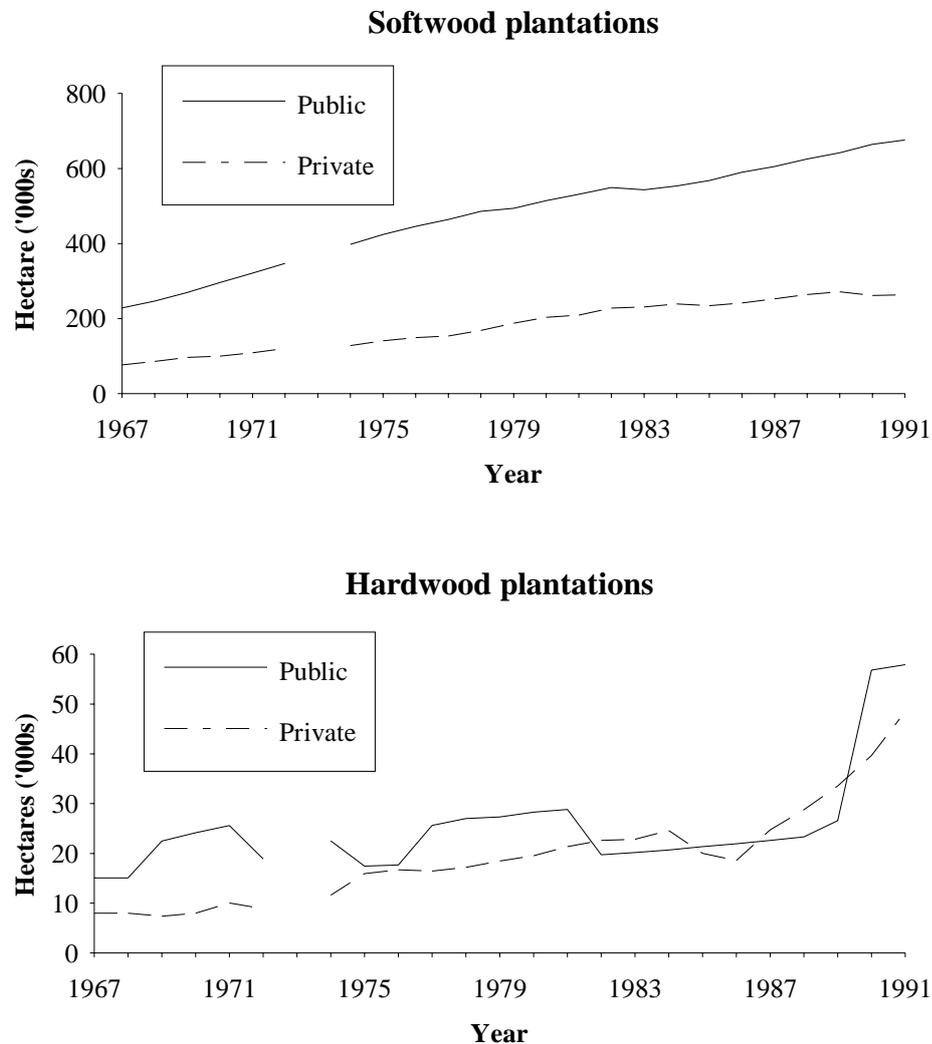
plantation estate comprises softwood, primarily *Pinus radiata*, with about one-third being privately owned and managed. The plantation estate comprising hardwood species, generally eucalypts, is almost equally divided between private and public ownership and management.

More than one-third of Australia's private plantations is located in Victoria, where the private plantation estate is almost as large as public plantations. Tasmania has more private than public plantation estate, the Northern Territory has only private plantations, but all other states are dominated by public plantations. Large state government plantation holdings are, in part, due to financial assistance (in the form of long-term low-interest loans) provided by the Commonwealth to states under the Softwood Forestry Agreements of the 1960s and 1970s.

Because of abundant hardwood supplies and ongoing regeneration in native forests, for decades there was relatively little interest in establishing private eucalypt plantations. However, privately owned hardwood plantation establishment rates increased significantly during the late 1980s (see Figure 6.2), mainly in response to increasing demands for hardwood pulpwood and because of growing concern that access to public forests would be restricted.

<sup>7</sup> Further information about Australia's forest resources is detailed in Appendix F.

Figure 6.2 Growth in area of public and private softwood and hardwood plantations in Australia, 1967 to 1991



Source: ABARE (1992b).

Although comprising only about 2 per cent of the area of native forests, public and private plantations supply around 45 per cent of the wood requirements for the sawmilling sector, 90 per cent of the needs of the wood-based panel sector, and about 65 per cent of the fibre used by the pulp and paper sector.

Given the youth of much of the estate, coniferous sawlog availability is not expected to stabilise until at least the year 2030. At that time it is expected that

the availability of softwood sawlogs will be more than double current annual yields.

It is difficult to determine the extent of future expansion. The availability of suitable land does not appear to be a constraint. The National Plantations Advisory Committee (NPAC 1991) indicated that about 1 million hectares of marginal agricultural land is suitable for plantation establishment. Similarly, the RAC identified about 460 000 hectares of suitable land within a 200 kilometre radius of existing processing facilities.

It is estimated that, in Western Australia, which has already established about 18 000 hectares of eucalypt plantations, another 200 000 hectares of tree plantations (equivalent to about 20 per cent of the existing national plantation estate) could be established in the south-west within fifteen years. Plans to establish a further 30 000 hectares of plantations on private land were announced in late 1992 (see Box 6.2). Given the extensive plantation holdings of governments, and current plans to sell some public plantations to private interests, it is probable that expansion of the national plantation estate will increasingly be undertaken by the private sector.

#### **Box 6.2 Plantation sharefarming**

In December 1992, the Western Australian Department of Conservation and Land Management (CALM) concluded two agreements with Japanese and Korean investors to establish 30 000 hectares of eucalypt plantations in the south-west of Western Australia over the next decade. The plantations will eventually be harvested for export woodchips. The agreement does not entail the purchase of land. Plantations will be established on a sharefarming basis with participating farmers being paid a percentage of the profits. CALM will supervise the forming of partnerships between farmers and the investors.

### **Advantages of private plantations**

Conservation groups favour plantation development because they believe it will allow a reduction in logging of native forests. This contrasts with the sawmilling industry which regards plantations not as a substitute for wood from native forests, but as a complement. For instance, the NSW Forest Products Association (transcript, p. 194) stated:

The association's policy is that hardwood plantations in the medium to long term will only ever be a practical supplement to access to the native forests.

Nonetheless, wood processing industries see plantations as offering a way of avoiding (or lessening) confrontation with conservation groups, certain frustrations associated with public sector log allocation/selection and pricing procedures, and other matters relating to log production in public native forests. Thus, private plantations are perceived to offer processors major advantages in the form of increased supply security and less government intervention.

Plantations are also more easily managed, and have other benefits which tend to increase yields and lower wood costs. For example, plantations provide opportunities for wood supplies to be located in reasonable proximity to processing plants and for species to be limited to high yielding genetically selected varieties. The resultant more uniform growth, coupled with the opportunity to use mechanical harvesting methods, can significantly reduce wood costs. For those forest industries requiring pulp logs, costs can be further contained by managing plantations to maximise pulping yield, rather than to maximise sawlog production as is currently the practice of most public forest management agencies.

There are some environmental costs associated with the establishment of plantations. The RAC (1992a, p. 35) suggested that the potential environmental impacts of establishment, maintenance and harvesting are greater than they are for current native forest management. The costs of commercial management of plantations include herbicides, shorter rotations, more frequent entry and more roads, all of which means a greater propensity for decline in soil productivity and water quality.

On the other hand, possible environmental advantages of plantations may include: the amelioration and prevention of land and water degradation; the utilisation of waste water for irrigation; an improvement in the microclimate and productivity of farms; and the provision of further forest cover to reduce greenhouse gases. Irrigated plantations can provide additional benefits through their use of effluence, groundwater and saline water, each of which may otherwise be associated with environmental problems.

To complement wood from their own plantations, some forest products producers are encouraging local farmers to engage in agroforestry. Agroforestry on private farmland may offer various benefits to property owners, including shade and shelter, wind erosion control, reduced salinity, reduced catchment eutrophication, protection of remnant vegetation and a positive financial yield.

## Impediments

Participants identified a range of constraints on the efficient development of private plantations and agroforestry ventures. These relate to:

- log pricing policies of forestry agencies;
- taxation provisions;
- legal ownership; and
- land use and planning.

Another significant barrier to private wood supply, government export controls, is discussed in Section 6.5.

### *Log pricing policies*

The NPAC (1991, p. 14) stated:

One of the most serious impediments to the development of plantations by small landowners and farmers is the tangled web of restrictions and imperfections that distorts the pricing system for wood in Australia.

As noted previously, a number of studies have found that, in most states, the prices of wood from public forests and plantations have in the past often been below those that a competitive market would achieve. This can be largely explained by there being generally no requirement for public forestry agencies to recover costs and the role that some agencies have been required to play in promoting regional employment and government social policy objectives.<sup>8</sup>

To the extent that logs are underpriced, the activities of the forest products industries are subsidised by taxpayers. Underpricing by forestry agencies also depresses the prices obtainable by private wood growers and, hence, discourages private sector investment in plantations and agroforestry activities. Other things being equal, the net result is a stimulus to investment in forest product activities and a bias against private sector investment in wood production in favour of acquiring higher proportions of wood from government forestry bodies.

In the past, the bias against private investment has been reinforced by rigid purchase agreements for wood employed by government forestry bodies. For example, as outlined earlier, some agreements with government agencies have incorporated requirements that limited the quantities of wood that processors could acquire from private sources. The dominant position of forestry services

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<sup>8</sup> The South Australian Government stated that its agency responsible for plantations — until recently known as the Woods and Forests Department — has been self funding and operating on a commercial basis for some time.

in each state provided producers with little option other than to comply with such conditions.

*Inappropriate pricing of logs by government bodies can distort investment decisions by wood using industries and growers of private wood. Corporatisation should help safeguard against underpricing and help eliminate such biases. Plantations would only be planted or replanted after assessment of the true costs and benefits of plantation development.*

### *Taxation*

The effect of taxation arrangements on private forestry has been canvassed extensively in a number of previous inquiries. For example, the NPAC (1991, p. 10) expressed the view that:

... taxation treatment of plantation development (and of wood growing in general) represents a major financial disincentive because of the inequitable treatment of long term investments and the so-called period inequity.

Participants in this inquiry also criticised the existing arrangements and sought changes to remove perceived inequities which they claim detract from investment in private wood ventures. For instance, Australian Forest Growers (sub. 18, p. 6) stated that:

We are not asking for any privilege for forestry, but for the rules that apply to others be equally available to the growers of trees for commercial use as primary producers.

Some other participants proposed that taxation policy be used to foster increased plantation development. Underlying this argument is a belief that direct incentives in the form of taxation concessions should be employed to offset difficulties in attracting investment capital to forestry. For example, the NSW Forest Products Association and NSW Logging Association (sub. 12, p. 4) stated:

The federal government, through the use of tax instruments, should promote the use of substantially-cleared land for plantation establishment.

Similarly, the Western Australia Department of State Development (sub. 15, pp. 10, 11) recommended:

... the Commonwealth be asked to recognise the significance of environmental benefits associated with private plantations and take these into account when considering taxation arrangements related to plantations.

Given the very long time frames between planting and harvesting trees, two provisions of the Act which cause participants particular concern are the lack of indexing and the existing income averaging provisions. These provisions relate to two general groups of impediments which have been identified by a number of studies of the current taxation arrangements (eg Bhati et al. 1991, pp. 196-8).

First there is period inequity. This refers to a situation where the tax paid over a number of years varies between taxpayers who, over the period, have identical total incomes. It can result in a taxpayer with fluctuating income paying more tax than a taxpayer whose income is relatively uniform. In the context of forestry operations, it arises because of the progressive nature of marginal income tax rates and the time path of forestry investment income whereby revenues are concentrated in only a limited number of years during a 10-60 year period (ie when plantations are harvested or thinned).

Income averaging provisions and the income equalisation deposit scheme are two provisions established to alleviate period inequity for individual taxpayers engaged in primary production (including forestry). However, analysis by Hansard and Dean (1991) suggests that the income averaging provisions operating in 1991 were ineffective in reducing period inequity for a forestry investment to a level comparable with an agricultural investment.

The upper limit for allowable deductions in respect of deposits under the Income Equalisation Deposits scheme has recently been raised by \$50 000 to \$300 000, giving greater flexibility to private forest growers. The extent to which this will alleviate existing period inequity problems depends on investors' portfolios.

The second impediment relates to a lack of adjustment for the effects of inflation on deductible expenses that have to be carried forward until such time as offsetting income is earned. In the case of forests, this period can be extensive — 20 years or more. It is claimed that, in the absence of indexation, the long lead times involved in growing trees reduces the real value of allowable deductions and makes investment in commercial tree growing less attractive relative to investments which yield revenue flows in shorter time periods.

There are a number of matters which need to be borne in mind when considering this latter issue. First, it needs to be recognised that this issue will not affect the majority of growers. For example, all growers that have income from other sources (eg companies other than those dedicated to plantation development, farmers that grow trees as a secondary activity and individuals who purchase trees as an investment) will be able to deduct expenses as they are incurred from their other income. Second, account also needs to be taken of the favourable tax treatment in the form of the immediate write-off of establishment costs accorded to growers that establish plantations. Those growers that cannot deduct other expenses incurred prior to sale may make a 'tax loss' but, as trees are an appreciating (rather than a depreciating) asset, they would not make an 'economic loss'. Third, costs are not indexed for other commercial activities, including those for which income is also deferred for

many years (eg projects with long construction phases, such as large buildings and certain horticultural projects such as orchard developments).

The Commonwealth Treasury (1993) has recently published a study on the tax treatment of deferred income projects (ie projects which involve initial expenditure to create an asset, but for which receipt of income is deferred for some time). While the study does not explicitly address plantation investments, such investments can be considered as a deferred income project. The study concludes that the tax system is not biased against such projects.

Another area of concern relates to the liabilities of sellers of immature (ie unharvested) plantations. The information available to the Commission indicates that there is quite clearly considerable confusion over this issue. Participants' contention — which has been supported by previous inquiries (eg RAC (1992a) and NPAC (1991)) — is that there is an inconsistency in the tax treatment of plantation owners.

Those companies and individuals that establish plantations and subsequently sell immature plantations will already have benefited from the deductions allowed for establishment costs. However, many participants believe that a subsequent purchaser of such plantations is disadvantaged because the purchase price cannot be deducted until the trees are harvested. In turn, this would imply that, if a plantation is sold again before harvest, there are no available deductions, and tax is paid on the full value of the trees. The extreme case is said to be that of a purchaser who buys and sells a particular plantation on the same day: it is argued that tax is payable on the sale price of the trees with no deduction allowable for the purchase price.

Since the draft report was released, the Commission has sought further advice on this matter. The information now available to the Commission suggests that there may be no anomaly. In the case of the 'extreme case' outlined above, taxable income as assessed by the Australian Taxation Office should generally be net of acquisition costs. In these circumstances, a buyer who bought and sold on the same day, would not have to pay tax (assuming that the purchase price and the selling price were identical).

*There is clearly on-going confusion about the application of the Income Tax Assessment Act to forestry investments. This creates uncertainty and impacts adversely on new investment. The Commission considers there is a need for the Australian Taxation Office to clarify the application of the Act to immature plantations. This should form part of the "comprehensive public ruling by the Australian Taxation Office" announced in the NFPS.*

### *Legal constraints on ownership of land*

Bunnings referred to the possibility of legal difficulties regarding tree ownership arising if a lease involves disputed tenure of land. This can occur because, under existing Australian law, the owner of land is also deemed to own the trees on the land. Bunnings stated that there is an urgent need for legislation in Australia similar to the New Zealand *Forestry Rights Registration Act 1983*.

The New Zealand legislation offers long-term legal security by extending the 'profit a prendre' concept into a flexible and fully registrable interest called a 'forestry right'. This enables landowners to grant a right to a developer to establish, manage and harvest a crop of trees on all or part of a landowner's property. By separating the tenure of trees and land, such legislation eliminates the need for costly survey and subdivision procedures if disputes arise, and facilitates the separate sale of trees on landowners' properties.

The need to amend current legislation was recognised in the NFPS. The Statement (1992, p. 30) foreshadowed action by state governments to:

... establish a sound legal basis for separating the forest asset component from the land asset for the purposes of selling timber.

*The Commission supports initiatives to create a means of legally separating the ownership of land and trees grown on that land. It considers that the necessary measures should be implemented as soon as possible, on a consistent basis, throughout Australia.*

### *Land use and planning*

The availability of suitable land is important to the commercial viability of private plantations. Such developments require large tracts of land located within economic haulage distance from processing plants.

Land use for plantations or other forestry investments is directly and indirectly affected by a range of government policies and controls (eg underpricing of logs by forestry bodies and relatively high government assistance provided to some rural industries — such as dairying — have reduced the ability of private tree growers to compete for land). However, more important factors influencing the availability of land are land zoning, planning controls and related regulations enacted by local governments.

Restrictions on plantation development largely reflect concerns of some local communities that such developments will have a detrimental impact on their region. Some fear that the conversion of agricultural land to plantations will destroy traditional rural lifestyles. There are concerns, for example, that it will lead to a fall in population which could result in the closure of local schools and

the downgrading, or closure, of other facilities and amenities (eg medical services). Some local farmers fear that the resumption of agricultural land for plantations will reduce their growth potential while, in some communities, concerns centre around fire risks posed by plantations and road damage caused by logging trucks.

In response to local community concerns, some local government bodies have introduced zoning restrictions and planning controls which prohibit plantations in certain areas or, unlike other rural pursuits, allow them to proceed only if a permit is granted. In some shires, plantation development is impeded by the additional costs involved in complying with local government requirements. For example, the Institute of Foresters of Australia (sub. 5, p. 5) stated:

Currently, difficulties are being experienced in some parts of Australia with adverse planning rulings by local governments which disfavour new plantation development. In part, this attitude is a hangover from past land purchase activities of State agencies, who bought farmland to establish large blocks of plantation. Some Shires which are dominated by old style farmers effectively “zone” their area to exclude plantation development by such means as prescribing impractical firebreak requirements.

NAFI stated that administrative costs associated with submitting permit applications and appealing against determinations are significant. It cited a number of instances where appeal processes extended over periods of between nine and fourteen months. In one instance cited by APM, obtaining local and regional harvesting permits resulted in an additional \$6 per cubic metre in legal fees alone. The company stated that this was the equivalent of almost 60 per cent of what it believed the wood cost should have been at stump. Other participants claimed that additional costs are imposed on plantation owners in the form of discriminatory rating levies and additional charges on logging trucks.

*Some local government regulations and practices discriminate between plantation developments and other agricultural activities. There would seem to be little basis to support continuing discrimination. There is, for example, no substantive evidence to show that plantation developments are more likely to impose environmental costs on the community than are other primary activities which are not subject to the regulations and planning controls applied to timber plantations. Any benefits resulting from the controls are likely to be small and accrue to a relatively small number of individuals within local communities. In contrast, the costs (in the form of inefficient plantation development) could be large and have significant ramifications for a much wider cross-section of the community.*

The need to overcome the problems posed by the current restrictions was recognised in the NFPS. It stated (p. 31) that there is:

... a need for State and local governments to simplify planning procedures and to ensure that land use planning controls and land rating systems do not discriminate against plantation development.

The NFPS proposed that state governments, with appropriate public involvement, should pursue planning policies that provide zoning suitable for commercial planting on private lands. Security for this zoning would be given by making tree planting and subsequent harvesting for commercial wood production an 'as of right' use. It also stated that state governments will seek to ensure that the rating basis used by local government authorities removes disincentives to the conservation of native forests and the establishment of plantations on cleared agricultural land.

## 6.5 Government export controls

### *Government regulations*

Using its powers under the *Export Control Act 1982*, the Commonwealth Government has required that licences be obtained for exports of logs and woodchips from all public and private forests and plantations. Licences, which have to be renewed annually, stipulate that unprocessed wood cannot be exported if it can be used in a domestic processing plant to promote domestic value adding. Licences are subject to Commonwealth approval of export prices.

Additional restrictions have been applied by some state governments. For example, in Tasmania, an annual limit has applied in the past to export woodchips while, in Victoria, the direct harvesting of pulpwood for export woodchips has been restricted by a requirement that all logs extracted from state forests be processed through a sawmill.

In Western Australia, a 'Forest Residue Utilisation Levy' applies to export woodchips. At the draft report hearings, the Western Australian Department of Resources Development stated that the levy is used as a means of providing financial support to allow the Department to fund studies and programs which will "lend to added value to forest residues". It added (sub. 61, p. 13) that:

The levy charge on woodchips exports is considered valid where there has not been significant progress by the company [Bunnings] to diversify into plantation eucalypts nor has it been able to justify investment in a pulp mill before today ...

The funds raised by the levy (which amount to about \$400 000 annually) have enabled the Department of Resources Development to investigate, and call for expressions of interest in, a new pulp and paper mill in the State's south west.

In the March 1991 Industry Statement, the Prime Minister announced that it is the Commonwealth Government's objective to phase out woodchip exports in favour of domestic value added products by around the year 2000. This objective was supported by State Governments at the 1991 Special Premiers' Conference:

State and Federal Governments share the objective of phasing out woodchip exports from native forests in favour of downstream processing of the resource (pulp and paper mills) by the year 2000 ...

Some participants interpreted this announcement as flagging government intentions to eventually ban woodchip exports. However, this view is not supported by some subsequent government statements. For example, a recent press release by the Commonwealth Minister for Resources (Griffith 1993) stated that:

... only woodchips which are surplus to the requirements of domestic processing industries are exported, but he made it clear that it was the Government's strong desire to see further processing of our forest resources in Australia when this was both feasible and appropriate.

### *Administrative processes*

The administrative procedures to gain export approval include assessments by relevant Commonwealth and State environmental authorities. This can cause delays and add considerably to industry costs. For example, Bunnings cited an application to export a small quantity of chips lodged in November 1991. Largely because of the need to prepare environmental assessments, the company estimated that it would take about 18 months before it would be able to commence exporting. At the draft report hearings in July 1993, the company indicated that it was still awaiting approval from the State Environmental Protection Authority, and that the delay has forced it to forgo three opportunities to sell the chips. (The proposal was subsequently approved later in July.) Bunnings also stated that the on-going need to obtain approval for export prices precludes the company from competing for spot market sales against international suppliers that are not subject to government price monitoring procedures.

In a submission to this inquiry, CSR also commented on the delays in obtaining export approvals and the costs associated with such delays. The company indicated that the need to comply with specific Commonwealth Government legislation can precipitate action by other governments. For example, CSR stated that it is required to pay a local council transport levy on exports — but not on products for domestic consumption (see Box 6.3).

### Box 6.3: Difficulties associated with obtaining export licences

... this company had acquired the rights to harvest a large private plantation in Queensland as input to one of its sawmills. The operation produced a large volume of small pulplogs for which no market in Australia exists, we managed to locate an overseas customer for this material, but because the customer required the material in the form of chips we needed an export licence from the Federal Government.

The Government insisted on a full EIS to harvest the product from a private softwood plantation. The cost of the EIS was about \$100 000. We had to agree to have our operation audited by an outside agency, and we must employ an outside agency to monitor the water condition between the mainland and Bribie Island. We also pay a road levy to the local councils for the use of the roads to transport our export products. None of these additional charges or controls apply to any other agricultural operation or to our own domestic operations, they are close to extortion based on the Government's power to refuse the issuing of an export licence.

The total process took in excess of 12 months during which about \$8 million worth of product had to be destroyed and the 60 people needed for the process remained unemployed.

*Source:* CSR (sub. 10, p. 5)

APPM (sub. 38, p. 47) also commented on the 'leverage' that the export controls provide to other governments. It stated that the controls deny the company the opportunity to source some of its wood requirements from cheaper private sources.

The Tasmanian Government is in a particularly powerful position to influence the Minister [the Commonwealth Minister for Resources] ... It is a matter of concern that the Tasmanian Forestry Commission, which is of course a major wood supplier, has sought to oblige the company to source its requirements from public forests regardless of our own preferences, by use of this influence.

According to APPM, this has not only increased its wood costs, but has also impeded the company's ability to increase its tree planting program on freehold land currently under native vegetation.

A number of producers commented that the need for licences to be renewed annually creates considerable uncertainty because the renewal processes inevitably become politicised and decisions on renewals are deferred. As a result, exporters cannot guarantee future supplies and importers are encouraged to source woodchips from overseas producers that can offer greater security of supply. The timing of export licence renewals for 1993 illustrates producers' concerns in this area: the renewal of woodchip export licences for 1993 was announced by the Commonwealth Minister for Resources on 4 January 1993.

### *Assessment of export controls*

In recent years, the total volume of woodchips exported has been a little less than the aggregate of entitlements. If entitlements were freely transferable, this

could imply that the present controls do not restrict woodchip exports. However, this is not the case — licences are specific, not only to the designated companies, but also to the port of shipment. Moreover, there is evidence that some current exporters and potential exporters have been restricted and that wood in Gippsland, Tasmania and certain other parts of Australia which could have been converted to chips has been left to rot on the forest floor. For example, APPM submitted to the RAC inquiry (1992a, p. 308) that:

In Tasmania, estimates suggest that pulpwood currently being wasted under the quota regime could sustain an increase in woodchip exports of at least one million tonnes annually above the present quota of 2.889 million tonnes.

To the extent that woodchipping activity has been constrained, export income, government royalties and employment opportunities have been forgone. Opportunities to add value to a resource which would otherwise be wasted have been lost. The analysis in Appendix G suggests that the controls could have resulted in annual losses in export income and GDP of about \$140 million and \$55 million respectively.

Even if all export restrictions were immediately removed, it may now be too late to fully exploit the available resources. According to participants, this is largely because the uncertainty and politicisation associated with annual export licence reviews has already encouraged Japanese buyers to diversify their supply sources. This has resulted in Australia's share of woodchip exports to Japan falling from over 60 per cent in 1985 to about 35 per cent in 1990. NAFI (transcript, p. 393), for example, stated that:

... licences are only issued annually and typically the renewal of the licence takes place right at the eleventh hour ... Right up until that time, the company can't be sure of the size of its licence or what the arrangements will be ... We believe that the export licensing has been a major factor in the Japanese moves to alternative suppliers.

The costs associated with the export restrictions are not confined to the woodchip industry: they also impact adversely on sawmilling operations. This occurs in two ways. First, export restrictions limit the ability of sawmillers to dispose of sawlog residues as chips. As chips can account for over one-third of the volume of hardwood sawlogs, this deprives sawmillers of a significant source of income and can undermine the viability of (higher value adding) sawmilling activity. For example, CSR (sub. 10, p. 2) stated:

By government focussing on the control of chip exports rather than on the inhibitors to further processing, it has encouraged customers to seek supply elsewhere and has in effect reduced the margin in the sawmilling industry.

Second, restricted access to export markets has reduced the incentive for forest thinning which, in turn reduces the availability of sawlogs. For example, Sprengel and Associates (sub. 13, p. 5) commented:

In WA, that [sustainable] yield is available in the form of pulp logs in greater growth than we can consume and over the next 50 years must be harvested to provide us with the higher value sawmill size logs ...

Similarly, in its submission to an earlier Commission inquiry into Raw Material Pricing (IC 1992b), the Wood Panels Association (sub. 29, p. 3) noted that:

Thinning is a necessary part of the silvicultural treatment of softwood plantations. Without thinning, expected yields of sawlogs will either not become available, or the production period will extend unacceptably.

At the draft report hearings, SEAS Sapfor supported the maintenance of restrictions on the export of logs, unless the logs are surplus to domestic requirements. The company's main concern is that, given the reduced availability of logs from the US west coast and from the coastal region of British Columbia, increased quantities of logs could be exported to the detriment of domestic processors.

Restrictions on log exports would benefit local wood processors by increasing the availability of logs and, to the extent that demand is reduced, reducing stumpage. On the other hand, the maintenance of the restrictions is not costless. By restricting demand, domestic log prices would be indirectly subsidised. This would reduce government revenue, reduce the profitability of growing wood and discourage investment in plantation development and forestry generally. Similar considerations apply to restrictions on woodchip exports.

The New Zealand Government recently removed restrictions on the export of unprocessed logs. In a submission to this inquiry, the New Zealand Ministry of Forests (sub. 81, p. 1) supported this initiative:

... log export restrictions were seen to be inhibiting the efficient development of the industry as they artificially enhanced the returns to one sector (domestic commodity processing) by restricting the returns to another (forest growing). Such restrictions caused private investors to shy away from investing in such plantations, ... the restrictions artificially lowered the cost of logs to domestic processors. This was a boon to domestic processors (at the time) as it allowed them to boost production. But in reality, such artificially lowered log prices simply allowed processors to delay essential rationalisation decisions, to become relatively inefficient and inward looking and hence, to become less internationally competitive over time.

There is an argument for restricting exports if Australian producers can exercise market power so as to influence international prices. In technical terms, this requires that the demand for Australian exports be less than perfectly elastic. In these circumstances, it may be possible to increase returns to Australia as a whole by limiting trade and forcing up international prices.

If, however, some intervention is warranted to maximise export returns, the most efficient means of restricting exports would be to impose an export tax.

This would limit exports to the more efficient producers. In contrast, the current export controls primarily reflect concerns about domestic processing and environmental matters rather than the magnitude of export revenues. Consequently, the controls are determined administratively on a case-by-case basis, and mainly on the basis of wood supply considerations. As a result, it would be purely coincidental if the current controls also maximise export returns.<sup>9</sup>

The 1992 NFPS is expected to result in some easing in Commonwealth export controls. Subject to the adoption of satisfactory codes of practice to protect environmental values, the Commonwealth has announced that it will remove the controls over the export of unprocessed plantation wood (ie logs and woodchips). The Commonwealth also announced that it will:

- consider export licence approvals for terms longer than the current annual renewal period for unprocessed wood sourced from public and private native forests covered by ‘comprehensive regional assessments’;<sup>10</sup> and
- Review the adequacy of existing mechanisms pertaining to transfer prices of wood products.

Even with these changes, significant Commonwealth export restrictions would remain. Licences would continue to be required for the export of unprocessed wood from both public and privately owned forests. Furthermore, given the need for agreed regional assessments and the commitment of the Commonwealth to only “consider” other options, there is no guarantee of a shift away from annual licence reviews. Consequently, while the changes may overcome some problems in relation to the export of plantation wood, restrictions on the export of logs and woodchips produced from native forests could remain. Thus, many of the costs associated with export restrictions would also remain.

The restrictions may yield environmental benefits by reducing harvesting in native forests. However, the Commission is unaware of any practices having adverse environmental effects associated *only* with logging operations for the purpose of producing woodchips for export markets. Hence, if harvesting is to be restricted to promote environmental goals, it would be more efficient to do

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<sup>9</sup> A 1991 study (Streeting and Imber) found that the Australian woodchip industry does have some ability to influence international prices. It concluded (p. 96) that an export tax on woodchip exports is “worthy of careful consideration”. However, the recent emergence of new overseas woodchip export suppliers, with the prospect of further new entrants in the short-medium term, casts significant doubt on Australia’s ability to influence export prices in future years.

<sup>10</sup> Commonwealth-State regional agreements specifying government obligations for forests in a region.

so by directly regulating *all* logging activity in designated areas. The appropriate use for harvested wood could then be determined on commercial grounds. In contrast, the present restrictions selectively target logging for one end use only — woodchipping. Moreover, they apply only to woodchips destined for export markets. They do not apply to woodchips used domestically. They also apply irrespective of the differing environmental values associated with different regions in which pulp logs are harvested for woodchipping operations. Consequently, export restrictions are a blunt and inefficient means of achieving environmental objectives.

The Commonwealth export restrictions are also intended to help ensure that the prices of export woodchips are not negotiated with overseas buyers in a manner intended to reduce exporters' Australian tax liability. However, export restrictions are also an indirect means of addressing 'transfer pricing' concerns. To the extent that such concerns exist, they are more efficiently tackled by using investigative powers encompassed in taxation legislation.

The Commission accepts that there may well be a legitimate role for government in promoting investment opportunities. However, to the extent that the levy applied to export woodchips by the Western Australian Government is largely a revenue raising tool which provides no direct good or service to the two companies to which it applies, it is tantamount to a tax. Similar considerations apply to the woodchip export levy paid to the Tasmanian Government by APPM and Forest Resources.

*The Commission has been unable to identify any compelling reason for discriminating between logging operations associated with the production of unprocessed wood for export markets and other logging activities. More generally it cannot identify a case for discriminating between the treatment of logs and woodchips for export and other rural sector exports. It considers that any benefits arising from the present controls are substantially outweighed by the costs. It recommends that all government export controls and discriminatory levies and taxes be removed. If warranted, more direct measures can be used to address environmental and other concerns which would not give rise to the significant costs associated with export controls.*

Removing the existing restrictions would not reduce the capacity of the Commonwealth to regulate exports at some future date. The Commonwealth would retain the power provided it under the Constitution to regulate exports. Consequently, if the Commonwealth were to judge that, for environmental or other purposes, it was prudent to reintroduce export controls, it would be free to do so. However, in the event that such circumstances arose, it would be more efficient if Commonwealth action was specifically targeted at the particular project(s), or the forest region, which is causing the concern. Moreover, if

licences are deemed necessary, they should be of a longer duration than the existing annual licences (eg 5 years). Longer licence periods would allow the Commonwealth to meet its objectives while providing firms with some flexibility to enter into commercial supply arrangements.



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## 7 GOVERNMENT PROVIDED SERVICES

The forest products industries rely heavily on inputs purchased directly from government suppliers (eg electricity, gas and water) and on the services provided by publicly owned infrastructure (eg ports and roads). In many cases, governments are the sole suppliers of such goods and services. Consequently, poor performance by government bodies can materially damage the competitiveness of the forest products industries, as can regulations which impair the efficient use of government-provided infrastructure (eg those governing the use of public roads).

Discussions with industry representatives revealed a number of concerns about the efficiency of government bodies. While many producers commented upon improvements that have been achieved in recent years, further improvements are considered a vital component of initiatives to increase the forest industries' competitiveness.

The areas of major concern to forest products producers appear to be land transport, sea transport and energy supplies. While many participants were critical of the general performance of government business enterprises, little specific information was provided about the nature of inefficient practices, and on how such practices impact on producers' operations.

Participants' concerns about the services provided by government land transport, port and shipping, and energy agencies are considered below.

### 7.1 Land transport

There was some criticism of rail transport. For example, ANM stated that the cost of rail transport for newsprint from its Albury mill to Perth (\$160 per tonne) is greater than transport costs from South Africa and New Zealand to Perth (\$103 and \$140 respectively). Greater concern was expressed about road transport regulations and trucking costs in Australia. APM, for example, stated that road freight rates from its Maryvale Mill to Sydney and Brisbane are significantly higher than the rate it will pay to have product shifted from its new plant in New Mexico to Los Angeles (\$A0.05 per tonne-kilometre compared with \$A0.033 per tonne-kilometre). However, the majority of criticism was directed at road transport regulations in Tasmania.

### *Tasmanian road user regulations in the 1980s*

Road transport in Tasmania has been highly regulated. Until the recent easing of some regulations, trucking operations have been constrained by regulations which, among other things:

- prevented 24 hour-a-day trucking operations;
- precluded the use of 'B-doubles';<sup>1</sup>
- limited gross vehicle mass;
- required a fee be paid for trucking operations that could be performed by rail; and
- permitted trucking operations to be undertaken only by licensed operators.

These regulations imposed greater restrictions on road freight operations than those that generally applied elsewhere in Australia. For example, on the mainland, trucks have generally been able to operate on an around-the-clock basis on weekdays. In Tasmania, they have been limited to the period between 4.00am and 8.00pm. Some states restrict Sunday trucking operations (eg in Victoria no carting is permitted between dawn Sunday and dawn Monday), but weekend operations in Tasmania were more severely restricted. Carting operations were prohibited on Sundays and could only take place on Saturdays if a permit had been obtained. It is common for the use of B-doubles to be restricted to particular roads in other states, but they are not totally prohibited as has been the case in Tasmania. The allowable gross vehicle mass for six axle semi-trailers has also been less in Tasmania than on the mainland (41 tonnes compared to 42.5 in mainland states).

A permit fee of 1.4 cents per tonne-kilometre of gross vehicle mass has been imposed on trucks carrying logs, timber and certain other goods (eg superphosphate and cement) more than 100 kilometres on routes where rail freight services could be used. (This could be viewed as a means of offsetting low road user charges although, given its limited coverage, it would not be an efficient means of doing so.)

Under the *Tasmanian Traffic Act 1925*, trucking operators have had to be licensed. Licences have generally allowed operators to cart only a specified commodity within a designated region. These arrangements were introduced to protect "costly duplication of services" as buses and trucks emerged to challenge the role fulfilled at that time by state-owned railways and tramways, and to ensure that all areas of the State were effectively serviced. The

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<sup>1</sup> A 'B-double' is a vehicle consisting of a prime mover towing two semi-trailers, where the first trailer is hitched to the prime mover's, 'fifth wheel', and the second trailer is hitched to a fifth wheel on the frame of the first trailer.

administration of the Act was subsequently broadened to encompass virtually all forms of public transport in Tasmania (eg taxis, hire cars and air ambulances).

It is not clear to what extent the licensing procedures have restricted entry to the industry. However, in the case of logging, it is understood that there have been no new entrants for many years and that some licence applications have been refused. To the extent that applications are refused, users' choice is restricted and competitive pressures are reduced.<sup>2</sup> In turn, this reduces the incentives for services to be provided at least cost and to be responsive to users' demands. Competition has also been reduced by route and commodity restrictions attached to some licences.

### *Recent changes in Tasmanian road user regulations*

Circumstances have changed substantially since the Traffic Act was introduced in 1925. Many rail services have been withdrawn. The railway operations remaining in Tasmania are now operated by a Commonwealth entity — Australian National. As in the rest of Australia, the Tasmanian road freight industry has developed considerably. There are now over 5000 operators. There is no need to restrict competition to ensure that freight transport services are available throughout the State. In other states, regulations protecting rail freight have been eliminated or substantially reduced.

Measures have been put in place to relax road user regulations in Tasmania over the last 12 months. In particular:

- the rail protection fee was reduced by one-third on 1 July 1993, and is to be removed completely by 1 July 1995;
- the maximum gross vehicle weight for six axle semi-trailers has been raised to 42.5 tonnes, the same as that on the mainland;
- operating hours have been extended, but the extension has to be approved and a fee is payable; and
- trials of B-double trucks have been undertaken to help assess whether such trucks should be permitted to operate in Tasmania.

In addition to these measures, the licensing of truck operators is currently being reviewed by a working party of the Tasmanian Transport Industries Advisory Council.

The Commission accepts that circumstances in Tasmania may differ from those in other states. Nonetheless, it cannot identify any public benefit stemming from

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<sup>2</sup> In 1987–88, a little under 10 per cent of licence applications (for the carting of all commodities subject to the licensing provisions — 52 in total) were refused.

the regulatory arrangements (other than those that may have accrued to existing licence holders). On the other hand, costs have been imposed on user industries. This has undermined their competitiveness and reduced employment opportunities.

In its initial submission to this inquiry, APPM estimated that, if the trucking licences and the rail protection tax were removed, and if other regulations were modified so as to parallel those existing in other states, it would be able to reduce transport costs in some areas of its operations by around one-third. The company provided detailed supporting evidence on a confidential basis.

*The Commission recognises that the Tasmanian Government is taking steps to relax some inefficient road user regulations. The changes will improve the efficiency of trucking operations in Tasmania and increase user-industries competitiveness, including the forest product industries — an important sector of the State's economy. However, if the benefits of reform are to be maximised, the Commission considers that it is essential that the licensing be removed as soon as possible, the rail protection fee be abolished and that other road-user regulations should be modified so that they parallel those existing in other states.*

In the case of logging trucks, the Tasmanian Government has announced its intention to buy out some licences to remove excess capacity which currently exists. The Government has proposed that companies engaged in the industry (eg ANM and APPM) contribute to the buy-out fund.

According to APPM, this issue is inhibiting reform. At the draft report hearings, the company (transcript, p. 686) stated:

The basic problem is that the Tasmanian Government has said that if we want to see reform in transport for our operations in relation to hours of work, axle-loads, rail protection, cart pass fees, the use of B-doubles, etcetera, then the government is prepared to introduce that as long as we pay \$3 000 000, and that \$3 000 000 is to help to buy out excess capacity in the industry.

The case for considering compensation largely rests on whether, by restricting entry and/or industry operations, the regulatory arrangements have advantaged truck operators, and if operators have made investment decisions based upon the current arrangements. If this is not the case, there would seem to be no basis for considering compensation. For instance, there would seem to be few grounds for compensation if the adjustments which are now deemed to be necessary simply reflect changes in market conditions (eg the introduction of more efficient equipment).

The Government could take the view that trucking regulations — like government regulations in many other sectors of the economy — are subject to

on-going revision, and that the prospect of change is a normal commercial risk. This view, coupled with the fact that a market exists for most second hand trucks and that licence holders may have already extracted some of the 'economic rents' usually associated with licensing, would lead to the conclusion that compensation is not appropriate.

If the Government is concerned about the effect on truck operators of the removal of the licensing system, or of other regulatory changes, it could provide sufficient notice of the intended changes to allow operators to obtain a return on their 'investment'. One disadvantage of this approach is that it would defer the realisation of benefits associated with the removal of inefficient regulations. Another alternative would be to provide direct financial compensation. If the Government elects to follow this course — which the Commission understands is the Tasmanian Government's preferred course of action in the case of log trucks — the Commission considers that compensation should be paid for by the body which has both created (and intends to modify) the value inherent in the regulatory system — the Tasmanian Government. The only possible grounds for seeking compensation from user-companies would be that such companies are the principal beneficiaries of the proposed changes. However, even if this could be demonstrated, it is difficult to argue that user-companies should be obliged to pay, particularly as they have also been the parties penalised by the existing provisions.

There is also a need to continue work on implementing reforms currently being addressed by the National Road Transport Commission. Part of that Commission's work involves the development of a more efficient system of road charges for heavy vehicles. An improved charging system would promote more efficient and effective provision and maintenance of roads although, to the extent that it may involve heavy trucks paying higher charges, it could increase transport costs for the forest products industries.

## **7.2 Port and shipping services**

The operations of Australian ports and coastal shipping services have been reviewed by a number of bodies over the last five years or so (eg IAC 1988b, ISC 1989, BTCE 1989 and IC 1993). There have also been a number of recent reviews of trans-Tasman shipping and of liner shipping services into and out of Australia (eg BTE 1986 and 1987, and Swan Consultants 1992).

A common theme that has emerged from these reviews is that substantial inefficiencies have existed and that, because of these inefficiencies, shipping costs have been unnecessarily high. For example, in summarising the ISC

findings, the (then) Commonwealth Minister for Transport and Communications stated<sup>3</sup> that the waterfront was:

... characterised by ineffective management, poor work force motivation, introspective industrial attitudes, high costs, endemic unreliability, poor response to user needs, abuse of monopoly power and a pervasive lack of competition.

and that:

... the gross inefficiencies which have been allowed to develop in these [shipping and waterfront] industries have restricted our economic growth, reduced our living standards and impaired our capacity to develop export markets.

Many of the inefficiencies have been attributed to the limited exposure of shipping and associated activities to competitive pressures. For example, international shipping rates are inextricably linked with shipping 'conferences' - associations of shipping companies which act together to offer common prices and to schedule sailings over defined routes. While such agreements would normally be regarded as constituting anti-competitive behaviour, they are currently permitted under Part X of the TPA. This section of the Act is presently being reviewed by a panel established by the Commonwealth Government.

Past reviews have found that significant efficiency improvements could be achieved in four major areas: coastal shipping; waterfront operations; port authority activities; and international shipping operations. Improvements in these areas were estimated to result in substantial cost savings. For example:

- The IAC (1988b) concluded that, if the cabotage arrangements which protect Australia's coastal shipping fleet from competition from foreign-manned vessels were removed so that international freight rates applied on the coastal routes, freight rates would be 20 to 50 per cent lower.
- The ISC (1989) waterfront investigation reported that savings of 35 per cent of stevedoring costs were possible, mainly through the implementation of measures to eliminate out-moded work practices.
- A BTE (1987) study undertaken in conjunction with the New Zealand Ministry of Transport found that freight reductions of 24 per cent for non-bulk cargoes and 50 per cent for bulk cargoes were possible on the trans-Tasman route. (A union accord effectively reserves trans-Tasman freight of Australasian-origin for Australian and New Zealand crewed vessels.)

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<sup>3</sup> Minister for Transport and Communications, Ministerial Statement on Reform of the Shipping and Waterfront Industries, House of Representatives, Weekly Hansard, No. 8., 29 May to 1 June 1989.

- Swan Consultants (1992) found that reserving trans-Tasman trade for Australian and New Zealand ships imposes an annual cost on the Australian and New Zealand economies of \$A39 million and \$A38 million respectively.

While not accepting the need for some of the reforms proposed to improve efficiency (eg abolishing cabotage), governments responded to the various reviews by implementing a range of measures. Initiatives to improve efficiency included the introduction of a retirement and redundancy package to enable 9000 waterfront workers to leave the industry, a reduction in the average crew size on coastal vessels and measures to increase the commercialisation of port authorities. Central to the initiatives was the creation of the Shipping Industry Reform Authority and the Waterfront Industry Reform Authority (WIRA) to oversee implementation of the reforms.

Some significant gains have been achieved following the reforms. On the waterfront, time lost through industrial disputes has fallen, productivity has increased and ship turn-around times have been reduced. According to WIRA (1992), efficiency improvements resulted in a reduction in stevedoring charges of 20 to 25 per cent in 1991. A report by the PSA (1992) found that some, but not all, of the cost savings have flowed through to shippers. Reform of port authorities has resulted in a significant fall in employment (from around 7000 to a little over 5000) and moves to place port charges on a user-pays basis. Improvements in coastal shipping have come about mainly as a result of falls in average crewing levels — average manning levels for trading vessels over 2000 deadweight tonnes fell from 28 to 21 between mid-1989 and mid-1992. Analysis undertaken by the Commission suggests that prospective gains may now be in the order of 10-15 per cent.

Estimates of the impact of future reforms on the waterfront and on coastal shipping are estimated in Appendix G. The analysis suggests that, while the impact on the forest products sector is relatively modest, GDP could increase by around \$450 million annually.

Some participants acknowledged that there have been improvements in the provision of port and coastal shipping services. For instance, Boral (transcript, p. 178) commented favourably on waterfront reform at Newcastle:

... the labour that has been needed to load a woodchip boat has now been cut down quite dramatically, so it is a pretty good operation and basically we don't have too many troubles.

Similarly APPM — which is a major user of coastal shipping services, principally Bass Strait services — stated (sub. 38, p. 19) that:

... improved productivity (which we estimate to be in the order of 30% across the stevedoring industry) has undoubtedly improved turnaround for ships in port, and enabled shipping companies to maintain more reliable schedules.

However, a number of participants commented that direct cost savings (ie reductions in charges) have been small or non-existent. For example, APM (sub. 36, p. 15) commented that:

... despite waterfront reforms, no tangible benefits have flowed to shippers in terms of freight rates.

While noting that information published by the Australian Shipping Users Group suggested significant improvements, including a reduction in container handling charges, the Australian Wood Panels Association (sub. 16, p. 9) expressed similar views:

... AWPA members have to date received no benefit from cost reductions.

A common view expressed was that, while improvements have been achieved, waterfront and coastal shipping activities are still not internationally competitive. ANM, for instance, stated that its Boyer mill is disadvantaged because distribution of the newsprint produced in that mill to mainland centres involves crossing Australian wharves twice. However, ANM also stated (sub. 45, p. 22) that:

The inefficiency of the Australian waterfront provides a level of protection for mills such as Albury distributing predominantly on the Australian mainland.

Bunnings, which said that overseas freight costs represent some 14 per cent of its export revenue, attributed high international freight costs to the existing shipping conference arrangements. The company suggested that the review into Part X of the TPA should be accelerated.

The New Zealand Ministry of Forestry provided comparisons of New Zealand and Australian port charges supplied to it by one New Zealand exporter. They suggest a substantial difference in charges. For example, port charges are claimed to be \$NZ 2 500 in New Zealand compared to \$NZ 16 000 for the same ship in Australia. The Ministry of Forestry (sub. 81, p. 2) added:

Such rates are indicative only and no doubt vary substantially from company to company, cargo to cargo and port to port, but they nevertheless illustrate that New Zealand's port reform process has been relatively more successful than Australia's. As one shipping company expressed it, the average pre-reform port charges in New Zealand were 83% of the equivalent rate in Australia, whereas the post-reform average port charges in new Zealand are now 47% of post-reform charges in Australia.

*There has clearly been some improvement in the efficiency of ports, coastal shipping services and some related activities. Nonetheless, continued reform is required if these activities are to be internationally competitive and not stand in*

*the way of improved export performance by Australia's forest products (and other) industries. The implementation of recommendations contained in the Commission's report on Port Authority Services and Activities — which would result in ports operating in a more commercial manner and in the exposure of some port services (eg towage) to increased competition — would help improve efficiency further. It would, of course, also increase the competitiveness of imported forest products in the domestic market.*

### **7.3 Energy supplies**

While in-house generating capacity reduces energy costs for many forest products producers, energy remains an important component of many producers' costs. ANM, for example, stated that electricity represents 32 per cent of manufacturing cost at its Albury mill. For energy-intensive users such as ANM, it is clearly essential that energy be supplied efficiently and at least cost.

Electricity supply in each state and territory is currently controlled by government instrumentalities. The arrangements for the supply of natural gas are more diverse. In Victoria, Western Australia and South Australia, gas distribution is undertaken by government agencies whereas, in New South Wales (including the ACT) and Queensland, gas is reticulated by private companies. A factor common to both industries is the limited exposure of the industries to effective competition. In some end uses, there is some competition between electricity and gas (eg residential heating). However, electricity and gas suppliers are effectively sole providers in the regions they service.

Although there are quite significant variations between regions and different user categories, average energy prices in Australia are broadly competitive with those in other developed countries. However, as pointed out by APM and ANM, aggregate data on electricity prices may not accurately reflect the prices actually paid by energy-intensive industries or by particular firms. The more important issue, however, relates to whether energy prices in Australia are as low as they should be.

Recent studies and actions by Australian governments to improve the efficiency of their energy utilities indicate that there is considerable scope for improvement. For example, in a 1991 report into Energy Generation and Distribution, the Commission estimated that the adoption of better production and pricing by energy utilities could expand national output by \$2.4 billion annually and create an additional 8000 jobs. A study by Swan Consultants (1991) found that Australian electricity utilities were operating at only 70 per cent of the productivity levels of investor-owned utilities in the United States.

These findings suggest that electricity prices in Australia should be lower than what they currently are.

A number of producers participating in this inquiry criticised electricity prices. For example, APM (sub. 75, p. 2) stated that:

Industrial electricity prices are significantly higher than they should be, given the low cost energy resources available. In APM's view, this is primarily a result of the lack of competition in the electricity supply industry ... Government interference in pricing policies for political reasons has resulted in cross-subsidisation of domestic tariffs by industry, leading to higher than necessary electricity prices for industry.

Concern was also expressed about the 'buy-back' prices offered by state authorities for electricity generated by industry. Participants stated that the prices offered were artificially low and discouraged the development of cogeneration plant.

Recognising the scope which exists for improving efficiency, most governments have taken steps to improve the performance of their energy utilities. Considerable progress has been achieved in improving efficiency.<sup>4</sup> Although progress varies between states, most have implemented some of the measures required to place electricity authorities on a more commercial footing. However, to date only limited progress had been made in introducing measures to address what is perceived by many to be the major factor underlying inefficiency in the industry — the limited effective competition.

Increased competition in electricity supply would make it difficult, if not impossible, for cross-subsidies to be sustained. It would also increase the incentive for electricity suppliers to minimise costs by, among other things, offering more realistic buy-back prices for privately generated electricity in order to reduce their overall supply costs.

A pre-requisite for increased competition is fair and open access to transmission facilities. While measures proposed by the National Grid Management Council would permit a degree of access, there is considerable reluctance to separate state-owned generation and transmission facilities so as to ensure that non-discriminatory access is available to all. There is also resistance to segmenting generating and distribution assets into a number of independent entities so as to promote competition in these sectors.

*The Commission considers that there is a need to accelerate reform of the electricity supply industry. It considers that the implementation of the policy options advocated in its earlier report into energy generation and distribution*

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<sup>4</sup> The Electricity Supply Association of Australia stated that the electricity supply industry has reduced its workforce by about 21 per cent since 1983 and raised overall productivity by more than 20 per cent.

*would help achieve this objective. This would involve full separation of state owned generation and transmission assets and breaking up existing generation and distribution assets in each state.*

Reforms that lower electricity suppliers' costs and reduce (or eliminate) existing cross-subsidies will generally advantage the forest products industries. On the other hand, it needs to be recognised that some reforms may disadvantage users. For example, requirements for public energy suppliers to pay all government taxes and charges and pay a dividend to government will decrease the capacity for energy tariffs to be lowered and, in the absence of off-setting cost savings, will tend to increase energy charges.

APM and some other participants also expressed concerns about cross-subsidies in natural gas supply and the need to create a more competitive market. The Commission concurs with this view.

*Competition in the supply of natural gas will be promoted by the adoption of the National Gas Strategy announced by the Commonwealth in late 1991. More recently, the Commonwealth Government has announced that it will develop a national regulatory framework for interstate trade in natural gas. Part of this initiative — a requirement that pipeline owners provide access to other parties — should also help foster competition. However, to ensure that competition evolves, states also need to consider measures similar to those proposed for the electricity industry (the separation of transmission and distribution assets, and the creation of multiple distribution franchises in each state).*



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## 8 OTHER IMPEDIMENTS

The previous two chapters have considered wood supply — in which governments are heavily involved as regulators and major owners and managers of forests — and government-provided services. This chapter considers various other impediments identified by participants, namely:

- management and labour issues;
- project approval processes;
- intervention to encourage paper recycling; and
- building codes, product standards and quality assurance.

Other factors which impair competitiveness, but which are largely controllable by the companies themselves — such as the choice of technology and the scale of plant — are discussed in Chapter 10.

### 8.1 Management and labour issues

Many management and labour matters are determined by direct negotiation between the industries, their employees and unions. However, the framework within which such negotiation occurs is largely determined by Australia's industrial relations system which, among other things, specifies minimum employment conditions, defines the scope and manner for negotiating enterprise-based agreements and prescribes measures which employers must comply with in order to help ensure that the safety of workers is not put at risk. Thus, although many labour issues (eg industrial disputes) may not be controllable by government, the influence of government over labour matters is considerable. Given these circumstances, the labour market issues raised by participants are discussed together in this section of the report.

As would be expected, participants' views about labour arrangements varied quite considerably. However, the predominant view appears to be that there has been a general improvement over recent years and that problems which do exist are generally in the process of being addressed, often in the context of enterprise-based agreements. For instance, the Federation of Industrial Manufacturing and Engineering Employees (FIMEE, transcript, p. 50) stated:

... this industry is not one which has massive labour costs; it is not one beset by industrial unrest. Therefore, if we have security of resource at a reasonable cost it's our submission there is a very good setting, in an industrial sense at least, for development of the industry.

Perceptions about training needs are more uniform: most participants expressing a view consider that, while the industries' commitment to training has increased in recent years, there is a need to improve both management and workforce skills.

Participants' views on these matters are amplified below: first in relation to management and work practices, and subsequently skills and training.

### **Management and work practices**

Participants indicated that there have been significant changes in management and work practices over recent years. Many of the changes have been negotiated in conjunction with modifications to the centralised wage-fixing system. Under the Accord arrangements, wage fixing has been closely linked to workforce reform designed to increase productivity and efficiency. The reforms were initially related to award restructuring under the structural efficiency principle developed in the August 1988 wage case. Among other things, the restructuring involved award modernisation, revised classification structures based on task broadbanding and multiskilling, and the introduction of consultative practices at the enterprise level. A key objective of the reform was to promote skill formation and increase the flexibility of the workforce to reduce costs associated with demarcation issues and outmoded work practices. The restructuring has been facilitated by legislative changes to allow unions to apply for sole coverage of workplaces under Section 118 of the *Industrial Relations Act 1988*. This has encouraged rationalisation of unions. The more recent move to enterprise bargaining has facilitated further change by focussing reforms at the workplace rather than at the award level.

In the forest products industries, there has been some rationalisation of both employer and union bodies. For example, employers established a national body — the Federation of Timber Industry Associations — and the Timber Workers' Union, the Pulp and Paper Workers' Federation, the Building Workers' Industrial Union and other unions amalgamated to form the Construction, Forestry, Mining and Energy Union (the CFMEU). Union rationalisation has also occurred at the plant level. For example, the number of unions at ANM's Boyer mill is in the process of being reduced to two. At one time, there were thirteen unions at the mill.

In the past, there has been criticism of the management of forest products enterprises. For instance, in 1991, the (now) joint secretary of the timber division of the CFMEU stated:

... Australian management practice is generally out of date and inefficient. Managers cling to 'management prerogative'. They actively encourage the retention of 'us and them' attitudes in the workplace.

In a submission to this inquiry, APPM (sub. 38, p. 34) argued that the style of management in Australia has been "paternal and generally individualistic rather than team-oriented". It stated:

[The] necessary change in management style will, by nature, be evolutionary in most cases, but, even if it is revolutionary, there does not appear to be any role that the IC can effectively play to improve or speed up the results.

On the other hand, a number of participants stated that there have been significant changes in management practices. The changes are said to be resulting in increased employee participation in decision-making processes. In this context, FIMEE noted that consultative committees have been established in mills in the south-west of Western Australia. The New South Wales Forest Products Association (sub. 91, p. 6) stated that:

The Federal Timber Industry Award is also unique in that it provided a clear focus for enterprise based consultative committees to vary existing award conditions, on site, and subject to certain conditions, without further reference to the Industrial Commission.

Companies that have negotiated, or are in the process of negotiating, enterprise agreements generally expressed the view that union-employer relations are good. For example, APM noted that over the past four years it has been developing an industrial relations approach in line with its Total Quality Management values, resulting in greater production efficiencies flowing from better trained employees and more tightly-staffed shift operations. APM stated that employee numbers and wage rates for the Australian pulp and paper industry are competitive with producers in other developed countries, although personnel costs per unit of production are higher because of the smaller scale of production. Bunnings also commented favourably on the "very productive" relationship it has with unions.

In contrast, a few participants expressed concerns about employer-employee relationships. For instance, while APPM said that "stunning" results had been obtained at its Wesley Vale mill, it claimed major ongoing difficulties at its older Burnie plant. Developments at this site were said to be hindered by the fragmented union structure, with ten unions vying for members. In discussing its efforts in industrial relations reform, APPM stated that the fundamental problem in Australia is that unions have not allowed management to utilise the flexibility granted under the award.

Similarly, Boral (sub. 40, p. 45) claimed that:

While the timber industry is relatively advanced in labour restructuring there are still significant gains that can be made but union attitudes to issues such as enterprise bargaining are still obstructive.

In some senses, reform of management and workforce practices is more difficult in the forest products industries because of its regional dispersion. As NAFI (sub. 24, p. 36) noted:

In the forest and forest products industries, labour productivity and market factors are exacerbated by the geographic location of the industry. The industries have traditionally been a major employer in regional Australia, and many labour and management practices have become entrenched.

*The Commission received no evidence suggesting that there are major problems in management and work practices in the forest products industries. The balance of information available to the Commission suggests that management and work practices are being improved (particularly in larger firms), although the situation clearly varies between and within companies. Given this variability, and the company-specific nature of some of the problems, it is appropriate for negotiations between companies and their workforce to continue.*

## **Skills and training**

The general view expressed by participants was that, although there has been increased emphasis on the need for management and workforce training, further changes are still needed:

- many argued that there is a case for more training; and
- some identified weaknesses in government training programs claiming, for instance, that there is a need to improve the scope of training courses and their regional availability.

### *Industry training needs*

There is only limited evidence on the adequacies of skill levels in the various forest products industries. However, a 1990 survey suggests that some skills are in short supply, at least in the hardwood industry. The Forestry and Forest Products Industry Council (1990) reported that 59 per cent of hardwood sawmills were experiencing difficulties in recruiting or retaining labour, with skill shortages being more pronounced for large mills. The survey noted that employee skills and training are vital if the hardwood industry is to increase value adding. It is not clear, however, to what extent the shortage in skills is attributable to the nature of the industry itself (eg it involves relatively hard

manual labour and, for many in the industry, there is no well defined career path).

The National Forest Industries Training Council (NFITC) considers that training needs are being neglected. It stated (sub. 43, p. 1):

... the objective of further value adding to Australia's forest products and the productivity and efficiency of the industry are impeded by a deficiency in education and training for major sectors of the workforce.

It is recognised that the workforce is already highly skilled, however, further development and value adding will be significantly dependent upon the ability of those employed within the industry to adapt to technological and other changes within the industry's internal and external environments.

In responding to the draft report, the Queensland Government submitted that there is a need for the NFITC to develop an overall training strategy. It also identified a need for competency standards to be developed as a basis for developing appropriate training curricula.

Pine Australia (sub. 41, p. 8) argued that the industries must improve their commitment to training:

Industry must work with Unions through the National Forest Industries Training Council to broaden from the present focus on career paths for forest and mill operators, including literacy and occupational health and safety.

CSR Softwoods (sub. 10, p. 6) went further, stating that:

... we are aware that education of our work force at all levels, from machine operator to managers requires improvement.

On the other hand, some producers consider the extent of training to be a less significant problem. For example, APPM (sub. 38, p. 34) stated that:

There are various 'providers' of training modules in this country and managers are frequently confronted with an embarrassing choice of courses, etc. for their employees. Expenditure on training is now substantial.

### *The availability of training programs*

The general types of education and training programs publicly available cover numerous work functions in all forestry and forest products industries. Programs are provided by a range of organisations as indicated by the following sample:

- TAFE colleges throughout Australia offer a range of specialist courses, for example, apprenticeships in saw doctoring in South Australia and New South Wales.

- Two universities have degree programs in forest science; another has a course leading to graduate certificates for middle and technical management in timber merchandising.
- State government departments and agencies conduct several courses, for example, the New South Wales Forestry Commission and the Victorian Department of Conservation and Natural Resources each provide chainsaw instruction.
- Industry bodies and agencies offer a range of programs including: courses for chainsaw instructors at the Victorian Timber Industry Training Centre; timber technology courses at the Institute of Wood Science; a wood science course for managing, supervising and sales provided by the J.W. Gottstein Memorial Trust; diplomas and masters degrees in pulp and paper technology at the Australian Institute of Pulp and Paper Technology; and correspondence courses such as those provided by CSIRO in wood drying.
- Private companies provide a range of courses (eg APM Forests conducts courses on occupational health and safety in forest operations).

Although there is clearly a variety of organisations that cater for training needs, most participants commenting on the issue consider there are deficiencies in the present availability of training programs.

The NFITC stated that there are relatively few education courses specifically servicing those employed in management, line management, supervisory and scientific technical roles. It stated that current initiatives are mostly directed at the operative levels of the workforce, and that management development specifically for the forest industries is largely neglected. According to NFITC, there is a significant disparity in the availability of training courses for those employed at the operative level between industry sectors and between different locations.

The NFITC argued for a greater government role. It stated that the majority of training courses available to the industry are offered by providers other than the publicly funded education system, and that there is a significantly greater range of publicly funded courses and research activities in the areas of ecology, environmental studies and resource management than in the areas of forestry or forest products. Concluding that forest industries are disadvantaged relative to other industries in terms of publicly funded education and training, it called for increased government funding.

Pine Australia (sub. 41, p. 8) claimed:

Government assistance, through established departmental programs and industry training councils, is necessary to achieve an integrated education system which will

develop and attract technical and professional skills into the industry. Government assistance is also required to constrain the competition between education providers to achieve a limited number of 'centres of excellence' rather than a sub-standard array of disjointed facilities. Consequently the terms of reference of industry training councils, which have allowed them to also act as training providers, should be reviewed.

CSR also identified significant shortcomings in the existing training arrangements. It stated (sub. 10, p. 6) that:

The education provided for the forest products processing industry with the exception of pulp and paper seems totally inadequate and disjointed. We have as an industry not been successful in the development of an education structure which will provide an integrated system of education starting with an apprenticeship system for our operators, an education system for first line managers, more commonly called supervisors, to professional education in wood science, processing technology, timber engineering and management.

Expenditure on training by individual firms (over and above the existing statutory requirements) is clearly a matter that should be determined by individual firms (in consultation with their workforce) based on assessments of their needs. However, governments have a role in providing training which is relevant to the needs of a number of firms, or the industries generally. While government funding of training is not open-ended, the forest products industries should not be disadvantaged vis-a-vis other industries.

*On the basis of the information available to the Commission, it is not possible to assess whether existing funds are allocated in the most efficient manner: absolutely, geographically, between forest products industries, between management and the workforce, or in other ways. However, given the criticism of the existing training programs expressed by participants, there is a clear need for governments, in consultation with the industries and their employees, to review as soon as possible: future training needs (including management training); the capacity of existing institutions to meet these needs; the level of funding provided; and the allocation of available funds.*

## **8.2 Project and environmental approval processes**

Many participants were critical of approval processes for forest projects. In the main, the criticisms echo those made by producers in other industries to a number of other Commission inquiries. The fundamental concern relates to the length of time and the costs involved in securing the necessary approvals to allow investment in new projects to proceed. The major factors said to contribute to delays include the imprecision (or in some cases, non-existence) of guidelines and standards with which new projects must comply, the multiplicity of government agencies from which approvals must be obtained,

overlapping responsibilities between government bodies and different levels of government, and a general lack of coordination of approval processes.

Typical of the sentiments expressed are those of the Institute of Foresters (sub. 5, p. 4):

There are excessive bureaucratic delays in the approval of projects based on forest resources, compounded by requirements to refer proposals to groups in Canberra or in the States who have no sympathy with the utilisation of forest resources. At times it appears they are opposed to any sort of economic activity.

Impediments associated with administrative processes for obtaining approval to establish and harvest plantations and to export logs or woodchips have been considered in Chapter 6. The frustrations appear to be no less in other forest products projects. For instance, the PPMFA (sub. 26, p. 13) stated:

Assessment of the environmental impact of major expansions by way of EIAs is a major chore for industry and can take several years and cost many millions of dollars. If there are unnecessary delays, the ultimate cost may be paid, that is the project is disbanded.

The failure of the Wesley Vale pulp mill project is cited by many as an example of how assessment costs, delays and abandonment all increase the lack of trust in the political process. NAFI argued that the ad hoc nature of decisions affecting approval adversely affects financiers' assessments of expected returns.

Participants gave examples of the delays and costs associated with smaller projects. The principal frustration appears to revolve around environmental approval processes. For example, in New South Wales, in addition to the *Forestry Act 1916*, forestry operations are subject to a lengthy list of environmental controls and protection legislation (see Box 8.1).

The burden of legislation in New South Wales is illustrated by the *Endangered Fauna (Interim Protection) Act 1991* which has added significant requirements for those wishing to harvest timber on private property. The New South Wales Forest Products Association calculated the financial impact of compliance by New South Wales state agencies alone at over \$11 million for the first 20 months of the Act's operation. The Association noted that preparation of Environmental Impact Statements is expected to cost the industry around \$3 million in 1991–92, or around 7 per cent of estimated revenue from hardwood forests. It also referred to the effect of the *NSW Environmental Planning and Assessment Act 1979* which it claimed (sub. 12, p. 7):

... has proved a minefield of litigation, delay, expense and frustration for what would otherwise be 'routine' forest harvesting activities.

### Box 8.1 Environmental control and protection legislation affecting forestry operations in New South Wales

- *Clean Air Act 1961* re air pollution, including smoke from controlled burning;
- *Clean Waters Act 1970* re erosion and siltation of water courses;
- *National Parks and Wildlife Act 1974* re endangered fauna;
- *Noise Control Act 1975* re noise pollution;
- *Heritage Act 1977* re preservation of the nation's natural and cultural heritage;
- *Environmental Planning and Assessment Act 1979* re assessment of impact of proposed forest operations on the environment;
- *Wilderness Act 1987* re preservation of wilderness areas;
- *Protection of the Environment Administration (PEA) Act 1991* re operation of the Environment Protection Authority in maintaining ecologically sustainable development;
- *Endangered Fauna (Interim Protection) Act 1991* re faunal impact assessment and associated licence issue, as administered by the National Parks and Wildlife Service; and
- *Timber Industry (Interim Protection) Act 1991* re division of forest areas into areas reserved from logging, areas which must undergo environmental assessment before logging proceeds and areas which are available for logging under normal harvesting prescriptions.

Source: Drielsma (1992).

In Western Australia, under the *Environmental Protection Act 1986*, development proposals are assessed by the State's Environmental Protection Authority, after which appeals to the Minister on the assessment can only be resolved by the Minister confirming the level of assessment, or increasing it. Consequently, outcomes are always skewed against the proponent (ie the presumption is that a project can only have a more detrimental effect than when first considered, never less). This factor, combined with the ability of an interested party to appeal for a nominal fee (\$10), provides an incentive for aggrieved parties to abuse the process by initiating appeals. This could impose only minor costs on appellants, but substantial costs on industry.

The Western Australian Environmental Protection Authority stated that, provided there are no major holdups, approval could be granted to a relatively small project in about 5 to 6 months, but that approval for major projects would take 12 to 18 months. The Authority said that it is developing a publication which details formal guidelines relating to its processes.

Many participants stressed the need to improve intergovernmental coordination, timeliness and consistency, and to remove project assessments from political interference. For instance, the PPMFA (sub. 26, p. 13) stated:

Governments must ensure that the assessment is tightly coordinated between the Commonwealth, State and regional levels, that it is of a definite short duration, is carried out under the principles of ecologically sustainable development using scientific methods, that it is not disrupted for political motives, and that the reasons for rejection, if this occurs, must also be expressed in ESD terms.

NAFI (sub. 24, p. 54) argued that:

Project approval processes are frequently poorly specified, costly, lengthy and highly politicised. There needs to be a 'one-stop' approach to all project approvals that incorporates the three levels of government — similar to the major project's unit announced in [the One Nation Statement].

One approach to facilitate an easier approval process is being tried by the Western Australian Government. It is currently seeking, through the Department of Resources Development, the development of a pulp and paper mill in the south-west of the State. The Government is seeking a proponent which will carry out a detailed feasibility study and commence a substantial hardwood plantation development program. For such a commitment, the Government is offering to work exclusively with the successful proponent for an agreed period to develop the project, assist with the feasibility process and facilitate the necessary approvals to commence operations. The Government will also offer the security of an Act of Parliament once there is a firm commitment to construct the mill.

The Department also acts as a co-ordinating agency for a number of other major forestry and non-forestry projects. In this capacity it liaises with state government agencies such as water and energy authorities about specific projects' infrastructure requirements and also with local governments, regional and local communities to help resolve a range of issues which need to be determined before major projects can proceed (eg the haulage of logs on local roads and local planning issues).

In a submission responding to the draft report, the Queensland Government indicated that it is seeking to ameliorate its complex planning procedures and processes by the establishment of the Office of Co-ordinator General to facilitate major projects, and by the adoption of streamlined approval processes and simplified planning appeals.

Improved approval processes were embodied in the Pulp and Paper Industry Package announced by the Commonwealth in December 1989 to assist the development of a viable bleached eucalypt kraft (BEK) pulp industry in Australia. The Package included a program of research into pulp production, bleaching technologies and environmental impact minimisation. It also included a commitment to negotiate with the states on joint Commonwealth/State environmental assessment arrangements for future BEK pulp mill proposals to

enable simultaneous consideration of approval issues. Agreements have been signed with several states.

The Package establishes clearly defined assessment processes for prospective BEK pulp mills — albeit involving a considerable period of time (72 weeks for the environmental impact statement and the social, economic and community impact statement). Together with the time for government decision-making and actual construction, there is a minimum of five years between the decision to invest and the first pulp sale. There is not ‘fast-tracking’, but there is more certainty.

While the Commonwealth’s guidelines pertain only to BEK pulp mills, the NFPS (1992, p. 17) indicates that the improved coordination processes between the Commonwealth and States contained in this approach are to be offered to developers of other major forestry projects:

... Governments will cooperate to offer to proponents of major projects a streamlined and coordinated Commonwealth-State project-assessment process in instances where the Commonwealth has a statutory obligation in relation to that project. This process will include agreed periods within which the governments’ requirement for environmental impact assessments will be agreed.

The Commonwealth Department of the Environment, Sport and Territories (sub. 80, p. 5) stated that:

A concerted effort is currently under way to address some of the perceived shortcomings of the current process of environmental assessment.

The Department noted that the Commonwealth Environmental Protection Agency is currently preparing a comprehensive operational manual to show how Environmental Impact Assessments are undertaken by the Commonwealth. It noted that the manual will “also confirm the practice of getting early agreement with proponents on time schedules for all stages of the assessment process”.

*The processes required to be followed by developers to gain approval for forest products projects are frequently costly, time-consuming and confusing. Improved coordination measures in some states (eg Western Australia) and recent Commonwealth initiatives will help overcome some problems. However, governments need to introduce further measures to reduce uncertainty and remove inefficiencies associated with all approval processes, including those applicable to smaller projects. This would require government action to:*

- *clarify the requirements with which project developers must comply;*
- *more clearly specify the assessment criteria; and*

- *review administrative procedures to improve coordination and avoid the possibility of duplication and overlaps between different government agencies that must be consulted to gain the necessary approvals.*

*The latter problem could, in principle, be addressed by the 'one-stop' concept employed by some governments.*

### **8.3 Government measures to encourage paper recycling**

Many governments wish to encourage recycling of paper. While the objectives have not always been explicitly stated, most initiatives appear to reflect desires to promote sustainable management of wood resources and, more commonly, to minimise waste and reduce landfill. For example, in June 1992, the Commonwealth Government's national waste minimisation and recycling strategy gave a commitment to reduce the total quantity of solid waste going to landfill by 50 per cent by the year 2000 (based on weight per capita using a 1990 base). Similarly, Victoria has established the Recycling and Resource Recovery Council to "support and facilitate the reduction, avoidance and recycling of wastes with the goal of reducing waste to landfill by 50 per cent by the year 2000". Other state governments, including those in New South Wales, and Western Australia, have also established landfill reduction targets.

Participants identified three types of government intervention which are intended to encourage paper recycling:

- sales tax exemption for certain recycled paper types;
- recycling targets; and
- government procurement policies prescribing purchase of recycled paper.

To facilitate later discussion of these concerns, the extent and nature of recycling in Australia is briefly outlined in the following section.

#### *Extent of recycling*

In 1991–92, 1.015 million tonnes of wastepaper was recovered, of which 43 000 tonnes was exported, and 24 000 tonnes was used by other industries, leaving some 948 000 tonnes being consumed by the Australian paper industry. With total paper consumption being 2.756 million tonnes, this equates to a recovery rate of 36.8 per cent. About 60 per cent of the wastepaper consists of packaging materials, about 25 per cent is printing and writing papers and the remaining 15 per cent is used newsprint.

According to the PPMFA, most wastepaper is collected from industrial sources. Kerbside collections account for less than 20 per cent of Australia's recycling

feedstock. Just under 50 per cent of packaging paper is recovered, most of which is reprocessed into new packaging products. The recovery rate for printing and writing papers is lower at 28 per cent. The newsprint recovery rate is about 26 per cent, a significant proportion of which is exported.<sup>1</sup> No tissue products are recovered, but some high quality printing and writing papers are reprocessed into tissue papers. Some printing and writing papers and used newspapers are also reprocessed into packaging. For packaging, the consensus is that Australia is close to the economic limit for the use of recycled pulp.

In 1987–88, Australia's utilisation rate was 36 per cent.<sup>2</sup> This was lower than the rate for Japan, the Netherlands and West Germany, but above the United States. Although somewhat dated, Table 8.1 shows that Australia's utilisation rates for wastepaper used in packaging and in printing and writing papers are high by world standards. The contrary is true in newsprint and in tissue production.

**Table 8.1: Wastepaper utilisation rates for major paper product groups, 1987–88**  
(per cent)

<i>Product group</i>	<i>Australia</i>	<i>West Germany</i>	<i>Western Europe</i>	<i>USA</i>	<i>Japan</i>
Newsprint	0	50	25–30	20–25	45–50
Printing/writing	6	4	3	6	14–15
Tissue paper	1	25	40	30	na
Packaging/industrial	68	90	65–70	30	65–70

*Source:* IC (1991d, vol. 2, Table 4.1).

While its definition differs from that used by the Commission to compile data for 1987–88, the PPMFA reported that, in 1991–92, the Australian utilisation rate was 45.7 per cent. The PPMFA (1993) stated that:

With planned industry projects to increase recycling, it is expected that wastepaper usage will exceed 50 per cent of the production of paper by 1995.

<sup>1</sup> Manufacturers' proposals could raise the recovery rate for old newspapers to about 55 per cent on the eastern seaboard.

<sup>2</sup> The utilisation rate is the amount of secondary fibre (recovered fibre) used in the manufacture of paper, expressed as a percentage of the total fibre used.

### *Sales tax exemption*

Exemption from wholesale sales tax for certain papers made wholly from recycled fibre took effect in October 1989 with the aim of increasing domestic wastepaper usage.

Several manufacturers argued that such exemptions are not an efficient way to encourage recycling because they distort product markets by diverting waste materials into less productive uses, encourage imports and misallocate capital. For example, the PPMFA (sub. 26, p. 17) described the exemption as a “classic example of misallocation of resources” because of the way in which it led to dramatically increased imports of tissue and packaging papers manufactured from wastepaper. APM (sub. 44, p. 17) claimed that the exemption failed to take account of the substantial difference between available volumes of different wastepapers and the long lead times in developing wastepaper supplies. In the event:

... imports of so-called 100% recycled bag papers increased dramatically. ... To compete, domestic manufacturers attempted to produce a 100% recycled bag paper. White waste was in limited supply and APM therefore had to import high cost white waste from overseas. This made [local] production uncompetitive and hence threatened the closure of domestic [bag paper] operations.

According to participants, the exemption favoured imported products that have no potential for further recycling (eg tissue paper), disadvantaged the use of papers with significant — but less than 100 per cent — recycled content, and did nothing to encourage greater recycling of newsprint — a major contributor to landfill waste. In addition, administrative difficulties were said to have arisen because, first, there was no way of testing manufacturers’ claims as to recycled content and, second, there was no consistent definition of what constitutes recycled fibre.

Following representations from local paper producers, the exemption was removed in June 1992 from facial and toilet tissue, certain books of paper such as exercise books, and paper bags. However, the exemption remains for writing, drawing or printing paper, pads of writing or drawing paper, paper for use in accounting ledgers or journals, and envelopes. With the removal of the exemption, the Commonwealth Government is making available financial compensation (“transitional assistance for three years ... effected by way of special purpose payments to the relevant state governments, for passing on to the producers”) for particular firms that made investment decisions following the announcement of the exemption.

### *Recycling targets*

Paper products comprise a considerable proportion of the solid waste stream in Australia. Consequently, there have been various legislative moves to set voluntary targets for wastepaper recycling through agreements requiring collection of minimum proportions of wastepaper or by mandating minimum recycled fibre content in paper products.

In many countries, there has been particular pressure to increase newsprint recycling levels. For example, in the USA, over half the states have mandatory old newspaper collections and twelve states have legislated minimum recycled fibre content in newsprint.

In Australia, the Tasmanian Government's draft recycling and solid waste management policy calls for no less than 55 per cent of newsprint to be recycled. Similarly, in Victoria, a 1992 report prepared for the (then) Victorian Government by a body comprising Cabinet Ministers, business representatives and senior trade union representatives (the Fibre Processing and Sustainable Development Jobs Council) recommended that the Government investigate legislating for a requirement of 50 per cent average secondary fibre content for all newsprint sold in the State.

### *Government procurement policies*

In December 1992, the Commonwealth Government announced that, in order to encourage waste minimisation and ecologically sustainable management of paper fibre resources in Australia, it would set targets for the use of recycled and other "environmentally preferred" paper products by Commonwealth agencies. These targets will have to be progressively met by 1995–96. By that time, 90 per cent of certain paper products purchased by Commonwealth agencies will have to meet these targets.

In July 1993, the Government announced that, in close consultation with industry, community groups and unions, specific scientific criteria would be developed for environmentally preferred paper products under three broad categories. The categories appear consistent with a definition recommended by the Commonwealth Environment Protection Agency:

Environmentally preferred papers are those able to demonstrate advantages in one or more of the following aspects of the product's life cycle - resource sustainability (includes recycled content - level of which must be stated if fibre resource not entirely post consumer waste), reduced energy use and reduced pollution (includes emission to air, water and land).

APPM (sub. 70, p. 15) argued that, under this broad definition of “environmentally preferred” paper products, “virtually every sheet of paper produced in the world” would satisfy the criteria.

APM claimed that requirements for government agencies to use paper with a high recycled fibre content can conflict with the objective of improving international competitiveness. It stated that, in order to compete on the international copypaper market, Australian manufacturers will have to produce high brightness paper, in which the maximum percentage of recycled fibre will be limited to around 20 to 30 per cent. APM (sub. 44, p. 16) stated that, if government purchasing requirements specify a higher recycled fibre content (and thus lower brightness), there would be a number of adverse consequences:

- a. ... the cost competitiveness of producing such papers on a new machine would be substantially poorer than the production of higher quality papers. Australia already has, and can build on, its natural competitive advantage of low cost eucalypt plantation wood.
- b. An artificial market which forces the purchase of papers from ‘favoured’ suppliers will encourage uncompetitive pricing.
- c. Recycled newspaper will be shifted to the production of poor quality fine papers when it would be more efficiently used in the production of recycled newsprint and as fillers for packaging papers.
- d. Capital will be misdirected to capacity expansions which will hinder and delay the development of truly internationally competitive paper production based on Australia’s natural competitive advantages.

In contrast, APPM supported intervention through government procurement policies. APPM said that it has been actively encouraging the Commonwealth Government to enter into binding contracts for the purchase of recycled paper from a new plant that it was proposing to construct at Shoalhaven. It also expressed dissatisfaction at the current situation where contracts can be obtained with the Commonwealth Department of Administrative Services, but individual government departments are not obliged to purchase under these contracts. APPM (sub. 70, p. 16) claimed that:

... consistent advice from Government is that such a contract would not be achievable and we were advised by Government that the policy route would be the only mechanism available that could help establish some security with regards to an initial market for the paper from the Shoalhaven project.

### *Assessment*

The Industry Commission has previously inquired into paper recycling. In its interim report on paper recycling, the Commission (IC 1990) concentrated not

on whether paper recycling rates could be higher, but on whether the Australian community would be better off if recycling rates were higher.

While the interim report found that there was widespread community support for recycling, it argued that, if governments wish to encourage paper recycling, they should focus on solving impediments to additional recycling rather than on addressing symptoms of the problems. For instance, the Commission (IC 1990, p. 10) concluded that:

Governments can best assist paper recycling by attention to the pricing and management of forests and the pricing of waste disposal, and by ensuring that there are no undue impediments to information about recycled products.

This argument was based on theoretical grounds in addition to the many practical considerations examined during that inquiry. Among other things, the Commission found that:

- paper recycling has been undertaken for some period of time and, therefore, there exists a keen demand for high quality wastepaper;
- to the extent that a ‘paper mountain’ exists, it contains the lower grades of paper (eg old newspapers and magazines) which have limited ability to produce widely useable printing and writing papers and which were being used to the fullest extent possible in packaging;
- unlike metal recycling, there are limits to which recycled waste paper can be substituted for virgin pulp before the performance of the paper product is reduced — these limits stem from the initial fibre source and pulping process as well as from the degrading of fibres during reprocessing; and
- while recycling involves some benefits (eg it reduces the need for landfill), it also involves other costs (eg transportation and sorting) which also have environmental implications.

During the course of this inquiry little evidence was produced to dispute the findings of the Commission’s previous reports. Moreover, as reported above, the evidence presented to this inquiry highlighted the inadequacies and unintended consequences of existing government strategies involving each of the three measures designed to encourage paper recycling. For example:

- Sales tax exemption for selected papers may result only in the available recycled fibre being shifted from its traditional use to those papers eligible for the tax exemption and/or increased imports of recycled paper or pulp. Significant administration costs are also likely to be incurred.
- Recycling targets, be they mandated or voluntary, are problematic: it is very difficult to measure the achieved level of recovery, let alone define the appropriate efficient target level. These practical problems are

compounded if, as is likely, it is appropriate to determine different targets for different regions.

- Procurement policies that favour papers with a high level of recycled fibre, like sales tax exemptions, may result only in a change in the way in which recycled fibre is used and, as indicated by APM, can undermine initiatives to improve competitiveness and lead to higher import levels. The recent Commonwealth initiative in adopting a broader perspective encompassing the notion of “environmentally preferred” papers may overcome this problem, but it presents significant administrative difficulties and its application is likely to require a considerable degree of subjective assessment.

On the basis of the information provided in this inquiry, the Commission considers that the findings of its earlier inquiry into recycling are still valid. The Commission’s final report on recycling (IC 1991d, vol. 2, p. 114) concluded:

... attempts by governments to coerce manufacturers and consumers to change their behaviour through discriminatory purchasing policies, tax concessions, or mandated or ‘voluntary’ targets would merely compound inefficiencies. Such policies can have the perverse effect of increasing costs to traditional paper recyclers, and increasing imports of recycled paper and perhaps of pulp.

*The use by government of sales tax exemptions, mandatory recycling targets and procurement policies to increase recycling levels is inefficient and is likely to impede efficient industry development. The Commission considers that:*

- *the remaining sales tax exemptions for recycled paper products should be removed;*
- *compulsory recycling targets should not be introduced; and*
- *government procurement policies should not discriminate between papers on the basis of their fibre content.*

*It is appropriate, however, for governments to address factors which may retard the efficient use of recycled paper (eg review municipal waste disposal charges to ascertain whether they reflect the true cost of landfill).*

At the draft report hearings, the Australian Conservation Foundation argued that since recyclers acquire waste paper at no cost (ie costs are related to collection and sorting), an increase in landfill charges would not reduce the cost of recycled fibre and, therefore, would not stimulate the further use of recycled fibre in paper production. The ACF advocated the retention of existing tax concessions and/or the imposition of taxes on paper producers which use virgin fibre.

There are a number of ways in which such a tax could be imposed on paper manufacturers in order to meet disposal costs. For instance, the tax could be imposed on:

- all paper and paper products. While this may reduce the demand for paper, as well as the amount of waste paper going to landfill, it is unlikely to alter the mix of virgin/recycled fibre used in paper production.
- paper and paper products which do not contain 100 per cent fully recycled fibre. Such a tax would be similar to the existing tax concessions which, as indicated above and expanded upon in the Commission's recycling report (IC 1991d), introduce inefficiencies by distorting the production processes, discriminate against less than fully recycled papers and are administratively costly to police.
- the production of virgin pulp. While such a tax would overcome some of the problems associated with the other two options (ie it would encourage producers to substitute recycled fibre for virgin fibre as well as reduce the overall demand for paper), it may be difficult to determine the value and the volume of the virgin pulp used in vertically integrated pulp and paper making operations where the transfer of the pulp is internal to one company.

The introduction of waste disposal charges which better reflect disposal costs would avoid the inefficiencies associated with product taxes. Furthermore, as households and firms would be required to pay directly for the removal of waste, they may also be willing to pay recyclers to remove used paper and other materials. In these circumstances, there would be an increased incentive to use recycled fibre since the net cost of collecting paper would be reduced.

#### **8.4 Building codes, product standards and quality assurance**

Several participants raised concerns about building codes and product standards. One participant argued that, because standards and codes favour traditional materials over new ones, the rapid and orderly substitution of hardwood timber by softwood has been impeded. However, the major concern of participants was that the current building codes and regulations unnecessarily restrict demand for sawn timber as a whole. For example, Mr G Nolan (sub. 23, p. 8) stated that:

The negative effects of statutory codes on the acceptability of wood products is documented as early as 1935. At the time, many local government authorities regulated against timber housing as it was regarded as unhealthy and a fire hazard. This indicated a general bias against wood as a satisfactory construction material. This bias has continued for varying reasons in Australia's codes and building regulation to this day.

### *Building codes*

NAFI stated that the Building Code of Australia contains significant barriers to the use of timber products. NAFI referred to building codes in North America, Europe and New Zealand that permit the use of wood in three-storey medium-density residential construction. Under the existing Australian Code, similar timber-framed construction of multi-storey dwellings is not permitted. NAFI argued that, as a result, a major opportunity for the expansion of the Australian timber market is lost. NAFI claimed that the use of timber in construction of three-storey, timber-framed apartment buildings would open up an additional market estimated at around \$150 million. (This would, of course, be at the expense of domestic suppliers of substitute materials such as concrete and steel.) NAFI stated that:

Indications are that timber-framed buildings will be about 10 per cent cheaper than masonry or concrete buildings, creating benefits for consumers and the nation through increased affordability and variety in housing, particularly in relation to medium density housing and urban consolidation policy initiatives.

Pine Australia (sub. 41, p. 7) reported one effort of industry to reform existing standards:

As a specific strategy, a comprehensive submission based on research, computer modelling and international practices is currently being prepared for multiple-occupancy three-storey timber-framed units as a first step in seeking the removal of combustibility prescriptions against the wider use of timber framed construction.

The Queensland Government stated that the Australian Uniform Building Regulations Coordinating Council (AUBRCC) has proposed that relevant research be undertaken into the embargo applying to the use of combustible materials in construction.

Participants at the initial round of hearings suggested that biases against the use of timber could also be overcome by the replacement of existing 'prescriptive' regulations by material performance standards (as adopted in New Zealand).

A performance-based approach would allow the use of any material, provided that it meets prescribed standards relating to, say, strength and combustibility. Performance-based standards would allow industry the flexibility to determine the most cost-effective manner of conforming with the specified standard, without constraining technology and ingenuity. This contrasts with regulations which specify how a required standard is to be achieved. Specifying a standard in this manner may exclude particular materials, even though they perform the task as well as, or better than, the material specified in the standard.

In its response to the draft report, the Queensland Government noted that, while the existing Building Code of Australia is largely prescriptive, it anticipates that every provision will be performance-based by the end of 1994.

### *Product standards*

A number of participants expressed concern about product standards for timber products. According to participants, there are not clearly defined size, moisture content or appearance standards, and there is a lack of conformity in some products (eg architraves and skirting boards).

Pine Australia (sub. 41, p. 7) claimed that the timber industry accepted the need and responsibility for the review and development of timber standards, stating that:

Australia's standards for design and use of timber must match those for competitive materials and marry with international developments.

The alignment of Australian standards with international standards would facilitate the entry of Australian timber producers into export markets, reduce the range of standards to be complied with, and eliminate potential non-tariff barriers to trade.

### *Quality Assurance*

Several participants commented on quality assurance standards and procedures. Some, such as Mr G. Nolan (sub. 23, p. 24), argued that acceptable quality control is a major problem in the timber industry. He noted:

... the timber industry cannot control its material or its market, while its competitors (steel, aluminium and, to a lesser extent, concrete) all can.

NAFI argued that there has been an accelerating involvement in quality assurance standards given the need for international competitiveness. Pine Australia noted the need to maintain the timber industry's record in quality assurance in relation to the structural properties of timber. It stated (sub. 41, p. 8) that:

The establishment of the Joint Accreditation Scheme for Australia and New Zealand (JAS-ANZ) provides a good framework for the development of certified quality management or product certification systems.

As well as coordinating and administering accreditation of those certifying quality assurance, JAS-ANZ pursues appropriate harmonisation with international standards.

At the firm level, it appears to be becoming more common for individual producers to pursue quality assurance programs. For example, Boral is seeking

to have all of its operations quality assurance accredited under AS 3902 (“Quality systems for production and installation” — a standard consistent with the International Standards Organisation (ISO) 9000 series of quality management standards).

NAFI (sub. 24, p. 41) expressed concern at governments’ preference — exercised through procurement policies — for products that meet internationally recognised quality assurance standards such as the ISO 9000 series, describing it as:

... an attempt to drive industries towards quality practices without regard for market forces or industry characteristics. Governments must recognise that their actions can distort market mechanisms, which may result in suboptimal social outcomes.

NAFI claimed that this over-prescription of standards in purchasing policies results from ignorance and confusion and, in some cases, deliberate policy. It also stated that applying the ISO 9000 series standard to certain parts of the industry (eg Australian trucking operations or sawmilling) was neither necessary nor efficient.

### *Assessment*

*Building codes should be reviewed to ascertain whether there are still grounds for restricting the use of timber in multi-storey structures. Standards for timber design and use ought to be performance-based, developed in a timely manner and be harmonised with international standards where appropriate. Quality assurance should essentially be an issue for individual producers and users.*

# **PART D**

## **POTENTIAL FOR DEVELOPMENT**



*Previous sections of this report have examined a range of diverse factors which impact upon the forest products industries in Australia. This analysis has highlighted:*

- the continuing growth in the global consumption, production and trade in forest products;*
- changes in the competitiveness of the Australian industries; and*
- many impediments controllable by governments which, if removed, would improve the competitiveness of the Australian industries.*

*This section of the report draws, and builds, upon this analysis in order to help identify the opportunities for growth in the forest products industries. In addressing this issue, the Commission has not attempted to form definite judgements about the prospects for individual markets, products or companies. The appraisal of specific investment opportunities and associated marketing strategies requires access to, and analysis of, commercially sensitive material and an intimate understanding of the nature of the products and their markets. While such analysis is, of course, central to the continued development of the industries, the forest products firms themselves are better placed to assess investment and market opportunities for specific products and firms.*

*Nevertheless, this section of the report does highlight that, for the Australian forest products industries as a whole, there is potential for growth in both domestic and export markets. Chapter 9 documents the industry's strengths and weaknesses, as well as opportunities and threats. Chapter 10 examines the changes which may be required if growth opportunities are to be fully exploited, including those which need to be undertaken by governments.*



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## 9 PROSPECTS FOR DEVELOPMENT

Past reviews have pointed to the strengths of the forest products industries in Australia. These include, abundant land and wood resources, a well educated labour force (relative to developing countries), and a stable political environment. The optimistic outlook for the industries' prospects has been underlined by an array of possible new investments.

However, as highlighted in previous chapters, the recent performance of the industries has not matched these expectations. In some markets, domestic producers have maintained or increased their market share against imports. But in others, local products have lost ground to imported goods. With the exception of woodchips, exports of wood products have been relatively small. Exports of paper products have increased, but remain small relative to production.

Over the coming decade, significant export opportunities are likely to arise for Australian producers as Asian economies develop. However, many overseas suppliers located around the Pacific basin and elsewhere will also be seeking to take advantage of these opportunities. These opportunities will not persist indefinitely: entry is likely to be more difficult once competing suppliers gain a foothold in Asian markets.

This chapter draws on information submitted by participants, and various other studies, to identify the Australian industries' potential and factors which may limit growth prospects. The existing strengths and weaknesses of the industries are identified and placed in the context of the impediments discussed in Part C. Growth in the consumption of forest products is also examined, as is the competitive position of rivals.

### 9.1 Strengths and weaknesses

Categorising industry strengths and weaknesses is not a straight forward exercise. In some circumstances, a strength for some sectors may be a weakness for others. For instance, international transport costs provide local suppliers with an element of natural protection in domestic markets: the prices of imported goods are inflated by the cost of transporting the goods to Australia. However, these same costs increase the prices of Australian exports, thereby limiting the opportunities for the industry to compete in international markets.

The work by Porter (1990) suggests one way of categorising strengths and weaknesses. In discussing how firms can improve competitiveness, Porter focuses on four main industry attributes:

- factor conditions (eg the availability of land and wood, and labour arrangements);
- demand conditions (particularly the sophistication of the local market);
- related and supporting industries/firms; and
- firm structure, strategy and rivalry.

Porter also discusses how competitiveness is influenced by government actions and by chance occurrences (eg technological breakthroughs).

This chapter uses a similar framework to identify the strengths and weaknesses of Australia's forest products industries. The discussion highlights the differential impact each can have on the various activities within these industries. While they are not dealt with separately, government actions and chance occurrences are examined as part of the discussion on strengths and weaknesses, and also in Section 9.2 in relation to opportunities and threats.

## **Factor conditions**

### *Australia's plantation resource*

In terms of quality and rotation periods, Australia's softwood plantation resource compares favourably with many overseas producers. In Australia, for instance, *Pinus radiata* yields average around 15 to 20 m<sup>3</sup> per hectare per annum on a rotation of 30 to 35 years. Much longer rotation periods (eg 60 to 100 years) are necessary in some northern hemisphere locations where annual yields are much lower than in Australia — eg under 5 m<sup>3</sup> per hectare in Scandinavia and around 10 m<sup>3</sup> per hectare in the United States Pacific northwest (New Zealand Ministry of Forestry 1992, p. 7). In contrast, higher yields are achieved in both Chile and New Zealand (over 20 m<sup>3</sup> per hectare per annum over shorter rotations). These higher yields and more intensive silvicultural techniques have enabled New Zealand's plantations to produce a much higher proportion of veneer and high quality sawlogs than in Australia's softwood plantations.

Australia also has a small, but increasing, hardwood plantation resource. The main species is *Eucalyptus globulus*. When managed for pulpwood, evidence indicates that 20 year rotations are common. However, since this depends on location and species, higher yields can be achieved in some parts of Australia (eg Bunnings indicated that yields of 30 m<sup>3</sup> per hectare per annum can be

achieved in Western Australia compared to 18 to 20 m<sup>3</sup> achieved elsewhere in Australia). Optimal rotation periods for hardwood sawlogs in Australia have not yet been achieved, but estimates range between 80 and 120 years.

In some other countries, wood yields in eucalyptus plantations established to supply pulpwood are generally higher than in Australia. While average yields in Portugal and Spain are on a par with those achieved in Australia, yields in South Africa and Brazil, in particular, are higher. For instance, in Aracruz in Brazil, yields of 40 to 50 m<sup>3</sup> per hectare per annum can result in rotation periods as short as seven years.

Current research projects are expected to lead to increased fibre yields in Australia. For example, land owned by APPM in northern Tasmania can presently produce in excess of 1 million tonnes of pulpwood per annum. However, APPM (sub. 38, p. 53) stated that with incorporation of:

... genetically improved stock and further research based management improvements, and the addition of surrounding private property through joint-venture arrangements, it is reasonable to anticipate sustained yields in the vicinity of 2 million tonnes per year.

While the quantity of wood harvested per hectare may be low compared with that in some other countries, the fibre content of some Australian plantation wood is relatively high. For example, APM (sub. 36, pp. 14–5) said that its:

... plantation eucalypts have a natural advantage in that 25 to 30 per cent less Australian plantation wood is required per tonne of pulp than Brazilian plantation eucalypts or Indonesian tropical hardwoods.

Combining this yield advantage of Australian plantation eucalypts with a transport distance of less than 50 kilometres from the paper mill would make Australian plantation eucalypt wood costs equivalent to the lowest in the world.

Hence, wood and pulp yields can be expected to increase as a result of existing forestry research and development programs. However, Australia's expenditure on research and development on forest products (ie including wood and paper products, as well as forestry) appears to be lower than overseas. For instance, expenditure on research and development by Australia's forest products industries appears to be no more than 50 per cent of the average expenditure of other OECD countries (see Appendix I).

### *Australia's native forest resource*

One advantage Australian producers have is access to a variety of unique tree species. However, perhaps the greatest advantage accruing to Australian producers is the management of forests used for wood production on the basis of sustainable yields. One offsetting factor is that the quality and availability of Australia's hardwood resources vary substantially between regions. It also

varies markedly between trees within regions. This variability increases processing costs, reduces harvest yields and reduces profitability.

The quality of Australia's native hardwood resource is also changing, from an old growth to a regrowth resource. In contrast to timber from old growth forests, regrowth timber is generally less stable when green and drying losses are usually higher. Lengths are typically shorter and widths narrower, although the actual volume of clearwood per tree is frequently similar because of fewer physical defects. There are also technical problems in sawing Australia's regrowth hardwoods which the industry is progressively overcoming.

Another problem is the size of many harvest areas and their location. The pulp and paper industry is capital-intensive and significant scale economies exist in both the wood and paper industries. New facilities require larger volumes of wood to be competitive. In some areas, it appears that the volume of wood available may be insufficient to meet such a demand. Moreover, CSR Softwoods (sub. 10, p. 2) indicated that the traditional sawlog allocation mechanism of the State forest services has:

... resulted in many small sawmills all operating well below full utilisation of their plant.

Many sites are also a long way away from population centres and their customers. The efficiency of transport services is, therefore, an important influence on the utilisation of a forest resource. These latter difficulties have been compounded in recent years following government decisions to considerably increase the area of forest set aside for conservation and recreational purposes.

### *Land*

Australia has an abundant supply of land on which timber plantations could be established. However, there is only a limited amount of suitable land close to existing processing centres. In addition, this land can be put to many uses, only one of which is growing trees for wood production. The forest industries compete both with agricultural activities for the use of plantation land and with conservation interests for the use of native forests. The availability of land for commercial wood production therefore reflects both competition from other commercial activities and the demand for land for non-commercial uses.

In recent years, agroforestry has been presented as a means of expanding wood supplies in a manner which is compatible with existing ownership and traditional agricultural land uses. However, as noted in Chapter 6, alleged biases in the taxation system and uncertainty about future markets are said to deter the extent of investment in agroforestry (and tree farming ventures generally).

### *Government*

Australia is seen as a politically stable country where nationalisation of assets and hyperinflation do not act as a disincentive to investment. However, virtually all participants expressed concerns about the uncertainty created by the lack of resource security in the industries and the restrictions placed on woodchip exports.

Some states have improved resource security by entering into long term supply contracts and granting long term sawlog entitlements. But producers are concerned that they have been unable to obtain a guarantee from the Commonwealth Government that it will honour state agreements or provide compensation if its actions lead to the withdrawal of wood resources secured under state agreements.

Few examples were cited of Commonwealth Government action which have resulted in wood supply contracts being breached. It is possible that the risk of such action is over-stated by participants. Nonetheless, the perception of the risk by firms and particularly by boards of directors, rather than the risk itself, is clearly a factor which currently deters new investment.

Government is also said to be impeding investment by its failure to develop efficient procedures to overcome fragmented and uncoordinated project approval processes for major forestry projects, and by the current lack of clear environmental guidelines for the construction and operation of new processing facilities, particularly pulp and paper mills (other than BEK pulp mills for which guidelines have been developed).

### *Transport*

The high cost associated with transporting forest products into Australia has afforded the domestic industries an element of natural protection from imports. However, this advantage is limited by the high transport costs associated with delivering goods over a large and sparsely populated continent.

Transport cost disadvantages are compounded by inefficiencies in Australia's domestic and international transport systems which limit the ability of Australian firms to compete in more distant local markets, as well as in growing Asian and other overseas markets. Partly as a result of high transport costs, the Australian industries have been unable to exploit fully the available scale economies.

Both APM and ANM indicated that, as a result of these factors, transport costs from their production facilities in south-east Australia to markets in Perth and Brisbane were roughly on a par with the transport costs incurred by their overseas competitors in delivering goods into the same markets.

### *Labour force*

Over recent years, staff cuts, the introduction of more flexible work arrangements and enterprise bargaining have all reduced labour costs. As a result, labour costs for the forest products industries in Australia compare favourably with those in other developed countries. This achievement has been enhanced by Australia's education system which has been well established for many decades. For example, it might be expected that well developed literacy and numeracy skills among workers would act as an advantage in an industry where new technologies and skills acquisition provide a strong impetus for the productivity improvements which have been achieved.

Nonetheless, a number of participants noted deficiencies in existing management and workforce skills, and generally supported the need for increased training. The institutional framework for improving skills levels was also questioned. For example, some suggest that there is a lack of industry-specific courses for workers in the wood products industry. In some regions, the prevalence of small firms which are geographically dispersed increases the difficulties faced by both the training institutions and trainees.

### **Demand conditions**

#### *Market sophistication*

As a modern developed nation, Australia's market for paper products is relatively sophisticated. In common with other leading industrialised nations, Australian consumers demand a broad range of printing, writing and industrial papers covering a wide spectrum of qualities. The markets for wood products are also similar in Australia and overseas. Woodchips, sawn timber, plywood and particleboard are all internationally traded commodities.

However, there are some specialist markets for wood products overseas which tend to favour particular species, and are therefore difficult for suppliers of other species to enter. For example, radiata pine has traditionally not been well known in Asian markets, and products such as parquetry are generally unsuitable for Japanese mass markets because of high installation costs.

In general, however, Australian markets for both paper and wood products are well developed, with domestic segments similar to those in major overseas markets. This similarity should assist local producers to compete in global markets.

### *Size and dispersion of market*

Australian producers, unlike their counterparts in most other countries, face a small domestic market which is dispersed around a large continental land mass. Both factors limit the ability of the domestic forest products industries (particularly the paper sector) to take advantage of 'world scale' operations. In many market segments, the addition of new world scale plant would result in local production capacity being significantly greater than total domestic demand. Hence, in those market segments, firms which attempt to expand production to world scale face the difficulty of simultaneously expanding domestic and export market sales.

### **Related and supporting industries and firms**

The relatively small size of the Australian economy poses a number of other difficulties for the forest products industries. For example, in contrast to the North American industries, the Australian industries need to import a significant proportion of their plant and equipment. The additional packaging, freight and government duties associated with the importation of plant and equipment increases capital costs, as does the relatively high level of construction costs in Australia. Because of their reliance on overseas equipment manufacturers, some Australian producers also have to carry considerable (and costly) stocks of replacement equipment.

In North America, firms enjoy significant economies generated by co-location of large sawmills, board, pulp and paper mills (eg lower wood costs). In Australia, these economies are much lower since the wood resource is smaller and more dispersed.

Additionally, some locally produced products, chemicals in particular, are expensive in comparison with international prices. The higher prices possibly reflect the limited opportunities to exploit scale economies to reduce unit costs in chemical manufacture in Australia, and the limited competition from alternative suppliers. The relatively high level of anti-dumping actions initiated by Australian firms in the chemicals and petroleum products industries (over 35 per cent of all cases) may also help explain why chemical prices are high. While there have not been anti-dumping actions associated with many of the chemicals used by firms in the forest products industries, the demonstrated willingness of chemical companies to pursue anti-dumping actions may be sufficient to discourage the importation of these chemicals at prevailing international prices.

Because of the capital-intensive nature of many processes, producers of forest products require access to efficient capital market facilities. However, with the

increased integration of the Australian and international capital markets, larger firms do not consider that access to capital is a major problem. Smaller firms are more restricted in their ability to borrow funds, generally facing fewer sources of funds and higher interest rates than larger firms. But there is no evidence to suggest that this does not reflect the greater risks associated with lending to small firms, rather than a failure of the capital markets as such.

### **Firm structure, strategies and rivalry**

There has been limited competition between domestic and international firms in some sectors of the Australian paper market. To varying degrees, high tariffs and high transport costs have protected the domestic industry from import competition. In some cases, competition with imports has also been muted by the commercial linkages between producers in Australia and producers overseas (eg New Zealand). Competition between domestic producers has also been limited, with each major paper firm traditionally focussing on a single market sector. Reductions in tariffs and moves by some producers to manufacture papers to cater for other market segments have led to increased competition over the last four or five years, although the recent withdrawal of APPM will reduce competition in the printing and writing paper sector. Although imports of paper have been, and continue to be, significant, the limited competition between domestic producers may have reduced pressures for change and the incentives to respond to changing market needs.

Competition provides an ongoing stimulant for firms to improve their performance by exploring avenues to reduce costs and by developing products which best meet users' requirements. The pressure for change which results from competition is illustrated by recent developments in the sawmilling sector. Facing loss of market share to softwood, hardwood sawmillers are increasingly being forced to produce a higher proportion of higher value products (eg dried and dressed products), to develop quality control programs and to devote resources to the marketing of hardwood products. In the face of strong import competition and direct competition between rival Australian producers, there have also been significant pressures for change among local softwood suppliers. Firms have responded by exploring new ways of using softwoods (eg as substitutes for steel and hardwoods in structural applications). Some have begun exploring market opportunities for softwoods in Japan and other countries.

In terms of industry structure, a clear strength is that the domestic paper and wood products industries contain a small number of firms which are either: part of a larger multinational forest products company (eg APM, ANM); or part of a company which is engaged in exporting either forest products or related products (eg Boral and CSR).

<b>Table 9.1: Strengths and weaknesses of Australia's forest products industries</b>		
	<i>Strengths</i>	<i>Weaknesses</i>
<b>Factor conditions</b>	<ul style="list-style-type: none"> <li>• good plantation resource;</li> <li>• wood with good strength and appearance features;</li> <li>• abundant land and good climate;</li> <li>• wood harvested on a sustainable basis;</li> <li>• literate workforce; and some tertiary courses;</li> <li>• improving work practices;</li> <li>• stable political environment;</li> </ul>	<ul style="list-style-type: none"> <li>• wood supplies in some regions are not of the quality, size or location to support capital intensive processing;</li> <li>• some training weaknesses (eg few wood processing courses);</li> <li>• problems with resource security; gaps in environmental guidelines for some processing operations; and complex and restrictive export and project approval processes;</li> </ul>
<b>Demand conditions</b>	<ul style="list-style-type: none"> <li>• relatively sophisticated demand for forest products;</li> <li>• scope for import replacement;</li> <li>• close to expanding Asian markets;</li> </ul>	<ul style="list-style-type: none"> <li>• relatively small and dispersed domestic market;</li> </ul>
<b>Related and supporting industries/firms</b>	<ul style="list-style-type: none"> <li>• access to a sophisticated capital market;</li> </ul>	<ul style="list-style-type: none"> <li>• few domestic suppliers of machinery;</li> <li>• high chemical costs;</li> <li>• transport costs limit opportunities in domestic and export markets;</li> </ul>
<b>Industry strategy, structure and rivalry</b>	<ul style="list-style-type: none"> <li>• many larger firms have international affiliations;</li> <li>• some firms are developing an international perspective.</li> </ul>	<ul style="list-style-type: none"> <li>• historically, limited competition existed between domestic and foreign suppliers of paper;</li> <li>• hardwood sawmilling sector has many small firms with limited capacity for investment and marketing;</li> <li>• many firms remain inward-looking.</li> </ul>

Many of these changes have been recent and have yet to be reflected in a significant increase in exports. Nevertheless, these international linkages help ensure that the domestic industries have access to new technologies, and to personnel with experience in developing export strategies.

### **Overview of strengths and weaknesses**

On balance, it is difficult to directly compare the relative strengths and weaknesses of Australia's forest products industries (these are summarised in Table 9.1). However, as indicated in Chapters 4 and 5, it is evident the industries' strengths have been sufficient to increase or maintain competitiveness in the supply of most products in the domestic market.

However, the industries' weaknesses (most notably the diversified wood resource, high input costs and limited domestic competition) have meant that it has traditionally adopted an inward looking stance and not achieved a strong competitive position in international markets. While many of these weaknesses are currently being addressed, the industries' ability to meet the growing international opportunities and threats depends upon the pace of industry restructuring and government reform (these issues are discussed in Section 9.2 and Chapter 10).

## **9.2 Opportunities and threats**

This section considers where the greatest opportunities for expansion exist and where threats to this expansion may arise. Initially, the focus is on growth in domestic and international demand, and on possible changes in environmental requirements globally. Subsequent discussion focuses on the growth in the capacity of the global forest products industries and other factors which will challenge the Australian industries in coming years.

### **Demand trends**

The level of economic activity is the main factor driving demand for forest products (see Box 9.1). For example, in periods of increasing economic activity, demand for housing usually increases which, in turn, impacts upon the demand for sawn timber. Similarly, the demand for newsprint is reflected in the number of classified advertisements, which is also related to the level of economic activity (eg employment growth).

**Box 9.1: Factors influencing domestic demand for forest products**

<b>Sawn timber and panels:</b>	demand for new housing and renovations; size and age of the population; interest rates; building regulations; and the price and availability of substitutes for sawn timber (eg steel for house frames, plastics for furniture).
<b>Wood chips:</b>	demand for paper products and packaging; the types of paper demanded; the extent of recycling, and availability of alternatives, such as recycled papers, clays and other fillers; and developments in pulping technologies which affect the volumes and types of virgin fibre needed.
<b>Market pulp:</b>	demand for paper and paper packaging; and the level of integration of pulp and paper mills.
<b>Printing and writing paper:</b>	literacy and education levels; changes in office technology; and the level of business activity.
<b>Tissues:</b>	growth in population; and price competition.
<b>Packaging papers:</b>	level of activity in the manufacturing and construction industries; and competition for substitute packaging (eg aluminium, glass and plastic).

*Demand in Australia*

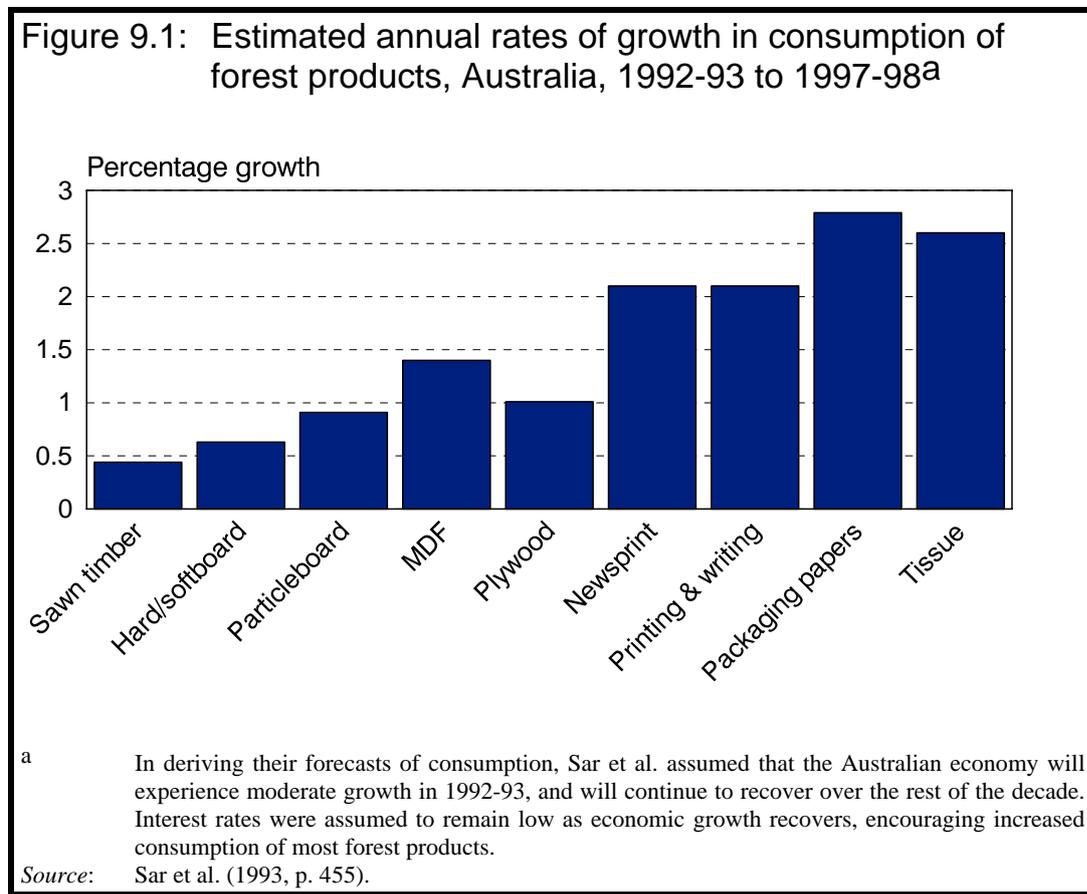
Over the past 30 years, the consumption of sawn wood in Australia has consistently been around 4.1 million m<sup>3</sup> per annum. However, this masks a significant increase in the consumption of sawn softwood at the expense of sawn hardwood. Sar et al. (1993) estimate only minimal growth — 0.3 per cent per annum — in the consumption of sawnwood during the 1990s (see Figure 9.1). Similarly, poor growth prospects exist for the domestic consumption of hard and softboards.

Australian consumption of plywood and particleboard clearly reflects general economic conditions. For instance, consumption of these two products slumped during the recession of the early 1980s and early 1990s and grew steadily in the intervening period. Moderate growth in consumption, around 1 per cent per annum, is expected during the 1990s.

In the wood products sector, MDF is forecast to have the strongest growth prospects — around 1.4 per cent per annum. This trend reflects strong growth during the late 1980s and early 1990s.

All paper products experienced a strong growth in consumption during the 1980s. Growth was particularly pronounced for printing and writing papers. Consumption of these papers almost doubled over the four years to 1988–89. This growth is expected to taper off during the 1990s. Nevertheless, with growth rates in excess of 2 per cent per annum for all categories of paper

products, growth in the consumption of paper products generally is expected to outstrip that of wood products (see Figure 9.1).



### *International demand*

On the basis of projected economic growth of around 3 per cent during the 1990s, world consumption of forest products is expected to be strong over the forthcoming decade. According to Resource Information Systems (PPMFA, sub. 26, p. 22):

World demand for paper and board is projected to advance ahead of general economic growth in the upcoming 15 years ... [it] will be supported by industrialisation and rising incomes in the Far East outside Japan; substitution of paper packaging (particularly corrugated containers for traditional packaging materials); further expansion of the stock of business machines, with their positive effect on writing papers; media deregulation in many parts of the world; and the competitive position of print media, especially direct mail, in attracting advertising expenditures.

It is becoming increasingly apparent that Australia's greatest opportunity in the area of forest products rests with trade into east Asia. Apart from proximity, this is premised on several factors, such as: projections of relatively high economic growth rates in the region; prevailing low levels of per capita consumption of wood and paper products; the region's strong reliance on imports; and, for paper, increasing literacy rates. According to NAFI (transcript, p. 396):

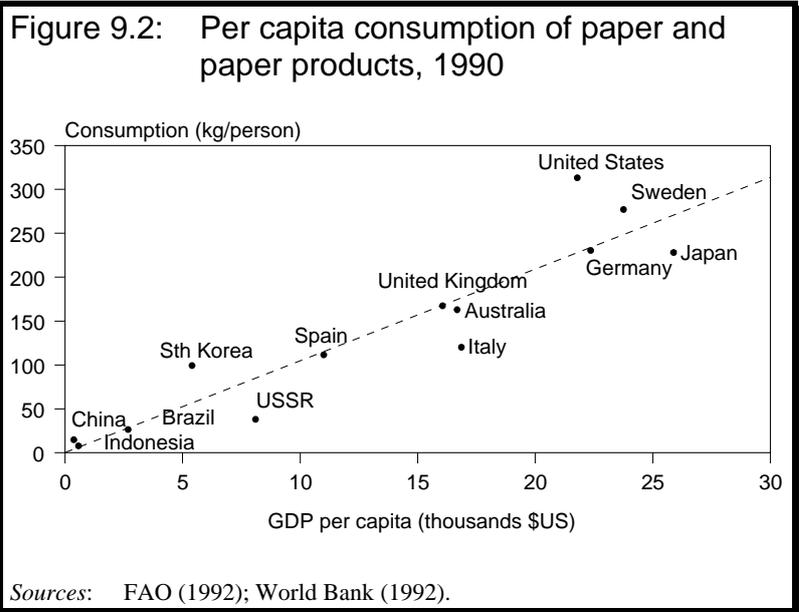
... income is growing quite quickly, say, in South-east Asia, where wood, pulp and paper consumption per capita is relatively low but is highly income elastic. So, there's an expectation of significant increases in per capita consumption over quite large populations, leading to quite big increases in total consumption.

As shown in Figure 9.2, per capita consumption of paper and paper products in nations such as China, South Korea and Indonesia is very low (eg per capita consumption of paper products in China is only 14.7 kg compared with 313 kg in the US). A similar pattern characterises consumption of wood products (see Appendix H).

An important aspect of the rising consumption levels in east Asia is the increased reliance on imports. For example, over the past decade, imports of forest products by Asian countries have been growing at around 13 per cent per annum (see Table 9.2 and Appendix C for more details). In 1991, Asia's imports of

forest products were evenly split between wood and paper products, and were valued at \$US17.7 billion.

Japan is, by far, the largest importer of both wood and paper products. South Korea is a relatively large importer of wood products, whereas Hong Kong and China import over \$US 2.8 million of paper products. A significant proportion of imports of forest products by Asian economies is sourced from within the region (ie Indonesia and Malaysia export hardwoods and panels to Japan, while Japan exports many paper products to other Asian nations). Sawn softwood and



pulp account for the majority of forest products imported from outside Asia (mainly North America).

**Table 9.2: Imports of forest products by Asian countries.**

<i>Forest product</i>	<i>Growth 1980-91 % pa</i>	<i>Value 1991 \$US b</i>
Sawn softwood	12	2.1
Sawn hardwood	15	1.9
Wood panels	24	3.1
Woodchips	7	1.8
Wood pulp	10	2.5
Newsprint	14	1.0
Printing & writing papers	11	1.2
Industrial & packaging papers	7	3.8
Packaging containers	20	0.4

*Source:* United Nations Trade Statistics (see Appendix C).

These trends are expected to continue over the 1990s with east Asia's consumption of paper and paperboard expected to increase by 18 million tonnes between 1995 and 2000. Over 5 million tonnes of this will be met by imports (FAO 1991). In addition, some Asian nations are expected to move from being self-sufficient to being net importers of certain forest products (eg China and India in sawnwood; Thailand in

wood-based panels; and Korea and Indonesia in paper and paperboard). Figure 9.3 shows movements in the net trade position of east Asia (including Japan) during the 1980s, as well as projections into the next century.

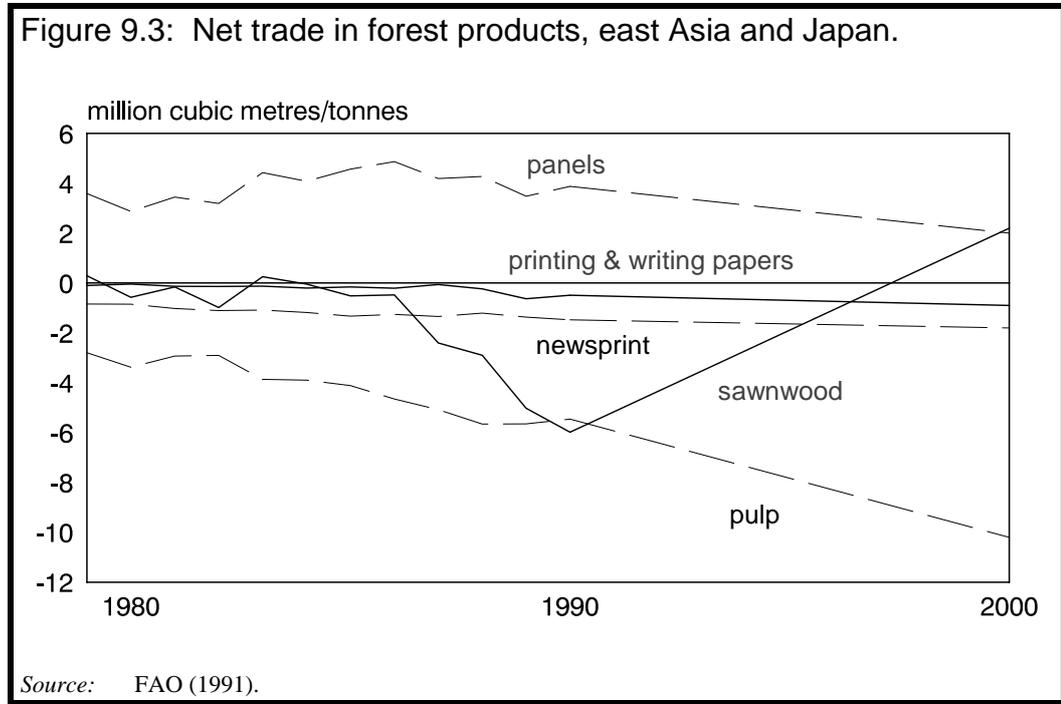
At the regional level, the Asian trade surplus in panel products is expected to fall over the next decade, while the deficit in paper products is likely to become more pronounced. The region's heavy reliance on imported pulp is forecast to continue over the coming decade. Opportunities for Australian exporters are expected to emerge in areas such as hardwood panels, bleached kraft pulp, virgin newsprint and packaging papers (see Appendix H for more details).

### *Environmental concerns*

The growth of environmental legislation, especially in developed countries, also impacts on Australia's forest products industries. The wood products industries, for example, are affected by regulations concerning the sourcing of sawlogs, the establishment of new processing facilities and the disposal of potentially toxic wastes. The pulp and paper industry is affected by a similar range of regulations.

Participants provided little information on the threats posed to, or the opportunities which may be opened for, Australian firms flowing out of the introduction of various forms of environmental legislation overseas. Three issues which were mentioned include: moves in the US and elsewhere to prescribe minimum wastepaper content requirements for paper pulp; the

problems of rare fauna in native forests; and concerns in Germany about the industrial processes which contribute to acid rain.



Government measures to establish minimum recycled content rates for paper and paper products is likely to affect the pattern of world trade. At the present time, many paper mills are located near the wood resource, rather than near the main sources of wastepaper. Transporting wastepaper to these sites will increase costs and encourage the development of new plants closer to the markets in which paper products are sold.

Increased community concern about the protection of native flora and fauna has led some countries to withdraw large areas of native forests from commercial wood production. The softwood forests of the US north-west have been severely affected. For example, harvest levels in national forests in Washington State declined by over 50 per cent between 1988 and 1991. In the largest forest — the Olympic National Forest — the harvest dropped from around 250 million board feet in the mid-1980s to only 20 million board feet in 1991. The level of cutting in 1993 is expected to be lower still. Similarly, in Canada, wood supplies are being affected by government decisions to set aside additional areas of forest for conservation purposes and to ensure that forests are managed on a sustainable yield basis. In British Columbia, which accounts for about 50 per cent of Canada's annual harvest, the annual allowable cut is expected to fall

by around 20 per cent in the short-to-medium term. A proposal for managing national forests was released by President Clinton in July 1993. The plan, which is subject to public discussion, would reduce the volume of timber harvested on federal land by 75 per cent to 1.2 billion board feet per annum.

The reduction in log supplies has already had a marked effect on log prices. For example, the average stumpage prices paid for Douglas Fir harvested from national forests in the west side of the Pacific northwest region in 1992 were double that paid in 1988.

Reduced log supplies and higher log prices in the United States and Canada will create opportunities for other suppliers such as Chile, New Zealand, and Australia — all of which have large radiata pine plantations. In this regard, the Centre for International Trade in Forest Products (CINTRAFOR) at the University of Washington recently published the following assessment (CINTRAFOR 1993, p. 2):

... radiata pine represents a substantial competitive threat in both the US domestic market and in Pacific Rim markets, given the competitive advantage that radiata pine producers enjoy with lower production costs and increasing timber quality.

Concerns about acid rain in Germany have led that country to introduce legislation requiring the removal of sulphur from all industrial processes. Consequently, German authorities will no longer grant licences for new kraft pulp mills using sulphur pulping or bleaching processes. While in isolation, the German action may have few repercussions for trade, it is possible that it will create a precedent which other countries may choose to follow. More generally, there are concerns that countries may, in time, close their markets to products produced in ways perceived to be damaging to the environment. While this is prohibited under the current articles of the GATT, it may limit the willingness of firms to invest in those activities.

At this juncture, it is unclear what impact changing environmental legislation will have on the Australian forest products industries. Continued reductions in areas of Australia's native forests available for commercial uses will undoubtedly restrict growth opportunities for some Australian products in the short term. However, the ongoing establishment in Australia of requirements to reduce environmental damage (eg there are a range of environmental safeguards in place and wood is increasingly being produced from existing commercial forests on a sustainable yield basis), coupled with lower availability of logs in some major supplying nations, may place it at some advantage in competing on international markets with countries which are just starting to deal with similar environmental concerns.

## Threats to the Australian industries

A number of external influences threaten to prevent the Australian forest products industries from grasping the opportunities available in domestic and international markets. The major threats are posed by the expanding capacity of the global forest products industries, and the trade and protection policies of overseas governments.

### *Expanding global capacity*

Major expansions in wood and paper production are expected to occur in Europe and developing nations within Asia and South America. According to the FAO (1991), growth in sawnwood production to the end of the decade is expected to be greatest in Brazil, Chile, Indonesia, India, Portugal, Malaysia and Thailand, all of which benefit from low wage costs relative to Australia. New Zealand has the potential to export a considerable amount of sawn softwood if more of its expanding sawlog resource is processed locally. According to Edgar et al. (1992), New Zealand's total harvest is expected to increase by 40 per cent by the end of the decade.

Table 9.3: Expected additions to paper production capacity, 1992-95.

	<i>Newsprint</i>		<i>Additional capacity ('000 tons/year)</i>				<i>Tissue</i>	
	<i>Firm</i> <sup>1</sup>	<i>APS</i> <sup>2</sup>	<i>Firm</i>	<i>APS</i>	<i>Packaging</i>		<i>Firm</i>	<i>APS</i>
Africa	-	-	-	23	-	-	-	-
Asia	282	210	60	770	-	-	-	-
Australasia	30	50	-	-	-	-	-	-
Europe	455	1130	1415	1411	-	100	250	70
North America	-	365	70	270	-	-	70	35
Latin/South America	-	440	450	120	-	80	-	-
Total	767	2195	1995	2594	-	180	320	105

Source: O'Brian and Pearson (1992).

Notes: 1 Projects which have received final approval, and will definitely proceed.

2 Projects in the 'advanced planning stage'.

Growth in pulp and paper output is expected to be dominated by Europe, although expansions planned for Asia and South America are generally more ambitious than North America (see Table 9.3). In Indonesia, for example, there are a range of estimates concerning future expansion of pulp and paper

capacity. Some predict the start-up of 6 new pulp mills in Indonesia between 1993 and 1995. The combined capacity of these mills would exceed 2.5 million tonnes per annum, while there could be another 2.5 million tonnes available by the end of the century. Kilam (1992), however, suggests a more realistic figure would be an additional 2 million tonnes up to the year 2000. In addition, Indonesia's paper capacity is expected to increase from 1.7 million tonnes in 1990 to 5.1 million tonnes by the year 2000. The FAO (1991) predicts that pulp output from Brazil will grow by over 6 per cent annually in the latter half of this decade. Moreover, Brazil's current wood pulp surplus of 1 million tonnes is expected to more than double by the end of the decade.

It is clear that over the coming years, Australia's forest products industries face continuing pressure from both traditional (eg North America and Europe) and non-traditional sources (eg South America and Indonesia). Unless Australian producers can continue to improve their competitiveness, this will threaten their position in the domestic market and thwart plans for export sales.

#### *Trade policies of overseas governments*

The prospects for Australia's forest products industries are affected by measures adopted by overseas governments to foster their own forest products industries. Measures by overseas governments to support their producers and to restrict access to their domestic market may threaten export growth, while trade liberalisation may mean the opposite.

Tariffs are the most prevalent form of protection. Overall, tariffs tend to be highest in developing countries and, in most, tend to rise as value added increases. This is intended to encourage firms to invest in value added processing. In Malaysia, for example, tariffs on sawn timber vary between 20 and 25 per cent; those on veneers and wood panel products are 25 per cent; tariffs on plywood are 45 per cent; and tariffs on joinery wood are 55.6 per cent. Tariffs on paper are 5 per cent (except for tissues which may be imported duty-free).

Tariffs on forest products are generally lower in developed countries. In Japan, tariffs on sawn wood, veneers, mouldings, wood panels and uncoated papers range from 3.5 to 10 per cent. However, significant non-tariff barriers exist. For example, barriers to Japan's lumber market which Australian producers must overcome include: government-applied quality standards; established domestic trading relationships (although this may be changing); and the traditional use of some species for specific purposes.

The United States imposes relatively high tariffs on plywood (20 per cent), but lower tariffs of 4 and 3 per cent apply to imports of particleboard and

fibreboard respectively. In the United States, tariffs on paper range from 0 to 5.8 per cent.

Some countries impose special tariffs when their domestic producers are threatened by imports. For example, in the Republic of Korea, duties on specific products may be temporarily increased by presidential decree if the Minister of Finance deems it necessary. The increases may apply generally, or to specific countries only. This mechanism has been used to increase the duty on plywood from January 1991 until December 1993.

Measures to discourage exports of low value products have been adopted by several countries in order to encourage their domestic conversion into higher value added products. Indonesia and West Malaysia, for example, prohibit the export of logs (though log exports continue from East Malaysia), and the Republic of Korea does not allow exports of locally grown rough sawn timber. Domestic processing quotas, export levies and taxes have also been imposed on some wood producers in Indonesia and Malaysia. In Sarawak, for example, the State Government has increased its minimum domestic processing quota from 15 per cent to 20 per cent of total logs harvested. These policies depress the domestic prices of logs and rough sawn timber to the benefit of downstream processors.

Some governments also provide financial incentives, in the form of concessional loans, export finance and insurance, and income tax concessions. These are available to firms which export forest products, develop export markets or make significant investments in value added processing.

### **9.3 Summary**

The prospects for Australia's forest products industries are heavily dependent upon their ability to build upon existing strengths. However, Australia is well placed since it has a hardwood forest resource of 43 million ha, 21 million ha of which is technically available for logging on a sustainable basis, a good softwood plantation resource, an improving and expanding hardwood plantation resource, and favourable conditions for tree farming. Building on this strength has already yielded some benefits. Australian pulp and paper makers have, for example, led the field in producing hardwood-based pulps and papers.

Nevertheless, the successful development of wood and paper products industries requires more than good forest or plantation resources. Typically, they also require significant capital investment. The larger Australian firms have ready access to a sophisticated capital market. These firms also have links with other major forestry companies in Australia and around the world, and have the resources needed to enter and establish a presence in major export

markets. However, to maintain their competitiveness, these firms must be able to reinvest in a time frame which matches market opportunities. In this respect, ongoing doubts about resource security and uncertainty, and drawn-out project approval processes weaken the incentives for new investment.

The future of Australia's hardwood sawmilling industry is more uncertain. Most sawmills are small operations, and although there has been some rationalisation in the industry, increasing competition from softwoods and a declining resource limit further development. The development of new products, such as those involved in kiln drying, and further consolidation of existing sawmills would help improve competitiveness, although there are problems in achieving large scale operations (eg the variability and location of the resource). Nevertheless, there will continue to be markets for green scantling timber.

In addition, good growth opportunities are likely to arise for most other products. Growth in domestic demand, and significant opportunities to displace imports in most market segments, will provide opportunities in the domestic market for Australian producers.

Export market opportunities will also arise. World demand for wood and paper products is also expected to grow strongly over the next decade. Demand is expected to be highest in Asia where economic growth rates are predicted to average 6 per cent per annum, and where current per capita consumption rates of forest products are low.

While opportunities will emerge, changes in global capacity and the trade and protection policies of foreign governments pose a threat to Australia's forest products industries. Competition for foreign capital, both from forest products industries overseas and from others (eg eastern Europe generally), may also limit possibilities for expansion. There is considerable uncertainty about developments in each of these areas.

On the basis of existing information, the greatest threat might be presented by planned new capacity, particularly in the developing nations (eg Brazil, Chile and Indonesia). However, given the expected increase in demand in these nations, the extent of the production that will be directed towards export markets is unclear. In some developing nations, increasing capacity could also be tempered by concerns about the harvesting of hardwoods on a non-sustainable basis from tropical rainforests. Import bans on tropical timbers by the developed nations would significantly affect demand patterns and expand opportunities for Australia's forest products industries which harvest temperate hardwood timber on a sustainable yield basis.

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## 10 IMPROVING PERFORMANCE

A wide range of timbers, high fibre yield plantations, considerable potential to displace imports in the domestic market and proximity to rapidly growing Asian markets suggest that, at the present time, there are significant growth opportunities for Australia's forest products industries. Nevertheless, global competition in the supply of forest products is vigorous and many overseas firms possess advantages not available to Australian industry.

The ability of Australia's wood processing industries to capitalise on growth opportunities in the face of competition from overseas suppliers will hinge on the success of strategies adopted by the firms to improve competitiveness. However, as major users of infrastructure and other government services, the capacity of the forest products industries to expand will also depend upon continued improvements in the performance of the government sector. Indeed, it is difficult to envisage how Australian firms could add significant further value to the nation's forest resources without governments also improving their performance.

The following section draws upon participants' submissions and other reports to illustrate the range of strategies which can be adopted by forest products producers to improve performance. Section 10.2 discusses the role that governments need to play in improving the competitiveness of Australia's forest products industries.

### 10.1 Initiatives by companies to improve performance

As tariff protection has been reduced, Australia's forest product industries have been exposed to increasing levels of competition. This has increased the pressures on local producers to improve competitiveness.

In the short term, companies' options to increase competitiveness are constrained by their limited capacity to vary significantly some of the major determinants of costs (eg the configuration of existing plants and contractual obligations with input suppliers and with users). Nonetheless, significant improvements in performance may be attainable. In the longer term, companies have greater flexibility in the types of measures which they can employ to improve efficiency. For example, new plants can be built, new markets can be developed and the product mix can be altered. In contrast to short term possibilities, the size of the investments required and the time horizons involved are much greater. Typically, the changes commit firms to particular courses of

action for some years to come. Consequently, it is important that longer term strategies are based on assessments which accurately reflect market developments.

There is considerable diversity both between and within the forest products industries. There are, for example, large differences in firm sizes, in capital intensities, in the technologies employed and in the markets supplied, as well as significant differences stemming from the varying characteristics of the products themselves. In these circumstances, there is likely to be a corresponding variation in the strategies adopted by different firms to improve their competitiveness. The optimal strategy for one firm may be totally inappropriate for others.

While recognising that the optimum development strategy will vary according to each firm's circumstances, this section of the report briefly considers some of the more common initiatives available to improve performance.

### **Improving company performance in the short term**

In the short term (ie periods of up to 2 years), firms' capacity to substantially change their plants and the fundamental technologies they employ, and to introduce new product ranges, is limited. Depending on the product, the development of new markets may also be constrained. For most firms, these are major changes which cannot be contemplated without considerable investigation of all feasible options, comprehensive assessments of the likely financial consequences and detailed planning of implementation processes. As noted in previous chapters, securing the necessary government approvals for major plant additions can in itself take upwards of eighteen months.

#### *Increasing plant utilisation*

Plants producing some forest products run on an around-the-clock basis (eg integrated pulp and paper mills). However, in some areas (eg softwood sawmilling) many plants currently operate on a one or two shift basis, even though it is common for comparable plants overseas to run on a three shift basis. CSR (sub. 10, p. 3), for example, stated that:

In general, sawmills operate for 38 to 76 hours per week, or between 23% and 40% of the available time.

Low levels of capacity utilisation impairs competitiveness by forcing companies to spread fixed costs over relatively low production volumes. Consequently, increasing capacity utilisation is an important strategy for improving competitiveness.

Its success is, of course, contingent on companies being able to successfully market the additional output. In most instances, it is also dependent on gaining additional wood supplies and the additional labour required to extend operating hours.

### *Plant upgrades*

While larger scale change may be precluded, companies do have some capacity to modify plant, change operating procedures and vary product specifications in the short term. For example, it is common for companies to be continually examining the possibility of upgrading particular segments of plants, in particular those which may constitute a 'bottle neck' in terms of overall capacity, and those areas in which greater automation could improve product quality and/or reduce costs. Investments by forest products companies in electronic sensor equipment and computer control mechanisms are illustrative of plant changes designed to improve efficiency and reduce waste which are feasible in the short term. In the case of paper producers, it is common to regularly rebuild parts of paper machines, such as the headbox or the coater. As a result, paper machines are frequently totally rebuilt a number of times over their working life.

### *Product development*

While the introduction of a new product range may require substantial new investment and may not be possible in the short term, participants indicated that companies constantly strive to improve product quality (eg to improve the uniformity of products). It is also commonplace for companies to produce variants of existing products to accommodate changes in users' needs.

The ability of forest products companies to modify both equipment and products in the short term is illustrated by changes made by APPM in its woodchipping operations. The company (sub. 38, p. 44) stated that:

We have also been able to reduce losses through chip breakage within the mill by reviewing systems to reduce handling and abrasion. Included here is significant capital investment in shiploading facilities and screens and the acceptance of higher screening losses.

We are also actively pursuing the possibility of segregating our product by species groups with a view to securing a price premium by supplying a more homogenous product.

In many companies, short term initiatives to improve quality have encompassed the adoption of formal quality management programs. Some are seeking to have all their operations quality assurance accredited under Australian Standard 3902. This is seen not only as a means of improving product quality,

but also as a means of improving productivity and customer service, and of increasing the skills and motivation of the workforce. In some cases, quality assurance and related programs also dovetail with initiatives to improve inventory control and reduce waste.

Producers generally accept that, for the most part, the forest industries have been 'supply driven'. Firms have been able to sell most of their output locally without having to be overly responsive to users' needs. However, in today's more competitive environment, producers are placing far greater emphasis on marketing — on ascertaining users' needs, promoting their products and on adapting products in response to changing market conditions.

### *Labour arrangements*

The major focus of many firms' short term strategies to improve competitiveness centres on improving labour productivity. While the present Australian labour market arrangements do not permit Australian firms the same freedom to negotiate with their workforce as those that apply in some other developed nations, the current enterprise bargaining provisions provide opportunities for improving workforce efficiency. The arrangements, among other things, allow for significant reductions in the number of unions represented at plants and for the introduction of more flexible working arrangements (eg greater ability for operating hours to be adjusted in response to changing market conditions).

Participants, particularly those representing larger firms, indicated that they are actively pursuing options to increase competitiveness by improving labour productivity. The changes have resulted in some downsizing in workforces, an increase in skill levels and improved productivity. For example:

- Over the past four years, APM has achieved a 50 per cent increase in labour productivity through "efficiencies flowing from better trained employees and more tightly staffed shift operations". Labour costs per tonne of output have fallen by 5 per cent.
- Labour productivity in ANM's mills has more than doubled since 1985. Employed has declined by over 50 per cent while, over the same period, output has increased by nearly 20 per cent.

Now that enterprise bargaining processes are becoming better understood, there may be an increased capacity for small and medium size producers to engage in workplace negotiations to improve labour productivity and, hence, competitiveness.

## Improving performance in the longer term

In the longer term, forest companies are able to reassess all facets of their operations and can implement major changes to improve competitiveness, such as investing in new plant and developing new products and new markets. Industry structure may also change. These matters are discussed below.

### *Industry structure*

A feature of the Australian forest products industries is the high proportion of production accounted for by a relatively small number of large firms. This is most evident in production of paper and paper packaging, with the output of newsprint, industrial and packaging papers, printing and writing papers, tissue products and paper packaging each being dominated by one or two companies. Concentration levels are lower for wood products. Nonetheless, local production of some wood products is also dominated by a relatively small number of producers (eg MDF and hardwood woodchips).

Many of the larger companies involved in producing wood and paper products have international affiliations, and some operate wood processing plants in other countries. Their presence has probably facilitated the transfer to Australia of new technologies and workforce skills. It may also have facilitated the development of international markets for some products. On the other hand, high concentration levels, coupled with relatively high protection against imports, has almost certainly muted competitive pressures in some industry segments and reduced the incentive to operate as efficiently as possible.

It is difficult to assess what the net effect of relatively high levels of concentration may have been in past years. However, with lower tariff barriers and with imports continuing to account for a significant share of most market segments, it is difficult (with one exception) to argue that current industry structures are inefficient.

The exception is the hardwood sawmilling industry. In major producing nations, a significant proportion of output is accounted for by large mills able to take advantage of new technologies and scale economies. In most parts of Australia, however, the industry is typified by small firms, many of which are owner operated. This high degree of fragmentation appears to be a result of:

- the relatively simple processes involved in producing green scantling timber — the industry's traditional product;
- the nature and location of the hardwood resource which has not lent itself to automation; and
- log allocation policies which have hindered consolidation (eg non-transferability of log entitlements).

In recent years, reduced access to old growth forests and competition from softwood and other building materials has led to some rationalisation of the hardwood sawmill industry. In the face of continued pressure from softwood, the competitiveness of the hardwood industry will have to improve further to remain viable. It is widely accepted that this, in turn, will require considerable restructuring.

Restructuring is viewed as necessary because many (but by no means all) in the industry see their future viability as being linked to their capacity to produce higher value added products and their ability to improve drying techniques. The investment required to meet these objectives is, however, unlikely to be feasible for many traditionally small sawmillers. Nevertheless, some demand for green structural timbers will continue into the future. Therefore, while the number of hardwood sawmills may decline, there will always be room in the industry for some smaller sawmills.

There are a number of restructuring options. For example, the Simons (1990b) study pointed to three possible directions for the Tasmanian hardwood sawmilling industry: (i) move to larger, more capital intensive sawmills; (ii) develop centralised wood processing facilities supplied by smaller sawmills; and/or (iii) develop cooperative joint ventures between existing sawmills.

Hardwood sawmilling companies participating in this inquiry provided a number of examples of rationalisation aimed at increasing competitiveness. For example, Boral has consolidated its operations in New South Wales and southern Queensland by closing a number of sawmills and feeding the output of the remaining mills into a number of central wood processing facilities. Similarly, in Western Australia, Bunnings draws output from its sawmills to central processing plants.

### *Investment in new plant*

Investment in new plant is an on-going process. Producers in all countries constantly evaluate opportunities to improve competitiveness by replacing ageing plant with new plant embodying the latest technologies, or by new plant which allows them to extend the range of products they produce.

According to participants, a major consideration affecting new investment in the Australian forest industries is scale. Some consider that if they are to be internationally competitive it is imperative that new plants are of 'world scale'. However, many consider that such investments cannot be justified because, given the relatively small size of the Australian market, a large proportion of the output of a new world scale plant would have to be sold on export markets at prices which would not realise an adequate return on the investment.

The significance of export sales is illustrated by the list of “possible new investment projects” in the paper industry submitted by the PPMFA (see Table 10.1). The table shows that, for many of the projects, export sales would need to account for a large proportion of the industry’s output.

<i>Projects</i>	<i>Capital cost</i>	<i>Annual sales value of output</i>	<i>Value of exports balance</i>	<i>Annual gain in trade</i>
3 new BEK pulp mills/ expansion BEK pulp mill	4.5	1.6	1.2	1.5
Uncoated wood free paper machines	0.3	0.2	0.1	0.2
Bleached CTMP mill	0.3	0.2	0.2	0.2
Lightweight coated paper machine	0.6	0.3	0.1	0.3
2 x de-inking plants	0.2			
2 x newsprint mills	0.6	0.3	0.1	0.3
Liquid packaging board	0.1	0.1	0.1	-
Magnefite pulp mill	0.2	0.1	-	-
Business paper machine and de-inking plant	0.2	0.1	-	0.1
Total	7.0	2.9	1.8	2.6

a Consists of announced proposals with at least in-house feasibility studies under way or completed. The new projects listed cannot be aggregated to indicate total new investment since the viability of some projects is clearly interlinked (eg it is unlikely that the simultaneous development in Australia of three new world scale pulp mills could be viable).

Source: PPMFA (1992).

While virtually all producers consider scale is an important determinant of competitiveness, a number believe the need for the Australian industries to install new world scale plant may be overstated. These participants stressed that scale is only one of many elements which interact to determine firms’ competitiveness. Larger scale can also increase costs. For instance, a large mill requires a sizeable timber resource to draw upon and, as plant size increases, haulage costs also increase. These higher transport costs may, in the end, limit the economies generated by a larger scale mill. In these circumstances, measures to reduce transport costs and consolidate a wood resource close to a mill can be just as important as investing in a ‘world scale’ mill. In this context, APM (transcript, p 231) commented that:

We don't see scale per se as a major issue ... with a judicious choice of investment, input costs, positioning, one can offset the scale factor.

For some producers, the major thrust of new investments to improve competitiveness is targeted not so much at lowering processing costs, but lowering input costs. Examples include investment in equipment to produce inputs in-house (eg chemicals and electricity) and new plantation developments to reduce wood costs and provide producers with increased resource security.

Although there are shortcomings in the available data, quantitative work undertaken by the Commission based on assessments of the cost structures of greenfields plants in Australia and overseas countries also suggests that the installation of world scale plants in Australia may not, in itself, significantly improve competitiveness (see Appendix G). It suggests that, if competitiveness is to be significantly improved and industry output expanded, improvements will also be required to, inter alia, lower input costs and increase market acceptance of Australian forest products.

### *New products and markets*

Competitiveness can also be enhanced by the development of new products and new markets. According to participants, both avenues are being actively explored by Australian producers. Some producers' plans involve relatively lightly processed commodity products targeted largely at export markets (eg new export woodchip ventures), while others involve relatively high value added products (eg decorative wood panels).

While some new products replace existing products, other product developments are aimed at penetrating markets which have traditionally been supplied by substitute materials. For example, the development of laminated veneer lumber (LVL) has provided a substitute for steel and concrete beams. Other laminated products provide an additional advantage to producers in that they provide a means of efficiently using offcuts or lower grade wood which would otherwise be converted into wood chips.

The development of new products is closely linked to research and development effort. There is some information to suggest that expenditure in Australia on research and development into forest products has been small relative to expenditure in other OECD countries and relative to expenditure by other Australian industries. For example, Australia's research and development expenditure as a percentage of production undertaken by the wood and furniture industries in 1988–89 was well under 50 per cent of the average expenditure undertaken by other OECD countries. Australia's expenditure on paper and packaging was higher, but was only slightly greater than 50 per cent of the OECD average.

The formation of the new Forests and Wood Products Research and Development Corporation from 1 January 1994 should help promote research activity and, given the establishment of appropriate mechanisms to prioritise the research agenda, should help direct research activity into those areas which offer the greatest potential benefits for Australia's forest industries.

One area of concern to the Commission relates to the funding arrangements. It is proposed that the research levy apply not only to Australian production, but also to imported products. The Commission considers that there is no justification for applying the levy to imported goods. It considers that the levy should apply only to Australian production. (This issue, participants' concerns about the funding arrangements, the nature of the research that should be undertaken by the Corporation and other matters associated with research and development are discussed in Appendix I).

It is becoming more widely accepted that the development of new products and new markets needs to be accompanied by programs to improve the consistency of product quality and by comprehensive marketing strategies. In the case of export markets, participants indicated that, to ensure on-going success, companies must be prepared to make long-term commitments, and ensure that they have an adequate understanding not only of the products themselves, but also of cultures and customs in importing nations.

For many small to medium sized firms which lack the experience and financial resources of larger firms, breaking into export markets constitutes a significant challenge. Assembling the necessary market information, arranging distribution networks and understanding the needs of overseas buyers are time consuming and costly exercises which deter many firms from seriously considering export opportunities. While this may frequently be an appropriate response for many smaller firms, others may be missing profitable expansion opportunities. However, in recent years, government programs to promote exports have placed increased emphasis on the supply of information, financial assistance and administrative support to assist exports by small to medium sized firms, particularly to Asian markets. This has included Austrade establishing a greater presence in Asian markets and changes to the Export Marketing Development Grants Scheme to make it easier for small firms to qualify for export grants. Assistance is also available from other government programs such as the marketing skills program operated by the Commonwealth Department of Primary Industries and Energy. Aided by a \$160 000 grant under this program, Australian temperate hardwood timber producers (a group of Victorian based firms) have recently formed an export network and are undertaking a study to identify export opportunities.

The nature of the strategies employed to develop overseas markets varies considerably. However, Box 10.1 illustrates some of the main components of a marketing strategy for penetrating Asian markets as identified by one international forestry consulting firm.

**Box 10.1: Accessing Asian markets: one commentator's view**

The Pacific Asian region provides the best opportunities for Australian paper producers to expand into export markets. For new firms to be successful in these markets, their entry strategies must address barriers associated with:

- *attitude* buyers and sellers will need to take the time to understand and agree upon product quality, service and price;
- *culture* sellers will need a detailed understanding of the buyer's social and business culture and, in particular, the distribution systems; and
- *commitment* buyers will need to be satisfied that the seller is committed to supplying and supporting the market on a long term basis.

Overcoming these barriers is, generally, a time consuming process which may be dependent upon establishing personal acceptance which can then develop into strong business relationships. Since these barriers differ between countries, it is probable that the entry strategy will also differ. Nevertheless, the entry strategy will generally consist of the following steps:

1. The seller must become familiar with the market's needs by engaging a local agent and supplying a limited number of customers. This part of the strategy should focus on establishing a good image and solid relationship with a few customers. Therefore, the selection and on-going support of the agent is paramount.
2. The commitment to the local market can be further demonstrated by the establishment of a local office. Employing local staff will facilitate a closer relationship with customers. Effective communication between the local and head offices will ensure that the correct company image is projected and that timely feedback is provided on changing market needs.

Companies must also ensure that quality standards are maintained and reflect the market's needs. Product prices should also reflect a firm's commitment to the market as well as being flexible to changing market conditions.

*Source:* Simons (1991).

One strategy which is sometimes employed to gain access to export markets is to forge links with companies domiciled in major export markets. This can involve seeking overseas equity partners or, alternatively, entering into marketing agreements. Another alternative is to supply export markets from plants located in other countries. This approach allows Australian companies to reduce transport costs and to take advantage of benefits which may not be available in Australia (eg low wage levels). While this course of action may reduce the use of labour and other Australian resources, the repatriation of

profits and improvements in the competitiveness of the company as a whole is of benefit to Australia.

At the draft report hearings, NAFI suggested that a “regional prospectus” could be a “useful tool for marketing Australia as a potential supplier of forest products and as an investment opportunity”. This approach, which NAFI said has been followed by New Zealand, would involve the preparation of a document containing information on available wood supplies in a designated region and other information of use to potential investors. NAFI (sub. 71, p. 5) considers that:

The Commonwealth and relevant State governments should endorse the regional prospectus by up-front, legally binding resource security legislation.

### *The Commission’s view*

The diversity within the forest products industries is reflected in the many different strategies that forest product firms have implemented, and are continuing to implement, in order to improve performance. Although in some cases the strategies differ markedly, it is not possible for the Commission, or for governments generally, to imply that they are not appropriate without a comprehensive analysis of individual firms, their products and the markets into which they are sold.

Nevertheless, as is clearly evident, governments are also major players in the forest products industries (eg they provide wood, transport and energy services and regulate environmental requirements and labour relations). Consequently, their actions have important consequences in shaping the industries’ future development. The way governments can enhance the ability of the industries to improve performance is discussed in the following section.

## **10.2 Role of government**

There are a range of views concerning actions which governments can undertake to improve the competitiveness of the forest products industries. Most participants focussed on unresolved issues associated with access to, and management of, Australia’s wood resources. Improvements in the efficiency of government business enterprises were also advocated. Participants also expressed concerns about government assistance, as well as efforts by governments to force the industries to undertake further downstream processing.

## **Government initiatives to direct industry development**

As a means of promoting development, it has been frequently advocated that Australia should add further value to its natural resources by increasing the extent of downstream processing (eg to logs, iron ore, copper and raw sugar). In the context of this present inquiry, a number of state governments and the Commonwealth Government have implemented measures which are intended to encourage Australia's forest products industries to increase their output of relatively high value added products. For example:

- The Victorian Government has implemented log allocation procedures whereby preferential allocation of higher quality sawlogs is available to those firms which engage in adding the greatest value to unprocessed wood. Under the Victorian licence conditions (section 10h), the quantity of timber, or the quality of timber, allocated to a licensee may be withdrawn and other kinds or quantities of timber substituted if “the kind of timber allocated to the licensee is not used for conversion to products applicable to that kind of timber”;
- Commonwealth Government export licences for woodchips are conditional on it being not commercially feasible to process and add value to the wood used to manufacture woodchips; and
- The Western Australian Government's Timber Strategy encompasses a system of structured royalties which are intended to provide “a major incentive for better use of forest resources and an increase in production of value-added products, such as furniture”. Similarly, State Agreement Acts entered into by the Western Australian Government and proponents of major projects generally require “processes to be implemented which will lead to downstream processing of the product”.

Increasing the level of wood processing undertaken in Australia has intrinsic appeal, especially at times like the present when unemployment levels are high. Further processing of (say) logs which are otherwise converted into export woodchips, or of sawn hardwood currently sold as green scantling, could involve significant additional processing and, hence, is seen by many as a means of increasing employment opportunities. It is also seen as a means of relieving the pressure on Australia's balance of payments by reducing the high level of imports of wood and paper products and/or increasing exports. This could occur if, for example, woodchips which are currently exported to Japan for use in paper manufacture were instead further processed in Australia to produce paper for export markets.

Additional advantages associated with switching production towards higher value added products include:

- Markets for higher value added products are said to be less price sensitive than are markets for lower value, ‘commodity’ products. Sales of specialty products are not only determined by price, but also by other factors, such as quality, appearance and delivery arrangements. This can advantage Australian producers in two ways. First, it can increase the competitiveness of Australian goods by reducing the focus on price — an area in which, given Australia’s cost structures, we may not be able to match overseas suppliers. Second, higher value added products are less vulnerable to the large cyclical variations in price which characterise some of the relatively lower value forest products (eg basic newsprint).
- The increased investment and higher employment that would result from expanded wood processing operations may provide forest products industries with greater security in the sense that it may be more difficult for governments to intervene to withdraw or reduce wood supplies.

As indicated in Chapter 3, there has been a trend towards the production of higher value added products. Nonetheless, given the apparent advantages associated with further processing, it is pertinent to ask why Australia producers of forest products do not add more value to their wood inputs? Why, for example, do we export such large quantities of woodchips — a relatively lightly processed product? Why is a large proportion of hardwood not processed beyond the green sawn stage? Why are many high value paper products imported — such as fluid packaging board for use in the manufacture of milk and drink cartons, and certain high quality printing and writing papers? Are there ‘market failures’ or other factors which limit production of higher value added products in Australia?

Two factors are important in understanding this issue. First, higher value added does not necessarily equate with greater efficiency. For example, value added would increase if labour costs rose and, as can be the case in the forest products industries, stumpage charges fall to offset the increase. However, as in this example there has been no increase in the gross value of production, efficiency would be unchanged. Second, higher value added does not imply higher profitability. It is quite conceivable that higher value added will result in reduced profits. This is illustrated in Box 10.2. The example shows that while strategy B results in higher value added, it is less profitable than strategy A.

**Box 10.2: Relationship between value added and profitability**

	Strategy A	Strategy B
	\$	\$
Product value	300	360
Material costs	<u>100</u>	<u>100</u>
Value added	200	260
Labour cost	100	190
Capital cost	<u>40</u>	<u>30</u>
Profit margin	60	40

In the Commission's view it is primarily this latter factor that explains the current level of processing undertaken in Australia. In other words, it is likely that the present level of processing represents that mix of activities which maximises returns to producers (taking into account the risk involved), and that new investment required to increase the output of higher value added products cannot presently be justified. However, this in turn raises the question of whether there are factors which inhibit the profitable production in Australia of higher value added forest products.

There is little doubt that there are some factors which do impede further processing. For example, certain natural factors, such as the species of wood produced in Australia and the distance of Australia from some major world markets, limit the scope for producing some higher value added products. Although little can be done about these factors, other barriers exist which can, to varying degrees, be reduced or eliminated.

One factor is trade barriers. New internationally competitive plant installed to undertake downstream processing operations would probably have to export a significant proportion of its output. However, in many countries, tariffs and barriers to trade are lowest on relatively lightly processed forest products (such as woodchips) and highest on higher value added products. The negotiations required to dismantle trade barriers are clearly a task for government. However, as discussed later in this chapter, progress is often slow.

An impediment to higher value adding which is more amenable to government action is project and environmental approval processes. As explained in Chapter 8, approval processes are frequently uncertain and administrative procedures are cumbersome. This can impose considerable costs on developers. According to participants, it also deters new investment. To the extent that new investment is greater for higher value products (eg the investment required for a pulp mill is substantially greater than that needed for a woodchip mill), the uncertainty and fragmentation which presently characterise approval processes

impede greater processing of wood in Australia. Similar arguments apply to resource security (ie lack of security over future wood supplies deters new investment).

In some sectors of the industries, skill shortages appears to retard companies' attempts to increase production of higher value added products. For example, a 1990 study undertaken by the Forestry and Forest Products Industry Council reported that skill shortages appeared to be impeding attempts by the hardwood sawmilling industry to increase value added production. This notion was also supported by the NFITC. As noted in Chapter 8 of this report, the Commission considers there is a need for governments to review existing training programs and funding levels.

Conditions attached to the sale of logs from crown native forests can also inhibit production of higher value added products. For example, in Queensland, there is only a limited facility for a purchasing mill to divert logs to other sawmills. In addition, all public sawlog and pulpwood sold must be processed in Queensland. By limiting the access of some mills to logs harvested in public forests, both provisions have the potential to retard production of higher value added products.

Clearly, the lower are production costs in Australia, the greater is the likelihood that there will be profitable opportunities to increase production of higher value added products. Consequently, actions by government to increase the efficiency of government business enterprises that supply important inputs to the forest industries — such as energy and transport services — will also encourage higher levels of processing in Australia.

Comments by local producers indicate an awareness of the benefits which can be derived from producing higher value added products. For example, in a number of states, many hardwood sawmillers consider it essential that they add further value to green sawn timber if they are to remain viable in the face of increasing competition from sawn softwood. However, a strategy of focusing production on such products will only be successful if the product can be successfully marketed so as to provide producers with a satisfactory rate of return.

In the Commission's view, producers of forest products are best placed to assess the commercial viability of increasing production of higher value added products. It is the producers themselves which have to raise the finance for new investments, and the producers who have to account to shareholders for company performance.

Government initiatives to force forest industries to produce higher value added products are, in some respects, analogous to government local content schemes.

In the context of the forest products industries, the use of measures such as log allocations and export controls to increase output of value added products could be counter productive. There is a very real danger that their actions will lead to a contraction rather than an increase in the size of Australia's forest products industries. This would result in less, rather than more, value being added by wood processing industries. This could occur if, by forcing companies into activities which they would otherwise not undertake, rates of return are reduced — or losses are incurred. If this eventuates, companies' ability to invest in new plant to maintain competitiveness is eroded or, alternatively, they are driven out of business.

Evidence submitted to this inquiry illustrates the costs which can stem from attempts by governments to force producers to increase production of higher value added products. For example, Mr T H Gunnensen of Marbut-Gunnensen (transcript, pp. 495-496) commented that the Victorian Government's policy of allocating logs according to the extent of value added undertaken:

... has led people into mistaken investments... there have been quite sensational failures in the Victorian industry based on large amounts of money spent on ... the kilns and also further processing equipment...

The policy has also affected the viability of some traditional hardwood sawmilling operations by reducing the quality of the logs allocated to them.

Similar considerations apply to other government measures which attempt to direct the nature of industry activity. For example, the Western Australian Department of State Development (now Resources Development) called for expressions of interest from parties interested in developing a pulp and paper mill utilising wood resources in the State's south-west. However, by prescribing the use for which the wood resources can be used, the Department precluded proposals for other developments (ie plants producing wood products such as MDF and particle board) which might provide a higher return to the State. The possibility of this occurring would be avoided if the State had permitted developers of any wood-based project to submit a proposal for the use of available wood supplies.<sup>1</sup> The approach has recently been adopted by the Tasmanian Forestry Commission which has called for "commercial proposals for the utilisation of the pine plantation resource on King Island".

*There could be benefits in increasing the extent of downstream processing of logs. However, decisions about which products to produce are most*

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<sup>1</sup> Shortly before this report was finalised, the Western Australian Government announced that it had accepted a proposal from Bunnings. The company will undertake a feasibility study to investigate the possibility of constructing a chemi-mechanical pulp mill, with the possibility of another pulp mill and two paper mills being developed at a later date.

*appropriately determined on commercial grounds by producers themselves. Attempts by governments to coerce forest products suppliers into producing higher value products by, for example, providing producers of higher value products with preferential log allocations, could be counter-productive. It could lead to lower rather than increased levels of value added in the forest products industries. A more appropriate role for government is to focus on the causes of the problems, rather than the symptoms. This would require that governments focus on initiatives to remove impediments — such as trade barriers, inefficient approval processes and factors which increase processing costs — all of which reduce the incentive for local manufacture of higher value added products. The removal of these impediments would also enhance the competitiveness of other Australian wood processing activities.*

### **Industry assistance**

The terms of reference request the Commission to examine whether assistance to the forest products industries is offered in a discriminatory manner, and how assistance can be used both to minimise the costs of adjusting to lower levels of assistance and to promote the development of the industries.

#### *Current assistance arrangements*

Commonwealth assistance to the forest products industries has generally been provided through tariffs, although bounties have been provided to some mechanical papers. Tariffs applying to imported wood and paper products have varied. During the 1980s, tariffs on imported rough sawn timber were 10 per cent, while plywood was dutiable at 40 per cent. A disparate structure also applied to paper imports, with some papers dutiable at rates of 30 per cent, while others were free of import duties (eg newsprint). Tariff arrangements have been further complicated by the application of developing country preferences, tariff concessions and policy by-laws.

These arrangements afforded the forest products industries as a whole with assistance similar to the manufacturing average. However, within the wood and paper industries, there were significant disparities in assistance. Over recent years, tariffs on most manufactured goods have been progressively reduced. Under the existing program of phased reductions, by 1996 the highest tariff on imported wood or paper products will be 5 per cent.

The effect of these programs will be to reduce significantly the level of, and disparities in, assistance afforded to the forest products industries (see Figure 10.1). Since the current program of tariff reductions applies across the board, many of the tariffs on the equipment and materials used by the forest products industries will also fall. Commission estimates suggest that the

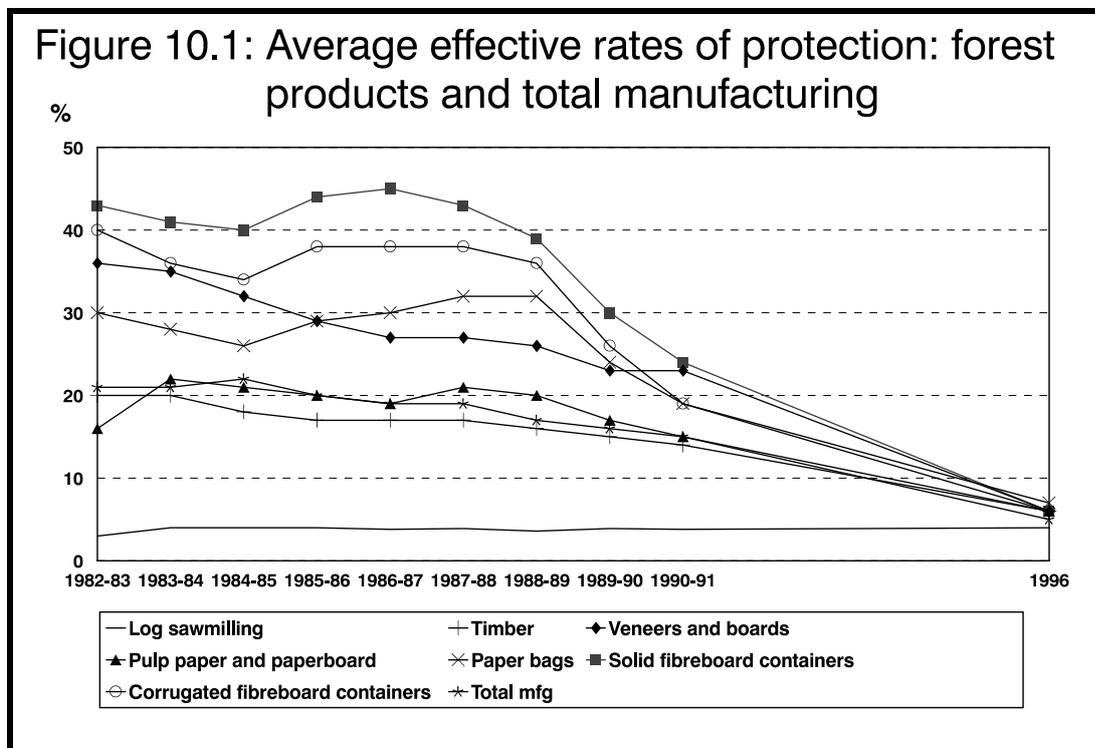
previously highly assisted activities will tend to contract while other activities will expand. On the whole, however, the level of output for the forest products industries is estimated to remain about the same. Assistance arrangements and the effect of tariff reductions are discussed in more detail in Appendix J.

*Adjusting to lower levels of assistance*

During the course of this inquiry, the majority of participants did not comment on changes to the assistance arrangements. Nevertheless, APPM expressed concern about the timing of reductions in assistance. In particular, APPM argued that under the current circumstances:

- where there are continuing problems with competitiveness (ie scale, labour costs and work practices, transport and shipping, and resource security); and
- where the average tariff on printing and writing papers is 6.5 per cent and not 15 per cent — resulting from some low general tariffs rates, duty free entry of some papers and preferential rates for Brazilian, Indonesian and Canadian imports;

further reductions in paper tariffs should be halted, and developing country preferences removed, until APPM's costs are reduced and microeconomic reforms completed.



The Commission recognises that a program of tariff reductions is not costless, and that industries and firms may experience adjustment problems. Nevertheless, these costs need to be weighed against the considerable benefits associated with tariff reform. Low levels of assistance encourage the development of those industries and firms which are most suited to the Australian environment. Assistance arrangements can distort this process by promoting less productive industries and by increasing the cost of imports to downstream users and consumers. High levels of assistance available in the past have also sheltered industries from competition and inhibited the development of internationally competitive export oriented industries.

The difficulty in implementing any program of reform is to ensure that the benefits are captured in a way which minimises adjustment costs to industry. The current program of tariff reform attempts to do this by reducing tariffs across the board (ie tariffs on inputs used by industry decline at the same time as tariffs on outputs) and by phasing-in tariff reductions over an eight year period.

Since all firms at some stage will face difficulties in adjusting to lower tariffs, the acceptance of arguments to halt the reductions in tariffs could equally be applied across all industries. If accepted, this could lead to a pause in the Government's current program of across-the-board tariff reductions.

The Commission accepts the view argued by APPM, and shared by many others, that the concurrent introduction of tariff reductions and a wider program of microeconomic reform would assist industry to adjust and become more competitive. However, the extent of the changes required, and the problems to be resolved, differ between the various areas on the reform agenda. Hence, it is natural for the pace of reform of the waterfront, coastal shipping, rail, electricity, etc to differ. If tariff reductions were deferred until reform elsewhere was completed, the same argument could be extended to other areas in need of reform. This could make the process of microeconomic reform as a whole unmanageable, and further reform could be stalled.

*The Commission considers that the deferral of tariff reductions for a particular product or industry, or for the manufacturing sector as a whole, would merely delay adjustments which must be made if competitiveness is to be improved. Rather than saving jobs, it could impede growth in both employment and activity levels. In the Commission's view, continuing the existing program of phased tariff reductions is consistent with the long term development of the industry and the economy as a whole.*

### *Developing country preferences*

The current tariff preference scheme for developing countries was established in 1986 following a review of the previous arrangements (Hughes 1985). In response to that review, the Government adopted a scheme which provided a uniform preference margin without exemptions or exclusions. Rather than implement administratively costly arrangements to identify and offset injury, the Government sought to constrain it by limiting the margin of preference to five percentage points.

Since then the Government has made two decisions to reduce the significance of tariff preferences. First, it phased out preferences on imports from Hong Kong, Korea, Singapore and Taiwan. Second, it phased out preferences on a range of imported goods (eg dried fruit, fruit juice, sugar, canned food, chemicals, textiles, clothing and footwear) from all but the least developed countries.

In response to this latter decision, APPM argued that tariff preferences should also be removed from imports of printing and writing papers from developing countries — in particular, from Brazil and Indonesia which have world competitive paper mills. In support of this claim, APPM argued that injury was being caused since more than 50 per cent of imports of uncoated woodfree papers are being sourced from developing countries.

APPM's proposition of removing tariff preferences from imports of printing and writing papers is difficult for the Commission to assess since it involves many issues other than economic efficiency considerations. For instance, the request impacts on Australia's broader trade policies, overseas development objectives and foreign policy considerations generally. Therefore, it is an issue which is more appropriately addressed by the Department of Foreign Affairs and Trade in consultation with other relevant departments.

It is appropriate to recognise, however, that imports of most grades of printing and writing papers are sourced from developed countries. Hence, in only a small number of cases (eg uncoated woodfree papers) is it likely that imports from developing countries will be undermining the general tariff on printing and writing papers.

### *Discriminatory aspects of assistance arrangements*

As noted above, the assistance provided to individual forest product industries has varied considerably, largely because of significant variations in tariff protection. However, as tariffs have been reduced, the extent of the problem has, and will continue to, diminish.

At present, the major discriminatory aspect of assistance provided to the industries is the discrepancy between the assistance provided to products sold in domestic markets and those exported. Products sold domestically continue to be afforded tariff assistance, while exports receive little or no assistance.

From time to time it has been suggested that additional assistance should be provided to exporters to compensate for the additional costs imposed upon them as a result of tariffs on their inputs. Such assistance could be provided either through direct export subsidies or, as has been suggested more recently, through export facilitation schemes. In the latter case, the disparities are reduced by allowing manufacturers to import certain goods within their industry free of any duty, in return for exports of certain goods within the same industry.

Each of the two approaches has a number of advantages and disadvantages in terms of their ability to reduce disparities in assistance and improve the efficiency of the economy or a particular industry.

The case for export subsidies (ie a tariff compensation argument) is generally raised in an economy wide perspective. The provision of subsidies would be directed at removing most, if not all, of the disparities in assistance which exist between industries. However, they would create a number of practical difficulties. First, it would be difficult to identify the level of subsidy every activity would require in order to be fully compensated for the tariffs on their inputs. Second, it would be expensive to subsidise all exports. Third, importing countries may be expected to retaliate by either imposing countervailing duties on the subsidised goods or through other forms of trade sanctions.

Export facilitation schemes do not suffer from these problems to the same extent. This is largely because an export facilitation scheme is industry specific and would not attempt to fully compensate for the impact of tariffs. However, unlike export subsidy schemes which may generate economy wide benefits, the benefits of export facilitation are specific to a particular industry. The benefits accrue because the removal of tariffs on goods imported by the industry (including both final products and the inputs into an exported product) reduces the intra-industry disparities in assistance between export and import competing activities. Thus, it encourages the industry to rationalise and focus on those activities in which it is most competitive.

Nevertheless, the removal of the liability to pay tariffs acts as an implicit subsidy to exports. If such subsidies are not generally available to all activities, an export facilitation scheme would run the risk of widening inter-industry disparities in assistance. In addition, export facilitation may add to the cost of industry adjustment through the administration of the scheme. For instance, the

scheme has to be administered by customs officials and firms must develop and maintain records in order to justify all claims.

Since export facilitation encourages an industry to become more competitive, the adjustment process may be smoother, thereby allowing tariffs to be reduced more quickly. On the other hand, there is a danger that export facilitation may encourage firms to invest in exporting activities which are not viable in the longer term. This could increase the extent of adjustment undertaken by an industry. It could also create additional pressure to stall the longer term program of tariff reductions as firms lobby for the maintenance of the assistance provided by tariffs and the export facilitation scheme. In both of these cases, export facilitation could be contrary to the objectives of reducing the discriminatory aspects of assistance (ie by lowering the highest tariff rates) and minimising the associated adjustment costs.

As the benefits and the offsetting costs are difficult to estimate, it is often not possible to know whether export facilitation schemes improve the efficient allocation of resources within the economy as a whole. In the case of the forest products industries, the current program of tariff reductions will reduce tariffs on the materials used, as well as those on imported wood and paper products, to minimal levels by 1996. The disparities in assistance will also have been significantly reduced. For these reasons, an export facilitation scheme would have little influence on the current trends in production and exports.

*Disparate levels of assistance have been provided to the forest product industries and to products sold into domestic and export markets. These disparities have been largely caused by the form in which the bulk of assistance has been provided — by means of tariffs. Phased reductions in tariffs currently in progress are addressing this problem directly, and are preferable to measures which attempt to compensate for disparities in assistance (eg export facilitation schemes).*

### **Barriers to international trade**

A number of participants drew attention to measures employed by overseas governments to assist their forest products industries. The assistance measures encompass direct financial assistance and taxation concessions to encourage industry development, as well as measures to reserve all or part of domestic markets for local producers (eg quantitative restrictions, tariffs and non-tariff barriers such as product standards designed to be compatible with the range and quantity of locally produced goods).

NAFI provided information on a range of countries to illustrate the extent of the assistance available. It shows, for example, that incentives for new investment

in Malaysia include tax 'holidays' of five to ten years duration, an investment tax allowance and double deductions for tax purposes of certain expenditure on research and development, export market development and training. Malaysian forest products producers are also assisted by high tariff duties on imported products (eg most imported timber products attract tariff duties in the range of 20-45 per cent). Participants pointed out that the level of government assistance provided in countries such as Malaysia contrasts starkly with the relatively low and declining levels of assistance available to the Australian forest products industries.

It is difficult to compare the assistance available in Australia with that provided by overseas governments. Nonetheless, tariff assistance appears to be low for most Australian products and, under the current program of phased reductions, will be reduced to a maximum of 5 per cent by 1996.

Assistance provided by overseas governments affects patterns of production and the level and composition of international trade in forest products. It places Australian producers at a financial disadvantage to many of their overseas counterparts in competing for domestic and export sales, and also restricts their access to overseas markets. In these circumstances, some advocate that the Australian Government should provide matching assistance.

There is some superficial appeal in matching the assistance provided by other governments. However, the provision of matching assistance would not be a costless exercise. The assistance provided would be at the expense of taxpayers and/or other industries. In addition, as Australia is a relatively small trading nation, it would not significantly add to international pressures for a reduction in international trade barriers. Indeed, it may well reduce the credibility of other Australian initiatives to lower overseas assistance levels (eg work by the Cairns group of countries in trade forums).

*The Commission considers the best approach to solving the problems posed by other countries' assistance policies is to pursue the matter in trade negotiations. As Australia has little leverage on its own, multilateral trade negotiations provide the best opportunity to press for trade reforms. Past experience suggests that, while obtaining agreement on reform is invariably a slow and difficult process, it is possible to negotiate reduced trade barriers in the context of multilateral negotiations. It is also appropriate to promote transparency and pursue trade reform in the context of on-going bilateral trade discussions between Australia and its major trading partners. In arguing the case for reform, it is appropriate to stress that reform would further a country's own national interests.*

### **The appropriate role for government**

In the Commission's view, governments can assist the Australian forest products industries to capitalise on the available growth opportunities.

Government's major contribution should be to implement actions aimed at overcoming inefficiencies such as those outlined in Chapters 6 to 8 of this report. This would largely involve the implementation of initiatives to improve resource security and to enhance the efficiency of a range of government business enterprises, as well as the removal of regulations which impair the efficiency of the industries (eg export controls and sales tax exemptions that apply to certain recycled paper products).

By targeting their actions on factors which are clearly stalling development, governments would assist the industries to improve efficiency and, at the same time, avoid the dangers inherent in strategies that, in essence, involve governments rather than industry determining where new investment should be directed. The removal by government of factors which reduce competitiveness would, as well as encouraging industry expansion, also encourage the output of higher value added products. For instance, restrictions on the export of woodchips ignores the fundamental interdependence of wood processing operations. It has deprived producers of the opportunity to maximise the returns from log residues. By ignoring the interrelationships between woodchipping and other forest products activities, the restrictions have reduced the profitability of integrated wood processing operations and reduced producers' ability to finance new investment, including investment in higher value added processing operations.

# **APPENDICES**

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## APPENDIX A: INQUIRY PARTICIPANTS

Organisations and individuals who made submissions to the inquiry are listed below. Participants marked \* presented submissions at public hearings. Participants marked \*\* made no written submission but appeared at hearings. The remainder made written submissions only.

Participant	Submission No.
Acacia Exports	17
Associated Pulp and Paper Mills*	38, 70
Australian Conservation Foundation*	34, 66
Australian Forest and Land Management Ltd*	2, 57
Australian Forest Growers*	18, 59
Australian Newsprint Mills Ltd	45, 51
Australian Paper Manufacturers*	36, 44, 50, 90
Australian Wood Panels Association	16
Big River Timbers Pty Ltd	53
Black Forest Timbers**	-
Boral Timber Division*	40, 55
Bowater Tissue Ltd	56
Bunnings Forest Products Pty Ltd*	35, 62
Chamber of Manufactures of New South Wales	39
CSIRO - Division Forest Products*	19, 64
CSIRO - Division of Forestry	68
CSIRO - Institute of Natural Resources and Environment	31, 42
CSR Softwoods	10, 54
Decorative Wood Veneers Association*	22
Department of Conservation and Land Management (WA)*	76
Department of Conservation and Natural Resources (Victorian Government)*	25
Department of the Environment, Sport and Territories	80
Department of Resources Development (WA)* (formerly, Department of State Development)	15, 61, 88
Electricity Supply Association of Australia	77
Environmental Protection Authority (WA)*	1
Federation of Industrial, Manufacturing and Engineering Employees*	6
Fine Wood Industry	93
Forest Industries Federation*	9, 65
Forest Products, Furnishing and Allied Industries Union of Workers	14, 89
Forest Protection Society, Warren Branch*	85
Furniture Manufacturers Association of Australia*	27, 48
G.L. Briggs & Sons Pty Ltd	7

Graham, A.	3
Gunnensen, T.H.*	33
Institute of Foresters of Australia Inc*	5, 69
Kimberly-Clark Australia	60
Latrobe Regional Commission	73
Midway Wood Products Pty Ltd	49
National Association of Forest Industries*	24, 71
National Forest Industries Training Council Ltd	43
National Library of Australia*	4
New Zealand Ministry of Forestry	37, 81
Nolan, Gregory B.	23
NSW Cabinet Office	30
NSW Forest Products Association Ltd*	12, 91
Otway Forests Industries Information Group	28
Pacific Magazines & Printing Limited	32
Pine Australia	41
Printing and Allied Trades Employers' Federation of Australia	87
Pulp and Paper Manufacturers Federation of Australia Ltd*	26, 46, 72, 79
Queensland Government	52, 83
Radcon Pty Ltd **	-
Rainforest Conservation Society Inc	86
SEAS Sapfor Ltd*	29, 67
Skoss, Jesse D.*	8
Smiley, George	78
South Australian Government	47, 92
Sprengel & Associates	13
Tasmanian Country Sawmillers' Federation	58
Tasmanian Farmers & Graziers Association	82
Tasmanian Government	94
Treecorp Group	11
Urban Bushland Council - WA **	-
Victorian Association of Forest Industries*	20, 74
Victorian Government	84
Vinden, P. & Ferguson, Ian S.*	21
Western Australian Forest Alliance*	63
Westpaper*	75

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## **APPENDIX B: TRENDS IN AUSTRALIA'S FOREST PRODUCTS INDUSTRIES**

This appendix examines the long-run trends in Australia's forest products industries in order to describe the industries' economic characteristics and contribution to the economy. The analysis also compares the recent performance of the Australian industries with those in Canada, New Zealand and the United States. For Australia, the analysis is based on official ABS industry and trade statistics and Commission estimates of assistance.

The focus of the review is on changes between 1968–69 and 1989–90.<sup>1</sup> In some years, however, industry statistics are unavailable (ie 1970–71, 1985–86, 1987–88 and 1988–89). Because of changes to the ASIC classification this period is divided in two, 1968–69 to 1976–77 and 1977–78 to 1989–90. The analysis compares the average annual values for each period. Examining several years together in this way reduces the transitory but potentially distorting effects of economic cycles, such as the 1982–83 recession. It thus provides a better indication of long-run trends in the industries under consideration.

Analyses over time of variables expressed in dollar values (eg productivity or average wages) can be distorted by inflation. To minimise this problem, all dollar values in this appendix are expressed in constant 1984–85 dollars.

This appendix is divided into two sections. The first section examines, in broad terms, production, foreign trade and domestic demand in the wood and paper products industries, and for the constituent industries (eg sawmilling and corrugated fibreboard containers). Section B.2 discusses value added and its determinants (ie price-cost margins, labour productivity and employment). Definitions of all variables and data sources are provided in Attachment B.1.

### **B.1 Production, foreign trade and demand**

This section examines trends in the production, demand and trade in the wood and paper products industries. The wood products industry includes:

- Log sawmilling (ASIC 2531);
- Resawn and dressed timber (ASIC 2532);

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<sup>1</sup> Manufacturing census data are available for 1990-91 but, as only a 'minor' census was undertaken, some of the more important industry aggregates (eg value added) are not available. Consequently, the data used in this appendix relate to the period up to 1989-90.

- Veneers and manufactured boards of wood (ASIC 2533); and
- Hardwood woodchips (ASIC 2537).

The paper products industry includes the following five activities:

- Pulp, paper and paperboard (ASIC 2631);
- Paper bags (ASIC 2632);
- Solid fibreboard containers (2633);
- Corrugated fibreboard containers (ASIC 2634); and
- Paper products nec (ASIC 2635).

### *Value of output*

Figure B.1 shows the (gross) value of output of wood and paper products in real terms during the 1969–77 and 1978–90 periods. That figure plots actual output and associated trends whereas Tables B.1 and B.2 show the average value of output and average annual rate of growth for each period for the industries under reference and also for the manufacturing sector.

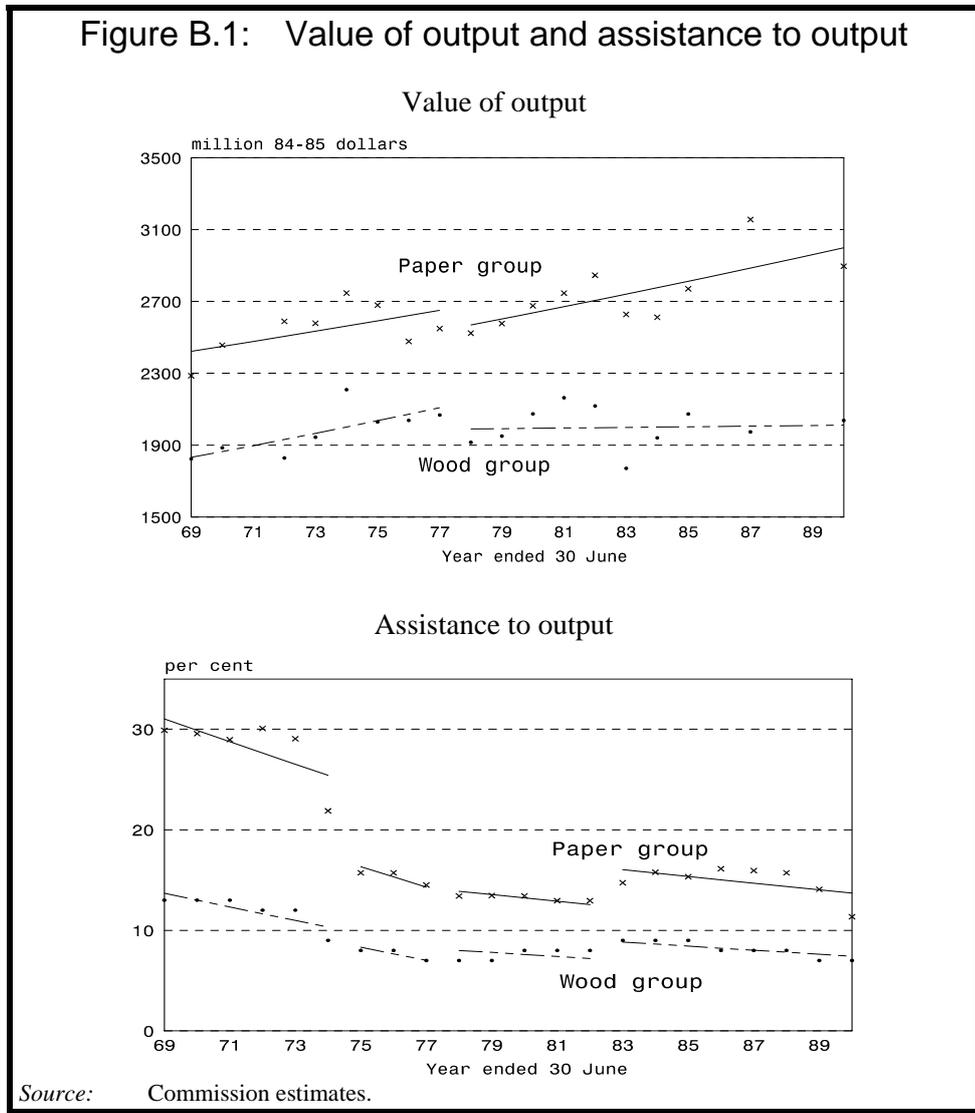
With the exception of hardwood woodchips, few significant trends are evident. A brief summary of the statistics is provided below:

- the wood products group accounts for around 2 per cent of manufacturing output with negligible growth in output since 1978–79;
- within the wood products group, the high early annual growth rate of 8.3 per cent for woodchips was not maintained during 1978–90, but at 3.7 per cent was still higher than the growth rate of 1.3 per cent for manufacturing;
- from 1978, the increase in the value of output of woodchips and veneers and boards was offset by falls in log sawmilling and resawn and dressed timber; and
- within the wood products group, the share of output held by hardwood woodchips increased from 6.7 per cent during 1969–77 to 10.3 per cent in 1978–90, while the share held by log sawmilling and resawn and dressed timber fell from 71 per cent to 65.2 per cent.

The paper products group accounted for 2.7 per cent of manufacturing output. The rate of growth of output for the paper products industries was almost identical with the rate recorded for the manufacturing sector as a whole over the 1978–90 period. Within the paper products group, the statistics show:

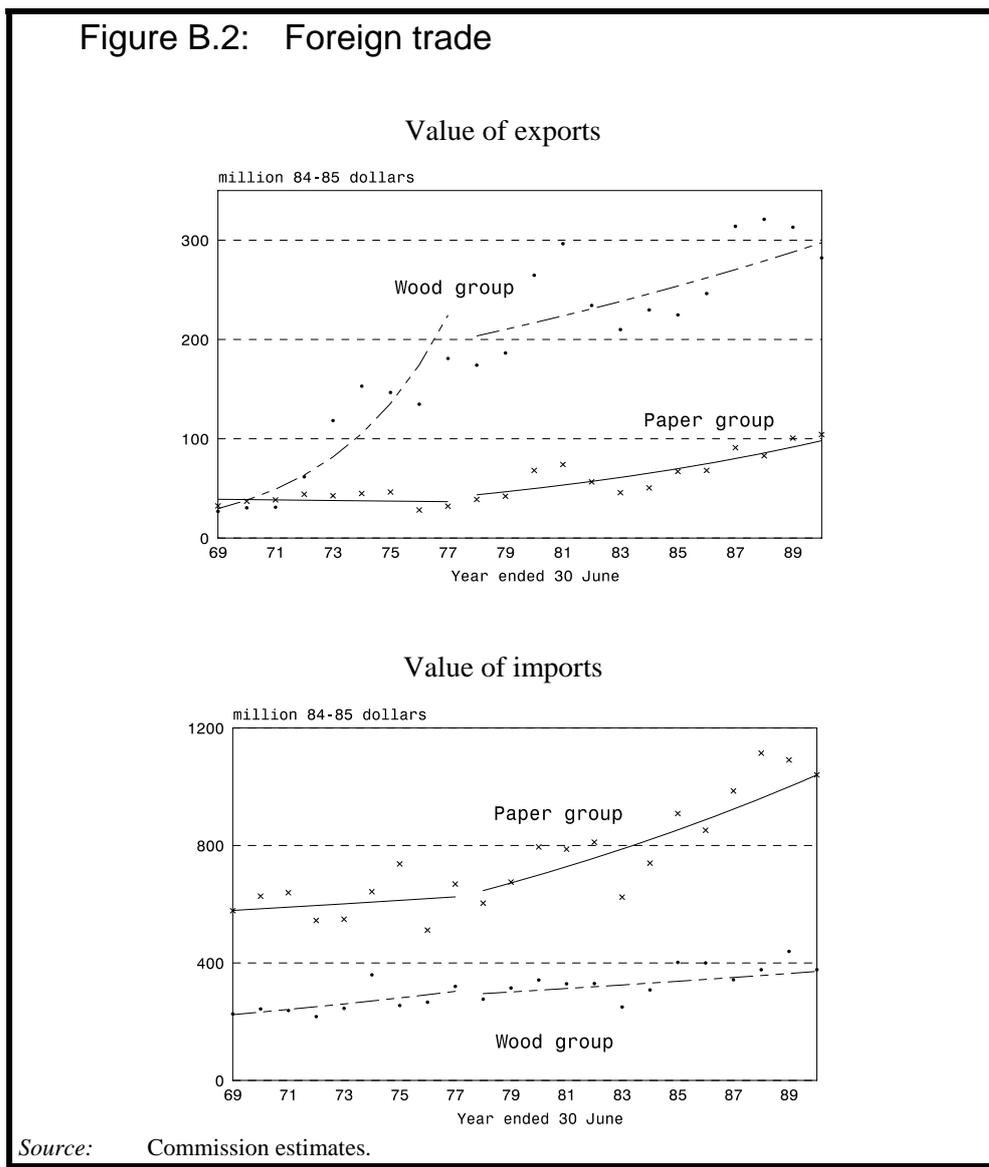
- pulp, paper and paperboard and corrugated fibreboard containers grew at double the rate recorded for manufacturing during 1978–90, but this was offset by falls in output of paper bags and solid fibreboard containers; and

- the shares of output held by the industries within the group did not change significantly over the period, with the average share held by pulp, paper and paperboard increasing from 38.8 per cent in 1969–77 to 41.5 per cent in 1978–90.



### Foreign trade

Figure B.2 plots the value of exports and imports for the wood and paper products industries over the 1969–77 and 1978–90 periods. Other indicators of trade orientation such as the export to output ratio, and the ratio of imports to domestic demand are shown in Tables B.1 and B.2.



For wood products, the major feature is the high annual growth rate of 25.3 per cent recorded for exports during 1969–77. This was entirely due to increases in exports, from a low base, of hardwood woodchips (approximately 70 per cent per annum). This growth rate fell significantly, to 4.3 per cent during 1978–90, but was still double the rate recorded for manufacturing of 2.1 per cent per annum. Since 1978, exports of hardwood woodchips accounted for 84 per cent of exports of the wood products under reference. In real terms, these exports peaked in 1986–87 and have declined slightly since.

The export performance of other industries within the group has been insignificant. Exports of veneers and manufactured boards of wood were on average only half the level recorded in the first period and exports of resawn

and dressed timber declined during the second period. Nevertheless, exports of resawn and dressed timber jumped significantly in 1991–92.

Imports of wood products accounted for, on average, 1.4 per cent of imports for manufacturing during 1978–90. In that period, the rate of growth for imports of wood products was significantly less than that recorded for manufacturing. The import statistics are dominated by imports of roughsawn timber and resawn and dressed timber which accounted for 84 per cent of imports of wood products.

For paper products, the most striking indicators are those relating to the trade orientation of the industry. The exports to output ratio for 1978–90 was only 2.4 per cent compared to 13 per cent for manufacturing, while the imports to domestic demand ratio was similar to that for manufacturing. The major industry within the group — pulp, paper and paperboard — recorded a very high imports to domestic demand ratio of 38.9 per cent for 1978–90, compared to a level of 23.2 per cent recorded for the manufacturing sector. The high level of imports for this industry is partly due to local supply constraints.

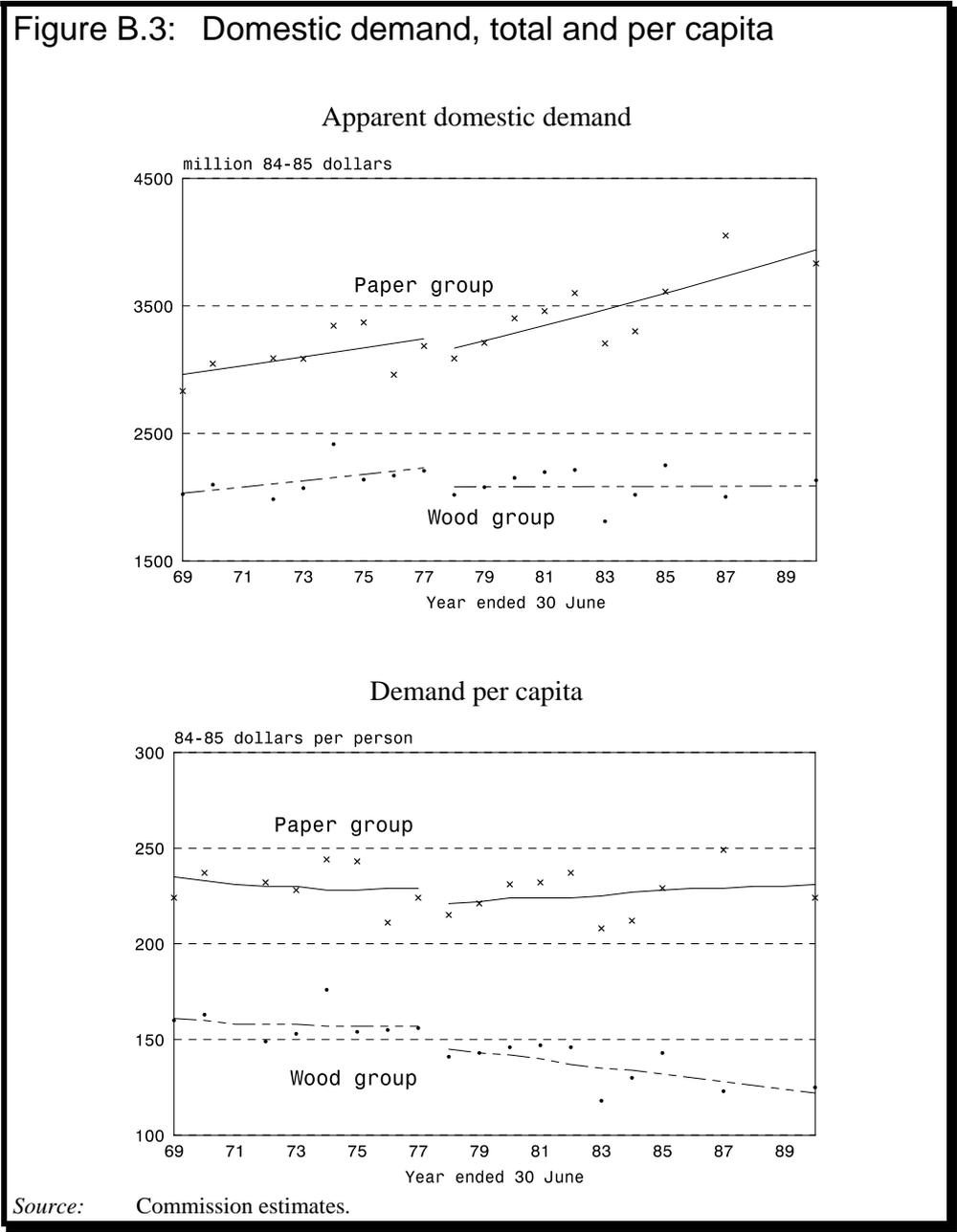
Exports of paper products accounted for less than 0.5 per cent of the total of exports for manufacturing over both periods. Since 1978, exports have been dominated by pulp, paper and paperboard which, on average, accounted for 77 per cent of exports of the paper products under reference. These exports grew at a healthy 7 per cent over the second period, but the growth was from a very low base. Most of these exports are of uncoated paper.

From 1978, imports of paper products accounted for 3 per cent of manufacturing imports. The rate of growth of imports for the group as a whole was slightly less than for manufacturing. However, imports of paper products grew at a faster rate than output during the same period. Imports of pulp, paper and paperboard accounted for about 88 per cent of imports of the goods under reference. In 1991–92, major paper imports were: coated paper and paperboard (35 per cent), newsprint (12 per cent) and uncoated paper and paperboard (13 per cent).

### *Domestic demand*

In this section, domestic demand is defined as the value of output of an industry plus the fob value of imports less the fob value of exports for the industry. Ideally, the variables should be taken at the same point of sale (ie the ex-factory value of output, the ex-factory value of exports and the landed duty paid value of imports). However, this information is not available on a consistent basis over the two periods covered. As a result, the value of imports are understated while exports are overvalued.

Figure B.3 shows that domestic demand for wood products declined slightly in the 1978–90 period. This was largely due to reductions in demand for sawn logs and resawn timber. Demand for veneers and manufactured boards of wood increased at a rate of 2.9 per cent, slightly higher than for manufacturing.



The market share held by imports of wood products increased from 12.3 per cent during 1969–77 to 16.5 per cent for 1978–90. With the exception of hardwood woodchips, imports increased their share of all segments of the market: from 7.7 per cent to 8.2 per cent for veneers and manufactured boards of wood and from 14.1 per cent to 18.2 per cent for log sawmilling and resawn timber. Imports of hardwood woodchips are negligible.

From 1978, domestic demand for paper products grew on average at 1.8 per cent per annum, slightly less than for manufacturing. This growth was largely due to increases in demand for paper, pulp and paperboard of 3.2 per cent annually. Demand for paper bags and fibreboard containers declined slightly. The average market share held by imports of paper products increased from 19.5 per cent during 1969–77 to 22.8 per cent for 1978–90. Again this was largely due to imports of pulp, paper and paperboard which increased their share from 34.8 per cent to 38.9 per cent. The market share of imports for the other paper products remained unchanged.

Table B.1: Production, demand and foreign trade, averages for the 1969–77 and 1978–90 periods, and 1989–90 estimate

<i>Period</i>	<i>Value of output</i> \$M	<i>Apparent demand</i> \$M	<i>Value of exports</i> \$M	<i>Value of imports</i> \$M	<i>Exports output</i> %	<i>Imports demand</i> %	<i>Assist. to output</i> %
<u>Log sawmilling and resawn timber (ASICs 2531 and 2532)</u>							
1969–77	1411.1	1623.4	18.7	231.0	1.3	14.1	6
1978–90	1295.1	1554.3	23.5	282.8	1.8	18.2	5
1989–90	1118.3	1409.5	18.8	310.0	1.7	22.0	5
<u>Veneers and manufactured boards of wood (ASIC 2533)</u>							
1969–77	434.4	458.6	11.3	35.5	2.6	7.8	26
1978–90	500.7	539.0	6.0	44.2	1.2	8.2	17
1989–90	650.3	708.4	8.6	66.7	1.3	9.4	13
<u>Hardwood woodchips (ASIC 2537)</u>							
1969–77	133.0	56.6	76.6	0.1	50.2	0.1	na
1978–90	186.6	9.9	176.8	0.1	85.7	0.2	2
1989–90	265.1	10.4	254.7	0.0	96.1	0.2	0
<u>Pulp paper and paperboard (ASIC 2631)</u>							
1969–77	986.7	1474.0	26.9	514.2	2.7	34.8	11
1978–90	1138.1	1788.1	49.2	699.2	4.2	38.9	8
1989–90	1346.1	2186.3	74.4	914.7	5.5	41.8	7
<u>Paper bags and fibreboard containers (ASICs 2632–4)</u>							
1969–77	1083.9	1127.6	3.4	47.0	0.3	4.2	36
1978–90	1164.4	1213.3	5.0	53.9	0.4	4.4	19
1989–90	1048.4	1098.6	8.8	59.0	0.8	5.4	15
<u>Paper products nec (ASIC 2635)</u>							
1969–77	474.4	511.9	8.0	45.5	1.7	8.9	28
1978–90	439.3	473.1	9.5	43.3	2.1	9.1	17
1989–90	500.9	543.4	20.9	63.4	4.2	11.7	14
<u>Wood products group (ASICs 2531–3 and 2537) †</u>							
1969–77	1978.5	2138.5	106.6	266.5	5.3	12.4	11
1978–90	2002.0	2087.4	241.7	327.1	12.0	15.6	8
1989–90	2037.7	2132.2	282.2	376.7	13.8	17.7	7
<u>Paper products group (ASICs 2631–5) †</u>							
1969–77	2545.0	3113.4	38.4	606.7	1.5	19.5	24
1978–90	2742.7	3475.5	63.7	796.6	2.3	22.8	14
1989–90	2896.0	3831.7	104.1	1039.8	3.6	27.1	11
<u>All manufacturing</u>							
1969–77	89999.0	95818.0	9292.0	15206.0	10.3	15.9	20
1978–90	99449.0	110908.0	13214.0	25686.0	13.3	23.2	13
1989–90	113796.3	131595.4	15822.1	33621.1	13.9	25.5	9

† Individual industries do not add up to group totals due to minor differences in series coverage.

Source: Commission estimates based on ABS data.

Table B.2: Production, demand and foreign trade, trends for the 1969–77 and 1978–90 periods

<i>Period</i>	<i>Value of output</i>	<i>Apparent demand</i>	<i>Value of exports</i>	<i>Value of imports</i>	<i>Exports output</i>	<i>Imports demand</i>	<i>Assist. to output</i>
Average annual change, per cent							
<u>Log sawmilling and resawn timber (ASICs 2531 and 2532)</u>							
1969–77	1.3**	1.7**	2.6*	4.3	1.4	2.7	-0.6**
1978–90	-1.7**	-1.0*	-7.3**	1.7	-5.6*	2.7**	0.0
<u>Veneers and manufactured boards of wood (ASIC 2533)</u>							
1969–77	1.6	1.7	-10.1**	0.9	-11.6**	-0.8	-0.6
1978–90	2.9**	2.9**	0.6	2.9*	-2.3	0.0	-0.7**
<u>Hardwood woodchips (ASIC 2537)</u>							
1969–77†	8.3**	-24.7	69.4**	-38.3	62.5**	-13.6	na
1978–90	3.7**	-5.5	4.3	-1.1	0.7	0.3	0.0
<u>Pulp paper and paperboard (ASIC 2631)</u>							
1969–77	1.3	1.3*	-2.7**	1.2*	-3.9**	-0.1	-0.2
1978–90	2.7**	3.2**	7.0**	4.3**	4.3**	1.1**	-0.3**
<u>Paper bags and fibreboard containers (ASICs 2632–4)</u>							
1969–77	1.6**	1.3**	2.2	-6.3**	0.6*	-7.6**	-1.2**
1978–90	-0.3	-0.2	7.7**	1.1	8.0**	1.3	-0.2
<u>Paper products nec (ASIC 2635)</u>							
1969–77	-0.3*	0.3	4.2	7.0*	4.5	6.7**	-1.6**
1978–90	1.6**	1.5**	5.7**	2.0	4.1**	0.5	-0.4*
<u>Wood products group (ASICs 2531–3 and 2537)</u>							
1969–77	1.8**	1.2	25.3**	3.8	23.5**	2.6	-0.6**
1978–90	0.1	0.0	3.2*	1.9*	3.1*	1.9**	-0.2**
<u>Paper products group (ASICs 2631–5)</u>							
1969–77	1.1	1.1	-0.8**	1.0*	-1.9**	-0.2*	-0.9*
1978–90	1.3**	1.8**	6.8**	4.0**	5.5**	2.2**	-0.3*
<u>All manufacturing</u>							
1969–77	0.6	0.8*	4.5*	4.1	3.9**	3.3	-0.8**
1978–90	1.3**	2.0**	2.1**	4.8**	0.8*	2.9**	-0.4**

\* For 1978–90, statistically different from zero at the 80 per cent confidence level or higher; for 1969–77, statistically different from the corresponding 1978–90 estimate at the 80 per cent confidence level or higher.

\*\* For 1978–90, statistically different from zero at the 90 per cent confidence level or higher; for 1969–77, statistically different from the corresponding 1978–90 estimate at the 90 per cent confidence level or higher (see note in Table B.6).

na Data not available.

† Trends based on almost negligible imports and on no exports before 1972.

Source: Commission estimates based on ABS data.

## B.2 Net and relative measures of economic performance

The focus of this section is on forest-based industries as part of two groups: wood or paper products. Individual 4-digit ASIC industries are discussed only when their characteristics are particularly different from the group average. To help place in context the industries under reference, the wood and paper products groups are compared with the manufacturing sector in Australia as a whole and with similar forest-based industries in Canada, New Zealand and the United States.

The discussion in this section refers mostly to averages and trends during the 1978–90 period. Only when there are significant breaks between that period and earlier years is the 1969–77 period discussed.

As in Section B.1, information about the wood and paper products groups is discussed with reference to figures showing trend lines and actual annual observations for the 1969–77 and 1978–90 periods. For these two periods, averages and trends for the wood and paper products groups as well as for individual industries have been summarised in Tables B.3 and B.4. These tables show the averages and trends for value added and its components, as well as for the effective rate of assistance and employment. Tables B.5 and B.6 show similar averages and trends during the 1978–90 period for the wood and paper products groups in Canada, New Zealand and the United States.

### *Value added*

Value added is a better measure of the contribution of an activity to the economy than gross indicators such as value of output or consumption. Conceptually, value added can be defined as wages earned by labour, rent for land, returns to capital and other payments to value adding factors of production such as technology, entrepreneurship, and managerial skills.<sup>2</sup> It can be estimated as value of output less purchases of materials and services. Thus, value added measures the net contribution of an activity to the economy.

Value added can be aggregated to include all firms in a specific group, such as the wood or paper products groups, or extended to the whole economy without incurring the double counting normally associated with aggregating output (or input) measures when the output of one industry is an input to another. When aggregated across the economy, it is called Gross Domestic Product (GDP). Thus, rising GDP is equivalent to increasing overall value added.

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<sup>2</sup> Note that total production costs can be computed by adding up expenditures on value adding factors of production (such as labour and capital) and on materials. In other words, value added is an intrinsic part of production costs as well as representing the earnings of value adding factors.

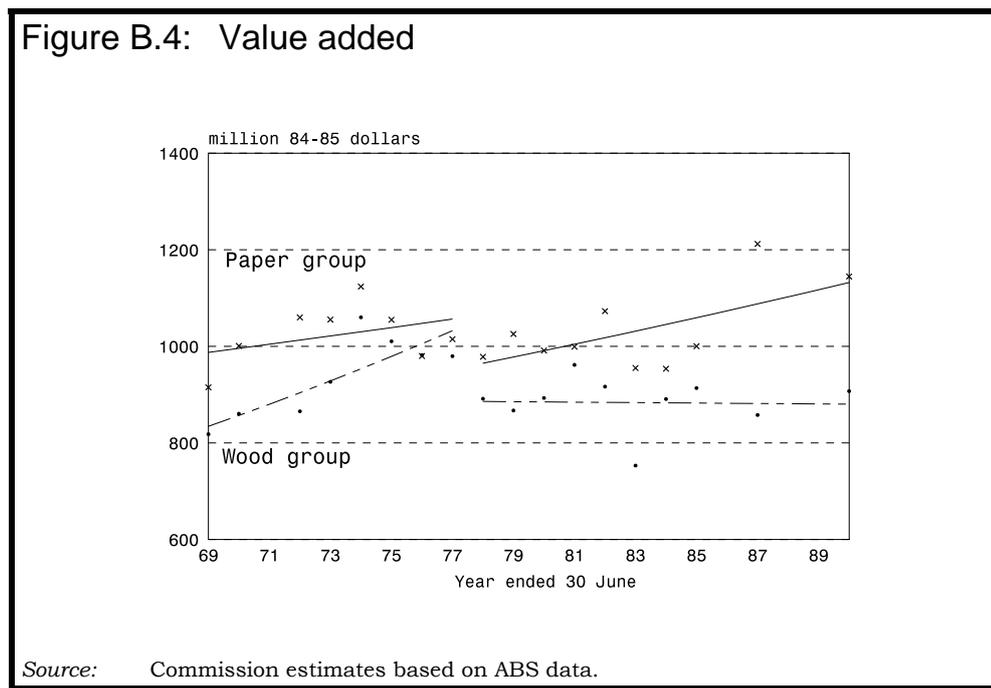


Figure B.4 shows (real) value added in the wood products and paper products groups in Australia during the 1969–77 and 1978–90 periods. During the latter period, average value added in Australia:

- was dwarfed by value added in forest-based industries in Canada and the United States, but
  - was much higher than in New Zealand, mirroring the relative size (as measured by value of output) of the industries in those three countries;
- had a similar level in the two forest-based groups, unlike
  - in Canada and the United States where the wood products group was much smaller than the paper products group; and
- in both groups combined was slightly less than five per cent of total manufacturing value added or about one per cent of GDP.

Regarding growth in value added, the paper products group proved to be more dynamic than the wood products group in all the countries examined. In particular, changes in value added in Australia during the 1978–90 period were characterised by:

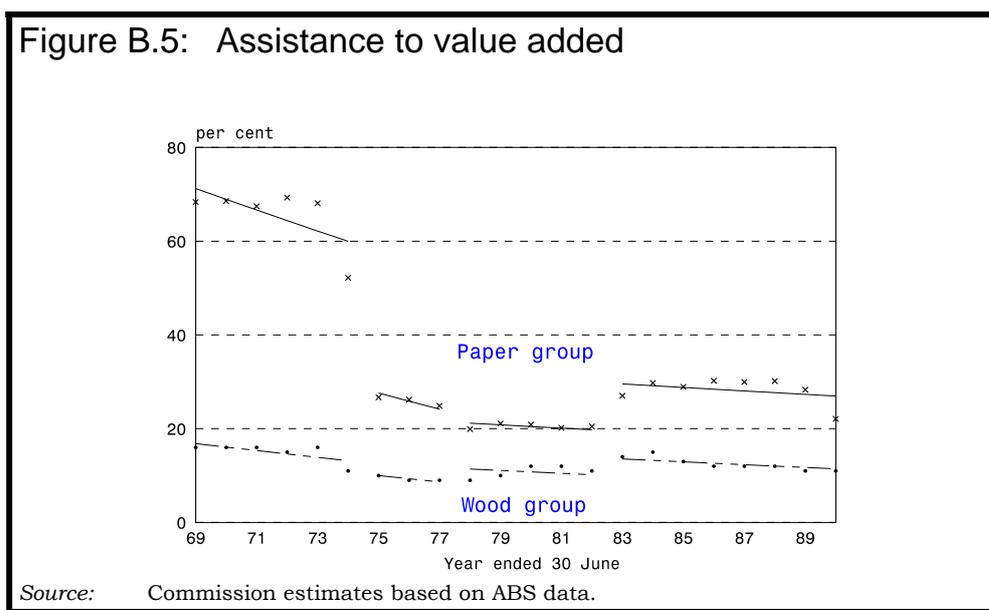
- significant growth in the paper products group (as in all manufacturing) which

- also expanded in Canada and the United States (this growth followed similar expansions in output in the three countries);
- little change in the wood products group (after growing substantially during the 1969–77 period) and
  - also little change in Canada and the United States, corresponding to a static value of output in each of the three countries (especially when expressed in local currencies); and
- falls in resawn and dressed timber, solid fibreboard containers and, especially, paper bags as value of output contracted.

Note that for variables expressed in dollar terms, like value added, comparisons of rates of change across countries are sensitive to changes in exchange rates. For example, when expressed in (constant 1984–85) US dollars, value added in the wood products group had a tendency to fall in the United States during the 1978–90 period. But the Australian dollar fell even faster against the American dollar during that period. As a result, when expressed in (constant 1984–85) Australian dollars, an upward trend in value added is estimated for the wood products group in the United States (as shown in Table B.6).

*Assistance to value added*

Figure B.5 plots the effective rate of assistance in the wood and paper products groups during the 1969–77 and 1978–90 periods. The effective rate of assistance is defined as the percentage increase in returns to value adding factors per unit of output relative to the (hypothetical) situation of no assistance.



The effective rate of assistance:

- was about 9 percentage points lower than manufacturing in the wood products group (except in veneers and manufactured boards of wood);
- was about 5 percentage points higher in the paper products group (except pulp paper and paperboard) than in manufacturing;
- declined significantly in both groups during the 1969–77 period (particularly between 1972–73 and 1973–74 ), as it did in manufacturing as a whole; and
- decreased only slightly during the 1978–90 period (except in veneers and manufactured boards of wood where significant falls occurred).

### *The value added share*

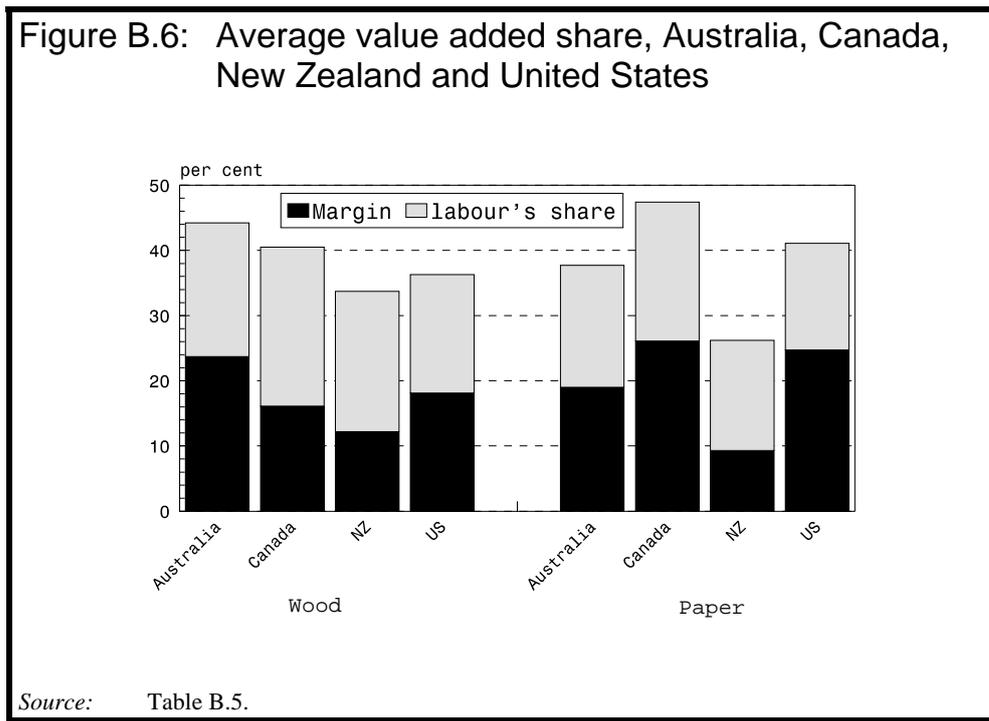
The share of value of output accruing to labour, capital and other value adding factors of production is defined as the value added share. This share can be interpreted as an indicator of the value adding capacity of an industry or group, because the higher this share the more value is added for a given output. Alternatively, the value added share can be interpreted as the unit cost of — or unit payments to — value adding factors (such as capital and labour) as a proportion of price (unit revenue).

The value added share can be more useful than the absolute level of value added because that share allows comparisons even across industries of vastly different sizes, such as those in Australia, Canada, New Zealand and the United States.<sup>3</sup> Another advantage of using the value added share for international comparisons is that this share is expressed in percentage terms and, thus, is unaffected by variations in exchange rates.

Figure B.6 shows the value added share in Australia, Canada, New Zealand and the United States. The total height of the bars in this figure represents the average value added share during the 1978–90 period for the wood products and the paper products groups in the four countries. Figure B.7 shows the evolution of the value added share for the wood and the paper products groups in Australia over the 1969–77 and 1978–90 periods.

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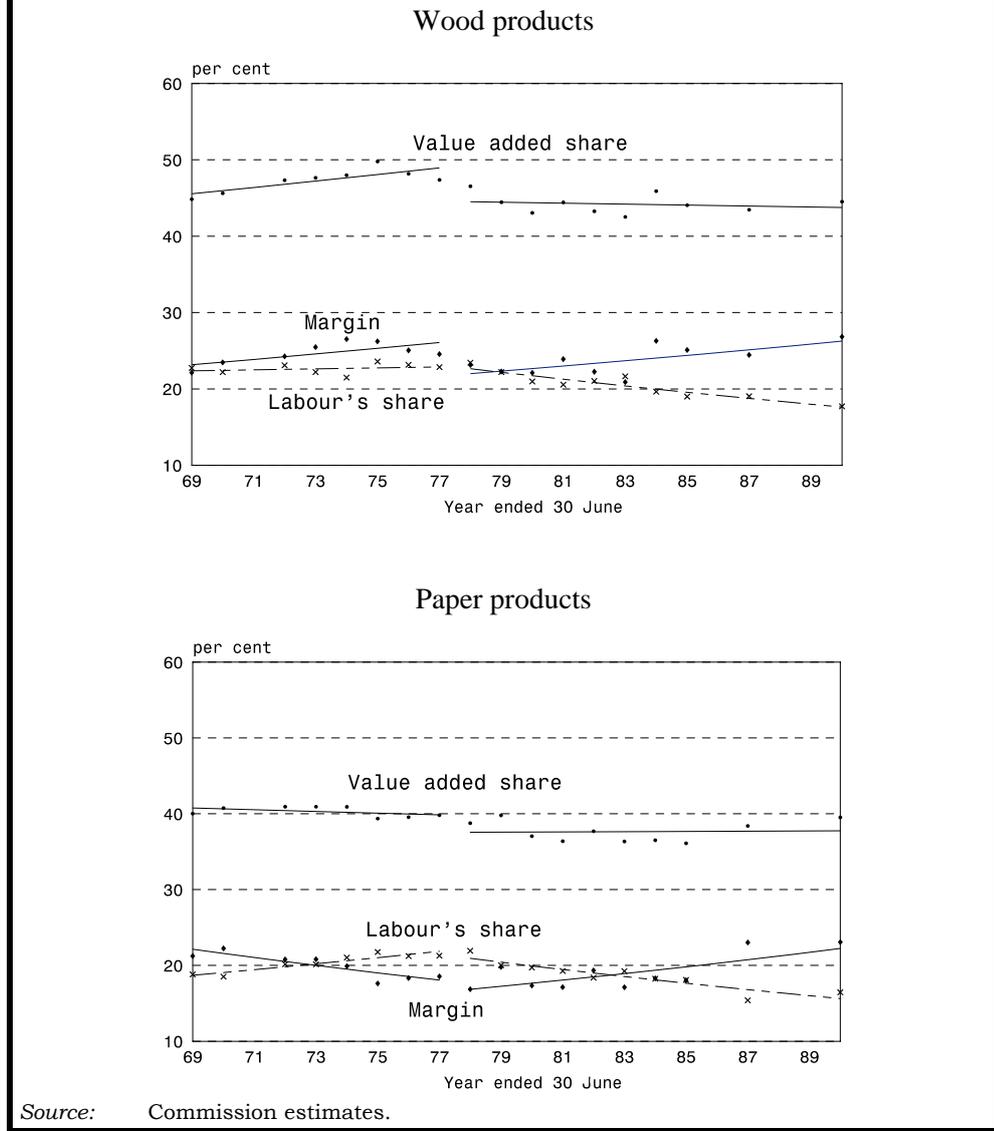
<sup>3</sup> The value added share abstracts from size because it is conceptually linked to two unit values: the unit cost of value adding factors and price.



In Australia, unlike in the other countries examined, unit payments to value adding factors relative to price were higher in the wood products group than in the paper products group. Also, the average value added share in Australia during the 1978–90 period:

- in the wood products group, was considerably higher (about 5 percentage points) than in all manufacturing, which
  - was due to the exceptionally high share in log sawmilling, and
  - was also higher than in similar groups in Canada, New Zealand and the United States; and
- in the paper products group, was slightly lower (about 2 percentage points) than in all manufacturing, and
  - also lower than in similar groups in Canada and the United States, but not New Zealand.

Figure B.7: Value added share and its components, Australia



The value added share in Australia has remained fairly constant in both the wood and paper products groups. The ratio fell in the wood products group in Canada but rose in the paper products groups in the United States. More specifically, during the 1978–90 period the value added share in Australia:

- changed little in the wood products group (after increasing significantly during the 1969–77 period), as occurred in manufacturing as a whole,
  - except in resawn and dressed timber where the share clearly increased, and

- also changed little in the United States, but fell significantly in Canada; and
- remained static in the paper products group,
  - except in corrugated fibreboard containers where the share increased, and
  - also changed little in Canada but rose significantly in the United States.

### *The price-cost margin*

Value added may be divided into two categories on the basis of payments to labour and payments to land, capital and other value adding factors such as entrepreneurship. Thus, the value added share can be derived as the sum of the share of value of output accruing to labour — labour's share — plus the share accruing to the other value adding factors — referred to as the price-cost margin.

The price-cost margin is a measure of the difference between price and the unit cost of labour and materials as a proportion of price. As such, the price-cost margin is often used as an indicator of returns to capital. However, care should be taken when using the price-cost margin in this manner as this measure can include returns to non-labour value adding factors other than capital, especially if market competition is limited.

Figure B.6 illustrates the price-cost margin and labour's share as the two components of the value added share in Australia, Canada, New Zealand and the United States. The evolution of the price-cost margin and labour's share is shown in Figure B.7 for the wood and the paper products groups in Australia over the 1969–77 and 1978–90 periods.

Returns to non-labour factors of production in the Australian wood products group are unusually high when compared with those in other countries. In contrast, in the paper products group, those returns are lower in Australia than in North America. Also during the 1978–90 period, the average price-cost margin:

- in the wood product group, was higher than in all manufacturing (accounting for this group's higher value added share),
  - was unusually high in log sawmilling and hardwood woodchips, and
  - was much higher than in Canada, the United States and, particularly, New Zealand; and

- in the paper products group, was only slightly lower than in all manufacturing, and
  - much lower than in Canada or the United States, but significantly higher than in New Zealand.

Significant growth took place in the returns to non-labour factors of production in the two Australian forest-based groups during the 1978–90 period. In particular, the price-cost margin:

- in the wood products group, clearly grew, as it did in all manufacturing, but
  - remained static in Canada and the United States; and
- in the paper products group, also grew (after falling during the 1969–77 period), and
  - also rose significantly in the United States, but not in Canada.

### *Capital intensity*

Estimates of capital intensity require, in principle, information on capital stocks. The latter was not available at the level of disaggregation used in this study. Instead, data on annual fixed capital expenditures were used as a proxy for capital stocks and, when expressed as a percentage of output, for capital intensity.<sup>4</sup> Due to data limitations this proxy should be treated as indicative only, especially when making international comparisons.<sup>5</sup>

As expected, estimates of capital intensity for Australia indicate that the paper products groups is capital intensive when compared with the wood products group. In particular:

- the wood products group spent about 3 per cent of value of output on capital assets, similar to the proportion in manufacturing as a whole, while
  - the equivalent ratio was about 4 per cent in New Zealand and the United States; and
- the paper products group invested a clearly higher proportion of output, an average of about 5 per cent, with

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<sup>4</sup> Other work undertaken by the Commission suggests a close correlation between the average of annual fixed capital expenditures over several years and available estimates of capital stocks. This is not surprising as capital stocks are made up of accumulated recurrent capital expenditures minus depreciation.

<sup>5</sup> Fixed capital expenditures in Australia were available for the period between 1968–69 and 1984–85. Estimates for New Zealand and the US included all years for which other indicators were available (see Table B.5). No similar capital expenditure estimates were available for Canada.

- capital expenditures relative to output being particularly high in pulp paper and paperboard, while
- the equivalent expenditures were about 7 per cent in New Zealand and the United States.

In principle, industries with higher capital requirements would be expected to be associated with higher price-cost margins, as margins include returns to capital. Thus, the price-cost margin in wood-related industries should be lower than in paper-related industries. This seems to be true in the United States and Canada. But in New Zealand the price-cost margin in both wood products and paper products groups is comparable.

Even more difficult to explain is the finding that in Australia the more capital intensive group (paper products), is associated with the lower price-cost margins. These estimates raise questions in relation to the persistency of high price-cost margins in log sawmilling and hardwood woodchips — which do not seem to have particularly large capital requirements — and the merely average margin in pulp paper and paperboard — which does appear to have larger capital requirements than other industries.

### *Labour's share*

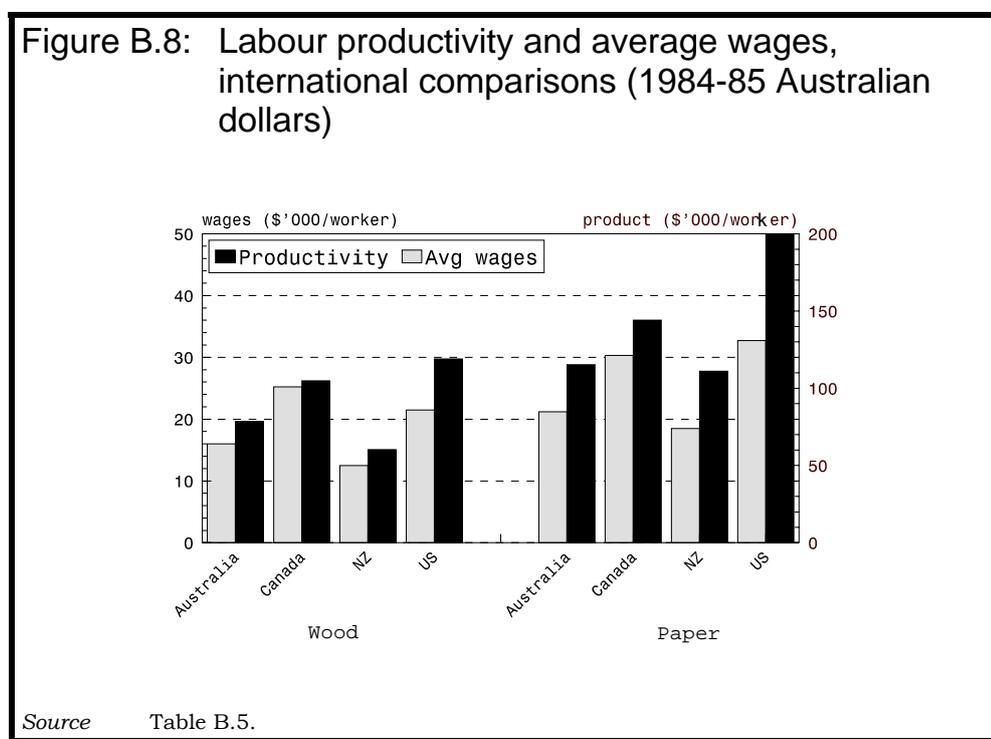
Labour's share can be interpreted as the share of value of output accruing to labour or as unit labour costs as a proportion of price. Figures B.6 and B.7 illustrate the labour share in Australia, Canada, New Zealand and the United States. During the 1978–90 period, labour's share:

- in the wood products group, was similar to manufacturing as a whole (but considerably higher in log sawmilling and hardwood woodchips), and
  - higher than in the United States and, particularly, New Zealand, but lower than in Canada;
- in the paper products group, was slightly lower than in all manufacturing (which together with a low margin resulted in this group's low value added share), and
  - while also lower than in Canada, was higher than in the United States and New Zealand; and
- fell in the wood and the paper products industries, as in all manufacturing (after rising significantly during the 1969–77 period), and
  - also fell in both forest-based groups in Canada, while remaining static in the United States.

The evidence from Canada, the United States and, more clearly, from Australia indicates a tendency for the trends in labour's share to be contrary to those in the price-cost margin. This suggests that markets imposed a cap on the value added share. As a result, rises in the labour's share hinder increases in the price-cost margin (like during the 1969–77 period), while reductions in labour's share allow rises in the price-cost margin (like during the 1978–90 period).

### *Labour productivity*

The labour share reflects the interaction of wage rates and (partial) labour productivity — defined as value of output per worker. Both are plotted in Figures B.8 and B.9.

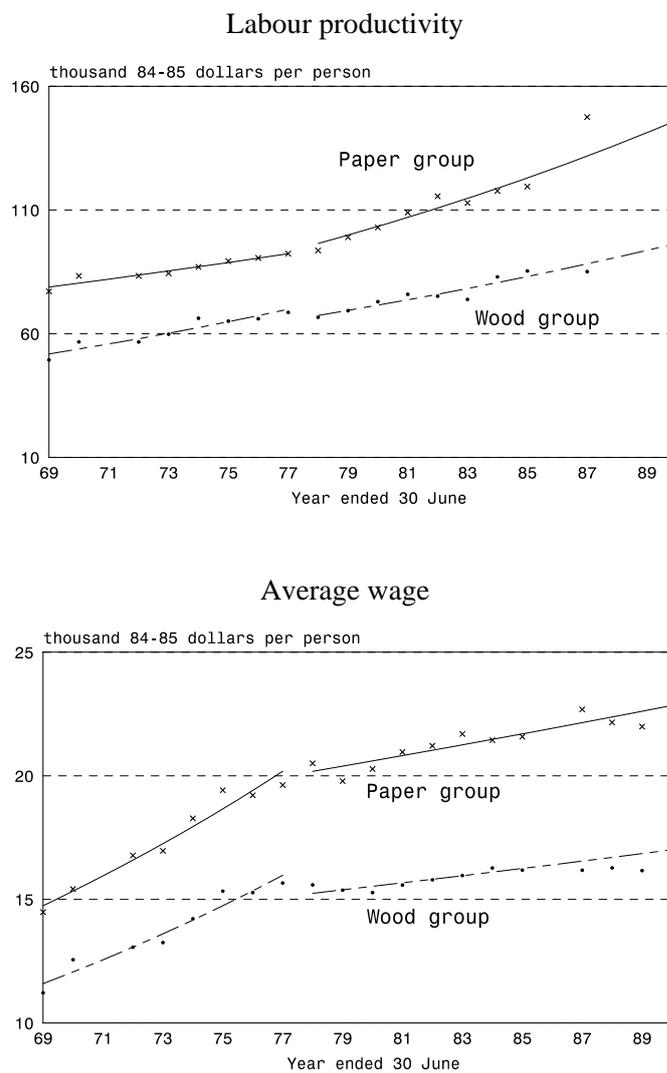


Labour productivity in Australia is considerably lower than in the two North American countries examined. Specifically, average labour productivity in Australia during the 1978–90 period:

- in the wood products group, was significantly lower than in all manufacturing, and
  - particularly low in log sawmilling, but exceptionally high in hardwood woodchips, and

- also considerably lower than in Canada and, particularly, than in the United States, but slightly higher than in New Zealand; and
- in the paper products group, was much higher than in all manufacturing, and
- also higher than in New Zealand but lower than in Canada and, especially, the United States.

Figure B.9: Labour productivity and average wages, Australia



Source: Commission estimates based on ABS data.

Considerable growth occurred in labour productivity in Australia during the 1978–90 period:

- in the wood products group, labour productivity growth was slightly faster than in all manufacturing, but
  - in hardwood woodchips, productivity rises slowed down considerably over time; and
- in the paper products group, growth was faster than in all manufacturing, and
  - tended to accelerate between the 1969–77 and the 1978–90 periods, especially in the pulp paper and paperboard industry.

Growth in labour productivity in Australia during the 1978–90 period was also significant when compared with other countries. Table B.6 shows rates of change for labour productivity and average wages measured in both (constant) Australian dollars and (constant) local currencies. (Note that the first measure can be considerably affected by exchange rate movements.)

Labour productivity during the 1978–90 period:

- in the Australian wood products group, grew faster than in Canada or the United States when measured in (constant) local currencies; and
- in the Australian paper products group, exhibited a similar trend to that observed for wood products.

### *Average wages*

Figures B.8 and B.9 plot average wages in Australia and other countries. Average annual wages followed the relativities and trends in labour productivity, with higher wages coinciding with higher productivities.

Typical average wages in Australia during the 1978–90 period:

- in the wood products group, were lower than in all manufacturing, and
  - were also lower than in the United States and, especially, Canada, but higher than in New Zealand;
- in the paper products group, were higher than in all manufacturing, and
  - were also higher than in New Zealand, but considerably lower than in Canada and the United States; and
- varied across individual industries much less than labour productivity.

Average wages in Australia during the 1978–90 period:

- in the wood products group, increased slightly faster than in all manufacturing, but
  - grew more rapidly than in Canada and the United States when measured in local currencies;
- in the paper products group, increased faster than in the wood products group and than in all manufacturing, and
  - were similar to the rates of increase in Canada and the United States when measured in local currencies; and
- compared with the 1969–77 period, increased considerably less rapidly in the two Australian forest-based groups.

The increase in the share of labour in value of output in the two forest groups in Australia (and in all manufacturing) over the 1969–77 period is explained by labour productivity increasing less rapidly than average wages. Similarly, the fall in labour's share during the 1978–90 period is explained by productivity growing faster than average wages. This is also true for the forest-based industry groups in Canada and the United States.

### *Employment*

Falling employment characterised the forest-based industries in all the countries examined. Employment in Australia over the 1978–90 period:

- in the two forest-based groups account for only 4 per cent of the total for all manufacturing (where about one-fifth of all workers in Australia were employed);
- fell more rapidly than over the 1969–77 period in the two forest-based industry groups (and all manufacturing);
- in the wood products group, declined faster than in all manufacturing, and slightly faster than in paper products, and
  - fell at about the same rate as in the United States, but much more rapidly than in Canada,
  - but in hardwood woodchips, employment rose strongly, as small productivity gains were more than offset by significant output growth; and
- in the paper products group, declined faster than in all manufacturing and
  - fell much faster than in Canada or the United States, and

- in corrugated fibreboard containers, remained static, as productivity gains were just offset by output growth.

The downward employment trends can be seen as a result of output increasing less rapidly than labour productivity, especially during the 1978–90 period. Alternatively, it can be argued that (partial) labour productivity growth was mostly achieved through job shedding, rather than output increases. This was true in Australia as well as in Canada and the United States.

Table B.3: Net and relative economic indicators — averages for the 1969–77 and 1978–90 periods, and 1989–90 estimate

<i>Period</i>	<i>Value added</i>	<i>VA share</i>	<i>Margin</i>	<i>Labour's share</i>	<i>Labour productivity</i>	<i>Average wages</i>	<i>Effective rate</i>	<i>Employment</i>
	\$M	%	%	%	---'000 \$/person ---		%	persons
<u>Log sawmilling (ASIC 2531)</u>								
1969–77	432.0	58.5	31.9	26.7	47.1	12.6	6	15849
1978–90	383.4	55.9	30.9	25.0	58.3	14.4	4	11898
1989–90	426.5	58.2	37.4	20.8	77.1	16.1	4	9500
<u>Resawn and dressed timber (ASIC 2532)</u>								
1969–77	252.1	37.8	18.6	19.2	73.9	14.2	11	8959
1978–90	237.1	39.2	19.0	20.2	79.8	16.1	15	7662
1989–90	167.8	43.5	23.4	20.1	82.1	16.5	15	4700
<u>Veneers and manufactured boards of wood (ASIC 2533)</u>								
1969–77	196.1	45.2	20.4	24.8	63.6	15.7	36	6865
1978–90	185.9	37.4	17.5	19.9	92.0	18.0	28	5480
1989–90	214.2	32.9	16.2	16.7	116.1	19.4	23	5600
<u>Hardwood woodchips (ASIC 2537)</u>								
1969–77	52.0	39.5	28.7	10.8	185.8	19.6	na	717
1978–90	71.8	38.8	29.5	9.3	253.3	22.4	4	732
1989–90	95.3	36.0	27.8	8.2	265.1	21.7	0	1000
<u>Pulp paper and paperboard (ASIC 2631)</u>								
1969–77	375.7	38.1	15.9	22.2	94.6	21.0	16	10431
1978–90	440.4	38.6	19.0	19.6	132.9	25.3	15	8705
1989–90	547.6	40.7	25.8	14.8	170.4	25.3	17	7900
<u>Paper bags (ASIC 2632)</u>								
1969–77	81.4	33.4	16.8	16.6	86.4	14.3	86	2832
1978–90	63.5	34.8	17.2	17.6	97.3	17.0	36	1884
1989–90	69.1	38.9	23.4	15.5	110.9	17.2	24	1600
<u>Solid fibreboard containers (ASIC 2633)</u>								
1969–77	133.3	43.7	18.8	24.8	63.0	15.6	86	4916
1978–90	129.0	39.1	19.9	19.2	99.1	18.9	38	3415
1989–90	85.7	48.6	26.5	22.1	98.0	21.6	30	1800
<u>Corrugated fibreboard containers (ASIC 2634)</u>								
1969–77	197.7	37.2	18.6	18.6	89.1	16.6	115	5959
1978–90	213.7	32.9	15.6	17.3	115.0	19.8	35	5645
1989–90	243.1	35.0	17.8	17.3	124.0	21.4	26	5600
<u>Paper products nec (ASIC 2635)</u>								
1969–77	234.0	49.2	31.0	18.3	87.6	16.0	49	5431
1978–90	186.8	42.6	23.9	18.8	100.5	18.8	29	4379
1989–90	201.6	40.2	22.3	18.0	113.8	20.5	25	4400

(continued)

Table B.3 (cont'd): Net and relative economic indicators — averages for the 1969–77 and 1978–90 periods, and 1989–90 estimate

<i>Period</i>	<i>Value added</i>	<i>VA share</i>	<i>Margin</i>	<i>Labour's share</i>	<i>Labour productivity</i>	<i>Average wages</i>	<i>Effective rate</i>	<i>Employment</i>
	\$M	%	%	%	---'000 \$/person ---	%	persons	
<u>Wood-based forest industries (ASICs 2531–3 and 2537) (a)</u>								
1969–77	937.8	47.3	24.7	22.6	61.0	13.8	13	32578
1978–90	885.2	44.2	23.7	20.5	78.5	16.0	12	25779
1989–90	907.2	44.5	26.8	17.7	98.0	17.3	11	20800
<u>Paper-based forest industries (ASICs 2631–5) †</u>								
1969–77	1025.3	40.3	19.9	20.3	85.9	17.5	52	29676
1978–90	1033.0	37.7	19.0	18.7	115.3	21.2	25	24028
1989–90	1144.5	39.5	23.1	16.4	136.0	22.4	22	21300
<u>All manufacturing</u>								
1969–77	36765.0	41.0	19.0	22.0	71.0	16.0	32	1265694
1978–90	38869.0	39.0	19.0	20.0	92.0	18.0	21	1086633
1989–90	47661.6	41.9	25.7	16.2	112.2	18.2	16	1013808

† Individual industries do not add up to group totals due to differences in series coverage.

Source: Commission estimates based on ABS data.

Table B.4: Net and relative economic indicators — trends for the 1969–77 and 1978–90 periods

<i>Period</i>	<i>Value added</i>	<i>VA share</i>	<i>Margin</i>	<i>Labour's share</i>	<i>Labour productivity</i>	<i>Average wages</i>	<i>Effective rate</i>	<i>Employment</i>
Average annual change, per cent								
<u>Log sawmilling (ASIC 2531)</u>								
1969–77	1.1	1.1**	1.5	0.8**	3.7	4.4**	-0.6**	-3.7
1978–90	-0.1	0.0	1.7**	-2.3**	2.9**	0.7**	0.1	-3.1**
<u>Resawn and dressed timber (ASIC 2532)</u>								
1969–77	5.2**	2.5**	3.3	1.8**	1.4	3.2**	-0.7	1.3**
1978–90	-2.5**	1.4**	3.2**	-0.3	1.0**	0.7**	-0.1	-4.9**
<u>Veneers and manufactured boards of wood (ASIC 2533)</u>								
1969–77	1.8	0.2**	0.9*	-0.3**	3.8	3.5**	-0.9	-2.3
1978–90	1.1*	-1.8**	-0.5	-2.9**	4.0**	1.1**	-1.2**	-1.1*
<u>Hardwood woodchips (ASIC 2537)</u>								
1969–77	6.6*	-1.7**	-0.6	-4.6**	8.7**	4.1**	na	-0.4**
1978–90	3.6**	-0.1	0.0	-0.4	0.9	0.5	0.0	2.8**
<u>Pulp paper and paperboard (ASIC 2631)</u>								
1969–77	1.0	-0.2	-3.3**	1.9**	1.5**	3.4**	-0.2	-0.2**
1978–90	2.5**	-0.1	3.9**	-4.4**	5.0**	0.7**	-0.06	-2.4**
<u>Paper bags (ASIC 2632)</u>								
1969–77	2.7**	2.9**	2.2	3.8**	0.6	4.4**	-2.4**	-0.9**
1978–90	-4.4**	0.1	1.0	-1.2**	1.5**	0.3	0.2	-6.0**
<u>Solid fibreboard containers (ASIC 2633)</u>								
1969–77	1.7**	-0.9**	-1.3**	-0.6	5.5**	5.0**	-2.0**	-2.9**
1978–90	-2.0**	1.7**	4.0**	-0.6	2.3**	1.8**	-0.5	-6.1**
<u>Corrugated fibreboard containers (ASIC 2634)</u>								
1969–77	3.0	1.0	-0.9**	3.0**	1.0*	4.0**	-1.4	1.0
1978–90	3.1**	0.8*	2.4**	-0.7*	2.2**	1.6**	-0.5	0.0
<u>Paper products nec (ASIC 2635)</u>								
1969–77	-2.4**	-2.1*	-4.3**	1.7**	1.5	3.3**	-2.5**	-1.8
1978–90	0.3	-1.3**	-1.4**	-1.2**	2.1**	0.9**	-0.6*	-0.5

(continued)

Table B.4 (cont'd): Net and relative economic indicators — trends for the 1969–77 and 1978–90 periods

<i>Period</i>	<i>Value added</i>	<i>VA share</i>	<i>Margin</i>	<i>Labour's share</i>	<i>Labour productivity</i>	<i>Average wages</i>	<i>Effective rate</i>	<i>Employment</i>
Average annual change, per cent								
<u>Wood-based forest industries (ASICs 2531–3 and 2537)</u>								
1969–77	2.7**	0.9**	1.5	0.3**	3.7	4.0**	-0.6	-2.0*
1978–90	-0.1	-0.1	1.5**	-2.1**	3.0**	0.9**	-0.3*	-2.9**
<u>Paper-based forest industries (ASICs 2631–5)</u>								
1969–77	0.8	-0.3	-2.5**	1.9**	2.0**	3.9**	-1.4**	-0.8**
1978–90	1.3**	0.0	2.3**	-2.4**	3.5**	1.0**	-0.3	-2.2**
<u>All manufacturing</u>								
1969–77	1.6	0.9*	0.0**	1.7**	1.6**	3.3**	-1.0	-1.0
1978–90	1.5**	0.2	2.4**	-2.3**	2.7**	0.4**	-0.5**	-1.4**

\* For 1978–90, statistically different from zero at the 80 per cent confidence level or higher; for 1969–77, statistically different from the corresponding 1978–90 estimate at the 80 per cent confidence level or higher.

\*\* For 1978–90, statistically different from zero at the 90 per cent confidence level or higher; for 1969–77, statistically different from the corresponding 1978–90 estimate at the 90 per cent confidence level or higher (see note in Table B.6).

na Data not available.

Source: Commission estimates based on ABS data.

Table B.5: Net and relative economic indicators — averages for Australia, Canada, New Zealand and the United States

<i>Period</i>	<i>Value added</i>	<i>Value of output</i>	<i>VA share</i>	<i>Margin</i>	<i>Labour's share</i>	<i>Labour productivity</i>	<i>Average wages</i>	<i>Employment</i>
	\$M	\$M	%	%	%	--'000 \$/person ---	persons	
<u>Wood products group</u>								
<i>Australia:</i> 1978–90	885	2002	44.2	23.7	20.5	78.5	16.0	25779
<i>Canada:</i> 1978–90	3432	8427	40.5	16.1	24.4	104.8	25.2	80479
<i>New Zealand:</i> 1979,'82,'84,'87	196	601	33.7	12.2	21.5	60.4	12.5	9932
<i>United States:</i> 1978–87	9314	25315	36.4	18.1	18.2	119.0	21.5	213930
<u>Paper products group</u>								
<i>Australia:</i> 1978–90	1033	2743	37.7	19.0	18.7	115.3	21.2	24028
<i>Canada:</i> 1978–90	6948	14596	47.4	26.1	21.3	144.0	30.3	101691
<i>New Zealand:</i> 1979,'82,'84,'87	257	989	26.2	9.3	16.9	111.0	18.5	8958
<i>United States:</i> 1978–87	25836	62460	41.1	24.7	16.4	199.4	32.7	314390

Composition of industry groups:

- *Canada.* Wood products group: Sawmills, planing and shingle mills; Veneer and plywood; and Other wood. Paper products group: Pulp and paper; and Paper box and bag.
- *New Zealand.* Wood products group: Sawmills; Planing, preserving and seasoning timber; Plywood, veneer and board; and Sawmills planing and other wood mills nec. Paper products group: Pulp, paper and paperboard and Corrugated board paperboard and corrugated board boxes, cases, cartons.
- *United States.* Wood products group: Sawmills and planing mills, general; Hardwood veneer and plywood; and Softwood veneer and plywood. Paper products group: Pulp mills; Paper mills; Paperboard mills; Setup paperboard boxes; and Corrugated and solid fibre boxes.

Source: Commission estimates based on official industry statistics.

Table B.6: Net and relative economic indicators — trends<sup>a</sup> for Australia, Canada, New Zealand and the United States

<i>Value of output</i>	<i>Value added</i>	<i>VA share</i>	<i>Margin</i>	<i>Labour's share</i>	<i>Labour productivity Aust'n dollars</i>	<i>Local currency</i>	<i>Average wages Aust'n dollars</i>	<i>Local currency</i>	<i>Employment</i>
Average annual change, per cent †									
<u>Wood products group</u>									
<i>Australia:</i>									
0.0	-0.1	-0.1	1.5**	-2.1**	3.0**	3.0**	0.9**	0.9**	-2.9**
<i>Canada:</i>									
2.0*	1.0	-1.0**	0.3	-1.4**	3.2**	1.9**	1.8**	0.4**	-1.2**
<i>New Zealand:</i>									
8.4**	4.3*	-4.0*	-2.4*	-4.9	7.8**	5.9	2.9	1.0	0.5
<i>United States:</i>									
0.7	0.7	0.0	0.3	-0.2	3.7**	-0.2	3.5**	-0.4	-3.0**
<u>Paper products group</u>									
<i>Australia:</i>									
1.3**	1.3**	0.0	2.3**	-2.4**	3.5**	3.5**	1.0**	1.0**	-2.2**
<i>Canada:</i>									
3.4**	3.5**	0.1	1.3	-1.4**	4.1**	2.8**	2.7**	1.4**	-0.7**
<i>New Zealand:</i>									
7.2**	5.3**	-1.9*	-1.0	-2.4**	5.9	4.0	3.5	1.6	1.3
<i>United States:</i>									
5.1**	6.0**	0.9*	1.8**	-0.5	5.9**	1.9**	5.3**	1.4**	-0.8**

† Composition of industry groups and years covered by the analysis are as per Table 5.

\* Statistically different from zero at the 80 per cent confidence level or higher.

**a** Methodological note on trends:

Trends for all variables except assistance rates were estimated using the model  $\ln(Y) = a + b \cdot d12 + f \cdot \text{Year} + g \cdot d12 \cdot \text{Year}$  where  $\ln(Y)$  stands for the natural logarithm of the variable under consideration and  $d12$  is a dummy variable equal to one during 1969-77 and equal to zero in subsequent years. The trends for effective and output rates of assistance were estimated using the model  $\ln(Y) = a + b \cdot d1 + c \cdot d2 + e \cdot d3 + f \cdot \text{Year} + g \cdot d12 \cdot \text{Year}$  where  $d1$ ,  $d2$ , and  $d3$  are dummy variables equal to one during 1968-74, 1975-77 and 1978-82, respectively, and equal to zero otherwise. The trends for the materials rate of assistance were estimated using the model  $\ln(Y) = a + e \cdot d3 + f \cdot \text{Year}$ .

In the equations above  $d1$ ,  $d2$ , and  $d3$  account for breaks in the data series and  $d12$  has been included to consider possible changes in trends between the 1969-77 and the 1978-90 periods. Three different models were required because production data were available in two series (1968-77 and 1978-90), the effective and nominal rates were available in four separate series (1969-74, 1975-77, 1978-82 and 1983-1985), and the materials rate of assistance was available only from 1977-78 in two series (1978-82 and 1983-90).

Estimates for the parameters  $a$ ,  $b$ ,  $c$ ,  $e$ ,  $f$ , and  $g$  were obtained using ordinary least squares, with  $f$  representing the average annual percentage change of the variable  $Y$  during the 1978-90 period and  $g$  representing the difference between the average change during the 1978-90 period and the average change during the 1969-77 period.

\*\* Statistically different from zero at the 90 per cent confidence level or higher.

*Source:* Commission estimates based on official industry statistics.

## **Attachment B.1: Data sources and definitions**

All the variables discussed below and initially expressed in nominal dollar terms were converted to 1984–85 constant dollars using the GDP deflator before any further manipulation.

*Imports:* goods brought into Australia directly for home consumption plus goods cleared from Customs (bonded) warehouses. Obtained from ABS computer tapes as the annual fob value of import clearances at the disaggregated commodity level. These values were aggregated to industry level using Commission concordances for the years to 1981–82 and ABS concordances from 1981–82 onwards.

*Exports:* refer to exports of Australian produce and re-exports. Australian produce is defined as goods, materials or articles, which have been produced, manufactured, or partly manufactured in Australia. Re-exports (excluded from Australian produce) are defined as goods, materials or articles originally imported which are exported in the same condition in which they were imported or after undergoing minor operations which leave them essentially unchanged (eg blending, packaging, bottling, cleaning, sorting, husking and shelling). Data were derived from ABS computer tapes.

*Value added:* turnover, plus increase (or less decrease) in the value of stocks, less purchases, transfers in and selected expenses.

*Purchases:* purchases of materials, fuels, power containers, etc and goods for resale, plus transfers in of goods from other establishments of the enterprise, plus charges for commission and sub-contract work, repair and maintenance expenses, outward freight and cartage, motor vehicle running expenses and sales commission payments and rent, leasing and hiring expenses.

*Wage:* wage and salary payments to all employees of an establishment, including those working at separately located administrative offices and ancillary units. Drawings of working proprietors are excluded.

*Employment:* number of working proprietors and employees on payroll, including those working at separately located administrative offices and ancillary units.

*Investment:* outlay on new and second hand fixed tangible assets less disposals. Includes fixed capital expenditure on manufacturing establishments not yet in operation.

Data on value added, purchases, wages, employment and investment were obtained from:

- Australia — *Manufacturing establishments, details of operation by industry class*, ABS Catalogue 8203.0, except for 1989–90 which are ABS preliminary data;
- Canada — *Manufacturing Industries in Canada: National and Provincial Areas*, Statistics Canada;
- New Zealand — *Census of Manufacturing*, Department of Statistics; and
- United States — 1987 Census of Manufactures, Industry Series, US Department of Commerce.

*Assistance rates (nominal and effective)*: Industry Commission estimates from various Industry Commission annual reports.

*Value of output*: computed as value added plus purchases. This is equivalent to adding turnover plus changes in inventories.

*Domestic Consumption*: computed as value of output plus imports less exports.

*Price-cost margin*: computed as the ratio of value added less wages to value added plus purchases. This is equivalent to dividing value of output minus purchases minus wages by value of output.

*Average wages*: computed as the ratio of wages to employment.

*Labour productivity*: computed as the ratio of value of output to employment.

*Labour's share*: computed as the ratio of average wages to labour productivity.

*Value Added Share*: computed as the sum of the price-cost margin and labour's share.



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## **APPENDIX C: TRADE OPPORTUNITIES IN FOREST PRODUCTS IN THE ASIAN REGION**

### **C.1 Introduction**

Asia is generally expected to present considerable trade opportunities for Australia due to its proximity, its relatively high rates of population and economic growth, its current low per capita consumption of forest products and its propensity to import both wood and paper products.

The aim of this appendix is to highlight Asia's trade patterns in forest products over the 1980–1991 period. Highlighting these patterns may help identify trade opportunities for Australian companies in selected Asian countries. The countries, which have been selected on the basis of their proximity and their importance as traders of forest products, are listed in Attachment C.1. Although the focus is on Asian imports — since these may represent export opportunities for Australia — Asian exporting countries are also considered — since these could become Australia's competitors.

Given Australia-wide resource constraints, not all opportunities can be acted upon and entering into trade with Asia in certain forest products may, for some firms, be a low priority. Nevertheless, it is important to be aware of as wide a range of opportunities as possible, so that informed choices can be made. It is with this in mind that the study reported in this appendix has been undertaken.

For this study an electronic search of Asia's trade in forest products was carried out by the Australian National University using its International Economic Data Bank (IEDB). The study is based on United Nations (UN) Trade Statistics at the 5-digit Standard International Trade Commodity (SITC) level.

Nine forest product groups were separately identified. These were, in turn, grouped into two broad categories: wood and wood products, and paper and paper products. Commodities included at the 5-digit SITC level in each of the nine groups are listed in Attachment C.2.

In presenting the results, Japan is separated out from the other Asian countries because, as a developed economy, its characteristics differ from those of other Asian nations. Results are generally reported for Japan, Other Asia and Asia (the sum of the first two categories).

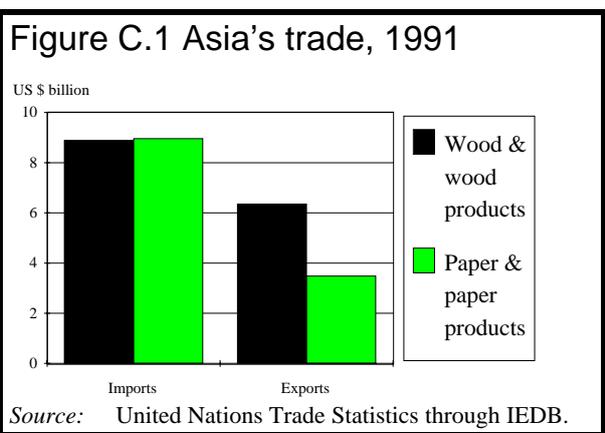
The next section gives an overview of world trade in forest products, placing Asia's trade into a global perspective. Section C.3 focuses on Asia's trade and identifies the major products traded, as well as the countries involved in that trade. Section C.4 discusses the opportunities Asia's trade may present for Australia.

## C.2 Asia's trade in a global perspective

In 1991, Asia's imports represented 18 per cent of the world's forest products imports. Although international trade in forest products accounted for only about 3 per cent of all world trade, this trade was still of considerable magnitude (close to US\$100 billion).

The five most important importing countries are the USA, Germany, Japan, UK and Italy. Japan — the only Asian country among the world's top five — accounted for 8 per cent of the world's forest products imports in 1991. The main exporting countries are Canada, the USA, Sweden, Finland, Germany and, in the Asian region, Indonesia and Malaysia (see Table C.1 and Figure 2.9 in Chapter 2).

The fact that some countries, such as the US and Germany, are important exporters as well as importers suggests the presence of significant specialisation in forest products trade. Another characteristic that suggests specialisation is the success of several small countries in exporting particular products not only to neighbouring regions, but also to many countries around the world. Examples include Finland, Austria and New Zealand. In 1991, New Zealand exported over US\$200 million worth of wood and wood products and US\$300 million worth of paper and paper products. Its performance indicates that countries with an isolated geographic location and a small domestic market can be successful in exporting forest products worldwide.



An important characteristic of Asia's trade is that, while its imports of forest products accounted for 18 per cent of world imports, its exports represented only 10 per cent of the world's exports (see Figure C.1). Thus, Asia is a net importer of forest products, its imports in 1991 having been US\$8 billion greater than its exports of forest products.

**Table C.1: Major exporters of forest products, 1991**  
(US\$ billion)

**Wood and wood products**

<i>Exports</i>	<i>Exporting countries</i>						
	<i>Indonesia, Malaysia</i>		<i>USA</i>		<i>Canada</i>		<i>USSR</i>
<i>To:</i>		<i>To:</i>		<i>To:</i>		<i>To:</i>	
Japan	2.1	Japan	2.5	USA	3.0	Japan	0.5
China, Taiwan	1.1	EC12	0.9	Japan	1.1	UK	0.2
EC12	0.9	Canada	0.7	EC12	0.7	EC12	0.5
Total (world)	6.5	Total (world)	5.4	Total (world)	5.0	Total (world)	1.6

**Paper and paper products**

<i>Exports</i>	<i>Exporting countries</i>								
	<i>Canada</i>		<i>USA</i>		<i>Sweden</i>		<i>Germany Finland</i>		<i>(unified)</i>
<i>To:</i>		<i>To:</i>		<i>To:</i>		<i>To:</i>		<i>To:</i>	
USA	8.0	Canada, Mexico	2.1	UK	1.3	UK	1.2	France	1.2
EC12	1.9	EC12	1.8	France, Denmark	1.0	France, Spain	1.1	Holland, UK	1.7
Japan	0.5	Japan, Korea	1.3	Holland, Italy	0.9	Other, EC12	2.7	Other, EC12	1.7
Korea	0.2	Australia	0.2	Other EC12	2.6	Australia	0.1	Australia	0.1
Total (world)	11.6	Total (world)	7.6	Total (world)	7.4	Total (world)	7.0	Total (world)	7.0

*Source:* Derived from United Nations Trade Statistics.

In terms of world trade, paper and paper products are dominant, accounting for two-thirds of the world's forest products imports. However, for Asia, wood and wood products are just as important as paper and paper products (accounting for

50 per cent of Asia's US\$18 billion worth of forest products imports). This is mainly due to Japan's large imports of semi-processed forest products, amounting to around US\$6 billion in 1991.

Growth in trade generally — and in forest products in particular — has been considerably greater in Other Asia than in the rest of the world (see Table C.2). Over the 1980–1990 period, the annual average growth rate for forest products imports by Other Asia was 9.5 per cent compared with 8.4 per cent worldwide. Growth rates for forest products imports were slightly higher than growth rates for all imports (which were 9.6 and 5.9 per cent a year for Other Asia and the world, respectively).

**Table C.2: Growth of imports, Asia and the world, 1980 to 1990**

(per annum, per cent, import values)

	<i>1980 to 1983</i>	<i>1983 to 1987</i>	<i>1987 to 1990</i>	<i>1980 to 1990</i>
<b>Forest Products</b>				
World	- 4.7	10.7	16.4	8.4
Japan	- 14.2	11.4	9.9	7.0
Other Asia	- 1.6	8.7	12.6	9.5
<b>All commodities</b>				
World	- 3.3	7.2	10.4	5.9
Japan	- 4.0	2.6	14.7	4.9
Other Asia	2.9	7.8	16.1	9.6

*Sources:* United Nations Trade Statistics through IEDB for forest products; and *UN Trade Statistics Yearbook, 1990* for data on all commodities.

For forest products and all commodities, growth in Japan's imports was below the growth in world imports (see Table C.2). However, at 9.5 per cent per annum for forest products and 9.6 per cent per annum for all commodities, the growth in imports for countries in the Other Asia group was more rapid than for the world.

One reason for slower growth in Japan was the 14.2 per cent decline in forest products imports over the 1980 to 1983 period. Likely contributing factors were the export restrictions and 'value adding' policies adopted since the late 1970s by Indonesia — a major exporter to Japan. Since then there have been rapid increases in both Japan's production of paper products (rising from 18 billion tonnes in 1983 to 28 billion tonnes by 1990), and its imports of forest products (see Table C.2).

As a result of Asia's more rapid growth, the share of its forest products imports in world imports increased from 12 to 18 per cent between 1980 and 1991 (see

**Figure C.2: Asia's share of world imports, 1980 and 1991**

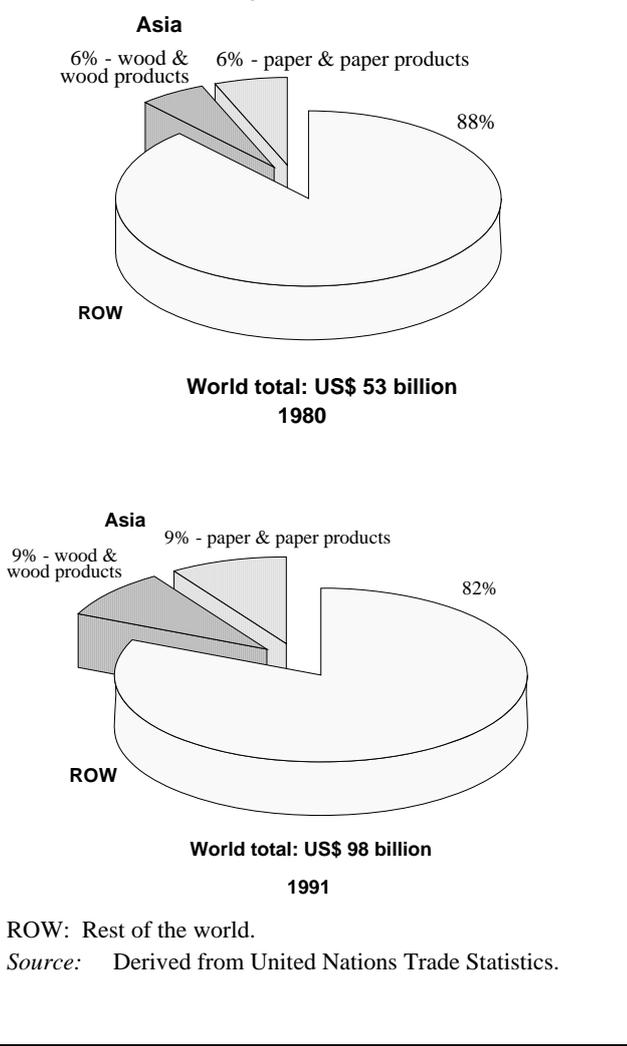


Figure C.2). Over this period, Asia's share of both the world's wood and wood product imports and paper and paper products imports increased by 50 per cent (Asia's share rose from 6 per cent in each in 1980 to 9 per cent in 1991).

In summary, Asia's imports of forest products are considerable, accounting for one-fifth of the world's forest products imports. In addition, Asia's imports have generally grown significantly more rapidly than the world average. Over the decade to 1990, growth in forest product imports by Asian nations other than Japan was well above the growth in forest product imports worldwide.

Although future growth in Asia's forest products imports is expected to slow somewhat, it is still likely to be considerably higher than

the world average (see Chapter 9). Further increases in Asian living standards, coupled with Asia's propensity to import, could present significant trade opportunities for potential neighbouring suppliers, such as Australia.

### C.3 Asia's trade

#### *Imports*

In 1991, the value of Asia's imports of forest products was close to US\$18 billion. A further US\$6 billion was imported in the form of softwood and hardwood sawlogs, mainly by Japan. Imports of sawlogs are not discussed further since these products are not under reference in this inquiry.

Table C.3 shows the top importing Asian countries. Japan was the most important player with a 45 per cent share of Asia's forest products imports. Imports by South Korea and China accounted for a further 20 per cent.

Most Asian countries are relatively open to international trade, although there are high tariffs on particular products in some countries. Also, Japan appears to have significant non-tariff barriers in place.

Table C.3 also shows the limited extent to which Australia and New Zealand supplied Asian imports of forest products in 1991. The only market in which Australia and New Zealand were significant suppliers was wood and wood products to Japan, where these two countries accounted for 9 per cent of Japan's imports. In all other markets, Australia and New Zealand supplied 3 per cent or less of the particular Asian country's wood and wood products or paper and paper products imports.

Considering Australia alone, its share of Asia's relatively open markets is generally very low. It is less than 1 per cent of the wood and wood products markets of key Asian importers other than Japan (ie South Korea, China, Taiwan and Thailand) and in the paper and paper products markets of all key Asian importing countries (ie Japan, Hong Kong, China, South Korea and Taiwan). The exception is Japan's wood and wood products imports of which Australia has a 7 per cent share (due to its woodchip exports).

Japan was responsible for 65 per cent of Asia's wood and wood products imports and 26 per cent of its paper and paper products imports (see Table C.4). Its imports were mostly semi-processed forest products, such as sawn softwood, woodchips and pulp. Australia supplied some US\$400 million of Japan's US\$1.7 billion worth of woodchip imports and New Zealand US\$26 million of Japan's US\$2 billion worth of sawn softwood imports.

As an exporter of paper and paper products, Japan ranked eleventh in the world in 1991 (with exports worth US\$1.7 billion). In the same year, its imports of paper and paper products amounted to US\$2.3 billion, although more than half of this was in the form of semi-processed pulp (see Table C.4).

Table C.3: Major Asian importers of forest products, 1991 (US\$ million)

<i>Wood and wood products</i>			<i>Paper and paper products</i>		
<i>Importing country</i>	<i>Sourced from</i>	<i>Value</i>	<i>Importing country</i>	<i>Sourced from</i>	<i>Value</i>
<b>Japan</b>	USA	1550	<b>Japan</b>	USA	1067
	Canada	1247		Canada	584
	Indonesia	1192		Finland	159
	<u>Malaysia</u>	<u>357</u>		Brazil	113
	NZ	102		Chile	49
	Australia	419		<u>Sweden</u>	<u>47</u>
	<b>Total</b>	<b>5765</b>		NZ	14
		Australia	15		
		<b>Total</b>	<b>2777</b>		
<b>South Korea</b>	Indonesia	383	<b>Hong Kong</b>	Japan	382
	Malaysia	174		USA	226
	USA	100		Taiwan	189
	<u>NZ</u>	<u>7</u>		Korea	163
	<b>Total</b>	<b>730</b>		<u>China</u>	<u>108</u>
		NZ	21		
		<u>Australia</u>	<u>15</u>		
		<b>Total</b>	<b>1516</b>		
<b>China</b>	Indonesia	433	<b>China</b>	HK	639
	HK	162		Canada	172
	<u>Malaysia</u>	<u>78</u>		USA	171
	<b>Total</b>	<b>702</b>		<u>Japan</u>	<u>123</u>
		NZ	6		
		<u>Australia</u>	<u>9</u>		
		<b>Total</b>	<b>1332</b>		
<b>Taiwan</b>	Indonesia	213	<b>South Korea</b>	USA	403
	USA	121		Canada	190
	Malaysia	93		Japan	131
	<u>NZ</u>	<u>11</u>		Brazil	34
	<b>Total</b>	<b>538</b>		<u>Sweden</u>	<u>37</u>
		NZ	25		
		<u>Australia</u>	<u>3</u>		
		<b>Total</b>	<b>1037</b>		
<b>Thailand</b>	Malaysia	237	<b>Taiwan</b>	USA	174
	<u>Vietnam</u>	<u>70</u>		Japan	139
	<b>Total</b>	<b>379</b>		Canada	76
		Sweden	57		
		Germany	42		
		<u>Singapore</u>	<u>34</u>		
		New Zealand	20		
		<u>Australia</u>	<u>2</u>		
		<b>Total</b>	<b>651</b>		

Notes: The top 5 importers in terms of trade values. Australia and New Zealand were included to provide insights into products exported to these countries.  
Source: Derived from United Nations Trade Statistics.

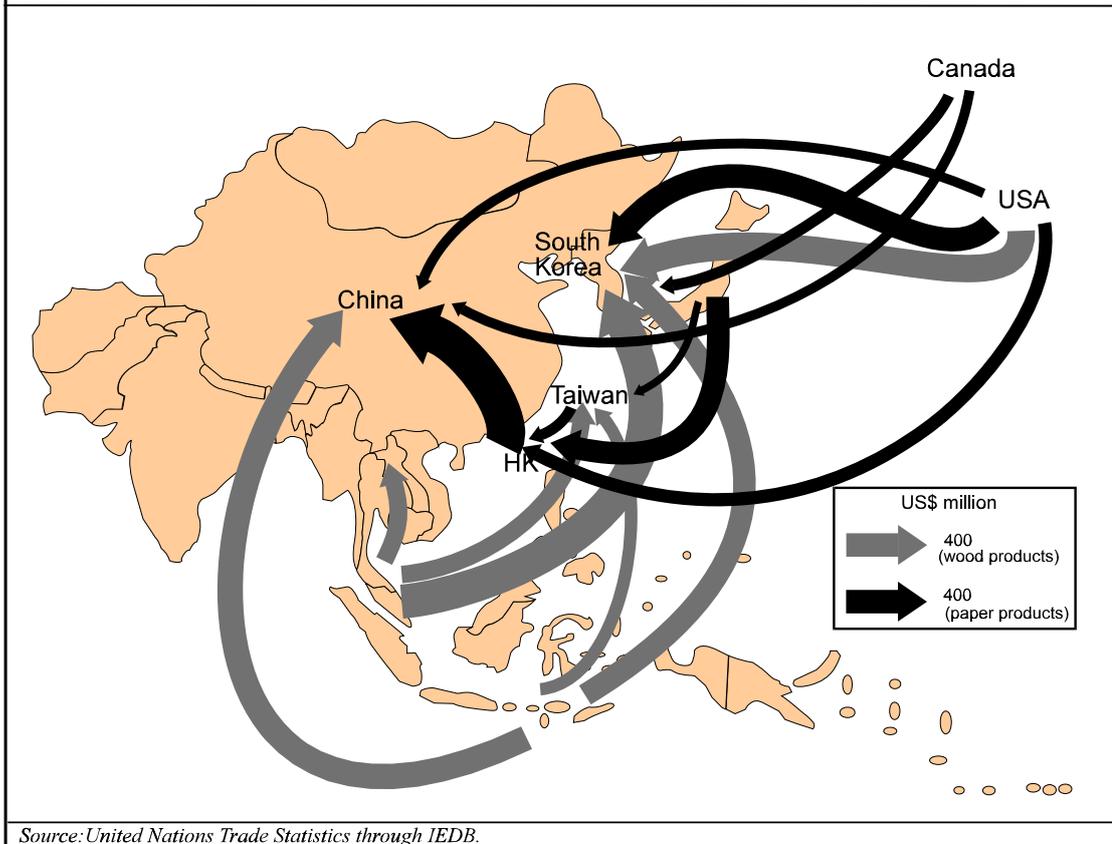
**Table C.4: Forest products imported by Asia, 1991**  
(US\$ million)

	<i>Japan</i>	<i>Other Asia</i>	<i>Asia</i>
Sawn softwood	2 063	79	2 142
Sawn hardwood	776	1 077	1 853
Panels	1 190	1 946	3 136
Woodchips	1 701	49	1 751
<b>Wood and wood products</b>	<b>5 730</b>	<b>3 151</b>	<b>8 882</b>
Pulp	1 220	1 261	2 481
Industrial and packaging papers	559	3 280	3 840
Printing and writing papers	133	1 025	1 158
Newsprint	330	622	952
Packaging containers	34	343	377
<b>Paper and paper products</b>	<b><u>2 276</u></b>	<b><u>6 531</u></b>	<b><u>8 808</u></b>
<b>TOTAL</b>	<b>8 006</b>	<b>9 682</b>	<b>17 690</b>

*Source:* Derived from United Nations Trade Statistics.

Other Asia mainly imported industrial and packaging papers, panels, pulp, sawn hardwood and printing and writing papers. These product categories accounted for close to 90 per cent of Other Asia's forest products imports (worth US\$9 billion). South Korea, China and Hong Kong were the major importers of these commodities — with Hong Kong re-exporting a high proportion of its imports to China. Countries in the Other Asia group mainly sourced their imports from within the region, but also imported significant quantities of forest products from North America (see Figure C.3).

In 1991, Asian imports of newsprint were worth just under US\$1 billion, with Japan being responsible for one-third of these imports and Other Asia for the remaining two-thirds. However, growth in newsprint imports by Asia has been very rapid, close to 17 per cent a year for Japan over the period 1980 to 1991, and 8 per cent a year for Other Asia. Thailand, Malaysia, Hong Kong and Taiwan were the top importing countries in Other Asia. Most of their imports were sourced from Canada, the USA and Japan. Japan's imports of newsprint were mainly sourced from Canada and the USA.

**Figure C3: Major Asian importers other than Japan, 1991.**

At the individual country level, South Korea's main imports were wood and wood products, with panels and sawn hardwood accounting for 24 per cent of its forest products imports and pulp accounting for 21 per cent of imports. In contrast, China and Hong Kong tended to import more from the paper and paper products group, industrial and packaging papers and panels accounting for 61 per cent of China's total imports of forest products, and printing and writing papers, industrial and packaging papers and newsprint accounting for 72 per cent of Hong Kong's forest products imports.

Because of the importance of specialisation in the international trade of forest products, growth rates in Asian imports at the product category level are likely to be of special interest. These are presented in Table C.5.

Growth in forest products imports by Asia was rapid over the 1980–1991 period, ranging from 7 per cent a year for woodchips to 20 per cent for packaging containers (Table C.5). For most product groups, growth was even more rapid since the mid 1980s, ranging from 7 per cent a year for newsprint to 35 per cent for panels.

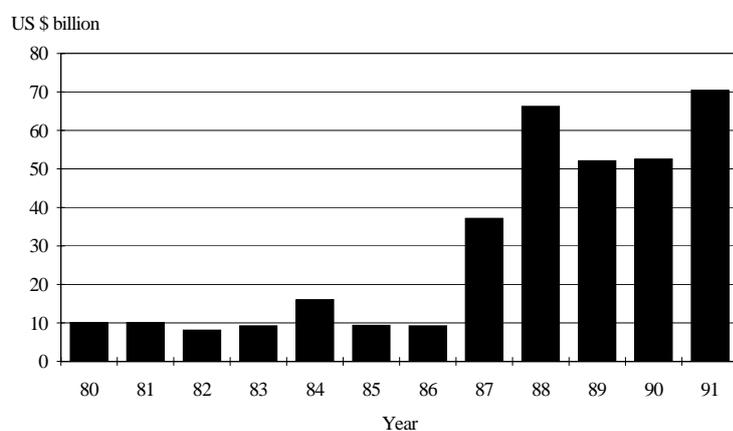
**Table C.5: Average annual growth rates in Asian imports, by product, 1980 to 1991**

(per cent)

	—1980 to 1985—			—1985 to 1991—			— 1980 to 1991 —		
	Japan	Other Asia	Asia	Japan	Other Asia	Asia	Japan	Other Asia	Asia
Sawn softwood	-7.7	20.8	-6.5	20.6	17.6	20.2	11.6	10.5	11.5
Sawn hardwood	7.9	2.6	5.0	21	18.4	20.5	18.2	13.0	15.2
Panels	10.2	1.3	2.9	42.5	27.3	34.6	36.8	19.8	24.2
Woodchips	-7.7	3.8	-7.3	16.7	0.5	16.1	6.7	8.5	6.7
<b>Wood and wood products</b>	<b>-9.9</b>	<b>-1.5</b>	<b>-7.5</b>	<b>15</b>	<b>17.3</b>	<b>15.8</b>	<b>6.4</b>	<b>9.1</b>	<b>7.3</b>
Pulp	-1.6	0.5	-0.3	13.3	16.0	14.4	9.2	11.0	10.2
Industrial/packaging papers	-1.5	3.3	2.3	15.5	21.0	19.8	8.8	15.0	13.6
Printing and writing papers	22.9	4.6	5.2	13	13.9	12.8	17.6	11.2	11.1
Newsprint	17.4	2.5	3.9	6.6	10.9	7.2	13.6	6.5	6.8
Packaging containers	13.1	16.5	16.2	31.4	27.7	28.0	23.3	19.7	20.1
<b>Paper and paper products</b>	<b>1.4</b>	<b>3.1</b>	<b>2.2</b>	<b>12.9</b>	<b>17.8</b>	<b>15.7</b>	<b>10.0</b>	<b>12.5</b>	<b>11.4</b>

Source: Derived from United Nations Trade Statistics.

Results for product categories of relevance to Australia's forest products industries are detailed further below.

**Figure C.4: 'Asian Tigers', sawn softwood imports**


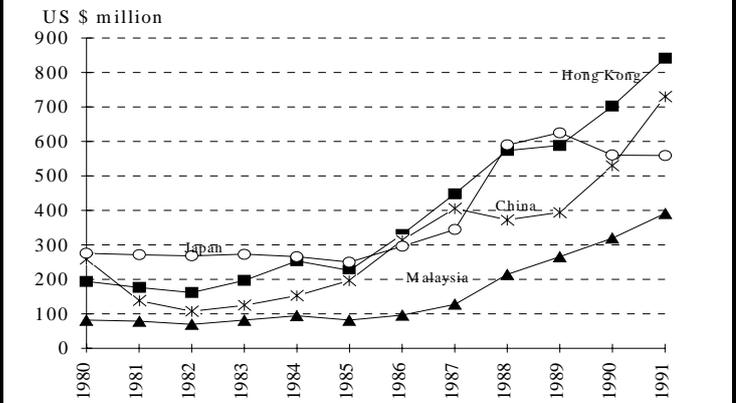
Source: Derived from United Nations Trade Statistics.

One growth area since the mid 1980s has been Asia's imports of sawn softwood, with Japan's imports growing at 21 per cent a year (Table C.5). Overall, growth for Other Asia was around 18 per cent a year, but imports by certain countries within the group increased even more rapidly (Figure C.4). Imports by the 'Asian Tigers'

(Singapore, Taiwan, South Korea and Hong Kong) increased from around US\$10 million in the mid 1980s to around US\$70 million by 1991. Some 70 per cent of their imports were sourced from Canada and the USA, and 17 per cent from New Zealand.

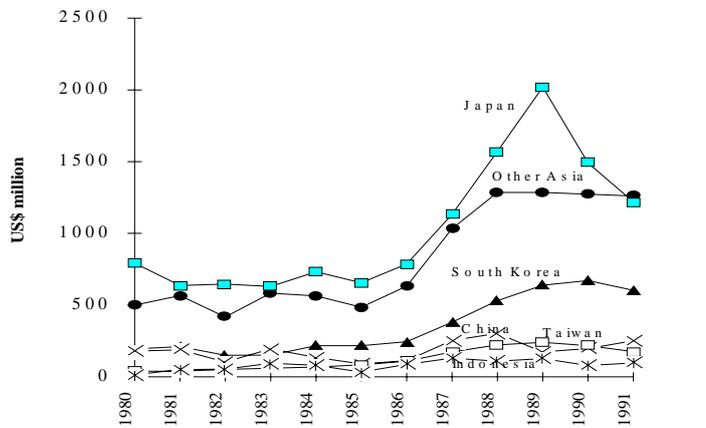
Another growth area since the mid 1980s has been industrial and packaging papers, with Japan's and Other Asia's imports growing at 16 and 21 per cent per annum respectively (Table C.5). Figure C.5 shows that China and Malaysia combined have increased their imports from around US\$700 million in the early 1980s to over US\$1.6 billion by 1991, with Hong Kong playing an importing and re-exporting role (mainly to China). Other Asia's imports of industrial and packaging papers were mainly sourced from within the region (Japan, Taiwan, Indonesia and Korea) and from the USA.

Figure C.5: Trend in industrial and packaging paper imports



Source: Derived from United Nations Trade Statistics.

Figure C.6: Trend in imports of pulp



Source: Derived from United Nations Trade Statistics.

Another product group worth considering is pulp, because of the magnitude of Asia's imports (US\$2.5 billion) and its higher value adding content than many wood products. Since the mid 1980s, Asia's imports have grown at 14 per cent per annum and were mainly sourced from the USA, Canada and Brazil.

Although growth for this group was not as important and sustained as for sawn softwood and industrial and packaging papers, imports by Japan and Other Asia, especially South Korea, have increased significantly (see Figure C.6).

In summary, Asia's imports of forest products are considerable (US\$18 billion). Its imports of products in which Australia already is, or could in future become competitive, are growing rapidly. By far the most significant importer is Japan, which is responsible for close to half of Asia's forest products imports. Its imports mainly consist of semi-processed forest products. Other key importers are Korea, China and Hong Kong, all of which have a tendency to import paper and paper products rather than wood and wood products.

Currently, Australia's share of Asia's rapidly growing markets is very low. It is less than 1 per cent of the internationally sourced forest products markets of key Asian countries. The exception is Japan, Australia accounting for some 7 per cent of Japan's imports of wood and wood products (due to its woodchip exports).

### Exports

In 1991, Asia's exports of forest products were worth close to US\$10 billion, two-thirds of which were wood and wood products (Table C.6).

<i>Forest product</i>	<i>Japan</i>	<i>Other Asia</i>	<i>Asia</i>
Sawn softwood	1	125	126
Sawn hardwood	19	2 095	2 114
Panels	31	3 979	4 010
Woodchips	0	89	89
<b>Wood and wood products</b>	<b>51</b>	<b>6 199</b>	<b>6 250</b>
Pulp	4	107	111
Industrial and packaging paper	1 098	934	2 032
Printing and writing paper	423	341	764
Newsprint	85	18	104
Packaging containers	54	405	459
<b>Paper and paper products</b>	<b><u>1 664</u></b>	<b><u>1 806</u></b>	<b><u>3 470</u></b>
<b>TOTAL</b>	<b>1 715</b>	<b>8 005</b>	<b>9 720</b>

*Source:* Derived from United Nations Trade Statistics.

Asia's exports of paper and paper products in 1991 were worth over US\$3 billion, with Japan and Other Asia accounting for around half each.

Panels, sawn hardwood, and industrial and packaging papers were the most important Asian exports, accounting for 84 per cent of Asia's forest products exports. Indonesia exported US\$3 billion worth of panels mainly to Japan, China, Korea and the USA. Malaysia was the major exporter of sawn hardwood, mainly to the USA and Japan.

#### **C.4 Implications for Australia**

It is often said that rapid increases in Asia's population, its living standards and its international trade should present significant trade opportunities for neighbouring countries, such as Australia. In general, opportunities are likely to be greatest when:

- the size of the market in Asia is large;
- trade is growing rapidly;
- there are few trade barriers;
- there are emerging markets with no traditional suppliers;
- transport costs are not a disadvantage relative to competitors; and
- Australian production is already internationally competitive.

Earlier sections of this Appendix have shown that Australia's share of Asia's growing markets is at present very low. Improvements will be needed in the way governments and the industry currently operate if Australia is to take greater advantage of the trade opportunities available in the Asian region.

The trade opportunities suggested by this Appendix are summarised in Table C.7. These will be discussed below, keeping in mind the assessments of Australia's competitiveness presented in Chapter 5.

The product groups considered for Asia's trade are considerably broader than the products that were considered in assessing competitiveness. In line with the specialised nature of much of international trade in forest products, it seems reasonable to assume that, if Australia took advantage of some of the trade opportunities in Asia, then it would probably specialise in a particular segment of the markets considered.

Because of their importance in Asia's trade, industrial and packaging papers are particularly worthy of consideration. In 1991, Asia's trade was worth close to US\$4 billion and demand has been growing very rapidly (around 20 per cent a year since 1985). Australian production is already internationally competitive in

this broad area. The key importers at present are Hong Kong, China and Japan. There is considerable competition from suppliers within the region (Japan and Korea), but the fact that the USA is a major supplier suggests that higher transport costs by more distant producers, as well as labour cost disadvantages relative to developing country suppliers, can be overcome.

Table C.7: Main characteristics of Asia's trade in forest products, 1991

<i>Product group</i>	<i>Asia's imports</i>		<i>Key importers</i>	<i>Key competitors</i>  <i>(sources of Asian imports)</i>
	<i>US\$billion</i>	<i>growth, 1985-91 (% per annum)</i>		
<b>Wood and wood products</b>				
Sawn softwood	2.1	20	Japan	Canada, USA, New Zealand
Sawn hardwood	1.9	21	Japan, Thailand, Taiwan, Korea	Malaysia, Indonesia, USA
Panels	3.1	35	Japan, China, Korea, Hong Kong	Indonesia, Hong Kong, Malaysia, USA
Woodchips	1.8	16	Japan	USA, Australia, Chile, Canada
<b>Paper and paper products</b>				
Pulp	2.5	14	Japan, Korea, China	USA, Canada
Industrial and packaging papers	3.9	20	Hong Kong, China, Japan	USA, Japan, Korea
Printing and writing papers	1.2	13	Hong Kong, China, Japan, Singapore	Japan, Finland
Newsprint	1.0	7	Japan, Thailand, Malaysia	USA, Canada
Packaging containers	0.4	28	China, Hong Kong, Taiwan	Hong Kong, China, Germany

The Asian market for sawn softwood may also present worthwhile opportunities for Australia given the importance of sawn softwood imports (over US\$2 billion); a growth rate of 20 per cent per annum in Asia's imports of these products; and New Zealand's status as a significant supplier. Australian production was found to be moderately competitive with existing plants.

Another product group of potential interest to Australia is sawn hardwood. In 1991, Asia's imports were worth close to US\$2 billion, with Other Asia accounting for around 60 per cent of these. Asian imports have once again grown rapidly (21 per cent per annum).

Asia's imports of pulp amounted to US\$2.5 billion in 1991. Imports have grown relatively rapidly, at 14 per cent per annum over the 1985-91 period. Australia was found to be competitive in producing hardwood kraft pulp, with new plants.

Other opportunities which may be available for Australian industry include:

- a possible expansion of Australia's woodchip exports to Japan;
- the exporting of those panels to Asia in which Australia is already competitive (softwood plywood, particleboard and MDF); and
- the exporting of newsprint.

Overall, a range of Asian trade opportunities could be exploited by Australia. Given resource constraints, only some of these are likely to be considered further. Relative rates of return, as assessed by individual firms, will no doubt be the main criterion determining whether, and to what extent, Australia will be able to increase its forest products trade with Asia.

### Attachment C.1: Asian countries included in the study.

Brunei	Lao PDR
Burma	Macau
China	Malaysia
Hong Kong	Philippines
Indonesia	Singapore
Japan	Taiwan
Kampuchea	Thailand
Korea, Dem Pls Rep	Vietnam
Korea, Republic	

### Attachment C.2: Product groupings and their commodity composition

<i>Product group</i>	<i>SITC code</i>	
	<i>Code</i>	<i>Description</i>
<b>Wood and wood products</b>		
1. sawn softwood	242.22	Sawlogs and veneer logs roughly squared or half squared, but not further manufactured
	243.21	Wood, sawn lengthwise, sliced or peeled, but not further prepared, of a thickness exceeding 5 mm
	243.22	Wood (including blocks, strips and friezes for parquet or wood block flooring, not assembled), planed tongued, grooved, rebated, chamfered, V-jointed, centre V-jointed, beaded, centre beaded or the like, but not further manufactured
2. sawn hardwood	242.32	Sawlogs and veneer logs roughly squared or half squared, but not further manufactured
	243.31	Wood, sawn lengthwise, sliced or peeled, but not further prepared, of a thickness exceeding 5 mm
	243.32	Wood (including blocks, strips and friezes for parquet or wood block flooring, not assembled), planed tongued, grooved, rebated, chamfered, V-jointed, centre V-jointed, beaded, centre beaded or the like, but not further manufactured

<i>Product group</i>	<i>SITC code</i>	
	<i>Code</i>	<i>Description</i>
<b>Wood and wood products (cont'd)</b>		
3. panels	631.22	Plywood consisting solely of sheets of wood, blockboard, laminboard, battenboard and similar laminated wood products (including veneered panels and sheets), inlaid wood and wood marquetry
	631.22	Cellular wood panels, whether or not faced with base metal
	631.41	"Improved" wood, in sheets, blocks or the like
	631.42	Reconstituted wood (being wood shavings, wood chips, sawdust wood flour or other ligneous waste agglomerated with natural or artificial resins or other organic binding substances), in sheets or blocks or the like
4. woodchips	242.1	Pulpwood in the round or quarter split
	631.83	Pulpwood in chips or particles component only (In SITC Revised, chipwood is aggregated with poles, etc)
<b>Paper and paper products</b>		
5. pulp	251.71	Sulphate (chemical) wood pulp, unbleached
	251.72	Sulphate (chemical) wood pulp, bleached or semi-bleached (other than dissolving grades)
	251.81	Sulphite wood pulp, unbleached
	251.82	Sulphite (chemical) wood pulp, bleached or semi-bleached (other than dissolving grades)
6. industrial and packaging paper	641.3	Kraft paper and paperboard, in rolls or sheets
	641.5	Paper and paperboard, in rolls or sheets, nes
	641.92	Composite paper or paperboard (made by sticking flat layers together with an adhesive), not surface coated or impregnated, whether or not internally reinforced, in rolls or sheets
	641.93	Paper and paperboard, corrugated, creped, crinkled, embossed or perforated, in rolls or sheets
	641.95	Coated paper (other than printing and writing paper) and paperboard, in rolls or sheets
7. printing and writing paper	641.21	Machine-made printing paper - uncoated
	641.22	Coated printing paper
	641.94	Ruled paper etc (Paper and paperboard, ruled, lined or squared but not otherwise printed)
8. newsprint	641.1	Newsprint paper
9. packaging containers	642.11	Boxes, bags and other packing containers, of paper or paperboard



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## APPENDIX D: POTENTIAL COMPETITIVENESS OF WOOD PRODUCTS

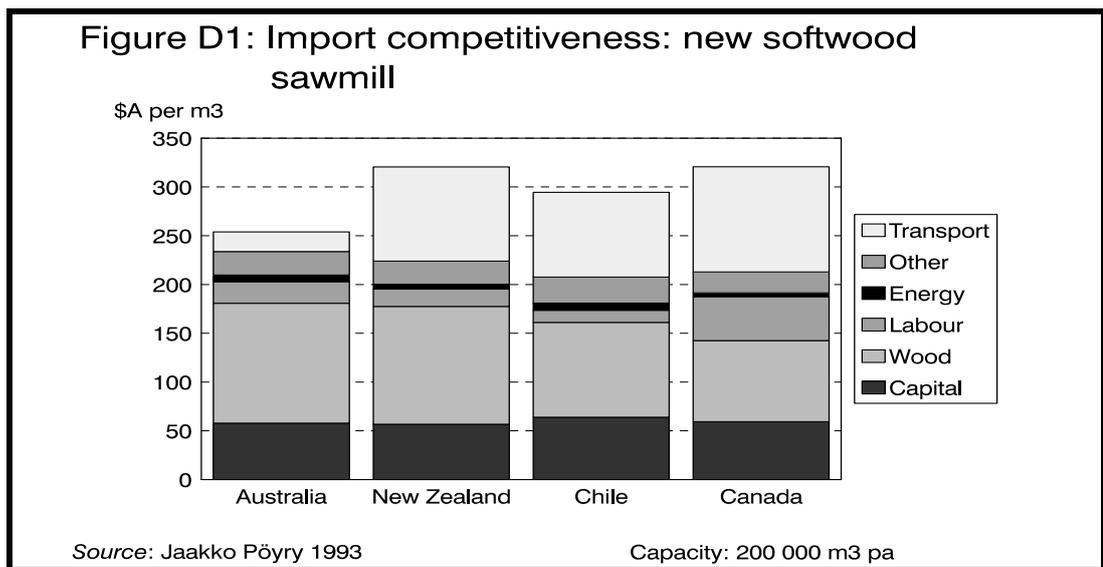
This appendix summarises the findings of the 1993 study undertaken for the Commission by Jaakko Pöyry on the potential competitiveness of Australian wood products. The study estimates costs for hypothetical, world scale mills in both Australia and major supplying nations as a basis for assessing potential competitiveness.

### D.1 Sawn softwood

The softwood sawmill depicted in the study was assumed to use the latest technology, with a high level of mechanisation and automation. The mill was assumed to be a large scale operation with an annual output of 200 000 m<sup>3</sup>. This is significantly larger than any existing Australian mills.

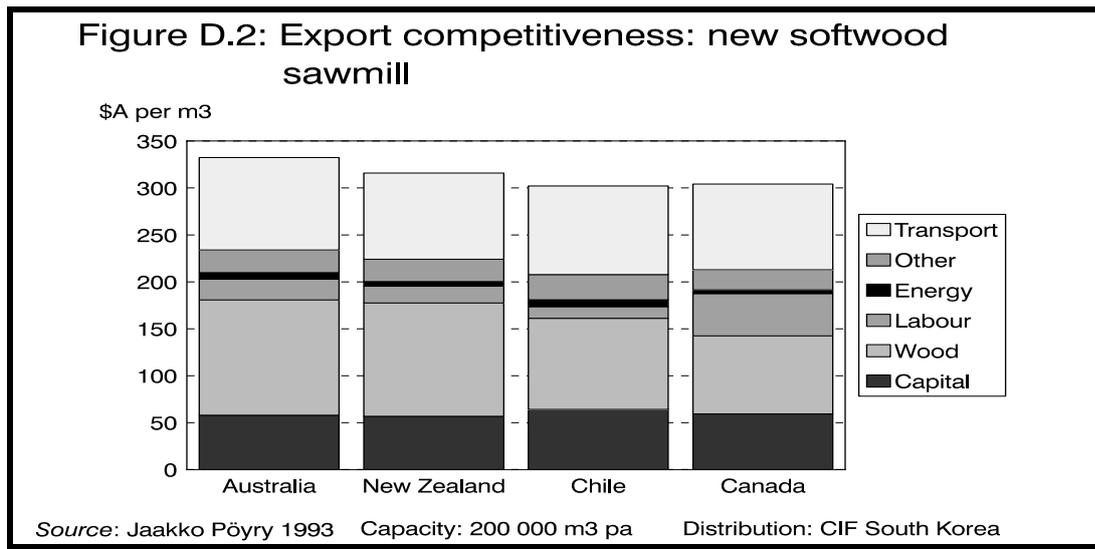
#### Import competitiveness

Compared to the competitiveness of the existing industry (see Chapter 5), Australia's relative competitiveness improves under the scenario of hypothetical new mills represented in Figure D.1. Although a new Australian mill was assessed to have higher production costs than its competitors, it sustains a competitive edge in the domestic market because of the impact of freight charges on imports.



## Export competitiveness

In the South Korean market, the study suggests that a new Australian mill would be at a competitive disadvantage — about 10 per cent against Chile, the most competitive country depicted in the study (see Figure D.2). The underlying cost disadvantages of the Australian mill reflect high wood costs compared to Canada and Chile, and higher labour and energy costs compared to New Zealand.



The disadvantage presently faced by existing Australian plants due to relatively high labour costs is reduced significantly by the gains in labour productivity that are estimated to flow from a move to larger scale plant.

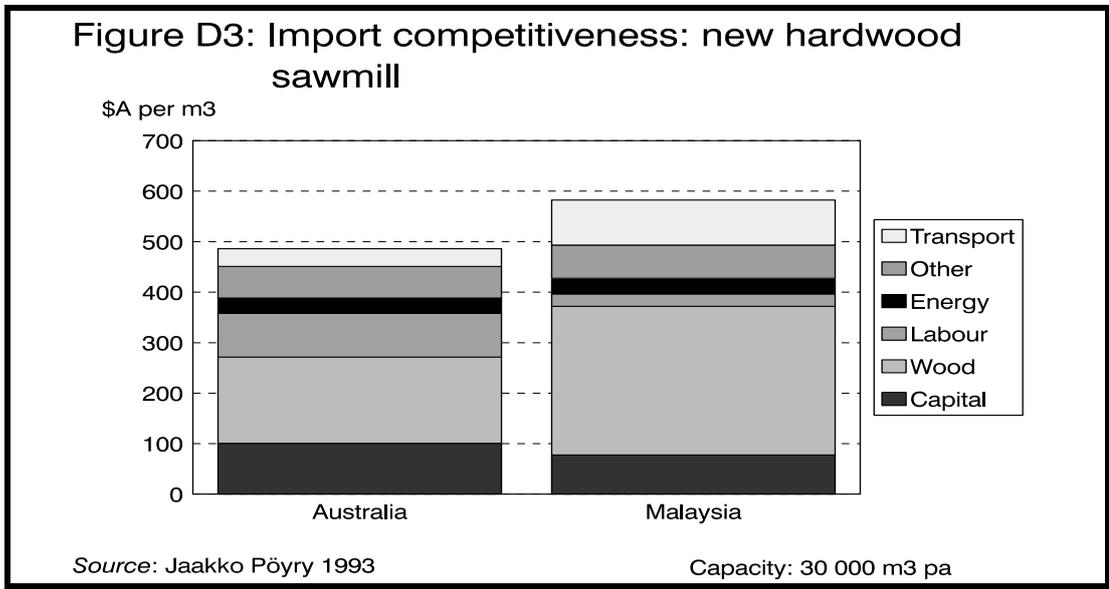
The study also suggests that a new, large scale Australian hardwood mill would be more competitive (but still at a slight disadvantage) with a new sawn softwood mill in the supply of green scantling to the domestic market, but at a substantial disadvantage in the supply of dried and dressed products.

## D.2 Sawn hardwood

The hypothetical mills used in the study are assumed to have an output of 30 000 m<sup>3</sup> per annum. The Australian mill was assumed to utilise mainly regrowth material. The drying capacity used in the analysis was 20 000 m<sup>3</sup> per annum. This mill is significantly larger than any mill currently operating in Australia. The results, therefore, have to be interpreted with caution, since resource constraints limit the number of mills of this size that could be constructed in Australia.

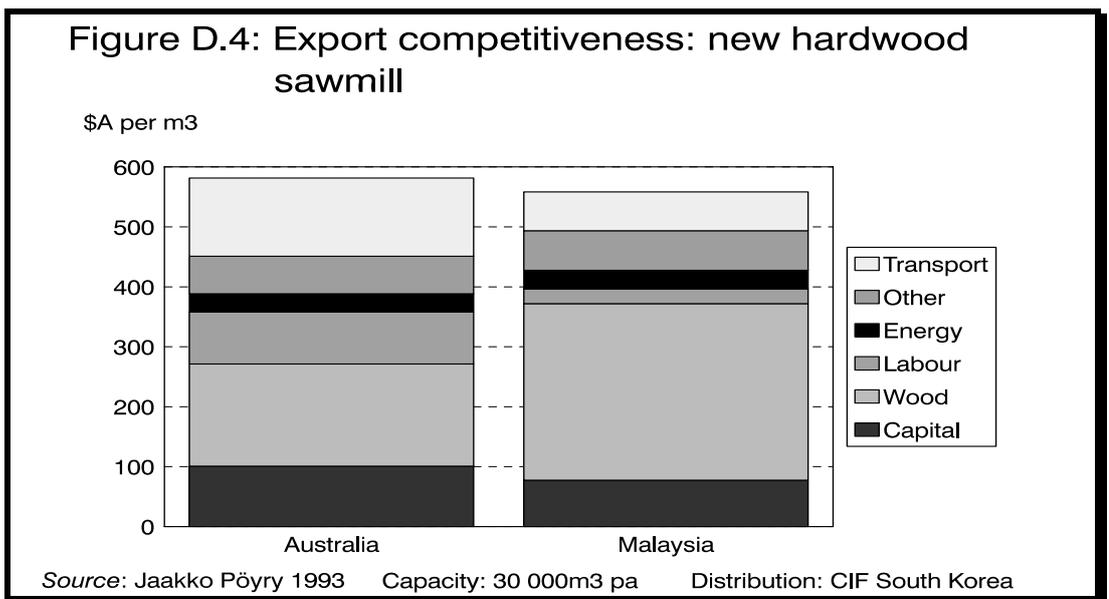
### Import competitiveness

The study suggests that the competitiveness of Australian industry in supplying the domestic market would increase if both Australian and overseas nations installed greenfield plants (see Figure D.3).



### Export competitiveness

A move to larger scale mills in Australia is estimated to make Australia more competitive on export markets, reducing Australia's cost disadvantage against Malaysia from over 10 per cent to less than 5 per cent (see Figure D.4).

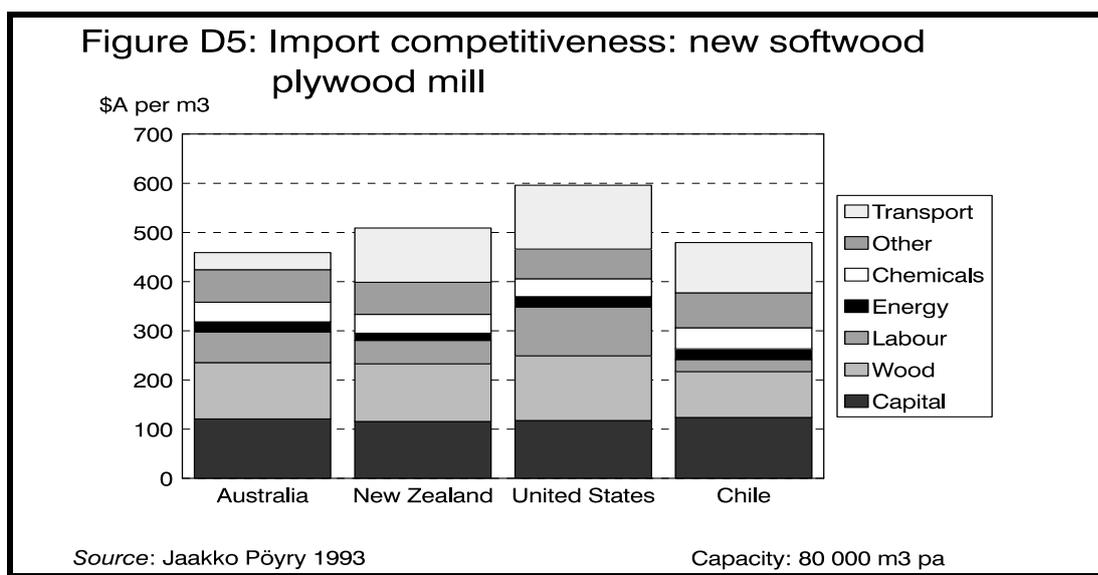


### D.3 Softwood plywood

In all cases, the study assumes a new hypothetical large scale mill of 80 000 m<sup>3</sup> per annum. This is significantly larger than the mills presently operating in Australia. The mills are assumed to have two peeling lines and use the latest technology. The study assumes that the wood input to the mills is normal sawlogs.

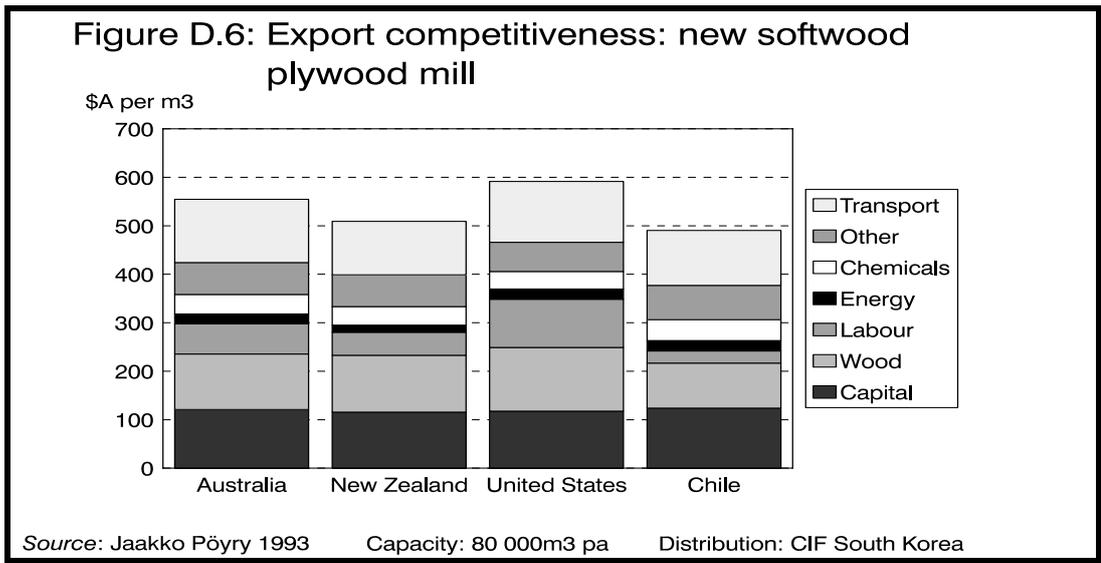
#### Import competitiveness

In the domestic market, the study found that a hypothetical Australian mill would have a price advantage of between 10 and 20 per cent against overseas suppliers. Australia's advantage arises mainly through the effect of transport costs on imports. In terms of production costs, Australia was assessed to be at a slight cost disadvantage compared to New Zealand and Chile, but at an advantage compared to the United States (see Figure D.5).



#### Export competitiveness

In export markets, New Zealand and Chile are estimated to have a competitive advantage over both Australia and the United States. According to the study, Chile's lower labour costs have a significant impact on its competitiveness (see Figure D.6).

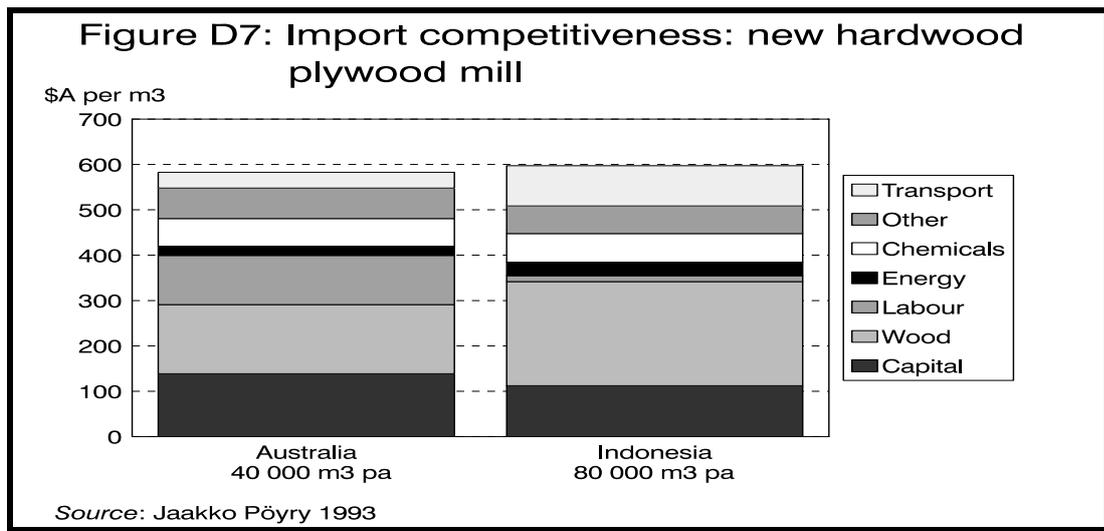


## D.4 Hardwood plywood

The study assumes that the hypothetical Australian mill has an annual output of 40 000 m<sup>3</sup>, around three times the size of the largest existing hardwood plywood mill in Australia. The output of the hypothetical Indonesian mill was assumed to be 80 000 m<sup>3</sup> per annum. This represents an increase in scale of around one-third compared with the representative existing Indonesian mill depicted in Chapter 5.

### Import competitiveness

In domestic markets, the study suggests that Australia has the potential to significantly improve its competitive position. Jaakko Pöyry estimates that a move to larger plant could improve Australia's competitiveness from a 10 per cent disadvantage using existing mills, to a slight advantage using new, larger scale plant. The large increase in the assumed size of Australian mills has a marked impact on labour productivity, reducing unit labour costs significantly. Although production costs are still lower in Indonesia, the study suggests that this advantage would be more than offset by transport costs from Indonesia (see Figure D.7).



### Export competitiveness

In the South Korean market, a new hypothetical Australian mill is assessed to be at a price disadvantage compared to Indonesia (see Figure D.8). Higher wood, transport and labour costs all contribute to this outcome.

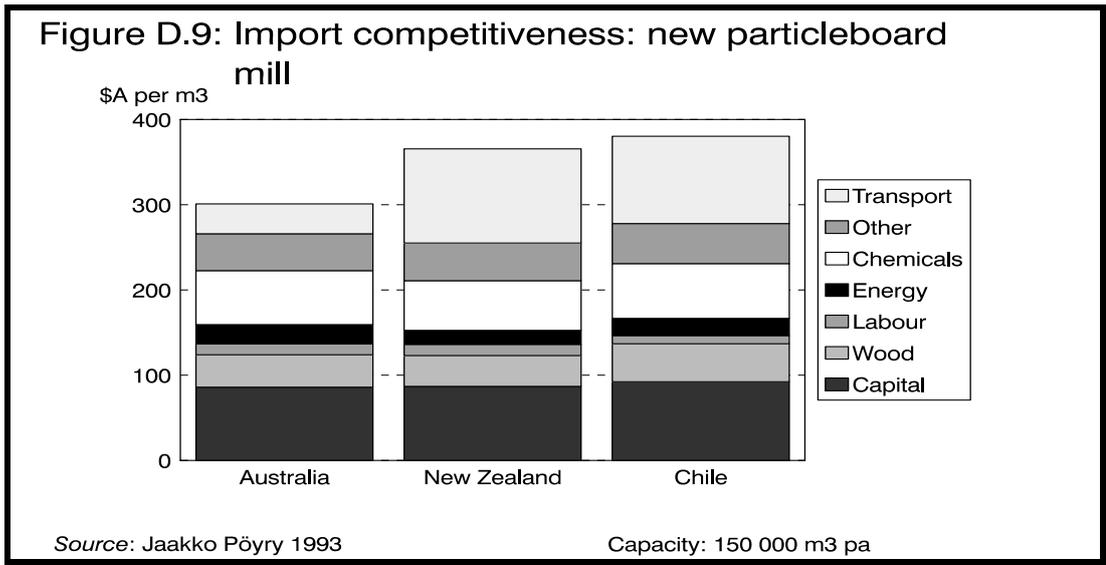


### D.5 Particleboard

The study assumes a new hypothetical Australian mill would have an annual output of 150 000 m<sup>3</sup>. This is not much larger than some existing particleboard mills in Australia. Thus, the study estimates that there would be only relatively small gains from increasing the scale of plant.

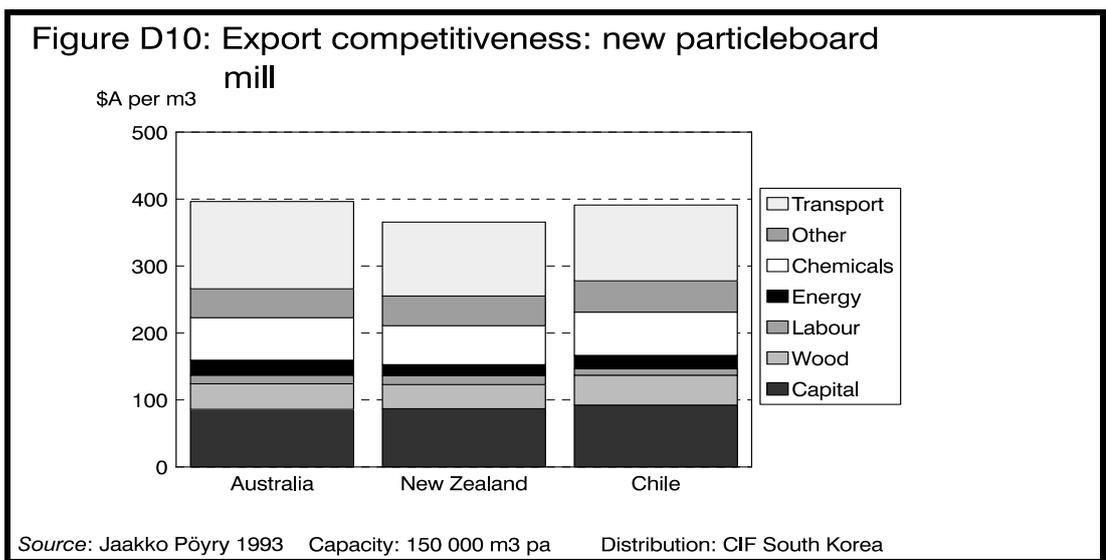
### Import competitiveness

In domestic markets, the study found that a new particleboard mill in Australia would have a significant price advantage over mills in New Zealand and Chile – around 20–25 per cent. This advantage arises largely from the effect of transport costs on imports. In terms of production costs, an Australian mill was estimated to be at a slight disadvantage compared to New Zealand, but at a slight advantage compared to Chile (see Figure D.9).



### Export competitiveness

In the South Korean market, an Australian mill was estimated to be slightly less competitive than both New Zealand and Chilean mills (see Figure D.10).

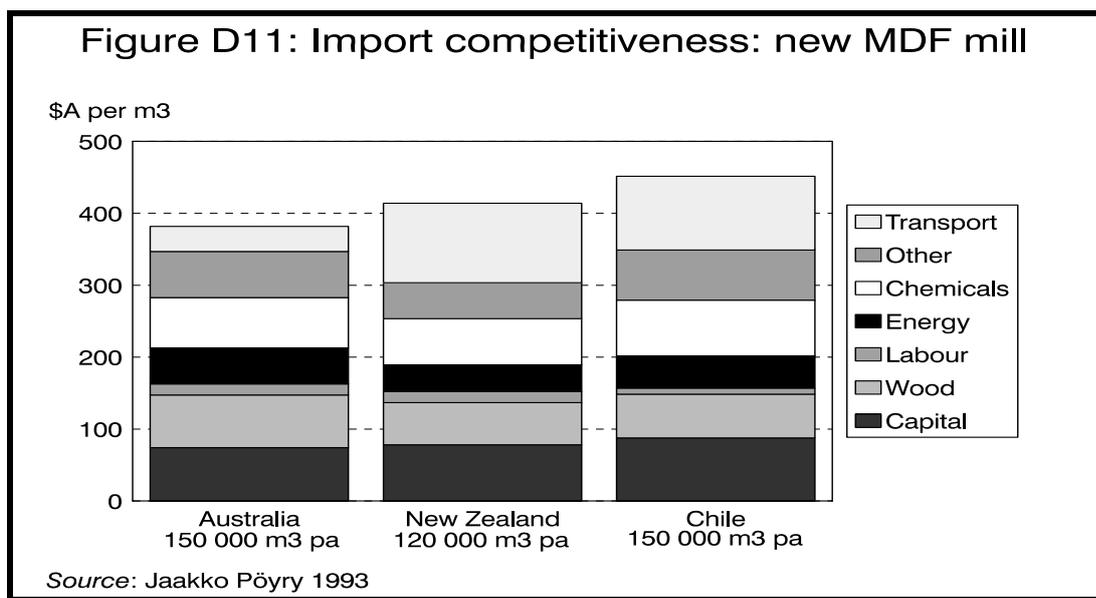


## D.6 Medium Density Fibreboard (MDF)

The study assumes that a hypothetical new mill in Australia would have a world scale capacity of 150 000 m<sup>3</sup> pa. Existing Australian MDF mills are fairly new and of relatively large scale (up to 140 000 m<sup>3</sup> pa), so only limited gains from scale would be expected from a move to larger capacity plant. The raw material for the Australian plant is deemed to come totally from thinnings, and the mill is assumed to benefit from being located adjacent to an existing board plant or sawmill.

### Import competitiveness

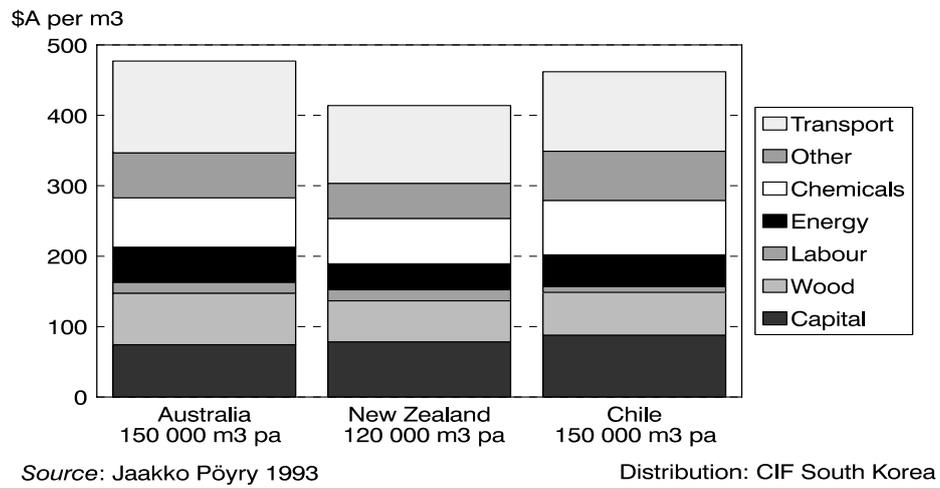
The study suggests that a new Australian mill would have a cost advantage over new mills in New Zealand and Chile (see Figure D.11). This cost advantage arises from the effect of transport costs on imports. In terms of production costs, a new Australian mill is estimated to be at a competitive disadvantage against both New Zealand and Chile. Compared to New Zealand — the lowest cost supplier — the main areas of disadvantage for an Australian mill were assessed to be higher wood and energy costs.



### Export competitiveness

In export markets, the study estimated that a new Australian mill would be less competitive than a New Zealand operation — with a 15 per cent cost disadvantage — and slightly less competitive than a new Chilean mill (see Figure D.12).

Figure D12: Export competitiveness: new MDF mill





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## **APPENDIX E: COMPETITIVENESS OF PAPER PRODUCTS**

This appendix presents additional information on the competitiveness of Australia's pulp and paper industry. The products discussed are hardwood kraft pulp, newsprint, woodfree printing and writing papers and light weight coated paper.

### **E.1 Hardwood kraft pulp**

Currently, all hardwood kraft pulp mills in Australia are integrated with paper making operations. Hence, relatively little recent information is available about the competitiveness of pulp production. As reported in Chapter 5, the Simons (1990a) study assessed that a new hardwood kraft pulp mill in Australia would be slightly less competitive (though not uncompetitive) than new mills of the same capacity in Brazil, Canada, Chile and the United States.

### **E.2 Newsprint**

Newsprint is currently produced at ANM's Albury and Boyer mills. As noted in Chapter 5, in 1988 the millgate cash costs of ANM's Albury mill were in the third quartile of all newsprint mills surveyed. Millgate costs at the mid point of the third quartile were about 15 per cent higher than costs at the mid point of the first quartile in 1988. At that time, ANM's older and smaller capacity Boyer mill was almost the highest cost mill in the survey.

Following restructuring, the 1992 survey ranked the Albury and Boyer mills in the second and third quartiles respectively. In 1992, millgate costs corresponding to the mid point of the second and third quartile were around 15 and 20 per cent, respectively, higher than costs at the mid point of the first quartile.

The company said that, since late 1992, the cost competitiveness of the Albury mill has been enhanced by renegotiated wood and electricity contracts, and that the position of both mills has been further improved by the depreciation in the Australian dollar. Additional improvements in competitiveness are expected at the company's Albury mill following the commissioning of its recycled fibre plant.

According to ANM, recent gains in labour productivity have been significant — work practices now approach world best practice and “further substantial gains in labour productivity are not likely to be achieved”. Since 1985, company employment has declined by over 50 per cent, while output has increased by 17.5 per cent. ANM stated that the greatest potential for further reducing input costs is in the areas of wood and transport costs.

Table E.1 shows a comparison of average wood stumpage costs for a number of competing countries provided by ANM. The data for Australia, based on the royalties ANM pays for supplies to its Albury mill, shows it to be at a significant cost disadvantage compared to the other countries listed. Royalty charges of zero recorded for the US and Canada may be deceiving if taken at face value. Royalties may be low because the data relate to timber residues rather than standing timber. More generally, however, it is millgate wood costs that matter. After taking into account logging and transport costs, a ranking of millgate wood costs may be quite different than the data on royalties suggests.

**Table E.1: Average stumpage costs**  
(\$A per tonne)

<i>Country</i>	<i>Average stumpage costs</i>
Australia	9.00
Chile	7.50
New Zealand	2.00
USA	0.00
Canada	0.00

*Source: ANM (sub 45, p. 11)*

The other area of cost disadvantage identified by ANM is transport. Based on ANM data, Table E.2 indicates that it is cheaper to ship newsprint into Perth from South Africa than from Tasmania, and cheaper from New Zealand to Brisbane than by rail from Albury. Thus, in some domestic markets,

**Table E.2: Freight cost of 1 tonne of newsprint delivered to Perth and Brisbane**

	<i>Destination</i>	
	<i>Perth</i>	<i>Brisbane</i>
ANM Albury (NSW) — Rail	160	110
ANM Boyer (Tas) — Coastal shipping	130	140
Canada (Vancouver)	190	190
New Zealand	140	80
South Africa	103	190

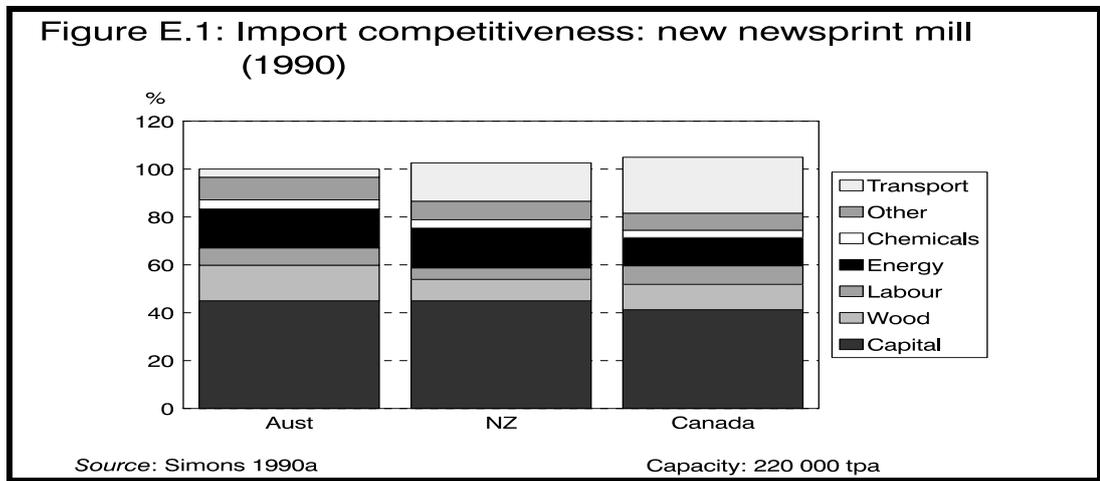
*Source: ANM (sub. 45, p. 20)*

the high cost of internal transport negates the natural protection local producers would normally expect to enjoy.

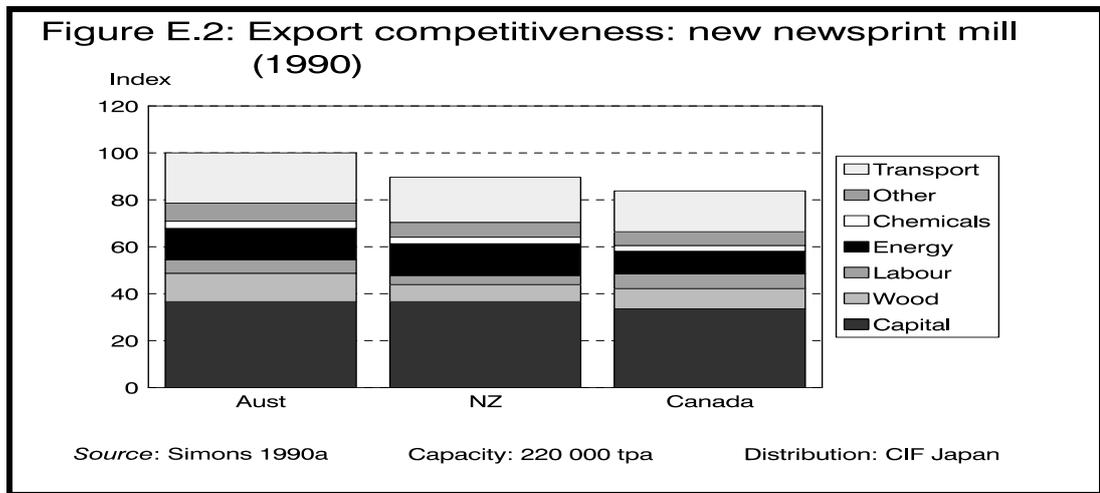
### Competitiveness of new plant

The competitiveness of a greenfield newsprint plant in Australia and competing countries was estimated by Simons (1990a). The analysis was based on a thermo-chemical pulp mill which was integrated with a newsprint machine. Based on a capacity of 220 000 tonnes per annum, the study indicated that Australia was the most competitive supplier of newsprint to the domestic market, followed very closely by New Zealand and Canada (see Figure E.1).

The analysis illustrates the importance of natural protection (in the form of transport costs) in giving Australia its competitive edge. Manufacturing costs were lower in both New Zealand and Canada yet, after transport costs were taken into account, the landed costs were slightly higher. The main areas of Australia's disadvantage were reported to be in wood and energy costs.



Transport costs disadvantage Australia in export markets. In supplying Japan, both New Zealand and Canada were found to be more competitive than Australia (see Figure E.2).



### E.3 Woodfree printing and writing paper

Woodfree printing and writing papers are high quality papers based on chemical pulp. Some woodfree paper grades, for example cospaper, are commodity papers, with price playing a leading role in determining competitiveness. Many woodfree papers, however, continue to be regarded as specialty papers. For these products, client service, delivery times and other non-price factors are important elements in determining competitiveness.

#### *Competitiveness of existing plant*

Woodfree papers are now only manufactured in Australia by APM. The company produces cospaper at its Maryvale plant and the former APPM plant at Burnie, and specialty grade papers at the Shoalhaven and Wesley Vale mills (using woodfree paper from Burnie).

As reported in Chapter 5, APM's Maryvale operations are at a slight cost disadvantage compared to some overseas mills. According to APM, this cost disadvantage places it in the second quartile in terms of cost competitiveness in domestic markets and in the third quartile in international markets. It is generally accepted that a mill needs to be in the first quartile to be internationally competitive.

Table E.3 shows a breakdown of domestic cospaper production costs and a comparison with best practice competitors supplied by APM for its Maryvale operations. The data suggest that Australia is at a competitive disadvantage in nearly all areas of production costs. However, these data alone do not give a true picture of Australia's international competitiveness, as no single producer is able to achieve best practice in all areas.

**Table E.3: Cost comparison with best practice competitors**  
(Index: Australia = 100)

<i>Cost</i>	<i>Best practice<sup>a</sup></i>
Fibre	62-65
Energy	62-92
Chemicals	62-65
Packaging materials	40-60
Packaging conversion	54-59
Direct conversion	94-134
Indirect costs	28-64
Depreciation	95-174
Distribution	63-75
<b>Average of all costs</b>	<b>61-75</b>

<sup>a</sup> International costs as a percentage of Australian costs.

Source: APM (sub. 36, p.48)

APM estimates that it must reduce its costs at Maryvale by at least 10 per cent to be in the lowest quartile in terms of domestic market competitiveness. The company expects that, through continued investment to increase capacity, it can

become one of the world's lowest cost copypaper producers into the domestic market and be export competitive in Asian markets.

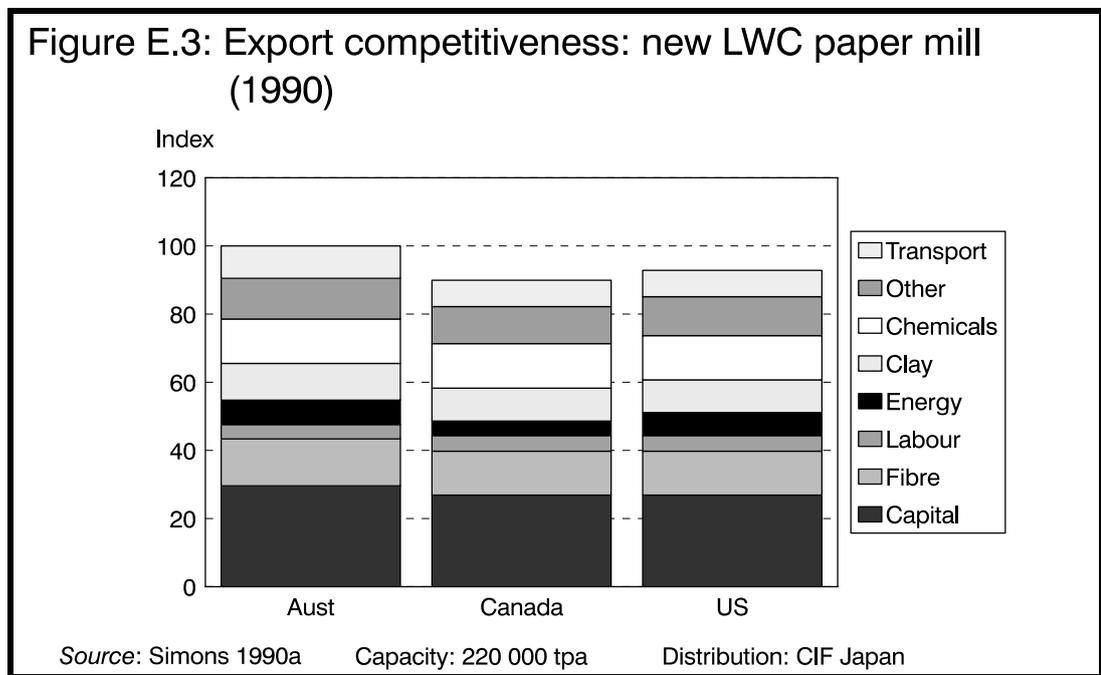
#### E.4 Light weight coated papers

##### *Competitiveness of existing plant*

Light weight coated (LWC) paper is only produced in Australia at the Wesley Vale mill formerly owned by APPM. The Commission does not have any cost data to compare the competitiveness of existing plant. However, the market share held by locally produced LWC paper has fallen in the face of increased competition from European and Scandinavian producers, despite initiatives to improve competitiveness. For example, APPM stated that labour productivity had improved from eight employees per 1000 tonnes of paper produced in 1984–85 to around five in 1991–92.

##### *Competitiveness of new plant*

Figure E.3 shows the export competitiveness of a new, world scale (220 000 tpa) LWC paper machine integrated with a chemi-thermomechanical pulp mill as reported in the Simons (1990a) study. The delivered cost of Australian produced LWC paper into Japan was estimated to be 5–10 per cent higher than Canada (the lowest cost producer) and the United States.





## APPENDIX F: AUSTRALIA'S FOREST RESOURCE

Growth of Australia's forest products industries will only be possible if a sufficient wood supply is available. Furthermore, the demand for wood resources is likely to be greatest for large, standardised supplies in order to facilitate the development of larger scale automated plants. Fortunately, there is a growing plantation estate in Australia which will provide increasing wood supplies in the future. However, the increasing availability of wood from plantations is likely to be offset, to some extent, by reduced supplies from native forests.

This appendix reviews Australia's forest resources. Consideration is given to wood supply from native forests and plantations, recent trends in plantation establishment, supply flows from private and public sources, and expectations of the future availability of wood supplies.

### F.1 Current stocks of wood

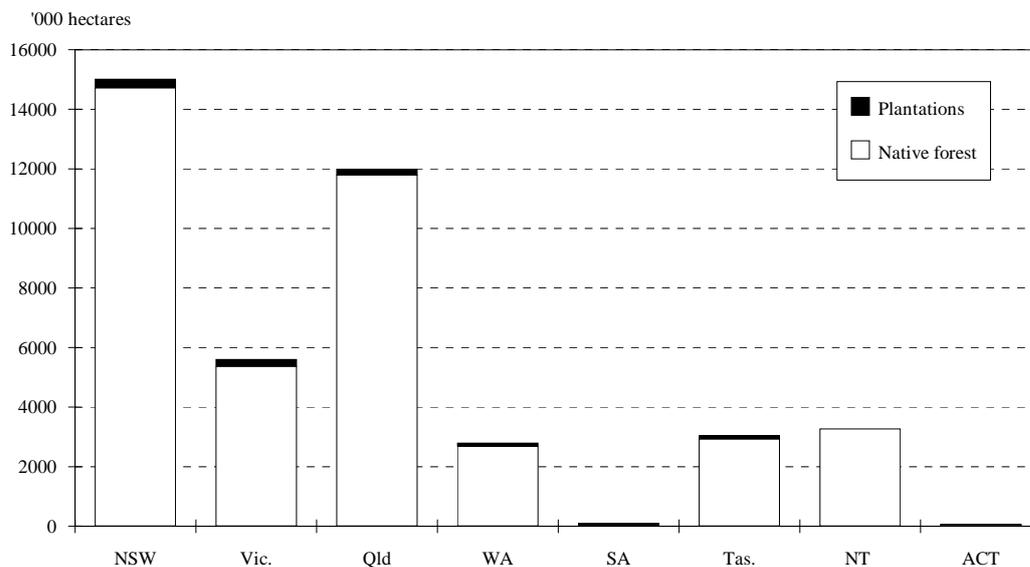
Just over 5 per cent of Australia's total land mass of 768 million hectares is covered by native forests and plantations. Native forests comprise over 97 per cent (40.8 million hectares) of Australia's forest resource base, with almost three-quarters of it under public ownership (see Table F.1). There are large areas of native forest in all states and territories except South Australia and the Australian Capital Territory, where plantations dominate. As shown in Figure F.1, plantations represent only a small portion of the total wood area (2.5 per cent). Most plantations have been established on Crown land. Coniferous species represent 90 per cent of the plantation area.

Table F.1: Areas of wood supply, 1991

	('000 ha)	% of total forest area
<b>Native forest</b>	<b>40 818</b>	<b>97.5</b>
Crown land	29 748	71.1
Private property	11 070	26.4
<b>Plantations</b>	<b>1 046</b>	<b>2.5</b>
Crown land	734	1.8
Private property	312	0.7
Coniferous	940	2.2
Broadleaf	106	0.3
<b>Total</b>	<b>41 864</b>	<b>100.0</b>

Source: ABARE (1992b).

Figure F.1: Total wood resource area, by state and territory, 1991



Source: ABARE (1992b).

New South Wales has the largest area of native forest and plantations, totalling just over 15 million hectares. This represents about 36 per cent of Australia's total forested area (see Figure F.1). Of this 15 million hectares, less than 35 per cent is available, or potentially available, for wood production.

## F.2 Native forests

Of the 40.8 million hectares of native forest in Australia, national parks and reserves comprise 15 per cent, with the remainder (35 million hectares) being potentially available for timber production. However, several factors reduce the area actually available for commercial wood production. For example, much of Australia's tropical eucalypt and paperbark forests are not harvestable on a commercial basis due to the poor quality of the timber, the dispersed nature of the resource and its remoteness. Timber quality and resource accessibility also constrain the availability of the other forest types set out in Table F.2. Taking these factors into consideration, the actual area available for commercial wood production would be substantially less than 35 million hectares.

Native eucalypt forests are divided into three categories based on productivity. In 1991, 16.3 million hectares (40 per cent of the total forest area) were classified into the highest two productivity categories, class I and class II. Almost half of the class I eucalypt forest is situated in New South Wales (see

Table F.2). Class III eucalypt forests are of limited suitability for wood production.

As shown in Table F.2, Tasmania has the largest proportion of native forest in the highest eucalypt productivity class. Almost 16 per cent of the native forest in Tasmania is classified as class I eucalypt forest, compared with 9.7 per cent in Victoria, 7.9 per cent in New South Wales, 6.7 per cent in Western Australia and 1.7 per cent in Queensland.

**Table F.2: Native forest areas, by forest type, 1991**

(thousands of hectares)

<i>Forest type</i>	<i>NSW</i>	<i>Vic</i>	<i>Qld</i>	<i>WA</i>	<i>SA</i>	<i>Tas</i>	<i>NT</i>	<i>ACT</i>	<i>Aust</i>
<b>Rainforest</b>	265	16	1 237	-	-	605	38	-	2 161
<b>Eucalypt</b>									
Productivity class I	1 163	521	205	181	-	459	-	-	2 529
Productivity class II	3 661	4 427	1 290	2 502	-	1 868	-	-	13 748
Productivity class III	7 937	397	3 300	-	-	-	-	51	11 685
<b>Total</b>	<b>12 761</b>	<b>5 345</b>	<b>4 795</b>	<b>2 683</b>	<b>-</b>	<b>2 327</b>	<b>-</b>	<b>51</b>	<b>27 962</b>
<b>Tropical eucalypt and paperbark</b>	-	-	4 078	-	-	-	2 450	-	6 528
<b>Cypress pine</b>	1 696	7	1 686	-	-	-	778	-	4 167
<b>Total</b>	<b>14 722</b>	<b>5 368</b>	<b>11 796</b>	<b>2 683</b>	<b>-</b>	<b>2 932</b>	<b>3 266</b>	<b>51</b>	<b>40 818</b>

*Source:* ABARE (1992b).

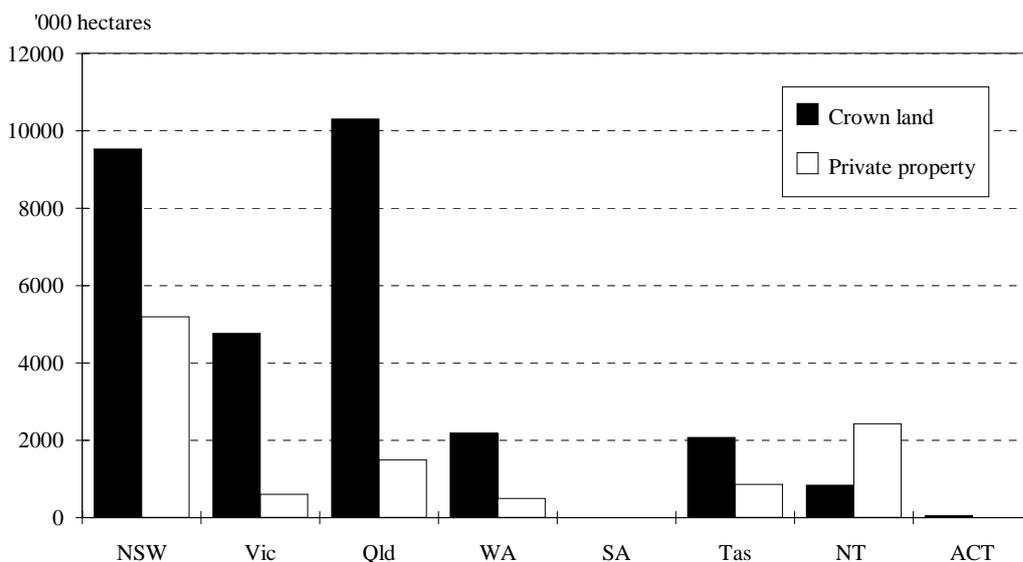
Although the Northern Territory has a larger native forest area than Tasmania (see Table F.2), only a limited amount of this resource is of commercial relevance. The native forest in the Northern Territory is dominated by tropical eucalypt, paperbark and cypress pine, which are of little or no commercial value due to technical and economic constraints. The remaining rainforest area is primarily reserved for conservation purposes.

Since the beginning of the 1980s, an increasing amount of native forest has been withdrawn from wood production and been redesignated as national parks and reserves. These areas increased from 3.8 million hectares in 1980 to 6.2 million hectares in 1991.

While the increasing area of national parks and reserves reduces the actual area available for wood production, the amount of land held by private native forest owners also impacts on the available harvesting area. Approximately 27 per cent of Australia's native forests are privately owned (see Figure F.2). Of this

11 million hectares, only a small number of privately owned native forests are managed predominantly for commercial wood production. Despite this, the Australian Forestry Council (1989) estimates that private forests have, for several decades, supplied up to 30 per cent of total wood removals from native forests.

Figure F.2: Native forests, by ownership and state, 1991



Note: South Australia has only a very small area of native forest which is not used commercially.

Source: ABARE (1992b).

Public ownership of the remaining 73 per cent of native forests is divided into three categories according to forest use (Table F.3):

- Category 1 — state forests which are managed for multiple uses, but are primarily reserved for wood production;
- Category 2 — crown land, either vacant or occupied under lease, on which wood production is carried out, but where the land is not reserved or managed specifically for that purpose; and
- Category 3 — conservation reserves where wood production is excluded, such as national parks.

State forests represent 30 per cent of Australia's native forests, while other crown land and conservation reserves represent 28 per cent and 15 per cent, respectively.

Within publicly owned native forests, about 21 per cent is reserved for non-wood production uses, leaving 79 per cent (23.5 million hectares) potentially available for logging. However, the RAC (1992b) survey results showed that most timber production occurs within state forests (category 1 public forest). The AFC (1989) and RAC (1992b) have estimated that of the 12.3 million hectares of state forest available, only around 7 million hectares can be used for the “effective production of wood within a multiple use framework” (AFC 1989, p. 4).

**Table F.3: Native forest areas, by type of ownership, 1991**

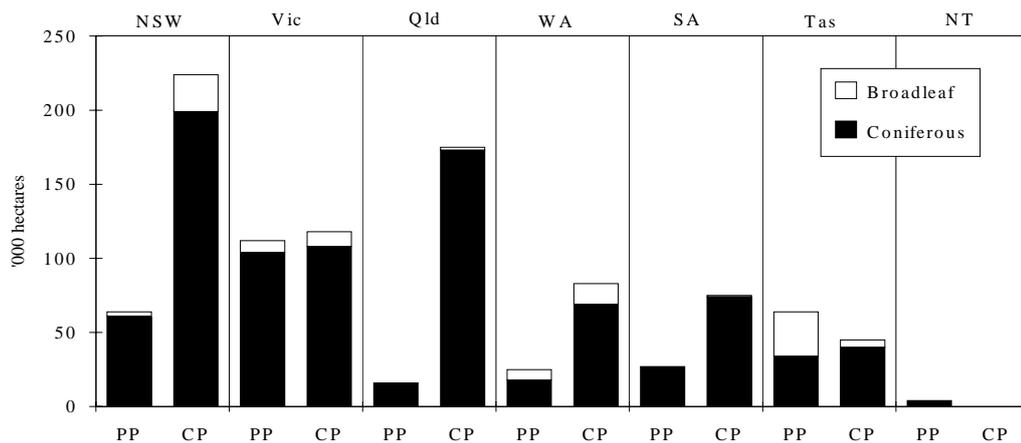
	(‘000 ha)	% of total
<b>Public</b>	<b>29 748</b>	<b>72.9</b>
Category 1 <sup>a</sup>	12 290	30.1
Category 2 <sup>b</sup>	11 229	27.5
Category 3 <sup>c</sup>	6 229	15.3
<b>Private</b>	<b>11 070</b>	<b>27.1</b>
<b>Total</b>	<b>40 818</b>	<b>100.0</b>

a Land forest management for multiple use, including wood production.  
 b Crown land, either vacant or occupied under lease, on which wood harvesting is carried out under government control, but not reserved or managed for that purpose.  
 c Land on which wood production is excluded.  
 Source: ABARE (1992b).

### F.3 Plantations

Australia has over one million hectares of timber plantations, of which 734 000 hectares (70 per cent) are publicly owned and 940 000 hectares (90 per cent) are

**Figure F.3: Plantations, by species, ownership and state<sup>a</sup>, 1991**



Note: PP — Private Plantation, CP — Crown Plantation.  
 a The ACT has 14 300 hectares of crown coniferous plantation.  
 Source: ABARE (1992b).

coniferous. Although plantations represent less than 3 per cent of the total forest area, 45 per cent of sawlogs harvested in Australia are supplied from coniferous plantations.

Since 1980, the total area of plantation estate has increased by 37 per cent, from less than 800 000 hectares to just over 1 million hectares. Although there has been a rise in private sector interest in plantation investment, the share of the national plantation estate owned by the private sector has been relatively stable. As in 1980, private plantations in 1991 represented approximately 30 per cent of the total plantation area.

Victoria has the largest private plantation estate in Australia. As shown in Figure F.3, around half of all plantations, and half of Australia's softwood plantations, are located in New South Wales and Victoria.

The structure of Tasmania's plantation estate differs significantly from that of other states (see Figure F.3). Tasmania is the only state in which there are more private than public plantations, and where the area of private coniferous and private broadleaf plantations are roughly equal. The extensive broadleaf plantation estate located in Tasmania accounts for around one-third of the total area of Australia's broadleaf plantations.

**Table F.4: Plantation areas, by ownership and species, 1991**

	(hectares)		
	<i>Public</i>	<i>Private</i>	<i>Total</i>
<b>Coniferous</b>			
<i>Pinus radiata</i>	453 546	241 819	694 365
<i>Pinus elliotti</i>	69 175	15 005	84 180
<i>Pinus pinaster</i>	31 478	476	31 954
<i>Pinus caribaea</i>	52 717	2 811	55 528
<i>Araucaria spp.</i>	47 060	114	47 174
Other	22 141	3 165	25 306
<b>Total</b>	<b>676 117</b>	<b>263 390</b>	<b>939 507</b>
<b>Broadleaved</b>			
<i>Eucalyptus spp.</i>	57 589	44 074	101 663
<i>Populus spp.</i>	15	1 736	1 751
Other	290	2 671	2 961
<b>Total</b>	<b>57 894</b>	<b>48 481</b>	<b>106 375</b>
<b>Total</b>	<b>734 011</b>	<b>311 871</b>	<b>1 045 882</b>

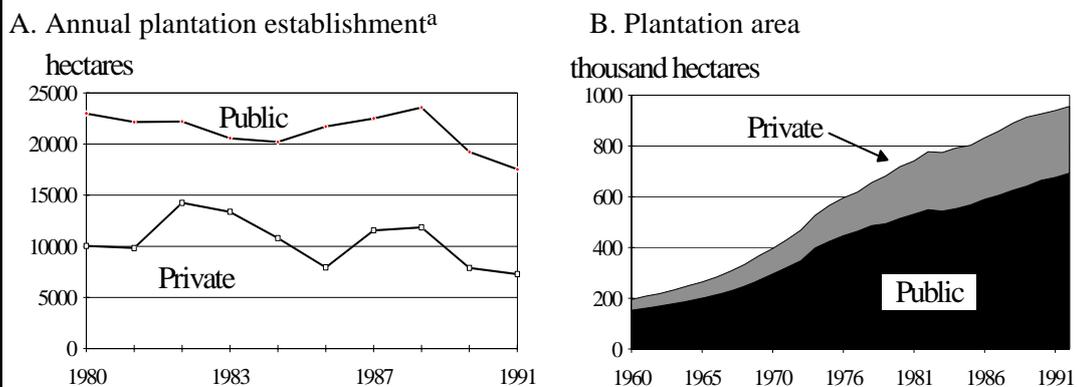
Source: ABARE (1992b).

While *Pinus radiata* is the major species grown in Australian plantations, significant areas of publicly owned plantations have been sown to other coniferous species. Private plantation owners have not diversified to the same extent (see Table F.4). *Pinus radiata* comprises 43 per cent of the total public and private plantation area and two-thirds of coniferous plantations.

The total area of *Pinus radiata* plantations is estimated to be nearly 700 000 hectares, two-thirds of which are publicly owned. Broadleaf plantations are almost entirely comprised of eucalypts.

The 1960s and 1970s was a period in which the establishment of new public and private coniferous plantations increased rapidly (see Figure F.4B). However, since 1980 the annual rate of new coniferous plantation establishment has been declining, as mature plantations reach the end of their rotation and are harvested (see Figure F.4A). These plantations are being replanted as a second generation crop, and as such are not included in the annual establishment figures. Between 1980 and 1989, the growth in the area of coniferous plantations averaged 33 000 hectares per year. Coniferous plantation establishment in 1990 and 1991 represented 2.5 per cent of the total coniferous plantation area and averaged 26 000 hectares per year.

Figure F.4: Coniferous plantations, by ownership, 1980–1991

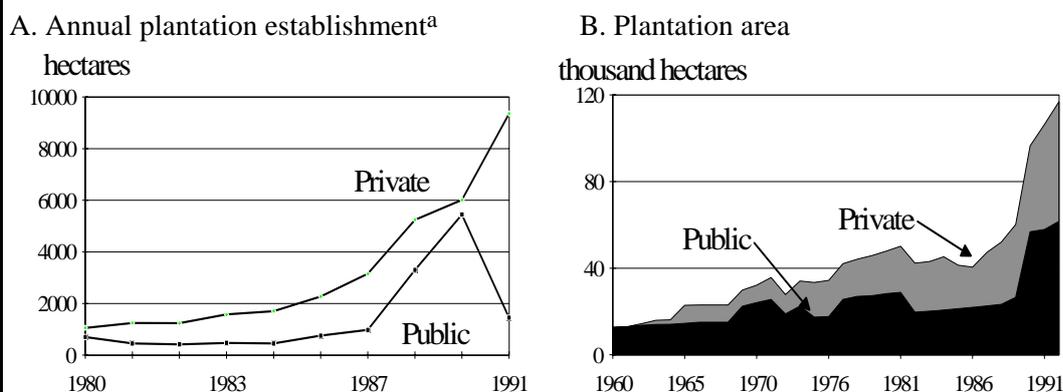


<sup>a</sup> Plantation establishment refers to the increase in the area covered by plantations. It does not include the area of harvested plantations which are replanted. Therefore, a fall does not indicate that the area covered by plantations has declined, rather, it indicates that the rate of increase has declined.

Source: ABARE (1992b).

The broadleaf plantation estate is fairly evenly divided between public and private ownership (see Figure F.5B). The small scale of broadleaf estate in Australia is a reflection of the relative abundance of such species in native forests. However, uncertainty about future wood supplies from native forests, and the benefits arising from plantation grown supplies (such as proximity to mill and quality control), have led to an accelerated growth in the area of broadleaf plantations, particularly by the private sector (see Figure F.5A). For example, between 1980 and 1989, the average establishment rate of broadleaf plantations was 3 376 hectares per year. This increased to an average annual rate of 11 131 hectares (representing 11.5 per cent of the broadleaf plantation estate) in 1990 and 1991.

Figure F.5: Broadleaf plantations, by ownership, 1980–1991



a Plantation establishment refers to the increase in the area covered by plantations. It does not include the area of harvested plantations which are replanted. Therefore, a fall does not indicate that the area covered by plantations has declined, rather, it indicates that the rate of increase has declined.

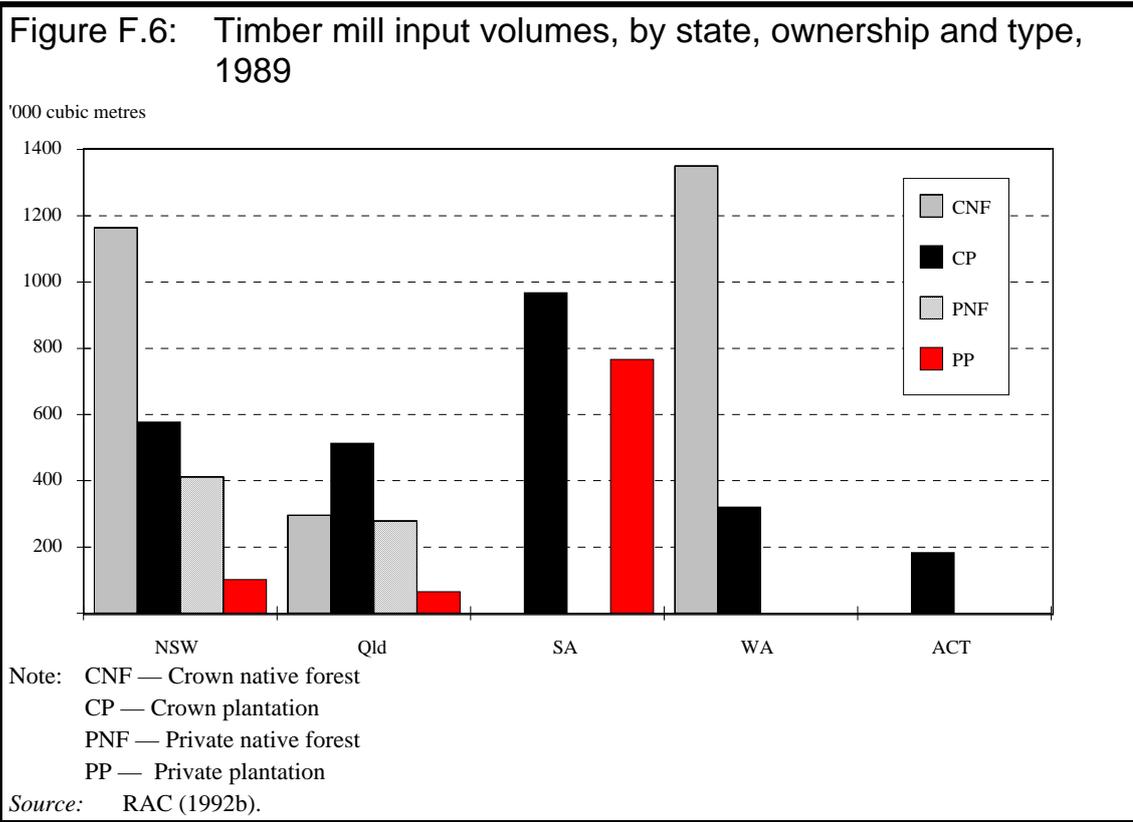
Source: ABARE (1992b).

The steep increase and subsequent fall in the area of broadleaf plantations established annually by the public sector (seen in Figure F.5A) largely reflects the increase in Western Australia's public broadleaf plantation establishment between 1987 and 1990. Further increases in broadleaf plantation establishment are expected following Japanese and Korean agreements to establish 30 000 hectares in Western Australia over the next decade (see Box 6.2). A number of other producers have also signalled their intentions to increase plantings as a means of reducing reliance on wood supplied by government agencies.

#### F.4 Flow of wood supplies

Detailed information on the removal of wood from private native forests and plantations and public native forests and plantations is not available. However, while important components of forest removals, such as pulpwood and woodchips, cannot be identified by their source, more general information is available. This includes information on specific supply flows from timber mill inputs and saw, veneer and sleeper log removals.

The timber mill input volumes, presented in Figure F.6, indicate the volumes of timber currently supplied from public native forests and plantations and private native forests and plantations. These data do not include removals of woodchips, pulplogs or wood used by the pulp and paper sector. Information on the flow of timber supplies from public native forests and plantations and private native forests and plantations is not available for Tasmania or Victoria.



In New South Wales, the crown native forest estate is approximately 9.5 million hectares, whereas in Western Australia, crown native forest covers just over 2 million hectares. Despite the significantly larger resource located in New South Wales, Western Australia's crown native forests supply 16 per cent more wood to timber mills than New South Wales.

Similarly, in Queensland where the crown native forest estate is over 10 million hectares, only a relatively small amount of wood is supplied to timber mills. Queensland's crown plantations are the major source of timber mill inputs.

In Western Australia, crown native forests supply 81 per cent of the volume of timber mill inputs for that state. The proportion of wood supplied by crown native forests in New South Wales and Queensland is 52 per cent and 26 per cent, respectively.

The timber mill input data, in Figure F.6, do not show the trend in removals from various sources over time. However, information on the removal of saw, veneer and sleeper logs does provide an indication of the flow of supplies from private and public sources.

Private native forests and plantations in Australia supply one-quarter of saw, veneer and sleeper logs. Between 1979 and 1991, supplies from private sources

increased by 8 per cent, while removals of equivalent logs from public forests and plantations fell by 17 per cent over the same period.

**Table F.5: Saw, veneer and sleeper log annual average growth rates, by ownership and state, 1979-1991**

<i>State</i>	<i>Source</i>	
	<i>Crown</i>	<i>Private</i>
<b>TOTAL</b>	<b>-0.6</b>	<b>1.2</b>
NSW	-1.8	-4.8
Vic	-0.1	9.1
Qld	2.7	1.8
WA	-0.1	-4.6
SA	-0.8	4.3
Tas	-2.4	7.1
NT	-	-
ACT	-3.7	-

Source: ABARE (1992b).

In the last decade, the volume of saw, veneer and sleeper logs extracted from private land increased steadily, reaching a level of 1.9 million cubic metres in 1990–91. Between 1979 and 1991, the average annual rate of growth in private supplies was 1.2 per cent. Victoria and Tasmania recorded the largest average annual growth rate of 9.1 per cent and 7.1 per cent, respectively, whereas both New South Wales and Western Australia experienced a decline of almost 5 per cent per year (see Table F.5).

In 1990–91, the supply of saw, veneer and sleeper logs from crown

land was 5.7 million cubic metres. Between 1979 to 1991, the volume of these logs supplied from crown land had declined by approximately 0.6 per cent, annually. Of all the states, only Queensland recorded an average annual growth increase in the rate of removals from crown land.

Total removals of saw, veneer and sleeper logs in Australia, from both public and private sources, revealed a slight overall decline of 0.2 per cent per annum, over the period 1979 to 1991.

## F.5 Future wood availability

Between 1974 and 1990 there were several major studies on future wood availability.<sup>1</sup> Projections by the Australian Forestry Council (AFC 1989) have been used as the basis for the majority of recent studies.

The projections of future wood availability are detailed in Table F.6. These projections are based on three main assumptions (Hossain et al. 1989):

- the current methods, rates and economics of harvesting and utilisation are unchanged;
- planned rates of plantation establishment are realised; and

<sup>1</sup> For more details see RAC (1992a), Volume 2b.

- no further large tracts of native forests will be withdrawn from wood production and management.

<i>Forest type</i>	<i>1990</i>	<i>2000</i>	<i>2010</i>	<i>2020</i>	<i>2030</i>	<i>% change</i>
<b>Softwood plantation</b>						
Sawlogs	3 759	6 472	8 284	9 354	9 422	150.7
Other logs	4 953	5 076	5 159	5 393	5 404	9.1
<b>Native softwood</b>						
Sawlogs	352	334	324	321	320	-9.1
<b>Total softwood</b>						
Sawlogs	4 111	6 806	8 608	9 675	9 742	140.0
<b>Native hardwood</b>						
Sawlogs	4 061	3 527	3 514	3 626	3 494	-14.0
Other logs	8 601	8 649	9 179	8 951	8 750	1.7
Total sawlogs	8 172	10 333	12 122	13 301	13 236	62.0
Total other logs	13 554	13 725	14 338	14 344	14 154	4.4
Total all logs	21 726	24 058	26 460	27 645	27 390	26.1
<b>Pulpwood (incl. residues)</b>						
	16 278	17 168	18 378	18 777	18 565	14.1
<i>Source:</i> RAC (1992b).						

In some quarters, there is concern that past planting rates will not be maintained as a result of the risky long term nature of plantation investment and changes in government policy in areas such as micro-economic reform, taxation and administrative structures. However, in contrast to this view, some consider there is a strong possibility of a significant increase in plantation rates, as producers seek greater control over their sources and supplies of wood.

Over the period 1990 to 2030, total log availability is expected to increase by almost 26 per cent. However, supplies of native hardwood and softwood sawlogs are forecast to decline. During the next 40 years, native hardwood sawlog supplies are expected to decline by 14 per cent, from 4.1 million cubic metres to 3.5 million cubic metres, while a fall in supply of 9 per cent (from 352 000 cubic metres to 320 000 cubic metres) is anticipated for native softwood sawlogs.

The largest increase in supply is expected to be in plantation softwood sawlogs, which are forecast to rise by 151 per cent, from 3.8 million cubic metres to 9.4 million cubic metres. Supplies of plantation softwood are expected to stabilise in 2030.

The projected availability of pulpwood is forecast to remain relatively constant, particularly after 2010 when total sawlog availability also begins to stabilise.

The AFC projections do not give forecasts for hardwood plantation removals. As hardwood plantations are predominantly owned by the private sector, such information is commercially sensitive, and is not publicly available.

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# APPENDIX G: QUANTIFYING THE EFFECTS OF IMPEDIMENTS IN THE FOREST PRODUCTS INDUSTRIES

## G.1 Factors external to the industry

### Resource security

A persistent theme in the submissions to this inquiry has been the importance of resource security.

The IC should not underestimate the depth of feeling in this company, in the wake of the Wesley Vale Pulpmill Project and the Douglas-Apsley Roding issue, with regard to 'sovereign risk' (APPM, sub. 38, p. 68).

Participants presented a range of views on the ways in which the lack of resource security has been affecting the decisions of the banks which finance investments in the industry. One participant cites banking sources as noting that the Wesley Vale incident has added about half a percentage point to the cost of capital for investment in Australian forestry projects or Tasmanian projects in general (Graham, sub. 3, p. 2). This suggests that sovereign risk has added somewhat to investment costs. On the other hand, NAFI (transcript, p. 385) suggests that sovereign risk has imposed a shadow price on the cost of capital that is prohibitive.

We have been advised by international bankers that until that position is resolved they are not prepared to fund forest industry development in this country.

However the lack of resource security may have been affecting the decisions of financiers, the overwhelming evidence from producers is that it is having a marked impact on their own willingness to expand. In some market areas, particularly in hardwood processing, it has also been stifling the investment required just to maintain capacity.

In the present environment, the native hardwood industry in Australia is characterised by low levels of investment, minimal value-added processing, diminishing competitiveness and a failure to restructure (ESD 1991, p. 119).

The main impact of resource insecurity has therefore been to prevent expansion in industry capacity that may otherwise take place.

It is, nevertheless, difficult to isolate the potential future output forgone through lack of resource security, because this is just one of several factors affecting producers' decisions. The PPMFA survey cited in Chapter 10 identifies \$7 billion of new investments under consideration in the paper industry between 1992 and 2000. While it is unlikely that market developments would allow all of these to go ahead at once, many of the major producers gave evidence to this inquiry on their future investment plans. They noted that while secure access to the wood resource would be necessary for them to go ahead, other factors such as exchange rate movements and developments in other producing countries would also be important.

One way of quantifying the impact of achieving resource security is to identify potential investments for which resource security is a major factor, while recognising that it is unlikely to be the only one. One view of potential developments in the industry is that developed by the RAC (1992a, pp. L6–31). It describes its “current trends” scenario as one that assumes past trends continue at more or less the same rate. The investment profile contains projects similar to some that have been described by participants to this inquiry as being contingent on resource security. The RAC evaluated the implications of these investments for employment, value added and trade within the forest products industry. However, the RAC's analysis does not give an estimate of the benefits or costs of these investments to Australia as a whole.

The economy-wide cost of forgoing potential developments in the forest products industry through lack of resource security can be assessed using the ORANI model of the Australian economy. The model used in this appendix is described in detail at the end. The model is used to assess the impact were resource security and all other necessary conditions improved to the point where the following potential developments would go ahead between now and 2000:

- expansion of a pulp mill producing an additional 250 000 tonnes of pulp a year;
- establishment of a lightweight coated paper mill producing 150 000 to 200 000 tonnes of paper a year;
- expansion of a newsprint mill producing an additional 250 000 tonnes of paper a year;
- increase in Australian softwood sawntimber's share of the domestic softwood market by 5 per cent; and
- output expansion of \$50 million per year in hardwood sawntimber in Victoria.

The first three developments are those which the RAC “current trends” scenario identified as being possible in the pulp and paper industry up until the year 2000. That scenario also identifies additional developments in pulp and paper to the year 2030. It is likely that over a 40 year horizon at least some of these new developments can be accommodated merely by general economic growth. The problem for the pulp and paper industry appears to be, however, that over a shorter horizon its development plans involve output expansions in excess of the growth expected in existing markets, necessitating increases in domestic and/or export market share. Attention here is therefore focussed on proposed developments over a shorter 10 year horizon, in the normal ORANI environment in which output expansions need to be accommodated primarily by increases in competitiveness rather than by general economic growth.

The developments in softwood sawmilling listed above are those offered by NAFI in its submission, and those in hardwood sawmilling are from Forestry Technical Services (1992), based on NAFI’s assessment that the RAC’s projections for the sawmilling industry are “conservative”. Although softwood sawmilling is primarily plantation-based it is not immune from resource security concerns.

The rights of plantation growers to establish, maintain and eventually harvest their crops are subject to various pressures and restrictions that do not apply to other primary producers. Many plantation owners are not sure that they will be allowed to harvest their trees or replace them at the end of the rotation. (APM, sub. 36, p. 13)

Based on ABARE (1992c) production data, the first three developments imply a 25 per cent increase in pulp output, a 62 per cent increase in the output of printing and writing paper and a 62 per cent increase in the output of newsprint. These developments would in turn contribute to an average 28.4 per cent increase in the output of the pulp, paper and paperboard industry, the industry aggregate that is included in the ORANI model.

Again based on ABARE (1992c) production data, the developments in softwood sawntimber imply a 7.9 per cent increase in the output of softwood sawntimber, while the developments in hardwood sawntimber imply a 7.4 per cent increase in hardwood sawntimber production. Overall, this is estimated to contribute a 7.7 per cent increase in the output of the model’s sawmilling industry (which is defined exclusive of export woodchip production). The possible impact of improved resource security is therefore modelled as a 7.7 per cent increase in sawmill production and a 28.4 per cent increase in production of pulp, paper and paperboard.

This output expansion is assumed to be achieved by a reduction in the cost of capital for investment purposes to these industries. The model results indicate that total cost reductions in excess of 10 per cent would be required to

encourage the import replacement and export expansion necessary to accommodate output expansions of this order. If, in practice, this were achieved by a reduction in capital costs alone, it would imply the industries were driven into loss. This is unlikely to be accepted by international financiers, even if resource security is granted. The results therefore confirm that resource security will be just one factor in determining the viability of such expansion plans. Cost reductions on a broader front or improvements in output quantity and service will also be required.

In reality, the cost reductions may come about not just from the industries' ability to obtain cheaper capital from international financiers, but also by taking advantage of the scale economies provided by new world-scale plant. Achievable cost reductions may also need to be accompanied by rationalisation in the forest products industries. These issues are taken up again later in the appendix.

Nevertheless, the results suggest that the lack of resource security in the forest products industries could be imposing a significant economy-wide cost. Lack of resource security is one factor preventing industry expansion that could potentially be worth an additional 0.3 per cent or around \$1.2 billion per year in real GDP.

### Corporatisation of forestry agencies

As discussed in Chapter 6, most states are introducing measures to place their forestry agencies on a more commercial footing, mainly in order to improve efficiency. For the purpose of this analysis, corporatisation of forestry agencies is assumed to have the following impacts:

**Table G.1: Estimated long-run effects of forest products industries expansion contingent on resource security (per cent change)**

Real GDP	0.3
Real consumption	0.2
Real investment	1.0
Export volumes	0.1
Import volumes	0.2
<b>Output<sup>a</sup></b>	
Sawmill products	7.7
Pulp, paper and paperboard	28.4
<b>Production costs</b>	
Sawmill products	-11.8
Pulp, paper and paperboard	-18.7
<b>Imports</b>	
Sawmill products	-15.0
Pulp, paper and paperboard	-4.5
<b>Exports<sup>b</sup></b>	
Sawmill products	68.5
Pulp, paper and paperboard	342.6

<sup>a</sup> By assumption

<sup>b</sup> Export projections are from a low base

Source: ORANI model projections.

- improved labour productivity in forestry and logging;
- improved forest thinning regimes, leading to better quality logs for sawmilling and veneer production; and
- improved ability of forest products industries to choose their source of log supplies, leading to savings in the cost of transporting logs to sawmills and pulpmills.

It is recognised that these impacts are somewhat speculative. Although better thinning can improve log quality it is also likely to raise costs. Whether it proves to be cost effective will ultimately depend on the price that can be achieved for the sawlogs and veneer logs, especially relative to pulplogs. A more commercial approach to forestry and the ability of forest products industries to choose their source of log supply will itself encourage greater competitiveness and flexibility in log pricing, and greater responsiveness of log supply to relative price signals. Without a detailed forecast of future price trends, however, it is difficult to establish that corporatisation would lead to more or better veneer and saw logs. The approach here is to examine the results in the event that it were undertaken, given current prices but ignoring the possible increase in costs.

There is no information to reliably quantify any of these impacts. For illustrative purposes, projected results have been obtained for an assumed 10 per cent improvement in the productivity of labour in forestry and logging, a 10 per cent improvement in the quality of domestic logs provided to the sawntimber and veneer industries and a 10 per cent reduction in the road cost of transporting domestic logs to the sawntimber, export woodchip, veneer, and pulp, paper and paperboard industries.

Labour productivity improvements in forestry are projected to benefit all downstream producers of forest products (Table G.2). Better thinning regimes leading to better quality logs would benefit sawntimber and veneer production. To the extent that the

**Table G.2:** Illustrative long-run effects of corporatising forestry agencies (per cent change)

	<i>10 per cent labour productivity improvement in forestry</i>	<i>10 per cent improvement in quality of domestic sawlogs and veneer logs</i>
Real GDP	0.03	0.02
<b>Output</b>		
Forestry and logging	0.24	-2.04
Sawmill products	0.45	1.14
Export woodchips <sup>a</sup>	..	..
Veneers and boards	0.12	0.28
Pulp, paper and paperboard	0.59	..
Bags and containers	0.03	..
Other paper products	0.04	..

<sup>a</sup> Held fixed by assumption because of export woodchip quota

.. Between -0.005 and 0.005 per cent

Source: ORANI model projections.

thinnings found an economic use in the domestic manufacture of wood products this could also benefit pulp and paper production, although this effect has not been modelled. Finally, better quality logs would allow production in downstream industries to be supported with lower output in forestry and logging.

It was found that lower road transport costs of the magnitude examined here would contribute a negligible amount to the prospects of downstream industries, primarily because road transport costs contribute less than 15 per cent on average to the delivered cost of wood. Overall there would be net contribution to the economy as a whole in the form of an increase in real GDP.

### **Removing export woodchip quota**

The anecdotal evidence provided to this inquiry suggests that the export woodchip quota has been binding, in the sense of restricting the export of woodchips to a lower level than would be achieved in its absence. This impression is confirmed by evidence given to the RAC.

In Tasmania, pulpwood currently being wasted under the quota regime could sustain an increase in woodchip exports of at least 1 million tonnes annually above the present quota of 2.889 million tonnes. (APPM as quoted in RAC 1992a, p. 308)

The same report noted that restrictions operating in Victoria mean that 840 000 tonnes of pulpwood is left on the forest floor annually in East Gippsland which would be worth \$A65 million per annum in woodchip export earnings. Other claims were made that wood, which could be used for woodchips, was left to rot, but no estimates were supplied.

Based on ABARE (1992c) production data, 1 840 000 tonnes of additional woodchips would imply a 34 per cent expansion in export woodchip production and be worth \$142 million in export earnings. But this does not measure the *net* contribution to Australia as a whole from additional woodchip exports.

In the absence of changes elsewhere in the economy, the appropriate way to measure the net contribution to GDP from the increase in export woodchip production is to measure the increase in value added, which in this context means the increase in wages, gross operating surplus and indirect taxes paid to government. Value added has accounted for an average 39 per cent of the value of hardwood woodchip production (Appendix B), so \$142 million in additional output would generate a net contribution of around \$55 million or 0.01 per cent to GDP.

However, the economic significance of the export woodchip quota is greater than the net contribution of the woodchip export themselves. To the extent that

the pulpwood not currently being exported is a by-product of other processing activities, the export woodchip quota is likely to have been adversely affecting both the productivity (through the impact on forest regeneration) and the economic viability of those other processing activities.

### **Deregulating Tasmanian road freight**

Chapter 7 notes that most of the criticism of land transport arrangements was directed at road transport regulations in Tasmania. APPM provided examples in which transport deregulation in Tasmania could reduce the cost of transporting logs to processing facilities by about one-third. Tasmanian logging operations account for around 40 per cent of wood removals nationwide (RAC 1992a, Appendix G). If the examples cited by APPM are typical of the cost reductions available throughout Tasmania, the implied average reduction in the national cost of road transport in taking logs to Tasmanian processing facilities would be of the order of 13 per cent.

This is similar in magnitude to the assumed 10 per cent reduction in the unit road cost of transporting domestic logs to processors that was discussed in the context of corporatisation. Those results suggest that the nationwide impact of Tasmania deregulating transport for its forest products industries would be negligible. The national gains could of course be greater were the impact of Tasmanian transport deregulation on industries other than forest products also taken into account. Either way, the gains would be proportionately more significant within Tasmania itself.

### **Reform of domestic shipping**

The forest products industries are also significantly affected by the efficiency of Australia's waterfront and coastal shipping services. Continued reform would reduce the cost of supplying forest products to domestic and export markets. Reform would also reduce the cost of the forest products imported into Australia. The impact of continued reform has been modelled via labour and capital productivity improvements on the waterfront and in coastal shipping sufficient to reduce total costs in these activities by 12.5 per cent, in the middle of the 10-15 per cent range of prospective gains. The likely further reduction in shipping delays has been captured by allowing a 0.25 per cent increase in the net price received for Australia's exports and a 0.25 per cent reduction in the net price of imports. The waterfront productivity reforms and reduced shipping delays are prevented from flowing through to the mining sector, however, in recognition that mining operations in these areas are already efficient. Finally, it is recognised that if further reform of coastal shipping involves the removal of

cabotage, it is likely to lead to a loss of about 20 per cent in Australia's exports of coastal shipping services.

The projected results in Table G.3 confirm that reform of domestic water transport will benefit most forest-related industries and also add significantly to real GDP. Sawmill products is the only forest-related industry projected to lose slightly from domestic water transport reform, but recall that this industry is defined exclusive of woodchip exports. Contributing to its projected loss is the impact of cheaper sawn timber imports, with no offsetting benefit on the export side. The expansion of forest-related industries contributes somewhat to the projected 0.12 per cent or \$450 million gain in real GDP. Important contributions also accrue from the cheaper shipping and handling of iron ore, bauxite and aluminium.

**Table G.3: Estimated long-run effects of reforms in the waterfront and coastal shipping (per cent change)**

Real GDP	0.12
Real consumption	0.12
Real investment	0.26
Export volumes	0.10
Import volumes	0.31
<b>Selected industry outputs</b>	
Forestry and logging	0.11
Sawmill products	-0.02
Export woodchips <sup>a</sup>	..
Veneers and boards	0.10
Pulp, paper and paperboard	0.13
Bags and containers	0.09
Paper products nec	0.11

<sup>a</sup> Held fixed by assumption because of export woodchip quota

Source: ORANI model projections.

### Other reforms

Along with road and domestic water transport reform, participants pointed to the likely benefits for the forest products industries of reforms in rail, electricity and gas. Although there is sufficient information to quantify the likely impact of reform on the average prices of rail, electricity and gas, it is also the case that there are significant variations in the prices currently paid in different regions, by different user categories and even by individual industry users. Thus general information on the impact of reform is likely to give a misleading impression of the impact on particular users who are not currently paying an average price. In the absence of detailed information about current rail, electricity and gas costs borne by the forest products industries, it was felt that the impact of rail and electricity reforms on these users could not be reliably estimated.

## G.2 Effects of industry initiatives

The factors likely to affect the industry's own performance were discussed in detail in Chapter 10. In the short term, a range of measures is possible with existing production capacity. In the longer term the best prospects for cost reductions appear to involve moving to world-scale plant. In assessing the net impact on performance, however, it needs to be recognised that the rest of the world is unlikely to stand still.

The information on competitiveness in Chapter 5 can provide estimates of the changes in unit production costs available if Australian producers were to move from existing to new, world-scale plants. It can also be used to estimate changes in forest products' import prices and in the prices that overseas markets would be willing to pay for our exports in the event that our overseas competitors also move from existing to new plants. Depending on the way the operational characteristics of the new plants have been defined, the move from existing to new plant may also involve adoption of a range of measures to improve operational efficiency.

For timber products the comparison is relatively straightforward because information on the operational characteristics of existing and new plant is available from a single source that uses a common set of assumptions. For pulp and paper products the exercise is more difficult because information was collated from several sources which use different assumptions about exchange rates and other relevant variables. The comparisons that are possible for pulp and paper are discussed shortly.

### Timber products

Table G.4 shows the resulting estimates of what might happen to export prices, import prices and unit production costs if both Australia and our competitors were to move from existing to world scale plant in timber products. The results are shown for the industry aggregates appearing in

**Table G.4: Implications of Australia and its competitors moving to world scale plant in timber products (per cent change)**

	<i>Sawn timber</i>	<i>Veneers and boards</i>
Australian unit input costs		
Wood	1.42	-12.21
Energy	0.74	-6.22
Chemicals	na	3.70
Other materials	-9.08	-12.27
Labour	-38.89	-29.90
Capital	16.83	80.76
Total	-4.68	0.76
Import prices	3.96	-3.72
Export prices	3.40	1.19

Source: Commission calculations based on Jaakko Pöyry (1993).

ORANI. The estimates have been compiled on the assumption that the move from existing to new plant occurs in each industry segment considered explicitly by Jaakko Pöyry (1993), but that no change occurs in segments also included in the ORANI industry aggregates but for which no information is available (primarily the production of wooden boxes, cases etc and decorative plastic laminates).

On the other hand, it has been assumed that the change in costs available to the particular foreign competitors canvassed in Jaakko Pöyry (1993) will be available to all foreign producers of the same product line. Thus, for example, the change in the cost of Indonesian hardwood plywood landed in South Korea has been assumed to be achievable by all foreign producers of hardwood plywood selling into South Korea. Similarly on the import side, the change in the cost of Malaysian sawn hardwood landed in Australia is assumed to be achievable by all foreign producers selling sawn hardwood into Australia.

On the export side, the change in the fob export price foreigners would be willing to pay for Australian exports of a particular product line has been calculated by asking the following question: what Australian fob export price change would be required so that when Australia's transport costs to the foreign market were added, the resulting cif price change would match that achievable by foreign competitors in that market? In this way it is possible to recognise that if transport costs from Indonesia to South Korea are lower than from Australia to South Korea, then a given percentage reduction in Indonesia's domestic production costs would need to be matched by a larger percentage reduction in Australia's domestic production costs in order for Australia to remain competitive in export markets once the transport component is added.

Within Australia, the move from existing to new plant generally implies an increase in unit capital costs and a reduction in the unit costs of other inputs, particularly labour. The main exceptions to this are in sawn hardwood, where the unit costs of wood and energy are expected to increase slightly, contributing to the small increases in unit costs of wood and energy for the sawn timber industry generally. An expected increase in the unit cost of chemicals for particleboard production also contributes to a small increase in unit chemical costs for veneers and boards generally. Overall, the total unit production costs for sawn timber are expected to fall, while those for veneers and boards are expected to rise slightly.

Overseas, a move from existing to new plant is expected to increase our competitors' total unit production costs for both sawn softwood and sawn hardwood, leading to an increase in the price of sawmill imports into Australia as well as in the price that overseas markets would be willing to pay for our sawmill exports. For veneers and boards, the projected overall decline in the

price of imports into Australia comes about from the significant expected fall in New Zealand's unit production costs for softwood plywood, where New Zealand is an important supplier into Australia. The increase in the price overseas markets would be willing to pay for our veneer exports comes about from the expected increase in Indonesia's unit production costs for hardwood plywood, where Indonesia is an important supplier into South Korea.

Table G.4 summarises available information on Australia's likely change in competitiveness if we and our competitors were to move from existing to new plant in timber products. It does not provide an estimate of the potential benefits to Australia from such a move, nor does it show whether the changes in relative unit production costs here and overseas would gain for Australian producers sufficient additional market share to accommodate additional capacity without also requiring some rationalisation.

A broad indication can be gained by using ORANI, since it takes into account the responsiveness of demand in domestic and export markets to changes in domestic relative to foreign production costs. The expected changes in Australian unit costs of the various kinds of inputs can be modelled by changing the unit input requirements in the sawn timber or veneer industries. The expected changes in import and export prices can be introduced directly. The model can then generate projections for the output expansion achievable by these industries, given the way that domestic and export demands respond to the changes in relative production costs. It can also generate projections for the net gains to Australia as a whole.

The projected economy-wide impact of changes in the sawn timber industry are shown in Table G.5. The projected 5.7 per cent expansion in sawn timber output is broadly in line with NAFI's views on the industry's prospects canvassed earlier in the context of resource security. The

projected industry expansion is nevertheless significantly smaller than the increase in establishment size associated with moving from existing to world scale plant. The assumptions on plant capacity used in Jaakko Pöyry (1993)

**Table G.5: Estimated long-run effects of Australia and its competitors moving to world scale plant in sawn timber**  
(per cent change)

Real GDP	0.08
Real consumption	0.03
Real investment	0.18
Export volumes	0.11
Import volumes	-0.02
<b>Sawn timber</b>	
Output	5.73
Exports	95.94
Imports	-11.59

*Source:* ORANI model projections.

The expansion of the sawn timber industry is nevertheless projected to contribute 0.08 per cent to real GDP, equivalent to around \$300 million. This projected contribution is smaller than sawn timber's contribution to the GDP gain projected in the resource security scenario, in part because there the industry's cost savings accrued as something of a gift from foreign financiers in the form of a lower required return on capital. Here the cost savings have been bought and paid for domestically. It needs to be remembered, however, that resource security is a necessary condition for the developments projected in Table G.5, so that a possible reduction in the required return on capital could accrue as an additional bonus. Even without taking this into account, the net gain to the economy as a whole is significant when compared with the current size of the industry.

Table G.6 shows the projected economy-wide impact of Australia and its competitors moving from existing to world-scale plant in veneers and boards. Sawn timber producers were expected to gain increased competitiveness in both domestic and export markets. By contrast, producers of veneers and boards are expected to gain in relative competitiveness on export markets but lose on the domestic market, primarily because of the increased competitiveness of New Zealand in softwood plywood. The net result shown in Table G.6 is a projected increase in exports of veneers and boards (from a very low base) as well as an increase in import volumes. Overall, the industry is projected to contract slightly, implying rationalisation in at least some segments of the industry. There is a net contribution of around \$110 million to the economy as a whole.

<b>Table G.6: Estimated long-run effects of Australia and its competitors moving to world scale plant in veneers and boards (per cent change)</b>	
Real GDP	0.03
Real consumption	..
Real investment	0.09
Export volumes	0.08
Import volumes	0.05
<b>Veneers and boards</b>	
Output	-0.90
Exports	15.64
Imports	1.86
.. Between -0.005 and 0.005 per cent	
<i>Source:</i> ORANI model projections.	

### Pulp and paper products

There are two main sources of information on the operational characteristics of existing and new plant in pulp and paper. Simons (1990a) gives unit cost information on new plant here and overseas, including unit capital costs. Jaakko Pöyry (1985) gives unit cost information on existing plant here and overseas,

but excluding unit capital costs. The two studies make different exchange rate assumptions.

To undertake analysis similar to the above for pulp and paper, it is therefore necessary to convert the information from the two studies to a common exchange rate and to impute a unit capital cost for existing plant. Even so, the exercise needs to be regarded with considerable caution because the earlier study is clearly dated.

Table G.7 shows the resulting estimates of what would happen to export prices, import prices and unit production costs were both Australia and our competitors to move from existing to world scale plant in pulp, paper and paperboard, the industry aggregate appearing in ORANI. The estimates assume a common exchange rate, that used in the Simons (1990a) study, and unit capital costs for existing plant taken from the information on the non-labour component of value added in various countries shown in Appendix B.

Table G.7 suggests that a move to world scale plant in hardwood pulp, newsprint and LWC paper would not lead to a reduction in total unit costs for the pulp, paper and paperboard industry. One factor contributing to the slight increase in overall unit costs is a significant increase in unit wood costs for hardwood pulp production. Another is the increase in unit electricity costs

for newsprint and LWC paper production. But perhaps the most important contributing factor is the significant increase in unit capital costs for all product lines considered. These range from almost 80 per cent for LWC paper to over 150 per cent for hardwood pulp and newsprint. (Recall that the cost changes for these product segments are combined with an assumption of no change in paperboard, the net result being an increase in unit capital costs of 24 per cent for the pulp, paper and paperboard industry as a whole.) Although the analysis needs to be treated with extreme caution, particularly the analysis of capital costs, the overall conclusion that new pulp or paper plants need not reduce total costs is consistent with at least some evidence elsewhere. The RAC (1992a), for

**Table G.7: Implications of Australia and its competitors moving to world scale plant in pulp, paper and paperboard (per cent change)**

Australian unit input costs	
Wood	4.47
Pulp	-6.56
Electricity	4.42
Fuel	-5.99
Other materials	-2.93
Labour	-9.25
Capital	23.89
Total	3.17
Import prices	4.75
Export prices	-1.30

*Sources:* Commission calculations based on Jaakko Pöyry (1985) and Simons (1990a).

all product lines considered. These range from almost 80 per cent for LWC paper to over 150 per cent for hardwood pulp and newsprint. (Recall that the cost changes for these product segments are combined with an assumption of no change in paperboard, the net result being an increase in unit capital costs of 24 per cent for the pulp, paper and paperboard industry as a whole.) Although the analysis needs to be treated with extreme caution, particularly the analysis of capital costs, the overall conclusion that new pulp or paper plants need not reduce total costs is consistent with at least some evidence elsewhere. The RAC (1992a), for example, concluded that the evidence on the economic viability of a BEK pulp plant in Australia was far from conclusive.

Table G.7 suggests that the price overseas markets would be willing to pay for our exports of pulp, paper and paperboard products would fall slightly, mainly because Canada and the US, two important potential competitors on export markets are expected to be able to achieve overall reductions in unit costs by moving from existing to new plant. Contributing to this result is the fact that their unit capital costs do not appear to rise as much as in Australia. On the import side, by contrast, Australia would appear to gain a small relative competitive advantage because New Zealand's overall unit costs are also projected to rise in the move from existing to new plant.

Nevertheless, the results in Table G.8 suggest that Australia's increase in relative competitiveness against imports would be outweighed by the loss in competitiveness on export markets. The net result would be a small contraction in the size of Australia's pulp, paper and paperboard industry and a small contraction in real GDP.

**Table G.8: Estimated long-run effects of Australia and its competitors moving to world scale plant in pulp, paper and paperboard (per cent change)**

Real GDP	-0.01
Real consumption	-0.05
Real investment	0.03
Export volumes	0.06
Import volumes	-0.07
<b>Pulp, paper and paperboard</b>	
Output	-5.19
Exports	-91.82
Imports	-2.20

*Source:* ORANI model projections.

To reiterate, this analysis of the implications of moving to world scale plant in pulp and paper production needs to be treated with extreme caution. Nevertheless, if the analysis is anywhere near the mark, it has one important implication. If Australian pulp and paper manufacturers are to achieve the output expansion and significant export orientation implied in industry

expansion plans, they will need to find significantly greater cost reductions than those which engineering studies have identified as being achievable with greenfield plant.

### **G.3 The ORANI model**

ORANI is a detailed general equilibrium model of the Australian economy which has been used over the past two decades to analyse a wide variety of policy issues. Previous applications to issues affecting the forest products industries include IC (1991d), Bruce (1988) and the CIE (1988).

Detailed documentation of the basic model can be found in Dixon et al. (1982), Dee (1989) and McDougall and Skene (1992). The database used in this analysis is derived from the latest available input-output table which is for 1986–87. For the analysis in this report, export woodchip production has been separated from other sawmilling activity but in all other respects the forest products industries are represented by the 4 digit IOCC industries in the published input-output tables.

In general terms, the model captures supply and demand pressures in each of more than 100 industries that make up the Australian economy. It also captures various interactions between industries. These can be direct, through the input-output linkages that occur in closely integrated activities, or indirect, through competition for resources that are in scarce supply to the economy as a whole.

On the demand side, one important category is export demand. In industries which produce relatively homogeneous products and in which competitiveness on price is thought to be a major determinant of export performance, export demands are treated as being price-responsive. In other industries, export sales volumes are normally held fixed by assumption, as much out of ignorance about some of the mechanisms governing non-price competition as in a belief in the realism of the assumption. The industries in which export demands are normally allowed to be price-responsive include traditional agricultural and mining export industries for which price competitiveness has proved to be important in the past and which together account for about 63 per cent of Australia's merchandise and service exports (as recorded in the input-output tables). The normal list does not include forestry and logging nor any of the forest products industries.

In analysing the effects of reducing manufacturing assistance reported in Appendix I, the normal assumptions regarding export demands have been maintained. Since the analysis in this appendix covers industry initiatives which the forest products industries themselves recognise might require significant export orientation, it has been conducted under the assumption that export demands for most of the forest products industries are also price-responsive. The exception is woodchip exports, which unless otherwise stated are assumed to be held fixed in volume terms reflecting the impact of the export woodchip quota. Were the analysis of assistance reductions in Appendix J also carried out under the assumption that export demands for forest products were price-responsive, the outcomes for the forest products industries would be slightly more favourable than reported in that appendix.

The export demand elasticities for forest products are set at -20, reflecting Australia's small share in the world markets for these commodities, the generally homogeneous nature of at least some forest products and the presence in our region of countries such as Singapore and Hong Kong with few trade restrictions on forest products that might impede the price-responsiveness of their demands.

On the supply side of the model, the long run elasticity of supply of minerals was limited to 10 by allocating land as a fixed factor to the mining industries. This adjustment is commonly made to prevent unrealistic increases or reductions in mining output in long-run simulations (eg IAC 1989).

The model's results indicate how different the economy would look at some point in the future, compared with its alternative position had the policy change or industry initiative in question not taken place. The results are long run because the point in the future is after an adjustment period sufficiently long for each industry to be able to build up or run down its productive capacity so to have restored rates of return on capital to the relativities they held prior to the policy change (the exception is where the required rate of return has been explicitly changed as in the resource security scenario). The distinguishing feature of long run results is therefore the mobility of capital.

On the labour side, it has been assumed that there is real wage flexibility but that the number of unemployed remains fixed. Clearly in the current economic environment there is scope for favourable government policy or industry initiatives to put resources back to work which are currently idle. Nevertheless, a conservative choice has been made to illustrate the likely impact of government or industry initiatives in non-recessionary times. The advantage is that the long term policy implications can more easily be shown to be independent of Australia's position in the business cycle. To the extent that the

initiatives examined here would also put idle resources back to work the projected gains would be greater.

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## APPENDIX H: DEMAND TRENDS

The future demand for forest products is expected to be closely related to the level of economic activity. In general, this reflects sales patterns which indicate that a large portion of output is used as intermediate goods. That is, wood and paper products undergo additional processing once they leave the forest products industries (eg they are converted into furniture, house frames, newspaper, books and protective wrapping for food exports). The demand for many of these transformed products is highly dependent on growth levels within the economy.

This appendix also provides information on domestic and international trends in the consumption of forest products. Information on domestic trends is based on figures published by ABARE, while international trends are based on statistics published by the FAO. Where possible, international projections from alternative sources are also provided.

### H.1 Demand in Australia

ABS input-output data provide some information about the demand for the products produced by the forest products industries. The latest period for which these data are available is 1986–87 (see Table H.1).

According to the ABS data, around 80 per cent of wood products and 96 per cent of paper products are used as intermediate goods (ie acquired by other industries for further processing). As shown in Table H.1, approximately 40 per cent of sawmilling output is an intermediate input for the construction industry. Other major users of sawn timber include joinery and furniture making. For pulp, paper and paperboard, the major users are the publishing, printing and stationery sectors. A large portion of this supply is subsequently directed into business services, retail, wholesale and banking activities.

**Table H.1: Usage of the output of the forest products industries output, by input-output classification, 1986-87<sup>a</sup>**  
(\$ million)

<i>Supplying industry</i>	<i>User industries</i> <sup>b</sup>														
	<i>2101-2201</i>	<i>2501</i>	<i>2502</i>	<i>2503-2504</i>	<i>2601</i>	<i>2602</i>	<i>2603</i>	<i>2604-2605</i>	<i>4101-4102</i>	<i>4701&amp;4801</i>	<i>6101-6106</i>	<i>7101</i>	<i>8201</i>	<i>Intermediate Usage</i>	<i>Total Supply</i>
0300 Forestry & logging	0.6	230.9	22.9	0.4	125.7	0.0	1.1	0.0	13.9	0.3	0.0	0.0	0.0	535.1	887.5
2501 Sawmill products	2.5	269.7	9.0	320.1	0.1	0.0	0.0	0.0	847.0	2.7	24.3	0.8	5.4	1687.5	2053.2
2502 Veneers, woodboards	0.0	2.2	93.9	306.9	0.0	0.0	0.0	0.0	99.2	0.0	14.1	0.0	1.2	566.5	614.9
2503 Joinery, etc	3.1	0.4	1.5	67.4	0.0	0.0	0.0	0.4	1097.4	155.6	37.4	18.3	35.2	1491.5	1783.9
2504 Furniture etc	0.1	0.3	0.0	121.0	0.0	0.0	0.0	0.2	1.5	48.3	1.7	37.9	73.8	415.4	2314.1
2601 Pulp, paper & board	11.0	1.3	1.1	2.5	254.6	474.0	42.2	1419.3	0.9	19.7	61.9	91.9	0.1	2572.4	2677.2
2602 Bags & containers	296.5	0.0	1.3	7.9	2.8	21.6	54.9	13.3	0.0	520.8	1.8	30.7	0.6	1392.4	1400.2
2603 Paper products nec	67.0	0.3	0.1	3.1	2.8	3.9	0.6	2.1	18.4	69.8	57.0	38.9	19.7	411.2	601.3
2604 Publishing, printing	55.9	1.9	0.5	15.1	1.0	2.1	2.5	38.1	23.9	476.5	518.3	131.4	288.8	2245.2	3551.9
2605 Stationery etc	102.9	5.1	1.0	25.0	0.7	8.7	11.6	157.0	52.6	1089.6	730.5	318.3	28.4	3241.7	3611.7

<sup>a</sup> This table indicates which industries are the largest consumers of forest products in 1986-87 (the most recent data available). For instance, the value of the output of the sawmilling industry in 1986-87 was in excess of \$2 billion . Of this, \$270 million was purchased by other sawmilling activities, \$320 million by joinery and furniture manufacturers, \$847 million by the construction industry (4101-02), with \$366 million purchased by households (total supply less intermediate usage).

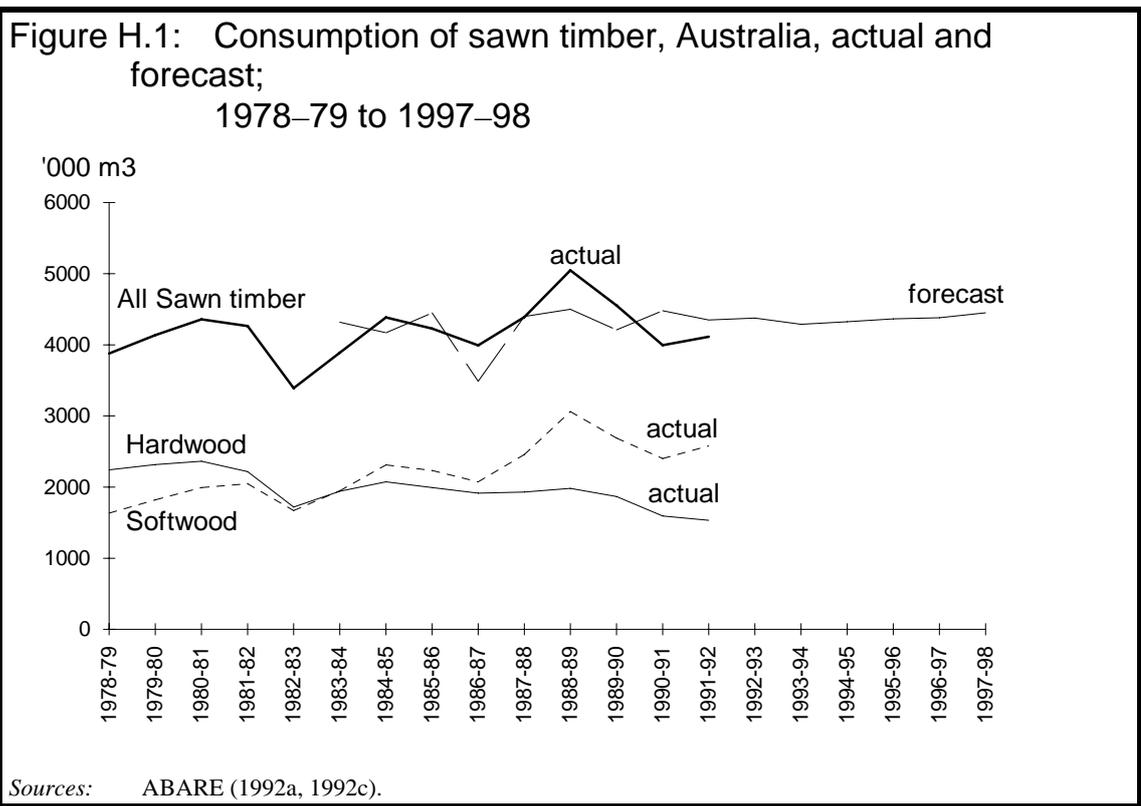
<sup>b</sup> 2101-2201 is the food, beverages and tobacco sector; 4101-4102 is the construction sector; 4701 is wholesale trade; 4801 is retail trade; 6101-6106 is the finance, property and business services sector; 7101 is public administration; and 8201 is education, museum and library services.

Source: ABS, Australian National Accounts: Input-output tables, 1986-87, Cat. no. 5209.0.

## Sawn timber

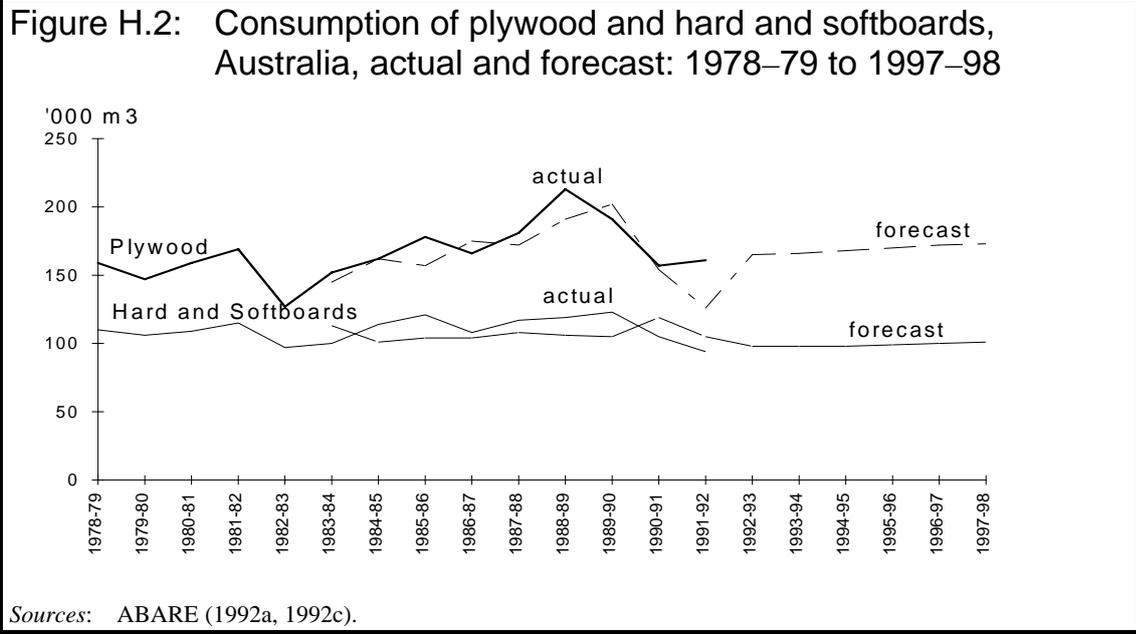
Sawn timber is largely used in the household framing and household construction market. Around 4.1 million m<sup>3</sup> of sawnwood is consumed in Australia annually. In the past 30 years, consumption of sawnwood has fallen below or risen above this amount by more than 5 per cent on only four occasions: the 1961 credit squeeze; the 1973 boom; the 1982–83 recession; and the 1989 boom. Sawn softwood producers have benefited most from each boom. Sawn hardwood producers have suffered most in each recession.

As shown in Figure H.1, softwood's share of the sawn timber market has risen from 42 per cent in 1978–79 to 63 per cent in 1991–92. There has also been a decline in the share of the domestic market held by softwood imports. ABARE forecasts suggest that, over the 1990s, domestic consumption of sawn timber will grow at an average annual rate of 0.3 per cent, reaching 4.45 million m<sup>3</sup> in 1997–98 (see Figure H.1).



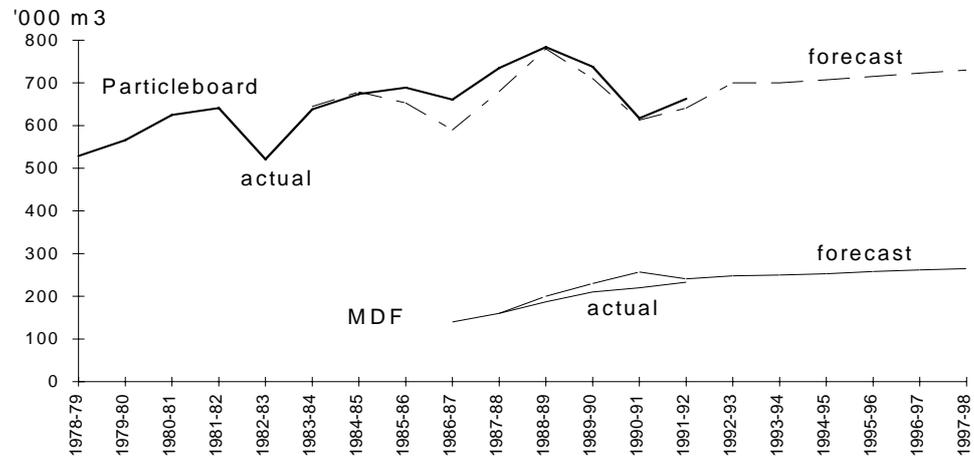
### Wood panels and boards

During the 1980s, there was negligible growth in the consumption of hard and softboards, and forecasts of consumption over the 1990s reflect a continuation of this trend (see Figure H.2).



The consumption of plywood and particleboard fell sharply in 1982–83, and then grew strongly until 1988–89. Since then, the consumption of these products has declined, and long term forecasts suggest that modest growth in consumption will occur over the 1990s. For example, consumption of particleboard is expected to grow at 0.8 per cent per annum (see Figure H.3).

Figure H.3: Consumption of particleboard and medium density fibreboard, Australia, actual and forecast: 1978–79 to 1997–98



Sources: ABARE (1992a, 1992c).

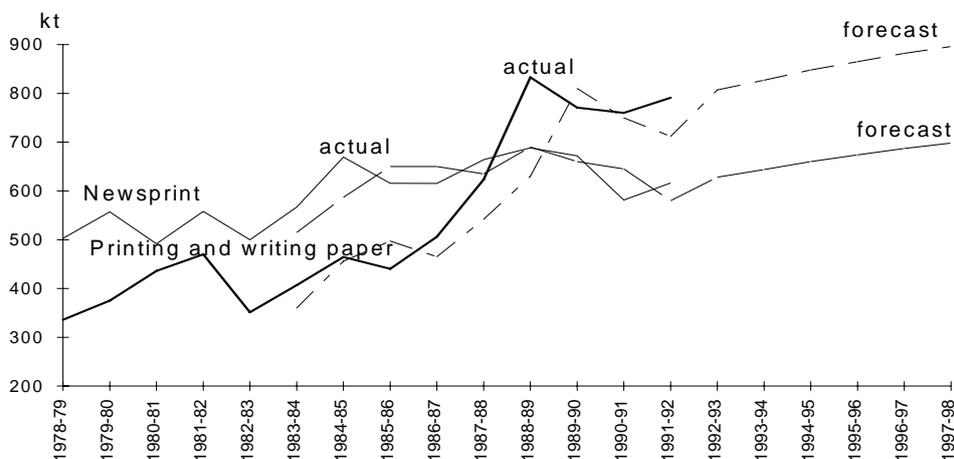
In contrast to the consumption of other wood panels and boards, MDF has experienced strong growth over the 1980s, and has been seemingly unaffected by the current recession. Moderate yearly growth of 1.3 per cent is expected to occur over the 1990s (see Figure H.3).

### Paper products

Over the 1980s, there was steady growth in the consumption of newsprint. However, in 1990–91, a 13 per cent decline returned consumption to the level it was at seven years earlier. Consumption of printing and writing paper experienced extraordinary growth in the mid-1980s (ie between 1986–87 and 1988–89, domestic consumption increased by 65 per cent), largely because of the increased use of photocopy paper and computer paper. Consumption fell in 1989–90 and again in 1990–91 (see Figure H.4).

Consumption of packaging papers rose between the period 1982–83 to 1987–88, then fell sharply in 1988–89. This fall coincided with a peak in newsprint and printing and writing paper consumption (see Figure H.5).

Figure H.4: Consumption of newsprint and printing and writing papers, Australia, actual and forecast, 1978–79 to 1997–98



Sources: ABARE (1992a, 1992c).

According to the Pulp and Paper Manufacturers' Federation of Australia (sub. 26, p. 20):

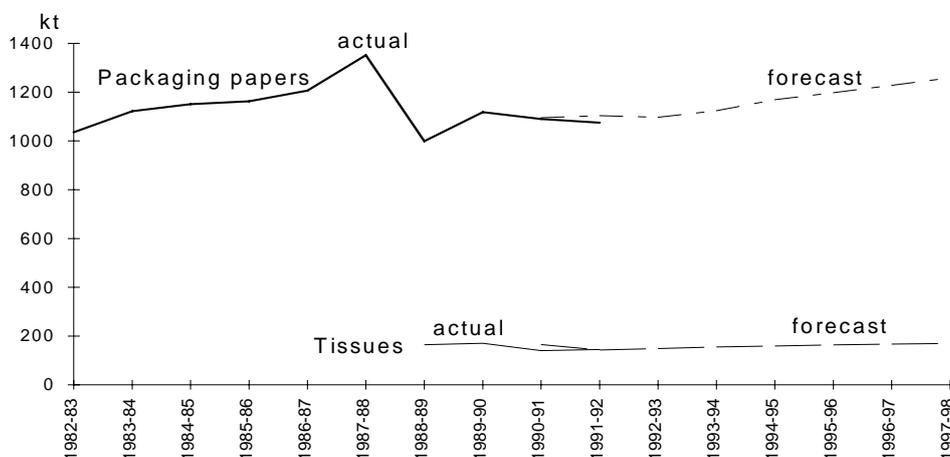
... a long term real decline in the cost of producing paper, compared to the cost of producing other materials such as plastics, metals, etc has resulted in an increase in demand for pulp and paper products in excess of GDP. This is expected to continue for the next 10-15 years, but with a narrowing difference.

Assuming underlying economic growth of 2–3 per cent per annum and increasing per capita consumption of paper, the PPMFA estimates the annual growth in domestic demand for various products will be:

- printing and writing papers, around 4 to 5 per cent;
- newsprint, around 2 per cent;
- packaging papers, 2 to 3 per cent; and
- tissue papers, 3 to 4 per cent.

ABARE estimates similar growth forecasts for newsprint (2.2 per cent per annum), packaging papers (2.8 per cent) and tissues (2.7 per cent) (see Figures H.4 and H.5). ABARE forecasts consumption of printing and writing papers to grow at around 2.1 per cent per annum (compared to the 4 to 5 per cent growth estimated by the PPMFA). Schofield and Horne (1991) estimate that the recent trend (2.7 per cent growth per annum) in the production of paper packaging (eg solid and corrugated fibreboard containers) will continue through to 1995. This suggests that consumption of paper packaging will outstrip demand for other packaging mediums during the 1990s.

Figure H.5: Consumption of packaging papers and tissues, Australia, actual and forecast: 1982–83 to 1997–98



*Note:* Figures for the consumption of packaging papers before 1988-89 include figures for the consumption of tissues in those years.

*Sources:* ABARE (1992a, 1992c).

## H.2 International demand

As discussed in Chapter 9, the greatest opportunities for Australian producers of forest products lie with trade into south-east Asia and Japan. This is based on

three main presumptions: high regional economic growth; low per capita consumption at present; and a strong reliance on imports.

### Economic growth

Economic growth in the United States and Europe over the last decade has averaged around 2.5 per cent per annum. This compares with growth in excess of 7 per cent in China, South Korea, Taiwan and Thailand, and over 5 per cent for most other nations in the south-east Asian region. This trend is expected to continue over the next decade (see Table H.2).

**Table H.2: Projected economic growth**

<i>Country</i>	<i>1991<sup>a</sup></i>	<i>1992</i>	<i>1995</i>	<i>1998</i>
	<i>percentage growth</i>			
OECD	0.6	1.5	3.7	3.3
United States	-1.2	2.0	4.0	3.5
Japan	4.4	1.5	3.0	3.0
Western Europe	1.0	0.8	3.5	3.2
SE Asia	7.0	6.5	6.5	5.5
China	7.0	10.0	6.0	7.0
Eastern Europe <sup>b</sup>	-14.0	-12.0	1.0	3.0
Developing <sup>c</sup>	2.6	3.0	4.4	5.0
World	-0.2	1.4	3.8	3.9

<sup>a</sup> Actual figure.  
<sup>b</sup> Includes countries within the CIS.  
<sup>c</sup> Includes India and developing countries in Latin America and the Middle East

*Source:* Jones et al. (1993)

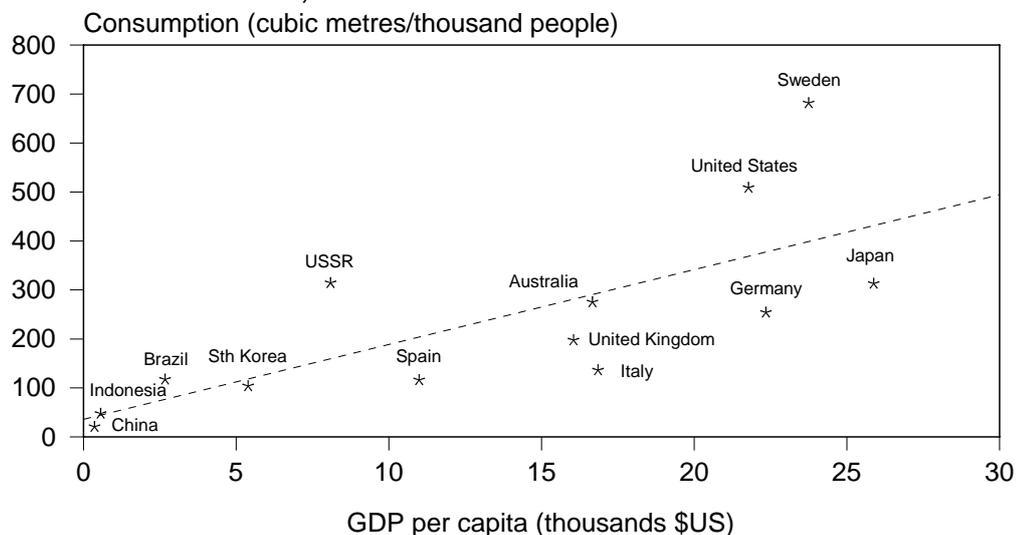
### Per capita consumption

The current low levels of per capita consumption of forest products in many Asian nations are the basis for much optimism within the forest products industries. As shown in Figures H.6 and H.7, per capita consumption of sawnwood and paper and paper products in several developing countries is low compared to Western nations, such as the United States and Sweden.

As these economies develop, there is a likelihood of accelerated growth in demand for forest products. For instance, as standards of living rise, expenditure on education generally increases. Hence, demand for paper also rises. In Indonesia, for example, government moves to increase the school leaving age from 14 to 16 are expected to significantly increase the local consumption of printing and writing papers (Kilam 1992). Other nations in the region, which are at a similar stage of economic development, include Thailand and Malaysia.

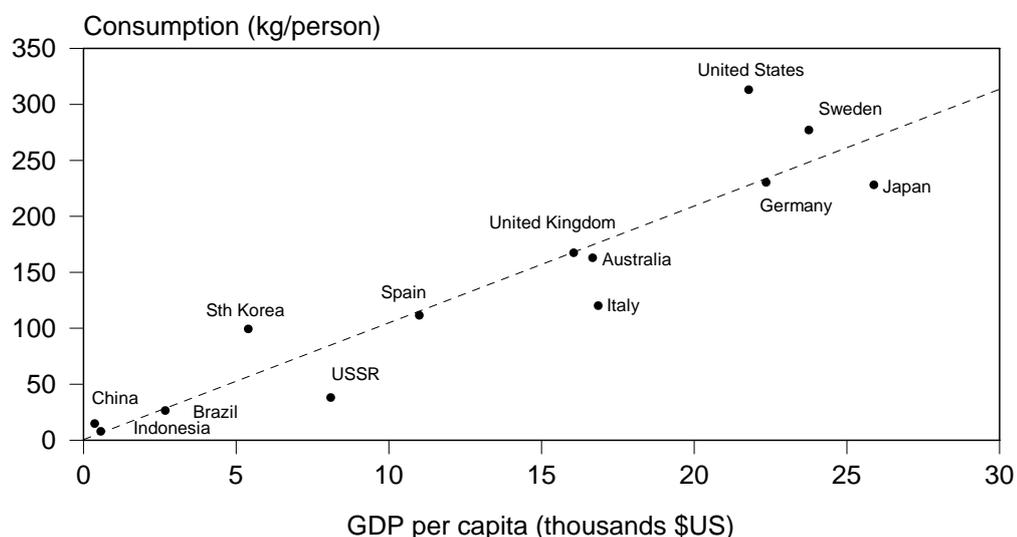
Apart from the potential for developing nations to consume more wood and paper commodities, there is also an opportunity for significant increases in the consumption of specialty products in the more developed markets of Japan, Hong Kong and South Korea.

Figure H.6: Per capita consumption of sawnwood, selected countries, 1991



Sources: FAO (1993); World Bank (1993).

Figure H.7: Per capita consumption of paper and paper products, selected countries, 1991



Sources: FAO (1993); World Bank (1993).

### Regional consumption and trade

The Asian region is a net importer of forest products. As shown in Table H.3, its reliance on imports is expected to increase in all major product groups apart from sawnwood.

Product	Period	Growth in consumption			East Asia/Japan Surplus/deficit <sup>b</sup>	Source
		World	E Asia <sup>a</sup>	Japan		
		% pa			'000 m <sup>3</sup> /t	
Sawnwood	1975-1989	1.6	4.9	-0.5	-4 800	FAO (1991)
	1995-2000	1.9	3.5	0.7	2 200	
Wood panels	1975-1989	3.1	11.0	3.1	4 400	FAO (1991)
	1995-2000	4.2	9.3	4.7	2 000	
MDF	1990-2000		17.5			ABARE (1993) <sup>c</sup>
Wood pulp	1975-1989	3.2	9.4	2.4	-5 200	FAO (1991)
	1995-2000	3.0	5.5	3.9	-10 200	
Paper/board	1975-1989	4.1	10.0	4.9	-3 700	FAO (1991)
	1995-2000	3.9	7.5	4.4	-13 600	"
Newsprint	1975-1989	3.4	7.4	3.5	-1 300	FAO (1991)
	1995-2000	2.9	5.0	3.7	-1 800	
P&W papers	1975-1989	6.2	7.7	7.8	-300	FAO (1991)
	1995-2000	4.9	7.1	6.1	-900	
	1990-2010		7.5	2.0		APPM
Wastepaper	1975-1989	6.0	15.8	6.9		FAO (1991)
	1995-2000	6.4	8.9	6.4		"
	1990-1995		10.7	5.4	-7 500	Payne (1992)

a Major East Asian countries include: China; Hong Kong, India, Indonesia, Malaysia, Singapore, South Korea, Thailand and the Philippines.

b The combined surplus/deficit for the east Asian region and Japan, at the end of the period.

c Cited in Sar et al. (1993).

Important aspects of these projections include:

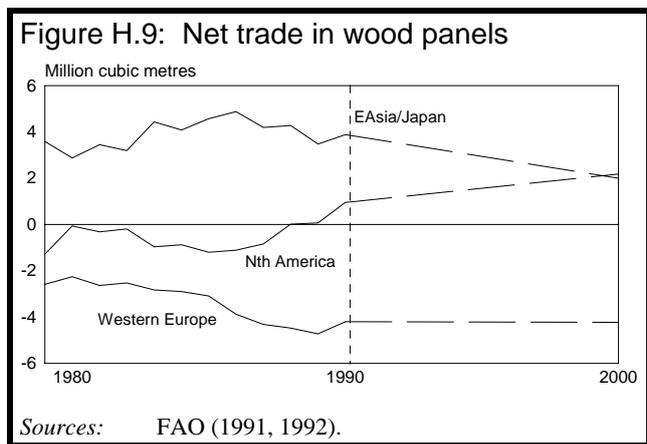
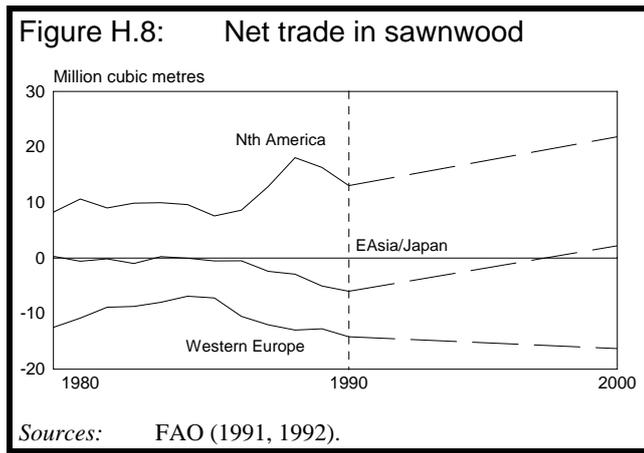
- consumption growth in east Asia is not expected to be as high as it was during the 1980s. Nevertheless, it is expected to exceed world growth rates in all product groups;
- for wood products, the best prospects appear to rest with panels, while growth in paper and paper products is forecast to be highest for wastepaper and printing and writing papers;
- growth in Japanese consumption of paper and paper products is anticipated to be at a rate greater than the rest of the world; and
- the FAO predicts that the most significant increases in imports will come from wood pulp and paper and board.

Apart from intra-regional trade, Canada and the United States are Asia's major trading partners. The capacity of North America and, to a lesser extent, European producers to meet expanding consumption levels in Asia has important implications for Australia. The following discussion therefore outlines emerging trends and FAO predictions on the net trade position of east Asia, North America and Europe.

### Sawnwood

The trade deficit for sawnwood into Asia is largely due to softwood imports. The region is a significant exporter of sawn hardwood. The potential for Australian exports of softwood into the region will largely depend on the success of radiata pine in displacing

the more traditional species such as Douglas fir and hemlock. Although softwood imports from the Pacific-northwest region of the United States are expected to fall and prices to rise, it is possible that any shortfall in supply will be taken up by imports from countries such as Chile and New Zealand.



### Wood-based panels

Asia's position as a net exporter of panel products is largely due to Indonesia's dominance of the plywood market. Nevertheless, many countries within the region are net importers of wood-based panels. Moreover, much of the plywood consumed in Southeast Asia and Japan can be substituted for by MDF. Consumption of MDF in the region is expected to increase by over 17 per cent annually until the end

of the decade. In Japan, consumption of MDF is currently only 3 m<sup>3</sup>/thousand people, compared to 13 m<sup>3</sup>/thousand people in Australia and 50 m<sup>3</sup>/thousand people in New Zealand (Sar et al. 1993).

*Fibre supply*

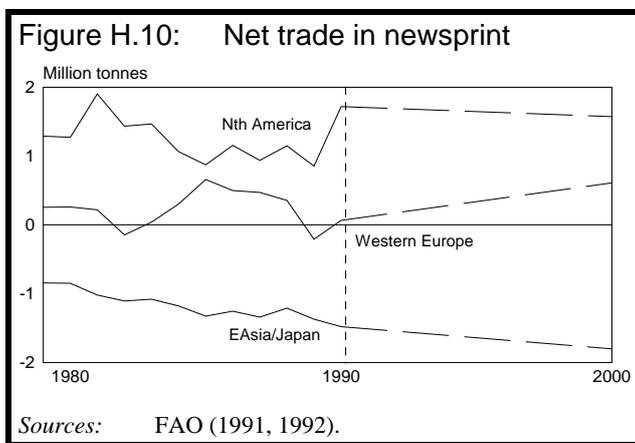
Japan and several east Asian nations rely heavily on imported fibre. In Korea, for example, over 90 per cent of furnish used for domestic paper and paperboard production is imported, either as secondary material (68 per cent) or wood pulp (25 per cent). Asian imports of waste paper are expected to increase from 5 to 7.4 million tonnes between 1990 and 1995 (Payne 1992).

At present, a large proportion of wastepaper used in the region is imported from the United States. Much of this supply, however, is now being assigned to local companies, as several US states now mandate levels of recycled material in paper and paperboard production. This is expected to have two effects on regional supply. First, the reduction in supplies traditionally sourced from the US will need to be supplemented by recycled material from elsewhere. Second, the secondary material coming from the United States will probably be of a lower quality, in terms of its potential for further recycling.

As demand for high-quality paper and paper products in the region expands, it will become necessary to replenish local supplies with increasing amounts of virgin fibre. This may provide an opportunity for Australian exports of high-quality pulps in the bleached kraft and chemi-thermomechanical grades (Simons 1991). The major competition for the supply of pulp to the region is expected to come from Indonesia. There are currently 6 new pulp mills due for start-up between 1993 and 1995. The combined capacity of these mills in excess of 2.5 million tonnes per annum, while there could be another 2.5 million available by the end of the century. These predictions, however, may be overstated. Kilam (1992) suggests a more realistic figure would be an additional 2 million tonnes up till the year 2000.

*Newsprint*

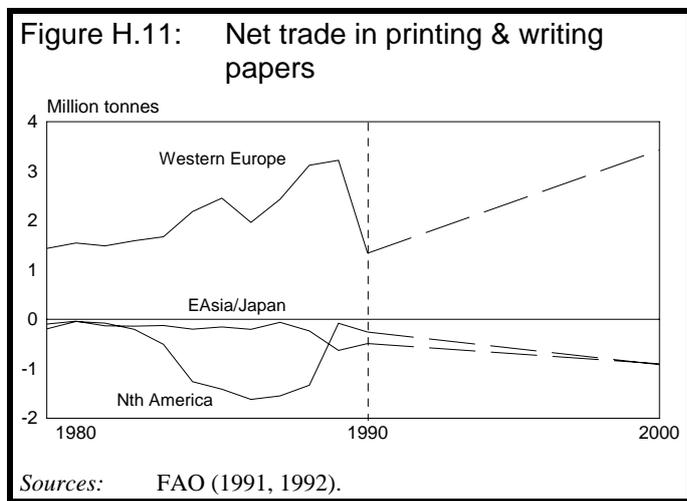
The annual increase in demand for newsprint over this decade is expected to be around 5 per cent in south-east Asia and 2 per cent in Japan (Simons 1990a). During the 1990s, there has been a steady trend toward increasing imports into the Asian region. Again, the clearest opportunities for Australia appear to rest with virgin newsprint into countries such as China and Taiwan. Although competitive with local supplies, it is not clear what



prospects Australian newsprint has of entering the Japanese market. As discussed in Chapter 2, it may be contingent on government moves to encourage increased supplies of foreign paper into the Japanese market.

### *Printing and writing papers*

The average growth in consumption of printing and writing papers in south-east Asia is expected to be over 7 per cent for the next 2 decades. This compares with 2 per cent for Japan, North America and Western Europe. The majority of high-quality papers imported into Asia are from Finland and the United States. However, an increasing amount is now being supplied from within the region. According to Simons (1990a), market opportunities for Australia rest with uncoated printing papers.



As discussed in Chapter 9, capacity expansions in Asian countries at the 'advanced planning stage' in the area of printing and writing papers are considerably greater than in North America. Much of this expansion is planned for Indonesia, Thailand and Malaysia. The capacity of these countries to meet the expected rapid expansion in regional demand in quality papers will depend on: their ability to attract capital; environmental regulation affecting paper mills and

wood resources; and government support.

### *Packaging and industrial papers*

Although rapid growth in the consumption of most forest products is forecast for the Asian region, most expect Australia's best chances to lie with high-quality products and, to a lesser extent, high-valued semi-commodities and speciality papers. According to APM, consumption of container material in south-east Asia is expected to grow from 17.5 to 25.5 million tonnes by the end of the decade. Simons (1991) suggests that Australia's best possibilities in the area of packaging rest with bleached paperboard, "...as the quality of linerboard and corrugated medium produced in Asia is going to be hard pressed to meet the quality demanded of the increasingly wealthy domestic market".

Although dependence by Asian nations on imports is expected to increase, Australian consumption of most forest products is also predicted to rise.

Moreover, for commodities such as wood-based panels and printing and writing papers, local demand during the next decade is projected to increase faster than production. Australian producers therefore face the prospects of two simultaneously expanding markets.



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## APPENDIX I: RESEARCH AND DEVELOPMENT

Empirical studies show that technical progress is an important determinant of growth (see, for example, DITAC 1993). Consequently, it is widely accepted that leading international suppliers in a wide range of industries need to have a high level of commitment to research and development (R&D) if they are to improve technologies and maintain their competitive edge over other suppliers.

In many countries, including Australia, governments have also contributed to research and development funding. The involvement of government has been justified on a number of grounds. A major concern has been that, in the absence of some form of government intervention, market forces will result in R&D expenditure being less than optimal from the point of view of the community as a whole.

In Australia, government support for R&D has been provided mainly in the form of direct funding of research by government agencies and industry research corporations, and incentives intended to encourage higher expenditure on R&D by private firms. Local firms are able to claim 150 per cent of R&D expenditure for taxation purposes, provided annual expenditure exceeds \$50 000.

Over the two decades to 1988–89, Australia's gross expenditure on research and development (GERD) on all activities doubled in real terms. As a percentage of GDP in 1988–89, it was at about the same level as in 1968–69.

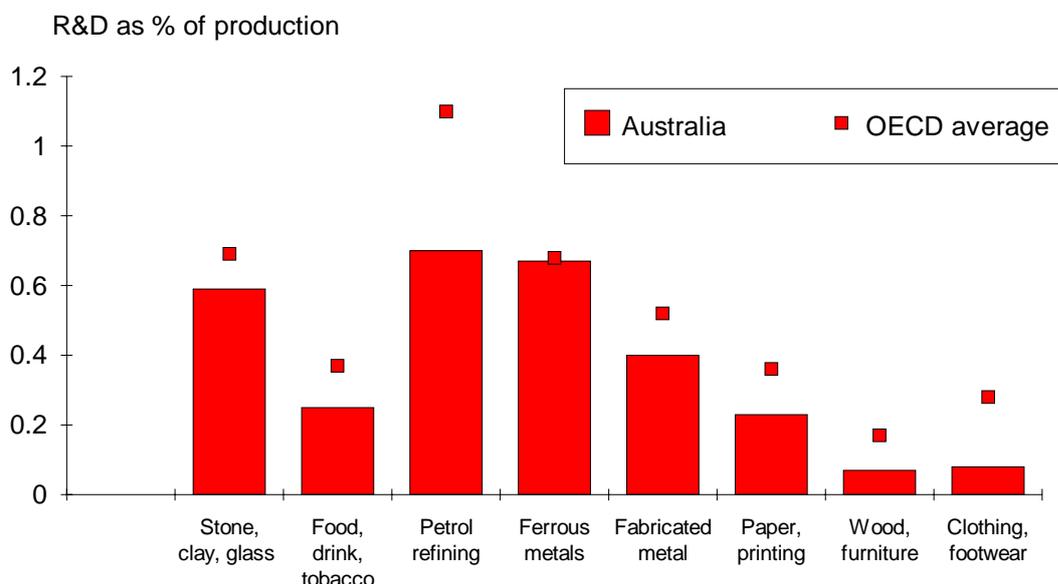
Australia's international ranking (on the basis of the proportion of GDP allocated to R&D) did not change during the 1980s. The OECD average was 1.87 per cent while the Australian average was 1.23 per cent. On this basis, Australia was ranked 16 out of 19 OECD countries. Australia's average R&D growth in real terms has, however, been above the average for OECD countries.

In Figure I.1, R&D expenditure in 1988–89 by a number of Australian low technology manufacturing sectors (in which the forest products industries are categorised by the OECD) is compared with a 1987 OECD benchmark for those sectors. Figure I.1 shows that:

- in no low technology manufacturing industry, was Australian R&D more intensive than the OECD average;
- Australian R&D intensity in paper and printing was just over half the OECD average, but wood and furniture was well under half; and
- Australian R&D intensity in wood and furniture was lower than in any other low technology manufacturing industry. It was, however, about 40

per cent of the OECD average which was better than that achieved by the clothing and footwear industries.

Figure I.1: R&D intensity in Australian low technology manufacturing industries compared to OECD average, 1988–89



Source: DITAC (1992).

### Research and development in forest products industries

The Commission has limited data on the extent of R&D undertaken by the forest products industries. Aggregate data available from official sources are limited and, in most cases, include data covering activities beyond the scope of this inquiry.

Some larger companies have significant internal research capabilities. For example, APM claimed that its R&D expenditure (equalling 0.15 per cent of sales, or \$350 per employee) probably falls into the middle range compared with overseas companies. R&D expenditure by APM Forests has been higher — averaging 1.6 per cent of turnover over the past three years.

One of a number of industry initiatives facilitating R&D has been the establishment of the Australian Pulp and Paper Institute which is located at Monash University. Industry also contributes significantly to the Cooperative Research Centre (CRC) for Temperate Hardwood Forestry and the CRC for Hardwood Fibre and Paper Science — as do universities, the CSIRO and various state agencies.

CSIRO also plays an important role in undertaking, facilitating, coordinating and otherwise encouraging research in the forest industries. Programs currently being undertaken by CSIRO include research aimed at assessing the pulp and paper making potential of selected tree species, improving the environmental performance of bleached chemical pulp mills and understanding factors that affect the biological deterioration of timber. CSIRO is also managing a major research effort under the National Pulp Mills Research Program.

In 1990–91, expenditure by CSIRO’s Divisions of Forestry and Forest Products was \$21.28 million, of which more than two-thirds was on forestry (see Table I.1). This represented 3.73 per cent of the total expenditure by CSIRO. About 80 per cent of the expenditure by CSIRO’s Divisions of Forestry and Forest Products was funded by government.

**Table I.1: Cash expenditures by the CSIRO Divisions of Forestry and Forest Products, 1990–91**  
(\$ million)

<i>Division</i>	<i>Appropriation</i>	<i>Sponsored research</i>	<i>Total</i>
Forestry	11.18	3.41	14.58
Forest products	5.82	0.88	6.70
Total	17.00	4.29	21.28

*Source:* CSIRO (1992).

Expenditure on R&D by companies engaged in pulp, paper products, printing and publishing activities during 1990–91 was \$35.4 million. This represented 0.24 per cent of turnover in this sector. A further \$7.3 million was expended by companies engaged in the wood, wood products and furniture industries during 1990–91 (0.09 per cent of turnover). Both figures are lower than expenditure in 1988–89, but higher than expenditure in 1986–87 (see Table I.2). Most funds were sourced from within the forest products industries (see Table I.3).

Government devoted \$31.7 million to forestry R&D in 1990–91. Higher education organisations also contributed to R&D. Recent data are not available, but expenditure in 1988–89 amounted to \$6.2 million. Assuming that a similar amount was spent in 1990–91, total expenditure by governments and the private sector on forestry R&D would have amounted to \$80.6 million in 1990–91. This would have been equivalent to 0.3 per cent of turnover. This may be compared with Canada, where about 0.7 per cent of the total value of forest product shipments was devoted to forestry R&D (Page 1992).

Table I.2: Research and development by forestry enterprises

ASIC Code	Industry	Enterprises (number)			Expenditure on R&D (\$m)			Person years of effort on R&D		
		1986-87	1988-89	1990-91	1986-87	1988-89	1990-91	1986-87	1988-89	1990-91
25	Wood, wood products and furniture	47	47	36	6.4	10.4	7.3	118	122	107
26	Pulp, paper products, printing and publishing	32	28	27	10.0	24.1	35.4	158	234	231

Source: ABS, Research and Experimental Development, Business Enterprises, Australia, 1990-91, Cat no. 8104.0.

Table I.3: Research and development by forestry enterprises, by type of activity, 1990-91 (\$'000)

ASIC Code	Industry	Total expenditure	Own funds	Type of activity		
				Basic research	Applied research	Experimental development
25	Wood, wood products and furniture	7295	6200	np	np	4627
26	Pulp, paper products, printing and publishing	35441	35415	604	6664	28173

a Includes wages and salaries, payroll tax, payments to contract staff on the payroll, fringe benefits tax and workers compensation insurance, overtime earnings, shift allowances, penalty rates, bonuses, commission payments, holiday pay, long service leave payments, sick pay, employer contributions to superannuation and pension schemes.

np not available for publication.

Source: ABS, Research and Experimental Development, Business Enterprises, Australia, 1990-91, Cat no. 8104.0.

In 1990–91, expenditure by all governments is estimated to have accounted for about half of all R&D. However, as governments are the owners of much of Australia’s forest resources, a considerable proportion of which is utilised for commercial purposes, much of the amount expended by governments may be better regarded as expenditure to further governments’ own commercial operations, rather than as a government contribution to R&D generally.

The nature and extent of R&D varies between states. For instance, the Victorian Government stated that it traditionally spends most on R&D at the growing end, rather than at the processing end. It has never had a wood technology division as does the New South Wales Forestry Commission. CSIRO’s Division of Forest Products reported that financial pressures on state forest services are resulting in reduced research efforts. Table I.4 presents expenditure on R&D by state.

Table I.4: Research and development expenditure by state, 1990–91<sup>a</sup>

(\$'000)

ASIC Code	Industry	Total expenditure	NSW	Vic	Qld	SA	WA	Tas	Australian territories	Overseas
<u>By business enterprises</u>										
25	Wood, wood products and furniture	7295	2625	957	932	1479	930	np	np	np
26	Pulp, paper products, printing and publishing	35441	3873	16563	589	np	np	np	np	143
<u>By general government organisations</u>										
	Forestry	31738	2896	6361	5554	2091	1535	6266	5781	1254
<u>By higher education organisations<sup>b</sup></u>										
	Forestry and fisheries	12025	1557	1650	1599	76	1397	2633	3113	-

a Location of the expenditure. This may not be the location of the organisation's head office.

b Data are for 1988.

np not available for publication.

Source: ABS, Research and Experimental Development, Business Enterprises, Australia, 1990–91, Cat no. 8104.0, ABS, Research and Experimental Development, General Government and Private Non-Profit Organisations, Australia, 1990–91, Cat no. 8109.0, and ABS, Research and Experimental Development Higher Education Organisations, Australia, 1988, Cat no. 8111.0.

The allocation of R&D expenditure by public bodies is shown in Table I.5. It shows that the majority of expenditure is on applied research, and that labour costs account for around 60 per cent of expenditure.

**Table I.5: Research and development expenditure by government organisations and higher education organisations on forestry**  
(\$'000)

	<i>By government organisations, 1990–91</i>	<i>By higher education organisations<sup>a</sup>, 1988</i>
Type of expenditure		
land and buildings	2002	1453
other capital expenditure	1823	1138
labour costs	18879	6964
other	9033	2469
<b>Total</b>	<b>31738</b>	<b>12024</b>
Type of activity		
pure basic research	142	2078
strategic basic research	9934	3113
applied research	20221	5930
experimental development	1441	903
<b>Total</b>	<b>31738</b>	<b>12024</b>

a Includes expenditure on fisheries R&D.

Sources: ABS, Research and Experimental Development, General Government and Private Non-Profit Organisations, Australia, 1990–91, Cat no. 8109.0, and ABS, Research and Experimental Development, Higher Education Organisations, Australia, 1988, Cat no. 8111.0.

An alternative to undertaking one's own R&D is to purchase technical know-how. In some circumstances, this can be much more economical and appears to be used increasingly by the pulp, paper products, printing and publishing sector (see Table I.6). This approach, however, has the disadvantage that owners of technical know-how may not be willing to provide leading edge technologies, especially to competitors, or potential competitors.

**Table I.6: Payments and receipts for technical know-how by forestry enterprises**  
(\$m)

ASIC Code	Industry	<u>Payments for technical know-how</u>			<u>Receipts for technical know-how</u>		
		1986-87	1988-89	1990-91	1986-87	1988-89	1990-91
25	Wood, wood products and furniture	0.2	1.6	0.8	0.6	np	np
26	Pulp, paper products, printing and publishing	4.0	8.7	9.9	np	np	0.4

np not available for publication.

Source: ABS, Research and Experimental Development, Business Enterprises, Australia, 1990-91, Cat no. 8104.0.

### Effectiveness

Some information was provided on the effectiveness of R&D by Australian producers. For example, the CSIRO Division of Forestry stated that, through research in breeding and silviculture, APM raised the productivity of radiata pine by 51 per cent between plantations established prior to 1971 and those established in the late-1970s. Nonetheless, most participants were reluctant to pass judgement on whether the current levels of R&D expenditure are appropriate. However, NAFI (transcript, p. 419) stated that the industry does not spend a large amount on R&D:

... the pulp and paper side has certainly endeavoured to have a respectable R and D program but, on the timber side, I think it certainly doesn't compare with the other primary industries ... but it hasn't had an R and D Corporation.

Several participants stated that the minimum claim of \$50 000 required to obtain taxation concessions for R&D expenditure encourages R&D by large companies at the expense of small companies. Even though small companies can pool their resources through Recognised Research Institutions, some participants contend that these institutions generally aim to meet the needs of large companies. On this basis, Australian Forest and Land Management Ltd called for the level of minimum claim to be reduced to \$10 000.

The Institute of Foresters (sub. 5, p. 5) claimed that there is a lack of sufficient forest products research and that public research has been too broadly based to be effective:

... there are considerable opportunities for the development of new value-adding industries in Australia, but a great deal of research is required to provide the necessary technical backing.... At the present time, there is very little forest products research in Australia.

There appears to be a general consensus that the nature of research and development needs to become more appropriately focussed and that industry should play a major role in selecting and directing publicly-funded research programs.

The Institute also stated that there is no effective system for translating research results into commercial success, citing the case of the Scrimber process originally developed by CSIRO (which the Institute claims is failing because there has been inadequate funding of the essential development phase<sup>1</sup>) and the VALWOOD process (which it believes is suffering from a lack of funds and a suitable organisation to commercialise it effectively) (see Box I.1).

#### Box I.1: VALWOOD

The VALWOOD project was undertaken by the Western Australian Wood Utilisation Research Centre. The term VALWOOD refers to both the process and the products resulting from that process. VALWOOD is made from thinnings which formerly were usually left to rot on the forest floor and from waste or low value wood. Low quality timber (with splits, brittle hearts and knotty cores) can be used in the centre layers of the laminate. In the process, ten millimetre thick boards are laminated edge to edge and face to face to produce a strong, practical timber of high value to sawmillers and furniture makers. As an added benefit, VALWOOD replaces timber that otherwise would come from high value trees.

With respect to the full commercialisation of major developments such as Scrimber and VALWOOD, CSIRO's Division of Forestry (sub. 64, p. 3) stated:

The opportunity cost of supporting developments on such a scale, or of pursuing significant 'market research', or of unduly emphasising applied research which would be more appropriately directly supported and undertaken by individual firms or trade associations, will be considerable.

Some participants commented that, over recent years, there has been a transformation in the way R&D has been conducted. For example, Professors Vinden and Ferguson (sub. 21, p. 16) stated:

An increasing emphasis is being placed on balancing strategic research and technology rather than pursuing pure, fundamental research.

<sup>1</sup> CSIRO's Division of Forest Products (sub. 68, p. 1) disputes that a shortage of development funds has been the cause of difficulties.

The change in emphasis has been linked to the increasing 'commercialisation' of R&D (ie increasing requirements for public research to raise funding from external sources). At present, about 30 per cent of funding for CSIRO's Division of Forest Products has to be derived from external sources. According to CSIRO, this is less than that for many similar overseas organisations.

The CSIRO Division of Forestry (sub. 64, p. 1) claimed that there has been a significant decline in production forestry research capacity in the Division "... and in the States (particularly Queensland, New South Wales and Victoria) through the withdrawal of Government financial support and lack of industry support".

## **Calls for change**

### *R&D Corporation*

There have been many calls for the establishment of an Australian Forest Industry Research and Development Corporation. In a 1987 consultancy report for the Australian Forestry Council, deficiencies in the level of R&D were identified in forest operations, economics, silviculture and solid wood products. To address these and other research needs, the industry proposed that an industry research fund be established along the lines of the Fishing Industry Research and Development Fund, funded by matching government and private sector contributions (Kerin and Cook 1989).

In 1989, the Commonwealth Government noted that private levels of forestry R&D funding were quite low. It saw benefit in encouraging further industry involvement in commercially oriented R&D. To facilitate this, the Government stated that it intended to establish a compulsory industry levy (without direct Government contribution) to be used for commercially oriented R&D projects for a trial period of three years. The industry R&D funds were to be administered under a Forest Industries Research and Development Corporation.

As set out in the NFPS, the Commonwealth has now agreed to establish a Research and Development Corporation, and to continue to support specific industry development research programs. Legislation to establish and fund the new Corporation was introduced into the House of Representatives in September 1993.

The Forest and Wood Products Research and Development Corporation (FWPRDC) is to be established as a Commonwealth statutory body and is expected to commence operation in January 1994. The Corporation's charter will be to identify research priorities and to commission, administer and subsequently evaluate research into a broad range of issues relating to wood

production, extraction, processing, economics and marketing. The NFPS stated that the Corporation will be encouraged to ensure effective communication of research results.

Private companies have supported the establishment of the Corporation. For instance, APM (sub. 44, p. 9) supported the formation of such a body stating that:

Essentially, such a corporation would charge a levy on all wood harvested and obtain a dollar for dollar subsidy from the Federal Government. Companies and organisations already contributing to forest industry CRCs should be given credit for their cash or in-kind contributions. Pulp mill guidelines research should also be recognised. Each industry sector would have a small advisory board, which would target impediments to competitiveness identified by that sector. The board would then allocate funds among competing research institutions and CRCs, which would undertake the research work.

Large companies like APM would want, where appropriate, to be able to substitute existing contributions in-kind for contributions in cash.

APM would require the results of some research projects undertaken by the company to be kept confidential and would seek the right to bid for funds on some projects as universities and other research institutions would do.

Similarly, the CSIRO Division of Forest Products (sub. 68, p. 2) supports the formation of the new Corporation:

... the Research Corporation may result in more shorter-term, industrially oriented research. To a small extent, this is likely to be at the expense of longer term, public interest research. Notwithstanding this, we welcome the establishment of the Corporation as a body representative of the broad forest products industry, and a focal point for a national research effort.

### *Funding of the new Corporation*

The FWPRDC will be funded through a levy on domestic production of wood, including that destined for export. In addition, the Corporation will receive funds from a charge on imports of unprocessed wood and imports of certain classes of primary processed forest products (eg sawn timber, wood-based panels and MDF). The Commonwealth Government will provide \$1 for every \$2 raised by the domestic industries. Commonwealth funding of \$4.25 million has been approved for the period up to June 1996, after which the effectiveness of the Corporation will be reviewed. The Commonwealth Government will not match funds raised by the charge on imports.

The Government is still consulting with industry on the operative rate at which the levy and charges will be introduced, although legislation will establish a maximum level based on the average value of production. The rate will be the same for domestic, exported and imported products. This is intended to ensure

that “imports are treated no less favourably than domestic production” (Australia, House of Representatives 1993, p. 974). Moreover, under the legislation:

... funds raised from the charge on imports must be directed to research and development which will be of relevance to the timber importing industry.

While it is possible that some research may be of benefit to overseas producers, it is difficult to see how it would assist importers that act in a merchandising capacity only. To the extent that no benefits accrue to importers, the application of the levy on imported goods is effectively a tax, albeit small, on imported products. The Commission considers that this proposal is inappropriate: it would increase the assistance available to Australian producers at a time when other barriers to trade are being reduced. It also invites retaliation from overseas countries on Australian exports. In the Commission's view, the levy should apply only to Australian production.

Although the R&D Corporation received much in-principle support from inquiry participants, concerns were raised about funding levels and its possible research focus. Several participants expressed concern that expectations will not be met given the Corporation's limited funding base. For instance, the Forest Industries Federation of Western Australia (sub. 65, p. 2) commented:

Given the breadth of potential research topics and the limited contribution of the Commonwealth Government we are concerned that the Corporation cannot live up to either government or industry expectations.

When fully established, the expected annual funding available to the Corporation of \$7–8 million will amount to about ten per cent of current expenditure. However, one concern is that the objective of the Corporation's establishment to enhance R&D may not be realised. For instance, CSIRO further stated:

The establishment of the Corporation will almost certainly result in the loss of some small-scale existing support (in the forestry sector, the Pine Fund in SA and the TFRC in Tasmania) which will reduce the net benefit of the fund. The attitude of companies such as APM [reported above by the Commission] is also of concern as this would, if accepted, further reduce the small net increase in funding which the Corporation promises, and detract from the flexibility and spirit of the Corporation.

The basis for funding will be the average value of production of logs delivered to mills. Some inquiry participants stated that this would not provide sufficient funds. They suggested that it would be more appropriate to base the levy on the value of processed product (which at the same levy would approximately treble government funding), although it was recognised that this would be more difficult to monitor because of company confidentiality.

NAFI stated that the Commonwealth should provide dollar-for-dollar funding as applies to other primary industries, rather than one dollar for every two dollars contributed by industry. It needs to be recognised, however, that industries benefiting from the one-for-one arrangements are typically those which predominantly consist of relatively small producers (ie individual farmers) that would not qualify for taxation concessions on R&D expenditure. This is not the case in the forest industries. According to the Minister for Resources (Australia, House of Representatives 1993, p. 974):

Half of the industry has a primary industry focus on tree production and small rural sawmills, while the other half has a manufacturing orientation. Commonwealth funding is intended to match the rural half of the industry contribution, consistent with arrangements for research and development in other rural industries.

The Commission is not well placed to judge whether the funding available to the new Corporation will be appropriate. It does not, however, believe that some of the concerns raised about the form in which the funds are collected are as important as some suggest. For example, the issue of whether the levy is based on the value of the logs or on the value of processed products is really a second-order matter. The main issue is the magnitude of the revenue raised. In this context, it needs to be recognised that if funding is transferred to a broader base (eg the value of processed products), the level of the levy could be reduced resulting in little or no change to the total funds collected.

#### *Availability of information*

At present, there is very little information available about log volumes and prices. This contrasts starkly with most other rural industries for which extensive market information is readily available to assist producers in making day-to-day operational decisions (eg planting and marketing decisions) and to assess new investment opportunities. The collection of data required to assess R&D levy contributions will, however, provide an opportunity to address this problem. In particular, it should be possible to publish regular details about log sales (eg volumes and prices by log type (and perhaps by major species) for each region). The level of aggregation would be, in part, determined by the need to preserve confidentiality.

#### *Focus of research*

Participants expressed a number of concerns relating to the focus of research that might be undertaken by the new Corporation. These included concerns about the balance between:

- strategic research, applied research and development;

- R&D in log production compared with research into processing issues; and
- research into issues which are of significance to the smaller states (and particular regions) as compared to research into matters affecting the more populous regions.

Participants' concerns and the need for a regional balance in the research is illustrated by the comments of Australian Forest and Land Management (transcript, p. 542):

... we have a fear that if there's a centralised corporation in Canberra that Western Australia might miss out ...

and the Forest Industries Federation of Western Australia (sub. 66, p. 2):

We believe that a significant proportion (greater than 75%) of the funds contributed to the Corporation from WA should be under the control of a Western Australian committee for allocation to projects of importance to WA.

Similarly, CALM (sub. 76, p. 3) stated that:

... it would be essential to ensure that ... funding is distributed on an equitable basis ie each State is allocated funds based on research requirements which may be either in the national or state interest ...

While it is only natural that individual sectors of the forest products industries are concerned that their need for research is not overlooked, it is equally important to recognise that the funds available for research in Australia are relatively scarce. In these circumstances, the Commission considers it imperative that research be directed towards those projects that are likely to yield the greatest payback. In the short term, this could mean that some sectors of the industries — or particular regions — may benefit from a disproportionate share of the research effort. However, in the Commission's view, this is an unavoidable consequence of having a nationally based R&D Corporation that is considerably outweighed by the benefits associated with having the integrated and national focus that the Corporation will bring to research. In this context the Commission endorses the comments of the CSIRO Division of Forestry (sub. 64, p. 2) which stated:

The Corporation will have the opportunity to identify the most critical R&D needs of the forestry and forest products industry as a whole, without regard to structural layering of wood growers, logging contractors and processors. It will be able, by catalytic funding, to bring together these various interests to undertake vertically-integrated projects, of which there have been few examples in the past.

The likelihood of 'inappropriate' research being undertaken by the new Corporation should be reduced by appointment of suitable members to its board and by the adoption of appropriate internal procedures to assist in identifying

and prioritising research projects. A methodology adopted by CSIRO to help establish research priorities is outlined in Attachment I.1.

## **Attachment I.1: CSIRO's methodology for setting research priorities<sup>2</sup>**

Since 1990, CSIRO has been using a method for setting research priorities which incorporates three elements:

- an assessment of the attractiveness of the research to Australia, including the capacity of industry to apply results;
- an assessment of the feasibility of successful research, including an assessment of the capacity to carry out the research; and
- voting in order to allocate priorities by scientists and experts from industry and other bodies outside CSIRO.

The technique has been used by CSIRO to assess research priorities at the national level, at the industry level and at the project proposal level. The following is a brief description of how the technique was used in the CSIRO Division of Forest Products in November 1992. It was also used in the CSIRO Division of Forestry in the same month.

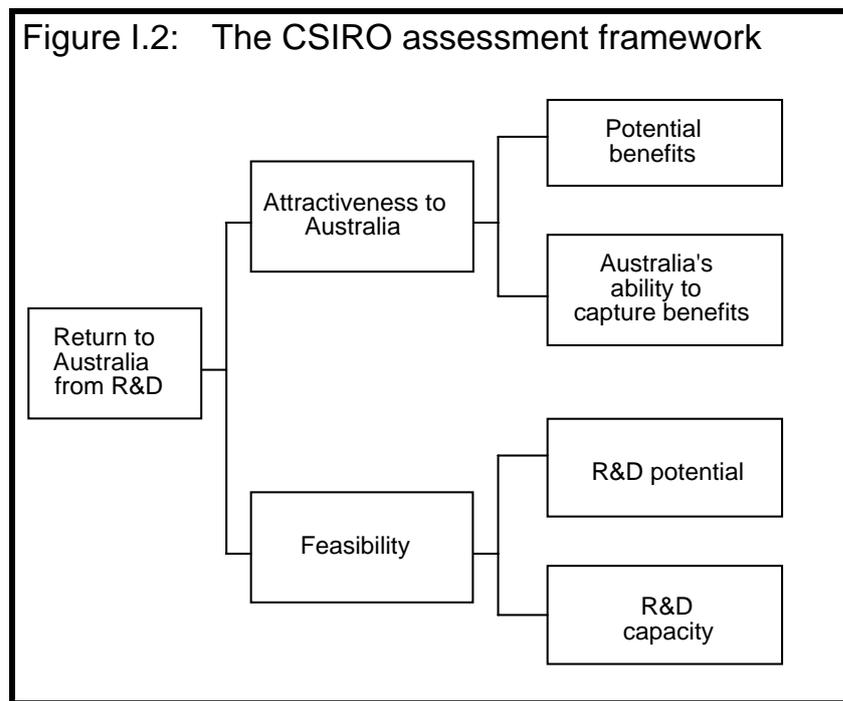
Twelve research areas were chosen for ranking and twelve senior scientists (champions) and industry counterparts were chosen to represent each research area. The areas were:

- 1 Hardwood timber
- 2 Softwood timber
- 3 Value-added products (refers only to furniture-type products from sawn eucalypts)
- 4 Composites
- 5 Chemical pulp
- 6 High yield pulp
- 7 Paper recycling
- 8 Pulpwood quality
- 9 Wood adhesives
- 10 Wood preservation
- 11 Biodeterioration
- 12 Chemicals from wood

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<sup>2</sup> Prepared by CSIRO's Division of Forest Products, July 1993.

The champions and their industry counterparts prepared data sheets describing the industry which corresponded to each research area, and evaluation sheets describing the "attractiveness" of research to Australia and the "feasibility" of achieving research success. "Attractiveness" was discussed under two headings; the maximum benefits Australia might gain from full research implementation and the ability of Australia to capture these benefits. "Feasibility" was also discussed under two headings; the potential of the research field and the capacity to undertake the research in Australia. The method is illustrated in Figure I.2.



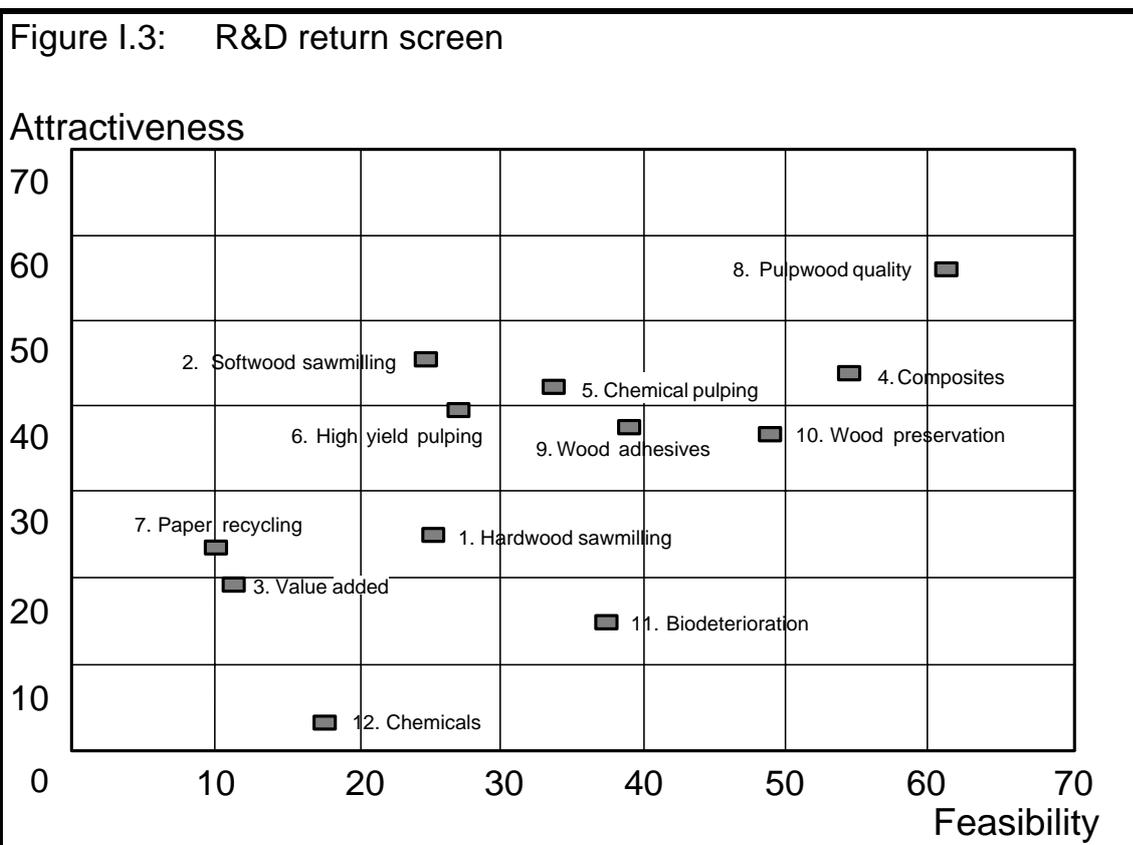
The ranking of research areas took place over a two day workshop. Champions, industry counterparts plus a few other experts attended the workshop. All the data and evaluation sheets were distributed to participants before the workshop and they were asked to score each area according to potential benefits, ability to capture benefits, R&D potential, and R&D capacity on a scale of 1 to 10 (10 being the highest, most desirable score).

Data and evaluation sheets were distributed before the workshop so that preliminary scores could be collected and the first part of the workshop was devoted to a discussion of this initial voting. Participants were asked to explain votes that were very different from the average of all participants' scores.

Twelve small groups were then formed to discuss each of the research areas. Each group consisted of the champion, the industry counterpart and usually one

other participant. The small group discussed the initial voting before coming to a consensus second vote on the four aspects of each of the twelve research areas.

Scores were then averaged across the groups for each research area, and the average "potential benefit" was multiplied by the average "ability to capture" to define an "attractiveness" score. The average "R&D potential" was multiplied by the average "R&D capacity" to derive a mean "feasibility" score for each research area. The numerical scores were then plotted on a scatter graph with axes of "attractiveness" versus "feasibility", as shown in Figure I.3.



Very strict interpretation of the graph insists that research areas in the top right hand quadrant of the graph are considered to deserve strong emphasis and those to the bottom right hand quadrant deserve limited support. A milder interpretation insists that projects in the bottom left quadrant can be supported but more selectively and must be accompanied by strong individual appraisal cases.

The second day of the workshop involved writing "role statements" for the Division in each research area in response to the priority scoring done the previous day. The initial draft of the role statements was written by the small group championing the area. Each draft was exchanged with another group and rewritten in response to comments. This exchange and rewriting was repeated a second time.

The workshop was completed with an open discussion session of the twelve role statements.

The process does not provide any automatic tool for deciding on how much should be invested in each research area but gives a good "feel" for what the balance should be. It does not indicate who should do the work or how it should be funded. It encourages all participants to assess their own cases in competition with all others within a formal process. Much depends on the choices of original research areas that are to be ranked and the individuals who attend the workshop. The process is particularly useful in giving both researchers and outside experts an appreciation of the wide demands on publicly funded research. At the end of the process, in the case of the Division of Forest Products, there was wide acceptance of the exercise as a fair and useful process.



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## **APPENDIX J: ASSISTANCE TO FOREST PRODUCTS INDUSTRIES**

### **J.1 Introduction**

In the past, tariffs have provided the forest products industries with disparate levels of assistance. This situation is expected to change through the current program of tariff reductions.

In previous reports into these (and other) industries, the Commission has recommended reductions in the level of assistance. It has argued that high and disparate levels of assistance provided to different segments of Australian industry result in inefficient patterns of production and consumption. It is both the level of, and disparities in, assistance which are indicative of the so called 'efficiency losses' in production and consumption.

Activities that have a relatively high level of assistance have an enhanced ability to attract and hold productive resources that could be more efficiently employed elsewhere in the community. In this regard, government assistance in the form of tariffs and quotas have favoured import competing industries at the expense of export industries and the non-traded goods sector.

The potential for efficiency losses are magnified if there are wide disparities in the net assistance afforded activities that use similar processes and compete intensively for similar resources. Likewise, efficiency losses in consumption are potentially greatest where there are wide disparities in assistance arrangements generating artificial price differences between closely competing products.

The Commission's nominal and effective rates of assistance estimates cover the major Commonwealth Government interventions which selectively alter incentives between activities. The estimates include assistance provided via tariffs, quantitative import restrictions, local content schemes, certain export incentives and any cost penalties imposed by domestic pricing arrangements for agricultural commodities. Due to their relative sectoral importance and data limitations, the estimates do not cover the entire range of assistance provided by the Commonwealth — eg anti-dumping arrangements, government purchasing preferences, offsets and partnerships for development agreements.

Moreover, the Commission's estimates do not attempt to take account of subsidies which may be embodied in the pricing policies of government instrumentalities (eg electricity, forestry or water authorities). The reason for

this are that such pricing policies may involve direct subsidies, cross-subsidies between activities or even excess charges. In addition, these arrangements can, and do, differ between firms and may be the subject of confidential commercial arrangements.

The nominal and effective rates of assistance are partial measures, which provide a useful means of describing the structure affecting industries. These measures are complemented by the Commission's use of the ORANI model of the Australian economy to quantify the benefits of tariff reform. The advantage of this model is that it takes into account the many costs which arise as a result of protected industries attracting, and withholding, resources from more efficient unprotected industries.

## **J.2 Forms of assistance to forest products industries**

### **Past assistance arrangements**

In the past, duties payable on imported pulps and papers have varied in both magnitude and form. The applicable rate on paper has depended upon factors such as grammage, method of manufacture and whether the paper was uncoated or coated. Imports of newsprint have been duty free, as have imports of certain uncoated and coated mechanical papers admitted under policy by-law (some of these papers were bountiable until February 1987). During the mid 1980s, significant quantities of imports occurred at General rates of Free, 2 per cent, \$50 per tonne (equivalent to ad valorem rates ranging from about 2 to 10 per cent), 20 per cent, 22.5 per cent and 25 per cent. Imports of dyeline base paper and paperboard were dutiable at 30 per cent.

Similarly, a diverse range of assistance measures have been afforded to the wood products industries. Prior to 1988, the highest level of assistance was afforded the manufacture of boards. For example, tariffs on particleboards were 30 per cent and those on plywood were 40 per cent — quota arrangements also existed for the import of plywood between 5.5 mm and 23 mm thickness. (For a further discussion, see IAC, 1981.) Imports of rough sawn timber (eg Douglas Fir) were dutiable at a rate of 10 per cent, whereas dressed timbers and veneers were dutiable at a rate of 15 per cent.

The tariff schedule applying to imports of forest products has been further complicated by:

- developing country preferences which allow goods produced in developing countries to be imported into Australia at concessional tariff rates (eg writing paper and plywood imported from Brazil or Indonesia are

dutiable at 10 per cent, whereas these products are dutiable at 15 per cent if they are imported from a developed country); and

- tariff concessions and policy by-laws, which allow products that would normally be subject to tariff duties to be imported free of duty (eg coated printing papers, used in magazine-like publications, can be imported duty free).<sup>1</sup>

### **Recent changes In assistance arrangements**

In previous reports into the forest products industries (see IAC 1981 and IAC 1987) the Commission has argued that a less disparate, generally lower, structure of assistance should apply to both wood and paper products. In its 1987 report into the pulp, paper, paper products and printing industries, the Commission was of the view that a tops down approach was the best way to achieve this. Among other things, the Commission recommended that:

- specific rate tariffs be converted to ad valorem tariffs;
- tariff rates above 15 per cent be phased down to 15 per cent over a two year period;
- tariff rates less than 15 per cent remain unchanged; and
- bounties applying to certain printing and writing papers be 7 per cent of net selling price, or its equivalent in terms of gross selling price.

The Government accepted the major recommendations of the Commission for lower tariffs and bounties. Tariffs were reduced on a 'tops down' basis to a maximum General Rate of 15 per cent over two years, with the phasing arrangements commencing on 1 January 1988. Rates of duty at 15 per cent or below generally remained unchanged except for the conversion of specific rates to ad valorem rates. (Some of the Commission's other recommendations were varied — for further details see IAC 1988a, pp. 209-210.)

The Government also decided that, from 1 January 1988, end-use policy by-laws would provide duty free entry for all coated paper used in magazine production and minimum rates of duty for clay coated paperboard used to

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<sup>1</sup> In 1991-92, imports under Commercial Tariff Concession Orders totalled \$81 million of the \$1210 million of pulp, paper and paperboard imports. Other types of concessional imports in that year totalled \$199 million, the principal one being paper valued at \$162 million for use in the production of Chapter 49 goods (ie printed books, newspapers, pictures and other products of the printing industry: manuscripts, typescripts and plans). The principal wood products imported are veneers and manufactured boards of wood. Imports of these were valued at \$103 million in 1991-92, of which imports under all forms of concessions totalled \$6 million.

manufacture aseptic liquid packaging and solid bleached sulphate board for flip top cigarette packaging.

These changes have been largely overtaken by the Government's overall reductions in tariffs in May 1988 and March 1991. In the Economic Statement of May 1988, the Government announced that nominal tariff rates above 15 per cent were to be reduced to 15 per cent, while rates between 10 and 15 per cent were to be reduced to 10 per cent by 1 July 1992. See Table J.1 for a summary of current and proposed tariffs on forest products.

**Table J.1: Summary of the major tariff rates applicable to forest products**  
(per cent)

<i>Forest product</i>	<i>Current tariff rate<sup>a</sup></i>	<i>March 1991 program</i>
<b>Wood products</b>		
wood chips	5	5
sawn timber	Free, 5 or 9	Free
veneer and sheets of plywood	5	5
particleboard	12	5
plywood	12	5
<b>Pulp and paper products</b>		
pulp	Free	Free
newsprint	Free	Free
printing and writing paper	12	5
industrial wrapping and packaging paper	12	5
tissue paper or tissue products	12	5

<sup>a</sup> The developing country preference rates are 5 percentage points lower than the general tariff rates. Margins of preference also apply to certain products imported from Canada, Forum Island countries, Hong Kong, the Republic of Korea, New Zealand, Papua New Guinea, Singapore and Taiwan.

*Source:* Customs Tariff, Section 9, Chapters 44, 47 and 48.

These changes had a differential impact on the paper and wood products industries. For instance, the paper industry was largely unaffected as the tariffs on pulp and paper products were already being phased down to 15 per cent by January 1990. On the other hand, some wood products were assisted by a tariff of 20 per cent, notably particle and fibre boards, and some by a tariff of 25 per cent, such as veneered panels and plywood. These rates were phased down to 15 per cent by 1 July 1992. A number of other wood products (some sawn timber and manufactured boards) were assisted by a tariff of 15 per cent. These tariffs were phased to 10 per cent by 1 July 1992.

Tariffs on forest products will continue to fall in line with the Commonwealth's 1991 program of tariff reductions on manufactured goods. This program will reduce most tariffs to a maximum of 5 per cent by 1996. Tariffs which are currently set at 15 per cent (eg particleboard, plywood and writing papers) will fall to 12 per cent from 1 July 1993, to 10 per cent from 1 July 1994, to 8 per cent from 1 July 1995 and to 5 per cent from 1 July 1996. Tariffs which are currently set at 10 per cent (eg planed timber such as Douglas Fir) will fall, on the same schedule, to 9 per cent, to 8 per cent, to 7 per cent and then 5 per cent.

### J.3 Measuring assistance

To estimate the level of assistance afforded through a range of interventions, the Commission has developed a number of partial measures of assistance, namely, the nominal and effective rates of assistance (see Box J.1).

#### Box J.1: Measures of assistance

Nominal and effective rates are two measures used by the Commission to summarise the assistance provided to Australian industries by government through tariffs and other forms of assistance.

The *nominal rate of assistance on outputs* measures the gross assistance provided to the products of a particular industry. It is the percentage by which producer returns are increased by assistance, relative to a situation of no assistance. Similarly, the *nominal rate of assistance on materials* is the percentage change in the prices paid for materials used in the production process due to government intervention (that is, the price increase on intermediate inputs). Hence, these two measures are good indicators of the distortions in consumption patterns which may arise as a result of assistance.

The *effective rate of assistance* measures the net assistance received by an industry. It takes into account the subsidy effect of assistance on an industry's output and the tax effect of assistance on its inputs. It measures the percentage increase in value added in an industry because of assistance to both outputs and inputs, relative to a situation of no assistance. The effective rate, therefore, allows comparisons of the extent to which industries have been advantaged or disadvantaged by assistance relative to each other.

Nominal rates of assistance on outputs and materials and effective rates of assistance for the forest products industry are presented in Table J.2.

In general, assistance arrangements have provided the forest products industries with a level of assistance which has been just above the manufacturing average. While this is well below the level of assistance afforded to the motor vehicles and textiles, clothing and footwear industries, it is above the level afforded to most other activities in the economy (eg 40 per cent of imported items are free of duty).

Table J.2: Assistance rates for wood and wood products, paper and paper products, motor vehicles and total manufacturing<sup>a</sup>  
(per cent)

ASIC code	Average nominal rate						Effective rate			
	on outputs			on materials			1986-87	1990-91	March 1991 program	
	1986-87	1990-91	March 1991 program	1986-87	1990-91	March 1991 program				
<b>WOOD AND WOOD PRODUCTS</b>										
2531	Log sawmilling	3	3	3	2	2	1	4	4	4
2532	Resawn and dressed timber	9	7	4	3	2	2	17	14	6
2533	Veneers and manufactured boards of wood	16	13	4	9	7	3	27	23	6
2537	Hardwood woodchips	-	-	-	..	..	..	..	..	..
<b>PAPER AND PAPER PRODUCTS</b>										
2631	Pulp paper and paperboard	9	6	2	4	1	1	19	15	6
2632	Paper bags (including textile bags)	20	13	5	14	10	3	30	19	7
2633	Solid fibreboard containers	21	13	4	7	6	3	45	24	6
2634	Corrugated fibreboard containers	21	12	4	13	9	3	38	19	6
2635	Paper products nec	21	12	4	9	6	3	38	21	6
<b>TOTAL MANUFACTURING</b>		12	9	3	7	6	2	19	15	5

a Updated estimates, up to the year 2000, are contained in the Commission's 1992-93 Annual Report.

Source: Industry Commission and Industries Assistance Commission, *Annual Reports*, and IC (1991a).

A further feature of the assistance arrangements has been the wide disparities in assistance afforded to the various forest products activities. In the case of wood products, the highest level of effective assistance has been provided to the more elaborately transformed products such as the manufacture of particleboard and plywood. Log sawmilling, on the other hand, has received minimal levels of assistance.

Wide disparities in assistance have also been a feature of the pulp and paper industries. In terms of paper production, the effective rate of protection on newsprint has been negative whereas that on woodfree (coated and uncoated) papers has been around 30 per cent. In addition, the level of assistance which has been made available to the manufacture of fibreboard containers (both solid and corrugated) has been around 40 per cent (for further details see IAC 1987, Appendix O, p. 6). However, given the competition which exists in the provision of packaging materials (eg aluminium, glass and plastic), it is unlikely that all of the assistance available to fibreboard containers has been used.

The 1988 and 1991 programs of tariff reductions have reduced, and will continue to reduce, many of the distortions created by assistance to the forest products industries. Not only the level of assistance will fall, but the disparities in assistance between activities will also continue to be reduced. These features are clearly illustrated in Figures J.1 and J.2.

When measuring assistance afforded industries by tariffs on competing imports, the Commission usually uses General tariff rates. This is based on the assumption that imports sourced from countries paying the General tariff rate set the landed duty paid price of imports and that developing countries could not compete at this price without access to the preference. The preference is assumed to displace imports from General to preferential country sources. The Commission's estimates of assistance to forest products industries are based on this assumption.

In some cases it might be argued that developing country preferences undermine the assistance afforded by the General tariff rate. In general, this is not the case for imports of forest products since, over the last few years, less than 10 per cent of imports have been sourced from developing countries (ABARE 1992b). However, evidence presented by APPM (sub. 70, p. 7) indicates that over 50 per cent of imports of uncoated woodfree papers are sourced from developing countries — primarily Brazil and Indonesia. This suggests that imports of uncoated woodfree papers from developing countries may be undermining the general rates.

Figure J.1: Average nominal rates of assistance: forest products and total manufacturing

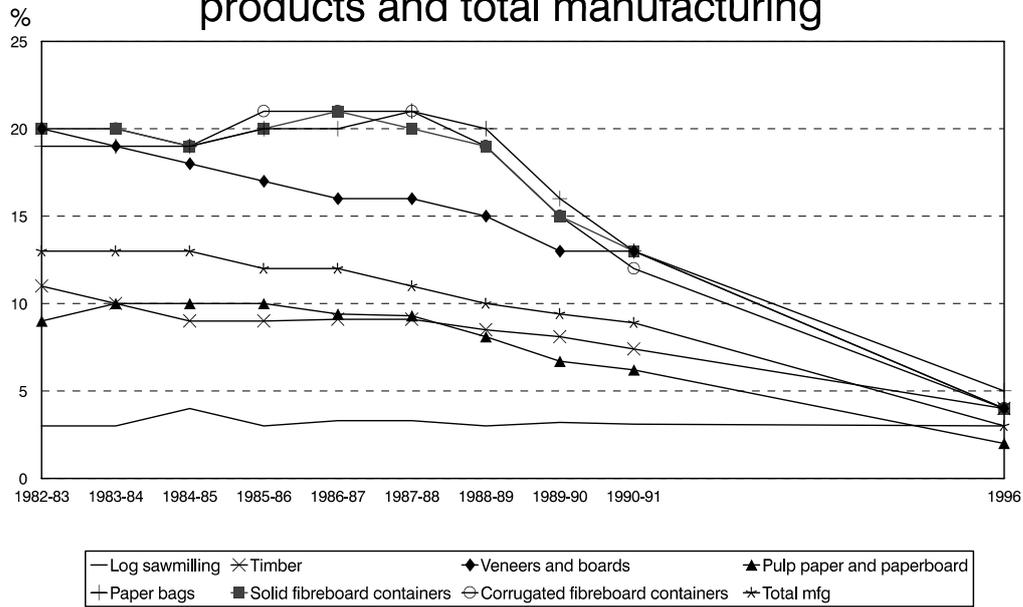
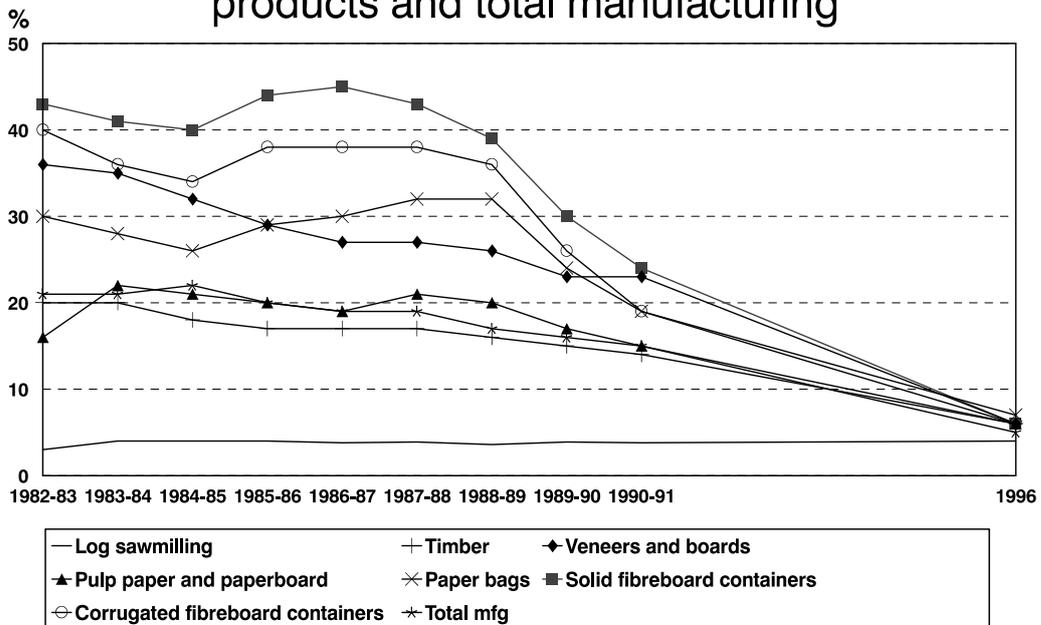


Figure J.2: Average effective rates of protection: forest products and total manufacturing



## **J.4 Benefits of tariff reform**

Tariffs increase the price of protected goods relative to other, unprotected, goods or services. This price increase will tend to:

- alter consumption patterns away from protected goods towards unprotected goods. This diversion in consumption patterns will be greatest where different levels of assistance are provided to goods which serve similar purposes (eg differing levels of assistance are provided to the manufacture of aluminium, glass, paper and plastic packaging);
- alter production patterns by inducing resources to move into areas which are less suited to the Australian economic and trading environment. As a result, the total output of the economy, valued at world market prices is reduced; and
- act as a tax on consumers by raising the price of protected goods. Indeed, tariffs tend to be regressive since the incidence of tariffs fall most heavily on the lowest 30 per cent of income earners.

Other costs of protection have been the fragmentation and lack of export orientation of Australian industry. The benefits, therefore, of tariff reductions are that the effect of these distortions will be reduced.

In general, reductions in tariffs will lower import prices which will induce a switch in demand from domestic production towards imports. In response to greater competition from imports, protected industries may either improve productivity to compete more effectively with imports and/or contract production. In either case, this may reduce the demand for labour and other factors of production in the protected industries. This places a downward pressure on nominal wage rates. Also, as a result of tariff cuts, the price of imported materials and capital equipment may fall. These lower prices will provide a stimulus to export industries and to those industries which are relatively intensive users of tariff protected materials. This stimulus can help to mitigate the effects of reduced assistance for some import competing industries.

A program of tariff reductions for the forest products industries alone would generally be expected to result in more imports and lower output levels for forest products industries. For instance, relatively small (around one per cent) declines in output may occur in the veneers, boards and paper industries (see Table J.3). For the veneers and boards industries, these declines reflect the relatively sizeable cut in tariff rates. On the other hand, declines in output for the paper industry reflects the strength of import competition.

**Table J.3: Projected long run effects of May 1988 and March 1991 programs of manufacturing assistance reductions**  
(per cent change)

	<i>Reductions in forest products assistance</i>	<i>Reductions in all manufacturing assistance</i>
<b>Real GDP</b>	..	1.00
<b>Sectoral output</b>		
Agriculture	0.01	2.22
Mining	0.04	7.96
Manufacturing	-0.01	-0.75
Services	0.01	0.76
<b>Forest products output</b>		
Sawmill products	-0.71	0.54
Veneers and boards	-0.78	-0.56
Pulp, paper and paperboard	-1.34	-0.20
Bags and containers	-0.23	0.66
Paper products nec	-0.61	-0.04
<b>Forest products imports</b>		
Sawmill products	1.96	..
Veneers and boards	4.31	3.32
Pulp, paper and paperboard	1.29	0.97
Bags and containers	4.80	5.16
Paper products nec	4.15	3.23

.. Between -0.005 and 0.005 per cent.  
Source: ORANI model projections.

However, if, as is currently the case, tariff reductions on forest products are part of 'across the board' reductions, other factors tend to stimulate output of forest products. First, as real GDP grows, the demand for forest products increases. Second, the cost to manufacture forest products will decline as the price of tariff assisted inputs (eg chemicals) fall.

For instance, in all cases, reductions in assistance elsewhere in the manufacturing sector reduce the adjustment pressure on the forests products industries (eg both production and imports of bags and containers are stimulated by growth elsewhere in the economy). Overall, the adjustment pressures on the forest products industries are relatively small, much smaller than those on industries such as motor vehicles, electronic equipment and household appliances which face much larger reductions in assistance.

## J.5 Other non-measured forms of assistance

### Dumping

In the recent past, anti-dumping action against paper has been significant. While no complaints were initiated in the period 1986–87 to 1989–90, in 1991–92, there were two and in 1990–91 there were three anti-dumping and countervailing complaints formally initiated by the local industry. Currently, the Australian Customs Service is examining a complaint about alleged dumping of certain white A4 cut ream copying paper exported to Australia from Austria, Brazil, Finland, France, Germany, Indonesia, South Africa and the United States. Following a preliminary finding that the local industry has suffered material injury from paper imported from all of the nominated sources other than Austria and France, provisional dumping duties have been applied.

During the previous four years, no complaints were initiated. Over the period from 1986–87 to 1991–92, no complaints were initiated by the wood and wood products industries.

### Other assistance measures

The forestry industry has received assistance through various Commonwealth Government budgetary measures. These include the National Afforestation Program and a number of packages for specific areas. Budget outlays on the forest industries during 1990–91, 1991–92 and 1992–93 and estimated for 1993–94 are presented in Table J.4. Currently, the Tasmanian forest industry package is the most significant with outlays in 1992–93 of \$12.5 million and estimated outlays of \$7.5 million in 1993–94.

	1990-91	1991-92	1992-93	1993-93 <sup>e</sup>
National afforestation program	0.7	0.4	0.1	-
North east Queensland rainforests package	-	-	0.5	1.1
NSW south east forests package	0.4	0.1	-	-
Tasmanian forest industry package	-	4.2	12.5	7.5
Victorian forest industry package	3.9	4.7	1.3	-

a Commonwealth Government expenditure net of industry contributions  
e Budget estimates

In its One Nation statement on 26 February 1992, the Government announced that it “remains committed to facilitating major investment in the forest industry by providing security for industry while at the same time ensuring that environmental standards are not compromised”. The Government committed itself to an accelerated and expanded program of joint regional assessments of national estate forest values. It also announced a form of resource security for the bulk of the hardwood sawmilling sector, by way of enhanced inter governmental agreements; these agreements are contingent upon industry commitment to value-adding investment or restructuring.

In the One Nation statement, the Government also announced a development allowance in the form of an accelerated depreciation allowance on new plant and equipment for certain larger scale investments. The pulp and paper industry was identified as one with potential for adding value to a natural resource base and thus eligible to receive assistance from this source. To be eligible, projects must involve a capital cost of \$50 million or more and be completed within a specified time frame. To receive the allowance, the projects must demonstrate that they meet criteria designed to ensure they are world competitive in respect of proposed practices of employers, employees and governments at all levels. The development allowance will be at the rate of 10 per cent and allowed when plant is first used or installed ready for use.

Assistance may be received by the forest products industries through programs available to all industries generally. Export support is provided by both Commonwealth and State Governments. There are generally available measures to support export marketing, product development, and export finance and insurance.

The Government’s major program in its package of measures to encourage research and development in Australian industry is the 150 per cent tax concession for research and development expenditure. During 1989–90 (the latest year for which statistics are available) about 85 companies in forestry related industries (includes furniture making, printing and publishing) had registered for such tax concessions (IR&D 1992, pp. 53-54).

The Environmental Technology Scheme has been established to “foster sustainable development by enhancing the capacity of Australian industry to develop marketable environmental technologies which meet environmental priorities” (IR&D 1992, p. 39). For example, during 1991–92 a grant of up to \$318 000 was approved for ANM together with the University of Tasmania for development of a coupled process for bleaching of mechanical pulp and recycling of newsprint using hydrogen peroxide.

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