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THE NEW ZEALAND WOOD PRODUCTS INDUSTRY IN THE 1980s

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CONFERENCE DRAFT ONLY : NOT TO BE CITED

1 Introduction

This paper describes the performance of the New Zealand Wood Products industry over the 1980s. This industry is a sufficiently important part of the New Zealand forestry sector to warrant such an analysis. The need to evaluate the effects of recent economic restructuring of the New Zealand economy provides additional motivation for this study. It is not possible in an analysis of this type to determine a causal relationship between government economic policies and the performance of the Wood Products industry. Industry performance is a response to a complex of new and existing policies, changes in processing technology, and the market signals of domestic and international markets. This paper therefore focuses on documenting the changes in policy directly relevant to the Wood Products industry and describing the performance of the industry over the 1980s.

2 The Economic and Policy Environment

Election of the Labour party to govern New Zealand in July 1984 set in motion a radical re-structuring of the New Zealand economy. Re-structuring was carried out to improve the adaptability and flexibility of the New Zealand economy, by adopting measures to ensure that market signals reach economic agents with as little distortion as possible (New Zealand Planning Council, 1989). Nevertheless government policies have led to industry concerns about reduced export competitiveness and a lack of investment in new plant and equipment (for example, NZTIF 1988). Microeconomic and macroeconomic policy measures were both employed as instruments of restructuring. The main features of macroeconomic policy have been a firm monetary policy, a floating exchange rate, and measures to reduce government fiscal debt. How has the macro-economy performed over the 1980s ? Table 1 shows that growth in the New Zealand economy averaged nearly 2 % per year but slowed over the period, with the economy contracting slightly in 1989. However, dwelling construction activity - a major end-use of wood products - generally increased after 1984. Table 2 shows the impact of tight monetary policy on interest rates.

Table 1 : Economic Activity in New Zealand

YEAR	NEW DWELLING PERMITS (year ending March)	CHANGE IN REAL GDP (%) (year ending March)
1980	15,197	2.6
1981	14,442	1.1
1982	19,006	4.9
1983	15,999	0.5
1984	20,226	2.7
1985	21,782	5.6
1986	23,035	1.6
1987	20,128	1.4
1988	19,886	0.1
1989	19,583	-1.2

Source : Department of Statistics

The goal of microeconomic policy is to improve economic efficiency by increasing competitive pressures, through trade liberalisation, reduction in assistance to industry, regulatory, and agency reform (New Zealand Planning Council, 1989). Trade and industry assistance policies are dealt with in Section 5. Two other major policy changes affected the Wood Products industry directly. First, price control was removed from exotic timber in 1982, although economy-wide price controls were imposed soon after, and not lifted until 1984. Secondly, the timber production role of the New Zealand Forest Service was taken over by the NZ Forestry Corporation, a State-owned enterprise. At the time of its demise (March 1987) the New Zealand Forest Service supplied logs that produced 56 % of NZ's output of sawn timber (Ministry of Forestry, 1988). The Forestry Corporation has not been constrained by government policy to favour domestic processing by restricting log exports, which has raised concerns from the sector of the industry that has historically relied on the Crown timber resource. Government policy is now to withdraw from commercial forest ownership by selling cutting rights to the forests currently managed by the New Zealand Forestry Corporation. The result of this sale, due to be completed in 1990, is likely to be influential in determining the future structure of the Wood Products industries.

Table 2 : New Zealand Interest and Inflation Rates[1]

YEAR	BANK BASE LENDING RATE (%)	PRODUCER PRICE INDEX INFLATION	REAL INTEREST RATE (%)
	at March	annual, at March	at March
1980	13.24	13.58	-0.34
1981	14.87	16.81	-1.94
1982	16.51	22.85	-6.34
1983	17.30	13.89	3.41
1984	13.53	5.94	7.59
1985	14.25	0.20	14.05
1986	19.25	14.88	4.37
1987	21.10	10.94	10.16
1988	18.40	5.78	12.62
1989	15.80	3.34	12.46

Sources : Department of Statistics, BNZ Economics Department
Reserve Bank of New Zealand.

3 Wood Products Production, Investment and Demand

Table 3 describes the composition of the Wood Products industry. The industry primarily services the domestic market (in 1989 less than 17 % of total Wood Products industry output was exported).

The Wood Products industry contributed 1.4 % to GDP in 1987 and 6.3 % of the value of manufacturing output in 1989 (Department of Statistics). The relative importance of the Wood Products industry to forest growers has declined with the expansion of the pulp and paper industry since the 1950s, but in 1989 sawlogs and peeler logs used by the domestic industry still comprised 45 % of total roundwood volume harvested (Ministry of Forestry). Pruned logs and unpruned sawlogs are priced well above pulplogs, and therefore constitute a major source of revenue to the forest grower. Sawmill residue has been increasingly used as a fibre source, so that now about one third of sawlog input (about 1.4 million cubic metres roundwood equivalent) is on-sold to the fibre products sector. About 30 %

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[1] The base lending rate is derived from the first mortgage lending rate (excluding government) prior to 1985. For 1985 and 1986 used the BNZ base lending rate, and subsequently data published by the Reserve Bank). The producer price index used is Wood and Wood Products output price. Real interest rates are calculated as the nominal interest rate minus inflation.

of the total value of forest products exported in 1989 was produced by the Wood Products industry. Figure 1 shows the contribution of various sectors of the Wood Products industry.

Table 3 : Description of the Wood Products Industry

Primary processing
- sawmills
- wood-based panel mills
- chipmills

Secondary processing
- planing, preservation and drying

Manufacturing plants
- joinery
- wooden containers
- cork products
- wooden furniture
- mattresses

Sales revenues and variable costs over the 1980s are shown in Figure 2. Labour costs show a slight decline while sales and other income and other variable costs have remained fairly constant.

Investment in capital equipment in the industry has been generally higher in the years since 1984 (Figure 3). The very high real interest rates of the late 1980s (see Table 2) did not prevent a higher than average level of investment for this period. However the changing nature of the timber resource, caused by the harvest of younger and smaller trees over this period, has required the adoption of new technology and hence explains the higher level of capital investment. Investment in stocks of materials and finished goods has declined.

4 Industry Employment and Labour Productivity

Total employment in the sector has declined 29 % recently (from 23,800[2] to 18,500) - the lowest level this decade (see Figure 4). Real output per employee hour has increased as shown in Figure 5, in line with improvements in manufacturing generally in New Zealand. Real output per employee hour is lower than the manufacturing average for New Zealand. Increases in labour productivity have been achieved primarily by reducing employment.

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[2] Total employment for 1989 is the author's estimate, based on unofficial information provided by the Department of Statistics. The source of previous years data is the Department of Labour Quarterly employment survey.

FIGURE 1 : WOOD PRODUCTS INDUSTRY EXPORTS

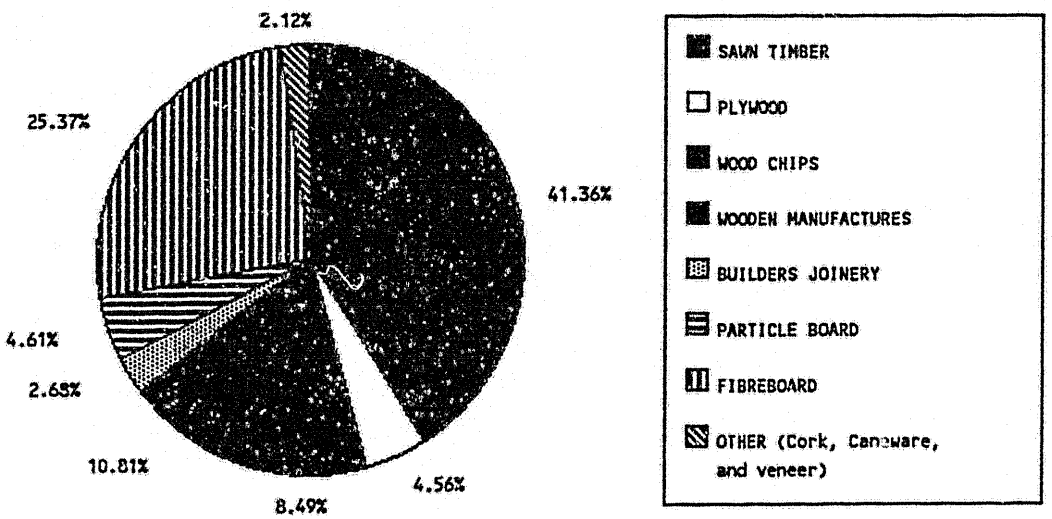


FIGURE 2 : WOOD PRODUCTS INDUSTRY REVENUE AND VARIABLE COSTS

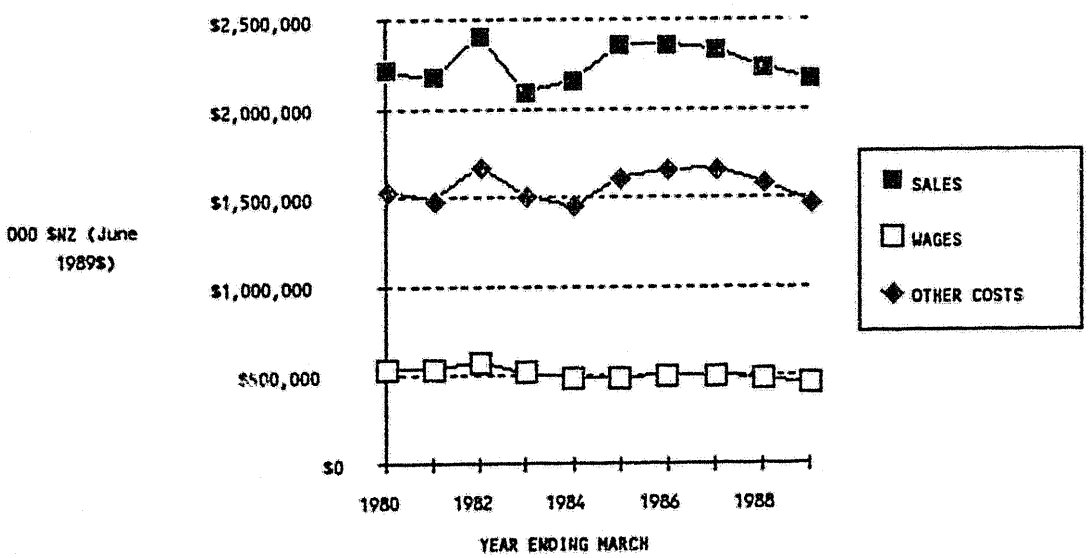


FIGURE 3 : FIXED AND INVENTORY INVESTMENT IN THE WOOD PRODUCTS INDUSTRY, NEW ZEALAND

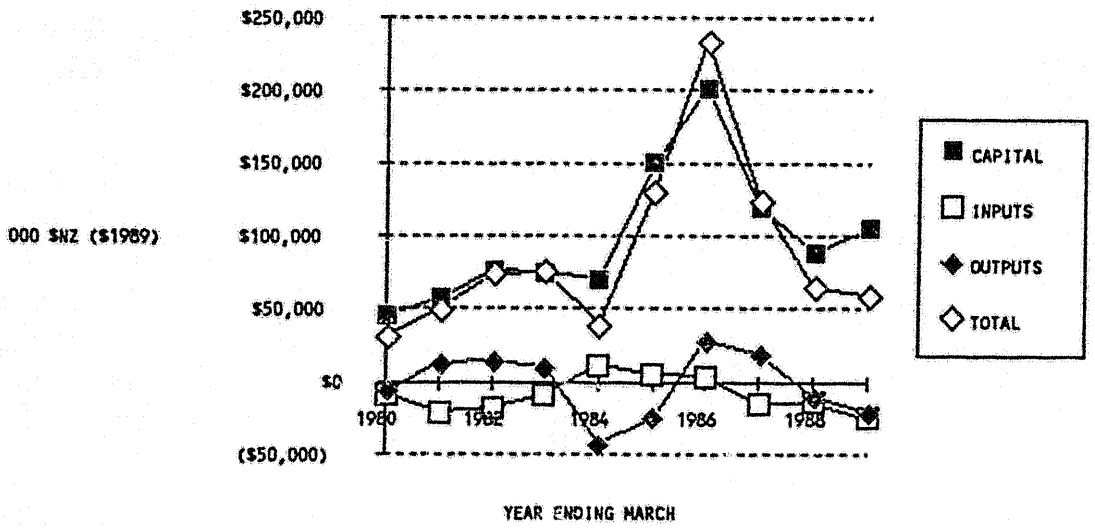


FIGURE 4 : WOOD PRODUCTS INDUSTRY TOTAL EMPLOYMENT, NEW ZEALAND

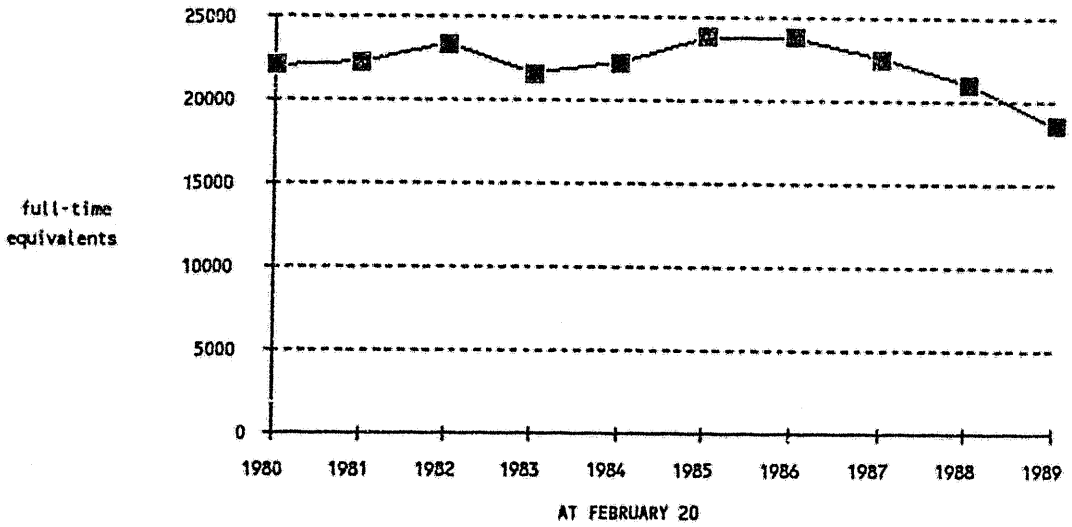
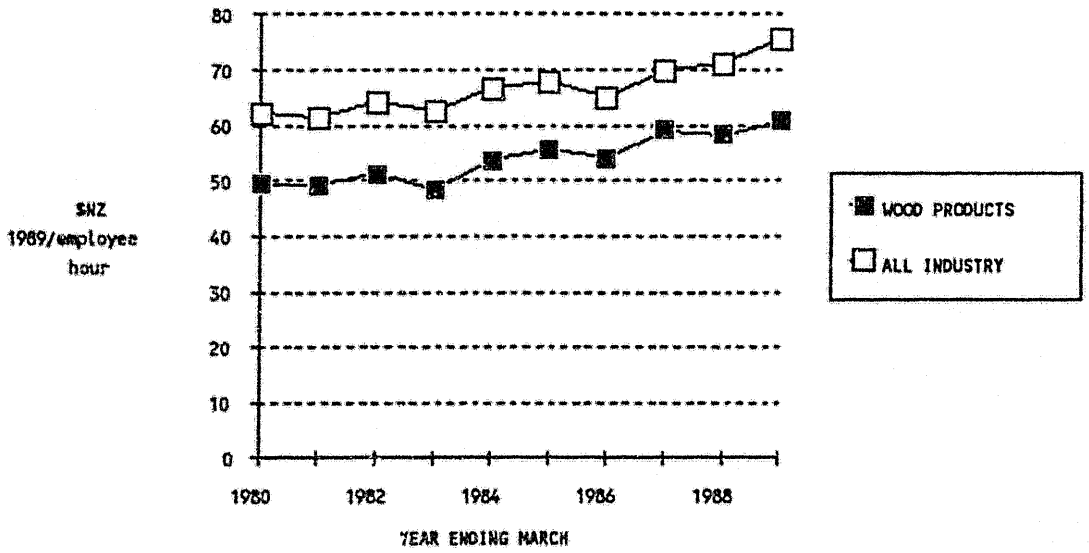


FIGURE 5 : WOOD PRODUCTS INDUSTRY NET REAL HOURLY OUTPUT



5 Industry Profitability and Competitiveness

Profitability in the Wood Products industry is indicated by 'operating margin'[3] in Figure 6. Figure 6 shows that a level of about 7% - 8% margin appears normal for this industry. Profits were low in 1983 (housing permits issued in that year were only 16,000 and sawn timber exports to Australia declined by about 25 % from the previous year), but higher than average in 1984, 1985 and 1989. Data presented above suggest that industry margin has been improved by reducing stocks of inputs and finished goods, and by reduction in the labour force. Figure 6 also shows that for New Zealand industry there has been a generally increasing trend in operating margin over the period. This trend may be at least partially explained by increasing capital costs.

Before government reforms, the Wood Products industry received assistance and protection from tariff and quantitative trade barriers, and from a system of export subsidies. Syntec (1984) estimated that 90 % of the output of the Wood Products industry was protected by import licensing, with a further 7 % protected only by tariffs. By July 1988 import licensing had ended for most goods (Planning Council, 1989). In principle at least, the Wood Products industry is now more subject to import competition. New Zealand's remoteness and the relatively small size of the domestic market may continue to provide natural barriers to widespread competition from imports.

A major subsidy to wood products exports - the Export Performance Taxation Incentive (EPTI) - was phased out over a three year period from April 1985 to March 1988 (Planning Council, 1989). Makin (1983) estimated that the effective subsidy for private sector sawmilling resulting from the EPTI and cost excesses due to import controls was 24.9 %. Zeitsch (1984) estimated that the nominal rate of assistance under EPTI for the Wood Products Industry in 1981 was 19.3 %.

The effective rate of assistance takes account of both protection of an industry's output, and cost excesses that the industry incurs because of protection of industries that produce inputs to that industry. The effective rate of assistance to the Wood products industry excluding the effects of export subsidies was estimated (Syntec, 1989) to have declined from 51 % in 1982 to 28 % in 1986 and 21 % in 1988.

One measure of export competitiveness is the relative price of an industry's output in domestic and export markets, which is determined both by the nominal exchange rate and the level of

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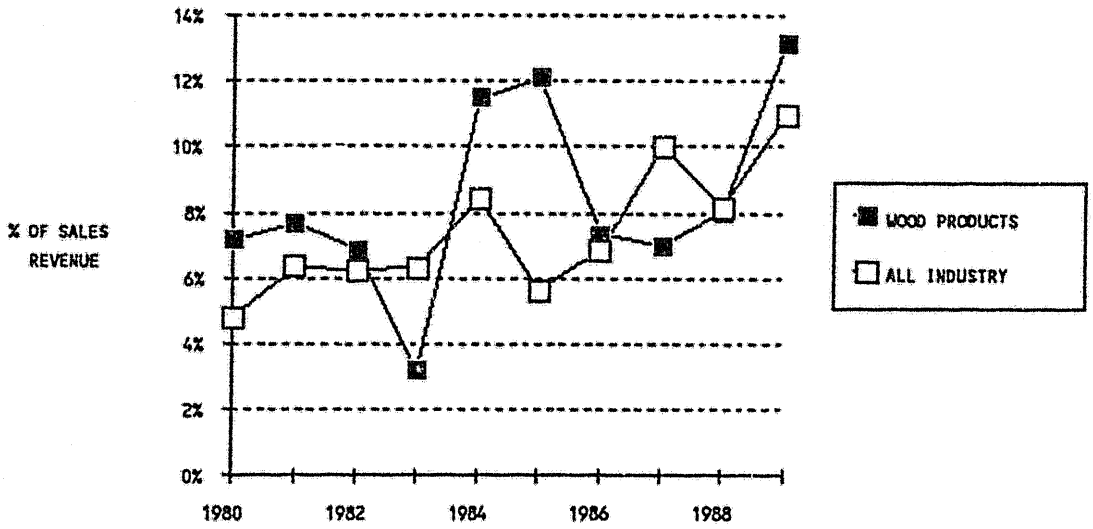
[3] Operating margin is defined as the value of output minus labour and other operating costs minus the change in value of stocks of inputs and outputs, expressed as a percentage of total revenue.

FIGURE 6 : WOOD PRODUCTS INDUSTRY OPERATING MARGIN, NEW ZEALAND



prices in domestic and export markets (the real exchange rate[4]). Figure 7 shows that competitiveness of New Zealand wood products in Australia and Japan is now almost the same as it was in 1980. (In 1989 Australia took 60 % of New Zealand wood products exports and Japan 20 %). The relative price of New Zealand wood products in Japan declined about 25 % from 1980 to 1982 but has generally increased since then. The price in Australia increased until 1985, then declined by 35 % between 1985 and 1988. Over the entire period, the New Zealand dollar depreciated by 10 % with respect to the Australian dollar and 64 % with respect to the Japanese yen. New Zealand currency depreciation was counteracted almost fully by increases in the relative price of New Zealand wood products in these markets.

The industry is not only subject to competition in export markets for its products. It also competes with overseas processors for New Zealand logs and the outputs of the primary and secondary processing industries (primarily sawn timber and wood-based panels). Figure 8 shows that the volume of logs exported increased markedly in 1988. Since the EPTI applied only to goods with a value-added content - not logs or squares (Makin op. cit.) - abolishing incentives may be expected to have reduced the exports of processed products in favour of exports of logs and squares. Short-term cash-flow requirements of major forest owners (including, since 1987, the Forestry Corporation) and a destructive cyclone in March 1988 may have also contributed to the increase in log exports.

6 Future Timber Resource Availability

The supply of logs available for processing by the New Zealand Wood products industry depends on availability of mature timber as well as the level of demand for log exports. Figure 9 shows the projected availability of timber over the next 20 years for sawlogs and veneer logs (Burroughs et al. 1986). Major challenges lie ahead in the utilisation of pruned logs (rising from 400,000 cu.m. in 1986-90 to 2,400,000 cu.m. in 2001-05) and large-branched sawlogs (rising from 1,360,000 cu.m. in 1986-90 to 3,390,000 cu.m. in 2001-05).

The sale of cutting rights to all New Zealand State forests, due to be completed in 1990, will have a major bearing on timber availability to established wood products industries in New Zealand. Unsuccessful bidders for cutting rights will depend on

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[4] The real exchange rate in this context is calculated from the ratio of the price level for Wood and Wood Products output in New Zealand to the price level of wood and wood products output in the export market, multiplied by the nominal exchange rate. An increase in the index indicates an increase in the relative price of the overseas output, in New Zealand dollars.

FIGURE 7 : EXPORT COMPETITIVENESS OF NEW ZEALAND WOOD PRODUCTS INDUSTRY

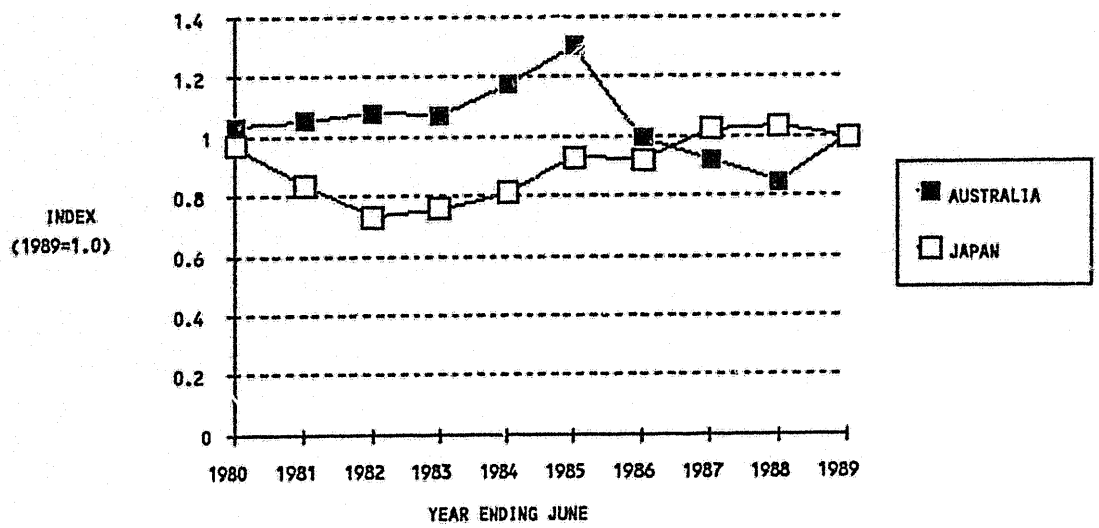


Figure 8 : VALUE OF WOOD PRODUCTS EXPORTS FROM NEW ZEALAND

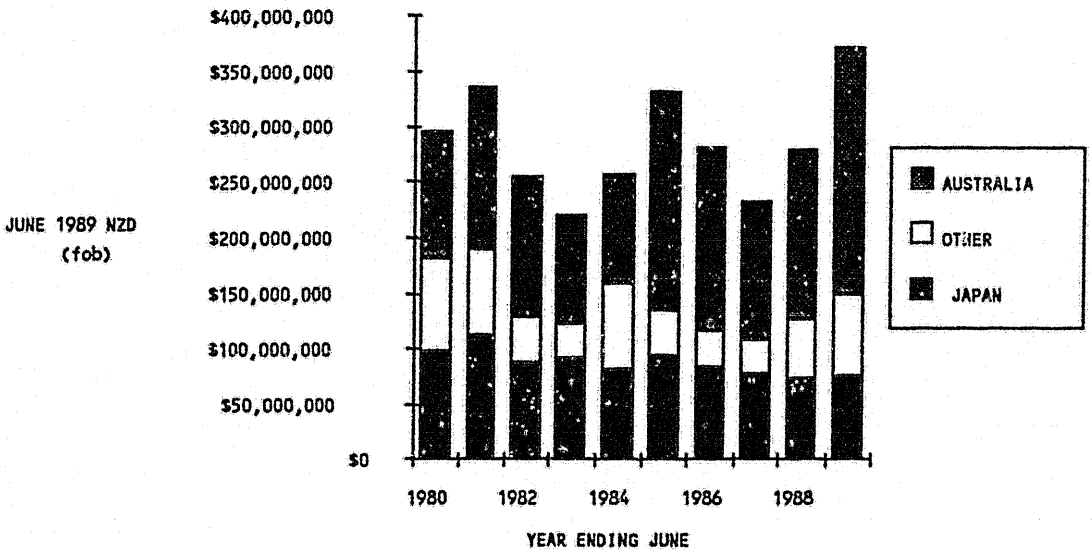
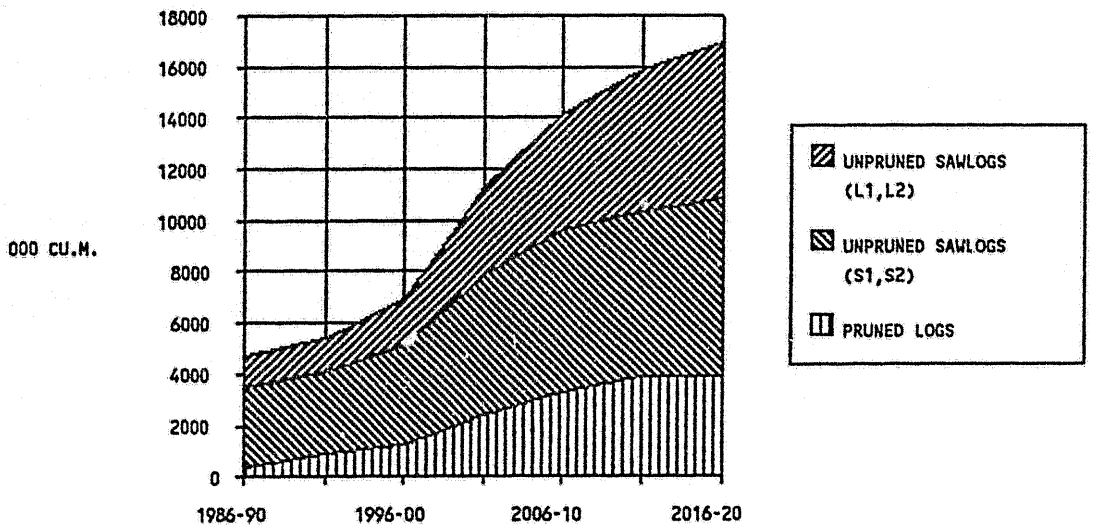


FIGURE 9 : PROJECTED HARVEST OF PRUNED LOGS AND UNPRUNED SAWLOGS FROM NEW ZEALAND FOREST PLANTATIONS



their competitors for logs previously supplied by the State, or on new players in the industry.

7 Conclusions

This analysis documents the performance of the Wood Products industry over the 1980s. The following conclusions appear valid for the whole industry :

- The value of output has remained fairly constant in real terms

- Investment in new plant and equipment was generally higher after 1984 than before, and was not discouraged by high real interest rates. Further investment may await the result of the sale of cutting rights to State forests, and the realisation of the expected increase in log availability in the 1990s.

- Labour productivity of the industry has been increased, largely by reducing employment.

- Export competitiveness is about the same in New Zealand's major markets now as in 1980, in spite of significant depreciation of the New Zealand currency.

- The New Zealand Wood Products industry is currently highly dependent on the New Zealand and Australian markets.

- Protection has declined for the New Zealand wood products industries, but has not resulted in an increase in imports of competing wood products.

A causal relationship between restructuring and Wood products industry performance cannot be determined. The implementation of several reforming policies simultaneously, more complex indirect effects leading from reforms in other sectors of the economy, external effects due to changing market demand, and changes instigated by the industry itself all frustrate any attempt to isolate the effects of individual government policies in an analysis of this type.

Major challenges for the industry in the future are in the improvement of export competitiveness, and diversification and expansion of export markets. If this is achieved then the industry will be well-placed to take advantage of the opportunities presented by a large increase in the availability of sawlogs and veneer logs from the New Zealand resource, beginning in the 1990s.

8 References

Australian Bureau of Statistics. Monthly Summary of Statistics Australia. (various).

Burrows G.D., H.H. Levack and J.B. Novis (1986). A National Forestry Planning Model for New Zealand. In Proceedings 56th ANZAAS Conference, Palmerston North, New Zealand, January 1987.

Department of Labour. Quarterly Employment Survey 1980-1988. Supplementary Tables to the Labour and Employment Gazette.

Department of Statistics (1986). Census of Manufacturing Bulletin Series C, Number 3. Manufacture of Wood and Wood Products, including Furniture 1983-84. (45 pp).

Department of Statistics. Monthly Abstract of Statistics. (various).

Department of Statistics. Quarterly Survey of Manufacturing

International Monetary Fund (1988). International Financial Statistics Yearbook.

Japan Statistics Bureau. Japan Statistical Yearbook (various).

Makin K. (1983). Effective Rates of Subsidy to New Zealand Forest Products. New Zealand Economic Papers 17:25-35.

Ministry of Forestry (1988). Statistics of the Forests and Forest Industries of New Zealand to 1987.

New Zealand Planning Council (1989). The Economy in Transition : Restructuring to 1989. Economic Monitoring Group, Wellington, July 1989, 189 pages.

New Zealand Timber Industry Federation (1988). Annual Report, 1988.

Syntec Economic Services Ltd (1984). The Structure of Industry Assistance in New Zealand : An Exploratory Analysis. (Unpublished) 178 pages.

Syntec Economic Services (1989). Industry Assistance Reform in New Zealand. Report Commissioned by New Zealand Government.

1Zeitsch J (1984). An Analysis of Export Incentives. In Syntec Economic Services Ltd (1984), The Structure of Industry Assistance in New Zealand : An Exploratory Analysis. (Unpublished) 178 pages.