

## DEMAND AND SUPPLY FOR WOOL

The wool industry is of considerable importance to the New Zealand economy, providing approximately 18 per cent of the country's total export receipts. The industry is large in world terms and New Zealand is the second largest wool exporting country in the world and the largest exporter of the coarser types of wool used predominantly in the manufacture of carpets. The following article looks at recent trends in the demand and supply of wool and competing synthetic fibres, and future prospects for the next decade.

### SUPPLY FACTORS

#### World Wool Production

World wool production (see table 1) tended to fall between 1968/69 and 1973/74, then began increasing again up until the current season. In 1968/69 world wool production totalled 2,801 thousand tonnes, but by 1973/74 it had fallen by 11 per cent to 2,483 thousand tonnes. Between 1973/74 and 1980/81 production rose by 15 per cent reaching a record 2,848 thousand tonnes in the latter year. At this level however world production was only 1.7 per cent higher than it had been in 1968/69. By contrast world carpet wool production (wool 34 microns or coarser) increased quite dramatically over the same period, rising by 46 per cent from 593 thousand tonnes in 1968/69 to 865 thousand tonnes in 1980/81. Carpet wool now accounts for about 30 per cent of world wool production compared with 21 per cent in 1968/69.

World production of wool is concentrated mainly in Australia, New Zealand, Argentina, China, South Africa, the USSR and Uruguay which together account

for about 72 per cent of world output. Of these only New Zealand, China and the USSR, are major carpet wool producing countries, the other main producers of carpet wools being Turkey, India, Pakistan and Iran.

#### New Zealand Production

New Zealand sheep numbers remained fairly static at around 60 million during the late sixties and early seventies. Between 1972 and 1975 quite a sharp reduction in numbers occurred, with the flock declining by 8 per cent to 55.3 million by June 1975. Since that time numbers have increased again, rising by an estimated 29 per cent between June 1975 and June 1981. A further increase to 73.4 million by June 1982 is forecast by the Agricultural Review Committee.

A number of factors including favourable weather conditions, a switch away from beef cattle because returns from sheep were better and higher net farm incomes contributed to the rapid growth in sheep numbers over this period. An important factor was the availability of government incentive schemes (the Livestock Incentive Scheme and the Land Development Encouragement Loan Scheme) which were introduced by the Government in order to encourage increased agricultural production and hence export earnings.

Because agriculture still provides more than 70 per cent of New Zealand's total export receipts the Government felt that it was vital to reverse the decline which had been occurring in sheep numbers in the early 1970s. A total of \$217.2 million was invested in farming through these schemes in the five years 1976/77 to 1980/81.

**TABLE 1**  
**WOOL PRODUCTION**

	<i>World Wool Production</i>	<i>World Carpet Wool Production</i>	<i>Carpet Wool Production as % of Total Wool Production</i>	<i>NZ Production</i>	<i>NZ Production as % of World Total</i>	<i>NZ Carpet Wool Production</i>	<i>NZ Carpet Wool Production as % of World Carpet Wool Production</i>
	(000 tonnes greasy basis)	(000 tonnes greasy basis)		(000 tonnes greasy)		(000 tonnes greasy)	
1968/69	2,801	593	21.2	332	11.9	220 (66.3)	37.1
1969/70	2,781 (-0.7)	577 (-2.7)	20.7	328 (-1.2)	11.8	225 (68.5)	39.0
1970/71	2,770 (-0.4)	587 (+1.7)	21.2	334 (+1.8)	12.1	234 (70.0)	39.9
1971/72	2,709 (-2.2)	583 (-0.7)	21.5	322 (-3.6)	11.9	213 (66.0)	36.5
1972/73	2,519 (-7.0)	582 (-0.2)	23.1	309 (-4.0)	12.3	197 (63.8)	33.8
1973/74	2,483 (-1.4)	599 (+2.9)	24.1	285 (-7.8)	11.5	180 (63.0)	30.1
1974/75	2,657 (+7.0)	667 (+11.4)	25.1	294 (+3.2)	11.2	188 (63.8)	28.2
1975/76	2,681 (+0.9)	683 (+2.4)	25.5	312 (+6.1)	11.6	203 (65.2)	29.7
1976/77	2,601 (-3.0)	737 (+7.9)	28.3	303 (-2.9)	11.6	194 (64.0)	26.3
1977/78	2,648 (+1.8)	777 (+5.4)	29.3	311 (+2.6)	11.7	204 (65.6)	26.3
1978/79	2,712 (+2.4)	800 (+3.0)	29.5	321 (+3.4)	11.8	211 (65.6)	26.4
1979/80	2,803 (+3.4)	831 (+3.9)	29.5	357 (+11.2)	12.7	235 (65.9)	28.3
1980/81 <sup>E</sup>	2,848 (+1.6)	859 (+3.4)	30.2	381 (+6.7)	13.4	255 (66.8)	29.7
1981/82 <sup>F</sup>	2,842 (-0.2)	865 (+0.7)	30.4	380 (-0.3)	13.4		
1982/83				395 (+3.9)			

Sources: Wool Quarterly — Commonwealth Secretariat  
 NZ Wool Board  
 UN Statistical Yearbook  
 E: Estimate  
 F: Forecast

**TABLE 2**  
**NEW ZEALAND WOOL PRODUCTION**

	Total Sheep (million)	Wool Produced Per Sheep (kg)	Total Production (m.kg greasy)
1968/69	60.5	5.48	331.9
1969/70	59.9	5.48	328.0
1970/71	60.3	5.54	333.9
1971/72	58.9	5.47	322.3
1972/73	60.9	5.07	308.8
1973/74	56.7	5.02	284.8
1974/75	55.9	5.26	294.1
1975/76	55.3	5.64	311.8
1976/77	56.4	5.36	302.5
1977/78	59.1	5.26	310.8
1978/79	62.2	5.15	320.6
1979/80	63.5	5.61	356.5
1980/81	68.8	5.53	380.7
1981/82 <sup>F</sup>	71.2	5.3	380
1981/83 <sup>F</sup>	73.4	5.4	396

Source: NZ Wool Board  
F: Forecast

As shown in table 2, production of wool per sheep varies considerably from year to year in response to a number of factors, the most significant being seasonal climatic conditions. Consequently total wool production does not follow the trend in sheep numbers precisely but generally moves in a similar direction. Accordingly New Zealand wool production tended to decline between 1968/69 and 1973/74 but since then has increased, rising to a record 381 thousand tonnes in 1980/81, 15 per cent above the average 300 thousand tonnes produced in the late sixties and early seventies.

About 65 per cent of the wool produced in New Zealand is of a range of types most suitable for use in the manufacture of carpets, with only a relatively small proportion being fine wool suitable for use in lightweight apparel manufacture. This arises because the most appropriate breeds of sheep for the New Zealand terrain and climatic conditions are crossbred types such as the Romney, Perendale, Coopworth and Drysdale breeds. These four breeds made up 81 per cent of the flock in 1979. The major change which has taken place in the composition of the flock since the early sixties is the decline in popularity of the Romney which once accounted for 75 per cent of the flock and now makes up only about 45 per cent. The Romney has increasingly been displaced by the newer crossbred types such as the Coopworth, Perendale and Drysdale which have been bred to meet more specific purposes and desirable characteristics such as 'easy care' properties. In addition to their use in carpets crossbred wools are

also used in the manufacture of blankets, upholstery fabric and heavy apparel.

New Zealand is responsible for approximately 12 per cent of world wool production and 30 per cent of world carpet wool production.

### World Trade in Wool

The major wool producing countries with the exception of the USSR and China are also the major exporters of wool while New Zealand and Argentina are the only carpet wool exporting countries of any consequence. New Zealand is the second largest wool exporting country and the largest exporter of carpet wools. In recent years New Zealand has been providing a gradually increasing proportion of the wool entering world trade. In 1968/69 New Zealand accounted for 29 per cent of the wool exported by the five major wool exporting countries while in 1980/81 New Zealand provided 32 per cent of these exports.

In 1968/69 the major importing countries were Belgium, France, West Germany, Italy, Japan, the United States and the United Kingdom. With the exclusion of the United States and the addition of the Soviet Union, these countries are still the major importers of wool. However there has been a more marked change in the major destinations for New Zealand wool over the same period. In 1968/69 the major importers of New Zealand wool were the same as the major importers of world wool whereas in 1980/81 the major destinations for New Zealand wool included Iran and China as well as those countries which are most important in total world trade in wool. These changes reflect a shift in processing away from the developed countries to the developing countries of Asia and Eastern Europe as well as increased reliance on synthetic fibres in some of the traditional markets such as the USA and EEC countries.

### Man-Made Fibres

The principal competition for wool is provided by man-made fibres, particularly the non-cellulosic fibres such as nylon, acrylic and polyester. These fibres are basically plastics derived as by-products in the production of fuels (fuel oil, petrol and gas). Various intermediate products in the production chain can be put to a number of alternative uses. For example, acrylonitrile can be used in the production of plastics such as ABS (acrylonitrile-butadiene-styrene) and SAN

**TABLE 3**  
**EXPORTS OF RAW WOOL FROM THE FIVE MAIN EXPORTING COUNTRIES**  
(000 tonnes, clean equivalent)

	1968/69	1969/70	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81
Argentina	79.8	67.4	57.6	54.4	55.1	26.0	44.2	59.3	55.7	67.6	53.9	55.4	70.1
(%)	(9.4)	(7.9)	(7.3)	(6.5)	(7.1)	(4.5)	(7.4)	(8.1)	(7.2)	(10.1)	(7.6)	(7.9)	(9.2)
Australia	430.0	459.4	414.8	446.0	423.7	312.7	305.1	386.1	448.0	333.9	389.7	355.3	378.0
(%)	(50.1)	(53.6)	(52.9)	(53.3)	(54.6)	(54.7)	(51.3)	(52.9)	(57.9)	(49.9)	(54.8)	(50.6)	(49.5)
New Zealand	242.2	240.0	235.6	253.9	233.2	172.8	181.0	223.0	208.6	202.4	217.1	240.1	245.5
(%)	(28.6)	(28.0)	(30.1)	(30.4)	(30.0)	(30.2)	(30.4)	(30.6)	(27.0)	(30.2)	(30.6)	(34.2)	(32.1)
South Africa	66.7	63.6	44.5	63.3	47.3	42.6	36.0	44.2	45.4	43.0	33.9	33.9	36.8
(%)	(7.9)	(7.4)	(5.7)	(7.6)	(6.1)	(7.4)	(6.1)	(6.1)	(5.9)	(6.4)	(4.8)	(4.8)	(4.8)
Uruguay	29.5	26.1	31.3	18.5	17.1	17.9	28.6	17.2	16.3	22.5	15.9	17.6	32.9
(%)	(3.5)	(3.0)	(4.0)	(2.2)	(2.2)	(3.1)	(4.8)	(2.4)	(2.1)	(3.4)	(2.2)	(2.5)	(4.3)
Total	848.2	856.5	783.8	836.1	776.4	572.0	594.9	729.8	774.0	669.4	710.5	702.3	763.3

Source: Commonwealth Secretariat

**TABLE 4**  
**WORLD SYNTHETIC FIBRE PRODUCTION**  
**Annual Growth Rates**

	1960-1973			1973-1981		
	Cellulosic	Non-Cellulosic	Total	Cellulosic	Non-Cellulosic	Total
West Europe	0.6	20.2	8.2	-7.5	-1.3	-3.0
East Europe	5.6	24.6	8.9	1.4	5.6	4.8
USA	2.2	18.2	11.8	-6.8	2.7	1.4
Other Americas	2.0	24.7	10.6	-2.2	7.3	5.0
Japan	1.3	20.3	9.4	-3.1	0.7	-0.3
Other Africa, Asia and Oceania	10.4	46.9	18.3	7.8	21.4	17.3
World	2.6	20.4	9.9	-2.1	4.1	2.4

Source: Textile Organon

(styrene-acrylonitrile) as well as in either nylon or acrylic fibres. Consequently there is no simple relationship between demand and supply for synthetic fibres. A short-term increase in demand for ABS plastics which are used in the manufacture of soft drink bottles may result in a shortage of synthetic fibres while a long-term increase in demand for ABS plastics may result in larger more efficient plants being built which would lower production costs and increase the supply of synthetic fibres.

Since 1940 when non-cellulosic synthetic fibres first became available in significant quantities, there has been a dramatic increase in production of these fibres. The expansion of production was particularly rapid during the 1960s and early seventies when annual average growth rates of 20.4 per cent were achieved. Following the first oil shock in 1973 the rate of growth slowed, averaging 4.1 per cent per annum between 1973 and 1981, a period when world wool production grew by an average of 1.6 per cent per annum. As can be seen in table 4 production has tended to increase at rates well above the world average in East Europe, Other Americas and Other Africa, Asia and Oceania, while it has tended to stagnate or decline in Japan and the Western European countries.

It is not possible to directly compare the price of synthetic fibres suitable for use in carpets with that for carpet wool as processing costs for synthetics are generally lower than for wool and there have been pronounced quality changes in synthetic fibres throughout the period. In the last five years alone there has been a substantial improvement in the dye efficiency, soil hiding and anti-static properties of synthetic fibres. However the price of synthetic fibres has tended to fall in real terms over the last 15 years although the oil shocks in 1973 and 1979 caused real prices to increase quite sharply.

## DEMAND FACTORS

One of the major influences on demand for wool and other fibres is the level of economic activity in the countries which import wool (either in its raw or processed state). Generally speaking these are the major industrial countries since a substantial proportion of the wool imported by developing and Eastern European countries is re-exported in its processed state to the industrial countries. Demand for carpet wool in particular is affected quite strongly by the amount of new construction being undertaken while demand for apparel wools is more closely linked to the level of discretionary income available to consumers. Fashion,

style of living, location and climate also play a part in determining demand. However in the longer term the price, supply and quality of competing synthetic fibres is perhaps of paramount importance in determining the demand for wool.

In periods when economic activity in the major industrial countries is increasing consumption of textile fibres tends to increase, while in periods of recession consumption tends to decline or stagnate. During the 1960s the increasing availability of relatively cheap synthetic fibres widened the market for textiles to an extent which would not otherwise have been possible and this, combined with high rates of economic growth in the industrial countries, led to a rapid expansion in total textile fibre consumption. However, almost all of the growth occurred in demand for synthetic fibres, consumption of which was increasing at an annual average rate of 21.5 per cent. Consumption of wool increased by an average of only 0.6 per cent per annum over the same period.

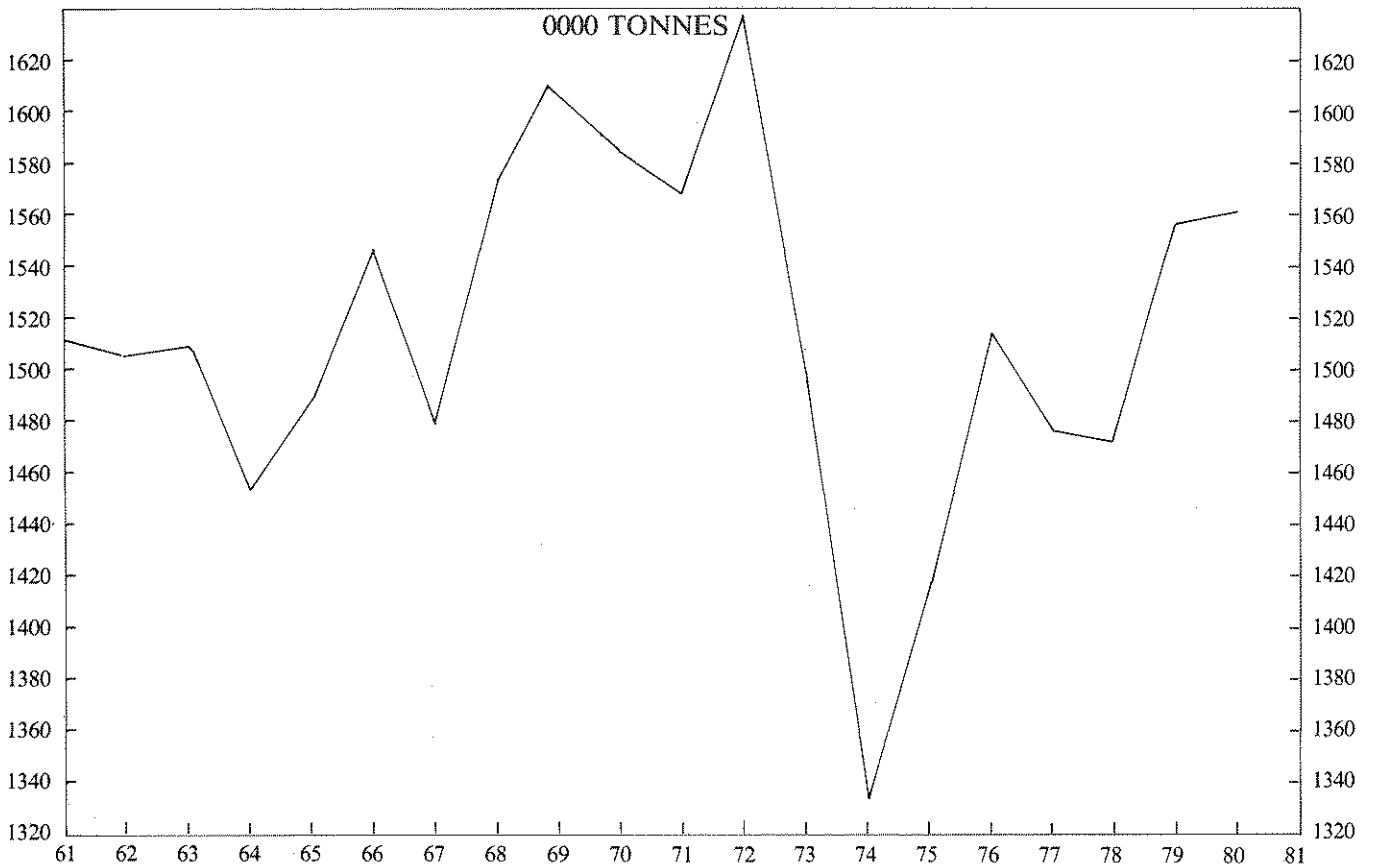
By the end of the decade much of the extra demand created by the development of synthetics had been exploited and the rate of increase in demand slowed appreciably. Consumption of synthetic fibres continued to grow, albeit at the slower rate of 12.3 per cent per annum, but consumption of wool fell quite sharply. In 1974 and the first half of 1975 an international recession, induced by the first oil shock, caused a decline in consumption of all fibres but once recovery got underway consumption of both synthetic and natural fibres began rising again. Between 1976 and 1979 real GDP was growing at an annual average rate of 4 per cent in the OECD countries and this was reflected in an increased demand for textile fibres. Consumption

**TABLE 5**  
**WORLD MAN MADE FIBRE PRODUCTION**  
(million lbs)

	Rayon and Acetate	Non-cellulosic	Total
1971	7,618	12,368	19,986
1972	7,848	14,061	21,909
1973	8,069	16,842	24,911
1974	7,787	16,505	24,292
1975	6,523	16,210	22,733
1976	7,076	18,963	26,039
1977	7,233	20,171	27,404
1978	7,314	22,121	29,435
1979	7,430	23,387	30,817
1980	7,151	23,118	30,269
1981	6,800	23,220	30,020

Source: Textile Organon

**GRAPH 1**  
**WORLD INDUSTRIAL CONSUMPTION OF WOOL**



of wool grew by an annual average of 2.7 per cent over this period while consumption of synthetics increased by an average of 4.1 per cent per annum.

When comparing these figures it should be remembered that consumption of wool has been increasing from a relatively low base (see graph 1), as consumption of wool was at its lowest level for many years in 1974. In the last two years the international economy has again been in recession, following the second oil shock. Once again consumption of all textile fibres has been declining but sufficiently up-to-date data is not available to be able to ascertain whether wool or synthetic consumption is falling most rapidly.

### Consumption of Fibres

In most countries wool, as a proportion of total fibre utilized within their wool textile industries, has declined substantially since the 1960s. In eleven major textile producing countries (Austria, Belgium, France, West Germany, Italy, Japan, Korea, the Netherlands, South Africa, the United Kingdom and the United States) wool, as a proportion of total fibre consumed in wool textile industries, fell from 48 per cent in 1968 to 31 per cent in 1980 while over the same period consumption of synthetic fibres rose from 27 per cent to 55 per cent. In the United States consumption of wool now makes up only 1.3 per cent of total mill fibre consumption. To a large extent these trends reflect improvements in quality, decline in real price and increased supply of synthetic fibres although other factors such as fashion trends have probably also played some part.

World consumption of wool tended to fall between 1968/69 and 1973/74, dropping by 17 per cent from

1,609 thousand tonnes clean to 1,333 thousand tonnes. Between 1974/75 and 1979/80 consumption increased again, rising to 1,561 thousand tonnes in 1979/80. However at this level consumption was still 3 per cent below the level of 1968/69. Since 1979/80 consumption of wool has again been falling (world consumption data is not as yet available but data for most of the main wool consuming countries is available and shows a declining trend).

It is not possible to obtain data on total world carpet wool consumption but data for eight of the major carpet wool consuming countries is shown in table 7. As can be seen from the table carpet wool consumption has followed a similar trend to total wool consumption. Although carpet wool consumption in the eight countries shows an increase between 1974 and 1980, it was still 18 per cent lower in 1980 than it had been in 1967.

Unfortunately data on the carpet industry in two of New Zealand's largest markets, China and the USSR, is not available. However, it is known that most of the New Zealand wool exported to China is used in the production of handknitting yarns, with only about 10 per cent being used in the production of carpets. At the present time all Chinese carpets are handmade but it is thought likely that a machine-made carpet industry may be started soon in which case opportunities to sell New Zealand wool to China will probably increase.

The USSR has been importing increased quantities of wool in recent years. Although it has been official policy to increase livestock numbers a succession of poor feed grain harvests have prevented this policy being put into effect and sheep numbers have remained fairly static over the last ten years. At the present time

**TABLE 6**  
**CONSUMPTION OF WOOL**

	<i>World Industrial Consumption</i> (000 tonnes)	<i>NZ Exports</i>	<i>NZ Mill Purchases</i> (000 tonnes greasy equivalent)	<i>NZ Disposal of Wool</i>	<i>NZ Wool Board Stockpile</i> (000 bales clean) end of season)
1968/69	1,609	334.6	13.0	347.6	480.1
1969/70	1,585	332.0	13.5	345.5	350.6
1970/71	1,569	325.6	14.8	340.4	262.7
1971/72	1,637	349.4	14.6	364.0	69.7
1972/73	1,495	323.8	22.5	346.3	—
1973/74	1,333	238.7	27.2	265.9	19.8
1974/75	1,414	240.8	14.2	265.0	213.1
1975/76	1,515	310.5	27.2	337.7	50.0
1976/77	1,477	291.6	24.2	315.8	103.8
1977/78	1,472	281.5	18.8	300.3	201.9
1978/79	1,556	301.9	24.4	326.3	80.9
1979/80	1,561	333.7	20.8	354.5	118.4
1980/81		324.4	21.8	354.2	344.1
1981/82 <sup>F</sup>					450.0

Sources: NZ Wool Board  
UN Statistical Yearbook  
Wool Statistics  
NZ Department of Statistics  
F: Forecast

**TABLE 7**  
**CARPET WOOL CONSUMPTION**  
**EIGHT MAIN COUNTRIES**  
(m.kg clean)

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
<b>EIGHT MAIN COUNTRIES</b>														
Belgium	16.3	17.2	16.8	18.5	22.0	25.2	21.5	18.2	21.8	23.1	22.1	24.2	27.1	32.2
France	4.6	4.0	4.0	3.2	3.4	3.1	3.3	2.4	2.6	3.0	2.6	2.4	2.7	2.4
West Germany	10.3	9.4	11.1	9.9	10.2	10.4	8.0	5.3	5.3	6.6	7.1	6.9	6.8	7.5
Netherlands	4.3	5.6	5.9	7.5	8.1	8.8	8.6	7.7	9.6	12.3	12.1	12.6	13.0	13.3
Italy	7.2	6.5	4.7	4.9	4.2	4.2	3.9	4.1	3.2	4.8	4.8	4.2	3.8	3.7
Japan	6.7	7.6	8.7	9.6	11.2	13.9	15.8	12.4	13.8	13.3	12.5	14.9	20.6	20.3
UK	35.1	39.7	39.3	39.0	40.4	45.6	45.2	38.1	38.3	37.6	35.6	33.5	32.1	26.7
USA	52.1	56.3	54.7	43.0	39.8	36.3	16.6	9.2	6.8	6.5	6.4	5.8	5.6	5.3
<b>Total:</b>	<b>36.6</b>	<b>46.3</b>	<b>45.2</b>	<b>35.6</b>	<b>39.3</b>	<b>47.5</b>	<b>22.9</b>	<b>97.4</b>	<b>101.4</b>	<b>107.2</b>	<b>103.2</b>	<b>104.5</b>	<b>111.7</b>	<b>111.4</b>
<b>OTHER COUNTRIES</b>														
New Zealand			0.2	0.5	0.5	0.5	0.4	0.3	0.5	0.7	0.6	0.5		
Iran			18.5	20.2	18.8	21.3	21.9	20.2	18.6	17.4	15 <sup>F</sup>	12 <sup>F</sup>	12 <sup>F</sup>	12 <sup>F</sup>

Source: IWS  
F: Forecast

increased emphasis is being placed on the production of feed grains so it may be some time yet before sheep numbers can be expanded. However production of non-cellulosic fibres in the Soviet Union has increased substantially rising from 77 thousand tonnes in 1965 to 550 thousand tonnes in 1980. It is estimated that sufficient capacity to produce 858 thousand tonnes of non-cellulosic fibres is available at the present time.

#### Disposal of New Zealand Wool

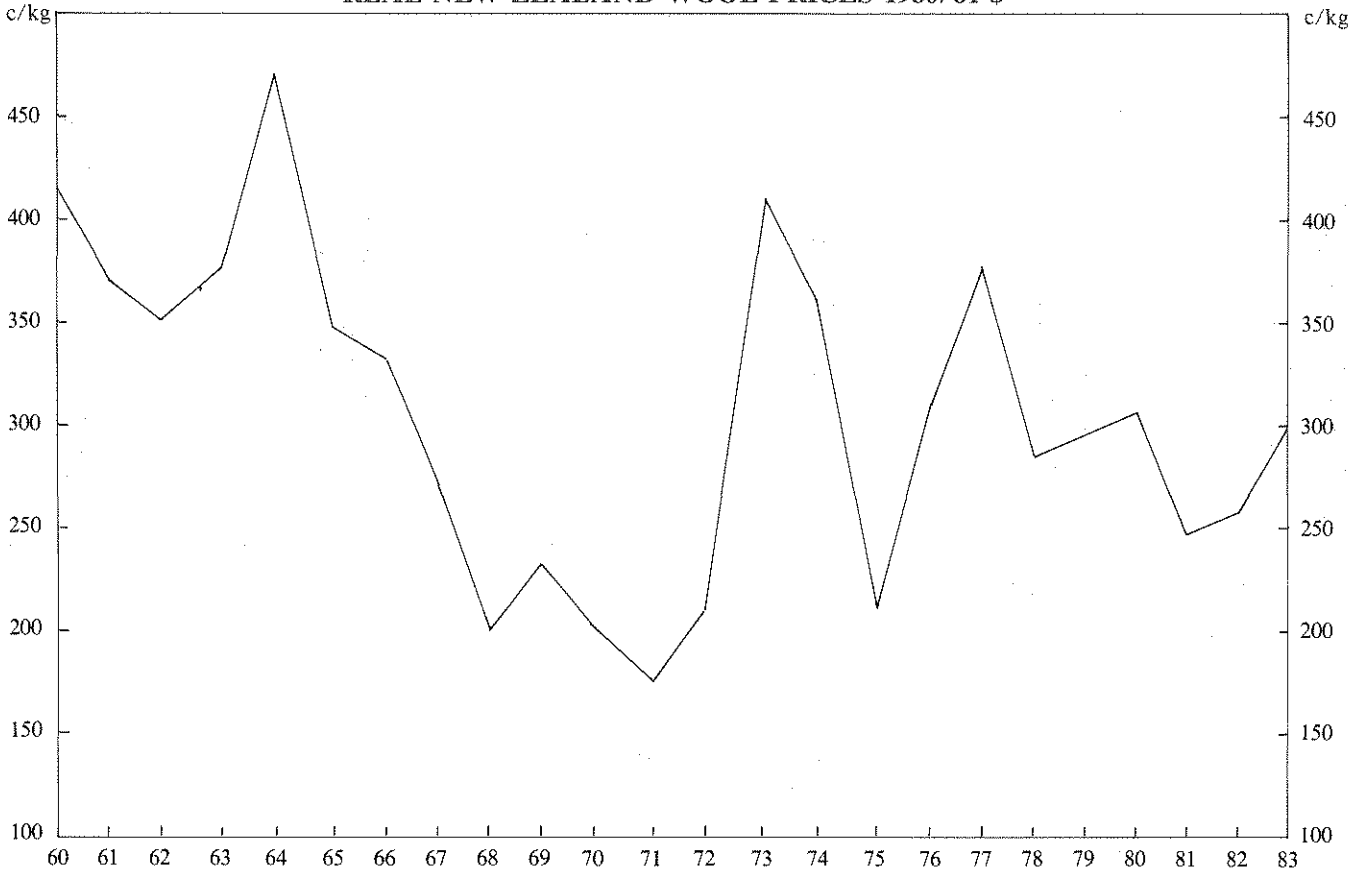
Over the period 1968/69 to 1980/81 New Zealand disposals of wool (exports plus New Zealand mill purchases) averaged 326 thousand tonnes and varied between a low of 265 thousand tonnes and a high of 364 thousand tonnes. New Zealand mills now purchase around 6 per cent of the wool sold each year compared with about 4 per cent in the late sixties. The remainder

of the wool is exported. Between 1968/69 and 1980/81 New Zealand exported an average of 307 thousand tonnes (greasy equivalent) of wool per annum.

#### Wool Prices

Real wool prices (New Zealand auction prices expressed in deflated New Zealand dollars) have been on a long term declining trend since the 1950s (see graph 2). Sharp fluctuations have occurred around this trend, despite the intervention of the Wool Board in the market, buying in wool when prices were low and selling wool from the stockpile when prices were high. At the end of the 1967/68 season, after two seasons of very low prices, the New Zealand Wool Board had a stockpile of 687 thousand bales, the disposal of which took place over the following five seasons. Between 1973/74 and 1978/79 the Board's end-of-season stockpile fluctuated

**GRAPH 2**  
**REAL NEW ZEALAND WOOL PRICES 1980/81 \$**



**TABLE 8**  
**RAW WOOL PRICES**  
(Dry Combed Basis c.i.f. UK)

	70s Fine Wool	46s Coarse (Carpet Wool)	Ratio Price of Fine Wool to Price of Coarse Wool
1968/69	109	46	2.37
1969/70	100	44	2.27
1970/71	84	43	1.95
1971/72	89	54	1.65
1972/73	239	111	2.15
1973/74	293	137	2.13
1974/75	200	99	2.02
1975/76	207	133	1.56
1976/77	259	200	1.30
1977/78	246	178	1.38
1978/79	250	189	1.32
1979/80	293	192	1.53
1980/81	306	175	1.75

Source: Wool Statistics, Commonwealth Secretariat.

between 20 thousand bales and 213 thousand bales. Since then, however, the Board's stockpile has risen and is expected to reach 450 thousand bales by the end of the 1981/82 season.

Fine wool generally commands a substantial premium over coarse wool but this premium fluctuates, being affected by factors such as fashion trends and the relative availability of different types of wool. As is shown in table 8 fine wool tended to become cheaper relative to coarse wool over the period 1968/69 to 1976/77 but since then the trend has been reversed, reflecting among other things the increased proportion of total wool represented by coarse wool production during this period.

**Outlook for the 1980s**

Real wool prices appear likely to continue fluctuating around a downward trend during the 1980s with a major negative influence on prices coming from developments in the synthetic fibre industry. The synthetic fibre industry has a large amount of excess capacity and this may well lead to further real price declines, particularly if, as now seems likely, oil prices do not rise in real terms during the decade. In addition there are likely to be further improvements in the quality of synthetic fibres. Already synthetic carpets are becoming available which are reportedly indistinguishable from wool carpets.

Wool has a number of characteristics which are superior to those generally associated with synthetic fibres such as for example resistance to soiling, resilience and the ability to absorb moisture. However, synthetics have had attraction for textile manufacturers because of a generally more stable price, uniform quality and strength, more immediate availability and the provision of discounts for bulk purchases. Although it would be possible for wool to duplicate many of these characteristics it would require a major reorganisation of the industry. However, continued efforts are being made to stabilise prices by the use of intervention schemes and to streamline methods of sale and distribution which should help to make wool more attractive to the manufacturer. Substantial technical improvements have also been achieved in wool's handling characteristics in recent years.

It seems likely that sharp fluctuations in wool prices will continue to occur throughout the 1980s in response to shifts in economic activity and changes in fashion and taste. As in the past, prices for synthetics are expected to

be more stable than those for wool. This arises partly because of the structure of the industry and partly because synthetics, unlike wool, are not sold at auction. Any short-term shift in supply or demand tends to have a substantial impact on auction prices whereas when prices are 'set' by the manufacturer they tend to be less responsive to short-term changes. The chronic excess capacity of the synthetic fibre industry and the lowering of costs as larger more efficient plants are built tends to place continued downward pressure on prices so that any upward push induced by increasing demand is at least partially offset. Another factor which tends to stabilise prices is the ability of the synthetic fibre manufacturer to vary supply in the short-term by shifting intermediate products in the production chain between different end uses according to demand. On the other hand supply in the wool industry is more or less fixed in the short-term and can only be altered relatively slowly because of the long lag between the decision to increase production and the implementation of that decision. The developments in market intervention have gone some way to smoothing the price reactions which stem from changes in demand and in providing buffer stocks which can be drawn on when demand increases.

Prices for coarse wool are expected to remain low relative to fine wool prices over the next decade because demand for carpet wools has not kept pace with the relatively rapid growth in the supply of these wools. Another factor which could adversely affect the demand for carpet wools is the increase in the production of tufted carpets which have been mainly made from synthetic fibres and the decline in the production of woven carpets which tend to be wool rich. Here too, technical developments have enabled wool usage to grow in the tufted carpet market in recent years.

### Conclusions for New Zealand

In view of the likelihood of a continued decline in real prices for textile fibres over the next decade and further improvement in the quality of synthetic fibres, the New Zealand wool industry is likely to face some difficulties in the short-term. Disposing of the wool resulting from the recent build up in sheep numbers producing coarse wool, at an economic price, may pose some problems. Over the period 1968/69 to 1980/81 New Zealand sold an average of 325 thousand tonnes of wool while the highest level of disposals in any one season was 364

thousand tonnes. Production in 1982/83 is forecast at 395 thousand tonnes, 40 thousand tonnes more than was sold to the trade in either of the last two seasons. World consumption of wool at present is still below what it was in 1968/69 and, while the end of the current international recession should bring increased consumption, it may still face severe competition from synthetics. Over the period 1974 to 1980 real GDP growth in the OECD countries averaged 4 per cent, while world consumption of wool increased by an average of 2.7 per cent per annum.

To maintain this rate of growth over the present decade may well be difficult unless there occurs a shift in demand in favour of wool. For New Zealand's increased production to command a price which would yield an economic return to the industry, it would appear necessary for a growth rate in world wool consumption of at least this magnitude to occur and for New Zealand's position as a supplier of internationally traded wool to continue expanding at a rate comparable to that of the last few years.

The New Zealand Wool Board stockpile, although large in comparison with recent years, does not represent an exceptionally large 'overhang' in the market when put alongside total consumption in the context of low commercial stocks being held world-wide at the present time. However, if this stockpile continued to grow in the next few years at anything approaching the rate of the last two seasons, it would rapidly become both a cause for concern in itself and for the depressive effect it would tend to have on market prices.

The challenge for the world wool industry as a whole in the decade ahead appears to be in recapturing some of the ground lost to synthetic fibres during the previous thirty years. In this it shares a challenge common to all the natural fibres. In the 1970s the New Zealand industry faced a different challenge, one which arose out of the cost-price squeeze of the late 1960s, a declining level of production. The production incentive policies of the New Zealand Government, together with generally more favourable climatic conditions, saw a recovery in production. However, the main challenge for the 1980s appears likely to be found in the area of marketing and promoting wool use. In this area the immediate objective will need to be enhancing wool's attractiveness to textile producers. The longer-term objective will be to ensure a continuing place in the world as a marketable product commanding prices which will keep the industry viable.