Demand for wool

in a changing world

Dale Ashton, Shane Brittle and Terry Sheales

Introduction

The Australian wool industry’s fortunes have changed dramatically since 1987-88 when the eastern market indicator price averaged 1117 cents a kilogram (clean) and sheep numbers peaked at 173 million (in March 1989). By 1999-2000, wool prices had fallen to average around 625 cents a kilogram and the sheep flock had fallen to about 115 million. Australian production of shorn wool fell from over 1 million tonnes in 1989-90 to around 630 000 tonnes in 1999-2000.

Despite the wool industry being now much reduced in size, it remains one of Australia’s most important agricultural industries, contributing around 10 per cent of the gross value of agricultural production and, in recent years, around $3-4 billion a year in export income. Wool market developments will therefore have a major impact on the economic performance of regional Australia, as well as on the nation’s trade.

Although the slump in prices in the early 1990s reflected a combination of weak demand and large supplies, it is weak demand that has been the main contributor to relatively low prices in more recent times.

A critical issue for the Australian wool industry is whether the decline in wool demand that occurred in the 1990s is irreversible. Solid world economic growth over the next few years may encourage improved demand for wool. However, there have been a number of developments in recent years that, taken together, must cast some doubts on whether higher consumer incomes will be reflected in a sustained strengthening in demand for wool. Growing competition for a share of consumer budgets, competition from other fibres, and changing consumer tastes and demographics will all be important.

Slow growth in world textile markets has contributed to increasing competition among fibres.

- Falling prices for synthetic fibres in the 1990s have made it difficult for wool to compete on price.

- Wool has faced increasing competition for consumer expenditures from other types of goods — including electronics, medical care, recreation and services.

- Aging populations and less formal fashion wear have resulted in declines in the market segments that favor wool.
Wool consumption in decline

After peaking in the late 1980s, world consumption of wool declined throughout the 1990s (figure A). Slower world economic growth and a substantial contraction in economic activity in the countries formerly comprising the Soviet Union were the main reasons for the major decline in wool consumption in the early 1990s. Despite a couple of short lived recoveries (in 1991 and 1994), consumption declined further during the latter half of the decade. Retail consumption of wool declined by around 30 per cent from a peak of 1.9 million tonnes in 1987 to a recent low of 1.4 million tonnes in 1998 (Woolmark 2000a).

The decline in wool consumption occurred at a time when total consumption of apparel fibres was rising. Since 1990, total world apparel fibre consumption has been growing at a rate of around 3 per cent a year — driven mainly by growth in population and a 0.7 per cent a year increase in consumption per person. Most of the growth in total fibre consumption during the 1990s was in synthetic fibres, which grew by nearly 6 per cent a year over the decade. Cotton consumption grew by around 1.6 per cent a year over the same period, while wool consumption declined.

In 1998, total world fibre consumption was around 46 million tonnes (International Cotton Advisory Committee 1998), with synthetic fibres comprising 49 per cent of the total, cotton 42 per cent, cellulosics 5 per cent and wool 3 per cent.

The decline in wool consumption occurred at a time of excess production over consumption in world fibre markets and steadily declining prices. These trends mainly reflected subdued growth in consumer spending on textiles and high levels of fibre availability, combined with strong competition between natural fibres and synthetic fibres as production of synthetics expanded rapidly.

Regional variations in wool consumption

There were some quite marked differences in wool consumption trends in major markets in the 1980s and 1990s (table 1). In aggregate, however, average annual consumption of wool declined from 1.76 million tonnes in the 1980s to 1.59 million tonnes in the 1990s.

For individual markets, by far the greatest decline was in the countries that comprised the former Soviet Union, where annual consumption fell from an average of over 320 000 tonnes in the 1980s to under 140 000 tonnes in the 1990s. However, consumption did not fall in all countries. The

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<td>Total</td>
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Estimated average annual retail consumption of wool

na Not available.
Source: The Woolmark Company.
most notable of these was China, where annual consumption rose from an average of 196 000 tonnes in the 1980s to 235 000 tonnes in the 1990s.

Wool consumption trends in the European Union varied considerably between the four major EU countries—Germany, France, Italy and the United Kingdom (figure B). The European Union is a major market for apparel fibres and a substantial consumer of high quality fabrics and garments. EU textile industries are also important leaders in design and technological development.

Germany is the largest EU consumer of wool, accounting for around 8 per cent of global retail consumption in the 1990s. A notable feature of German consumption was the sharp increase in the early to mid 1990s. The increase occurred mainly because of an increase in spending by east German consumers following a one-for-one exchange of west German deutschmarks for east German marks as part of the reunification process. That is, east Germans experienced a one-off gain in their disposable incomes and were able to spend some of this on a range of higher quality consumer products, including more expensive apparel that contained finer quality wools.

Italy and the United Kingdom each accounted for around 6 per cent of the world’s retail consumption of wool in the 1990s, but had very different patterns of consumer behavior. In Italy, which has a reputation as a designer and producer of high quality textiles, consumption of wool at the retail level fell from 114 000 tonnes in 1992 to 74 000 tonnes in 1998. After falling sharply in the early 1990s, retail consumption of wool in the United Kingdom trended upwards over the balance of the decade. In both cases, economic growth is likely to have been an important contributor—low growth in Italy but relatively strong growth in the United Kingdom.

In France, wool consumption was in gradual decline for much of the two decades. The decline gained pace in recent years, reflecting (in part) weak economic activity and high unemployment.

The United States was one of the few major markets where retail consumption of wool expanded during the 1990s—but it remained well below the levels achieved between 1985 and 1988 (figure C). Although US wool consumption is low on a per
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person basis, the US market still accounted for nearly 8 per cent of world retail consumption of wool in the 1990s. Falling unemployment, inflation and interest rates in the 1990s contributed to higher consumer incomes, resulting in increased demand for higher value products such as wool apparel.

In East Asia, demand for wool varies significantly from region to region. Wool has typically been favored by the colder climate countries of north east Asia but is generally unsuited to the warmer tropical climates of South East Asia. Japan has traditionally been a major consumer of wool, but its importance has declined in recent years, while China and the Republic of Korea have become more significant (figure D).

As well as being the world’s largest consumer of wool at the retail level, China is also a major processor of wool from raw fibre to finished products, including apparel. China’s large and growing population and rising disposable incomes in urban areas are particularly important to wool consumption. A cold climate in the northern parts of the country and limited indoor heating are conducive to the wearing of wool. As well, changes in consumer lifestyle and apparel preferences mean that there is a growing urban formal wear market associated with rising per person incomes and a trend toward western style formal fashions.

China’s consumption of wool has also been affected by the existence and subsequent withdrawal of government subsidies on the production and consumption of some commodities, and by import quotas restricting the supply of high quality imported wool.

Despite declining consumption of wool, Japan remains an important market, accounting for 11 per cent of the world’s retail consumption of wool during the 1990s. A range of factors including low economic growth are likely to have contributed to the fall in consumption. Nevertheless, Japanese consumption of wool per person is among the highest in the world at around 1.13 kilograms per person in 1998.

An increasing western influence on Korean culture has resulted in that country adopting trends in fibre use similar to those in other developed countries. Most of the growth in consumption has occurred in urban areas where the culture is being increasingly exposed to western influences and consumer incomes are generally higher than in other areas. Retail consumption of wool in Korea grew steadily between 1980 and 1996, but fell significantly in 1997 and 1998 because of the economic downturns of that time.

As indicated previously, the single most significant fall in retail consumption of wool was in the countries formerly comprising the Soviet Union. During the 1980s the Soviet Union was one of the world’s major consumers of wool. However, with the collapse of the Soviet Union as a political and economic entity, wool consumption plummeted in the 1990s (figure E). The substantial contraction of the Russian

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**C** Retail consumption of wool, United States

**D** Retail consumption of wool, Asia
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Economy (which accounted for around 80 per cent of the former Soviet Union economy), foreign exchange difficulties, and sharply reduced military spending (including on uniforms that contain wool) were major factors contributing to the decline in consumption. The Russian economy shrank by an estimated 46 per cent between 1990 and 1998.

Factors affecting fibre demand

Although economic factors appear to have played a part in the downturn in wool consumption in the 1990s, they are unlikely to have been the only (or even, perhaps, the major) ones. In general, fibre demand is influenced by a combination of factors, not just consumer incomes, and many of these appear to have been changing to the detriment of wool. The demand for raw fibre, including wool, is derived from consumer demand for textiles and apparel in aggregate.

The main factors that influence demand for apparel in particular markets include economic growth and consumer incomes, population growth, consumer tastes and relative prices of various fibres. Other factors may also include climate, social habits and promotion by manufacturers of textiles and apparel.

Some of these factors (such as economic growth, consumer incomes and population) can be readily measured, while for others (such as changes in fashion) empirical data are difficult to obtain.

Consumer incomes

An important economic determinant of apparel consumption is consumer incomes. High income countries tend to have high clothing consumption per person, whereas low income countries have low consumption (figure F). For example, consumer incomes in the United States (approximated as gross domestic product divided by population) averaged around US$20 000 per person in the 1990s, and apparel fibre consumption averaged around 26 kilograms per person. In contrast, consumer income in China averaged around US$300 per person and apparel fibre consumption around 5 kilograms per person over the 1990s.

A similar pattern of consumption relative to per person incomes applies to individual fibres as well. However, a notable exception occurs with wool in the United States, where there has traditionally been a relatively low level of wool consumption per person. A number of factors may have contributed to such an outcome. For example, with US spinners and weavers relying significantly on wool imports, import tariffs add substantially to raw material costs and reduce the competitiveness of wool relative to other fibres in processing. Also high advertising expenditure by the domestic US cotton and synthetics industries relative to wool may be important in explaining the low per person consumption of wool in the United States.

Although, in most countries, there appears to be a strong association between consumption of apparel fibres and consumer incomes, there is an ever growing array of demands competing for a slice of consumers’ budgets. In general, an improvement in economic activity, and hence consumer incomes, can be expected to result in stronger demand for all consumer goods — of which apparel is only one. Such competition may help explain why, despite a tradition of relatively high fibre consumption in developed countries, the proportion of consumer expenditure being devoted to apparel is declining.

The growth areas for expenditure include items such as electronic devices (examples
being computers, games and mobile telephony) and associated software, restaurant meals, medical care, transport, recreation and other purchased services. Although the data are not extensive, estimates of household expenditure by category show spending on apparel to be flat or declining in a range of developed economies.

In Australia, average weekly household expenditure on clothing and footwear declined between 1993-94 and 1998-99, despite an overall increase in household spending and little change in clothing prices in real (net of inflation) terms (ABS 2000). In contrast, spending on all other major categories of purchases by households increased in real terms over the same period. Similar spending patterns were observed in Japan, Germany and the United States. In all three,
the proportion of household spending devoted to clothing and footwear declined in the latter half of the 1990s (table 2).

Fibre competition
The relative prices of individual fibres and the degree to which fibres can be substituted in textile production and consumption are important factors influencing the demand for various fibres. Competition among the individual fibres has been increasing — based primarily on price, physical attributes of the fibre, and demand for particular types of end product.

The responsiveness of fibre consumption to changes in relative fibre prices, and hence prices for final products, varies between major markets (Connolly 1992). For wool, regions where consumption is more responsive to changes in prices tend to be those with market or mixed economies that also have low domestic consumption of wool per person (such as China, Hong Kong and the United States). Countries where wool consumption is less responsive to changes in relative prices of fibres have tended to be centrally planned economies (such as the former Soviet Union during the 1980s), and the developed economies where consumption of wool per person is already high (such as Italy) (Connolly 1992).

The wide variety of fibres used (in terms of staple length, fibre diameter and other properties) in apparel manufacture and the limited public availability of consistent and regular price information mean it is difficult to draw conclusions about trends in prices of many individual fibres. However, some broad changes in absolute and relative prices have occurred over time. Most of the longer term changes in prices of fibres stem from productivity improvements in the manufacture and processing of synthetic fibres.

Prices for synthetic fibres, the main substitute for wool, have trended downward in real terms since 1980 (figure G). Because of the ready substitutability of synthetic fibres for wool in most apparel, wool prices have also trended down — thus maintaining their overall competitiveness. Continuing productivity improvements in synthetic fibre manufacture mean synthetic fibres prices can be expected to continue trending down over the longer term.

Given their high degree of substitutability, it is not surprising that apart from two spikes in wool prices, the ratio of wool prices and synthetic fibre prices has been fairly flat since 1970, averaging slightly over three to one (figure H). Continued cost saving productivity improvements in the manufacture of synthetic fibres means that raw wool prices are likely to keep falling in real terms and that wool growers, marketers and processors will need to continue raising productivity to remain profitable.

Changing consumer tastes
Many changes in consumer tastes and social habits have occurred in recent decades, but these are typically difficult to quantify. However, some lifestyle changes have had

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Demand for wool is affected by changing demographics

easily identifiable impacts on the demand for textile and apparel products made from wool.

Better heating in cars and public transport, and improved space heating and insulation in buildings has reduced the need for travel rugs, overcoats and other heavier weight clothing for warmth. At the same time, a broad trend toward lighter weight apparel means that the average amount of wool used in individual garments has declined over time. Another important development has been the advent of microfibres — new generation synthetic fibres used to manufacture products that are light weight, are easy to care for, and that possess many of the desirable attributes of wool.

Fashion changes occur frequently and, at times, may favor wool. However, this was probably not the case over the past decade given the decline in wool consumption observed in some major markets. Furthermore, the Woolmark Company (1999) has suggested that the major trends in fashion over the next few years will mean that casual wear continues to be the largest market segment, with the formal wear market — of major importance for wool — shrinking.

Population growth and demographic changes

As populations grow, so does aggregate consumption of fibres. Given the links between income and fibre consumption (figure F), fibre producing industries can be expected to benefit most from any given amount of population growth in the developed higher income economies.

However, population growth is expected to remain relatively low in most developed countries over the next decade. In the United States, for example, population is projected to grow by less than 1 per cent a year between 1999 and 2010 (US Bureau of Census).

Developing countries, with relatively high rates of population growth, are therefore likely to be particularly important to future growth in fibres consumption. However, given the low per person incomes in such countries, cotton and synthetics are likely to be the main beneficiaries of population increases.

Demand for wool is also likely to be affected by changing demographics — especially the age structure of countries’ populations. Changing age structures are likely to be reflected in such factors as the types of consumer goods purchased overall, the amount of apparel purchased, and the fibre content of apparel.

Retail sales data show that total consumption of apparel is highest in the 25–44 year age range, and then declines in the older age groups (Woolmark Company 2000b). And while wool’s share of apparel retail sales is higher for older age groups than for younger groups — partly reflecting life long purchasing habits — the older age groups’ expenditure on apparel declines as they approach, and then attain, retirement.

As incomes decline in retirement, consumers have less discretionary income in absolute terms, and become more ‘cost conscious’ in their spending. Both factors are likely to be a negative for wool demand.

Among the developed countries, the proportion of the population in older age brackets is growing, while the proportion in younger age brackets is shrinking. In the United States, for example, the proportion of people aged 15–29 years fell from 27 per cent in 1980 to 21 per cent in 1998, while the proportion aged 30–55 years increased from 29 per cent to 37 per cent over the same period.

Barriers to trade

A feature of world trade in textiles and apparel over the years has been the substantial impediments to trade imposed by developed countries such as the United States and the European Union.

For much of the past two decades, the major barrier to free trade in textiles and clothing has been the Multifibre Arrangement. The arrangement — an international trade agreement that was created under the auspices of the General Agreement on Tariffs and Trade — consists of bilateral agreements
between developed and developing countries that allow the former to restrict textile and apparel imports from the latter. In some markets, restrictions are imposed on specific fibres while in others restrictions apply more generally to particular types of products. Overall, the Multifibre Arrangement has had the effect of protecting textile industries in developed countries and distorting the location of global textile processing activity.

As part of the Uruguay Round of trade negotiations, member countries agreed to phase out the Multifibre Arrangement by 2005 and integrate it into World Trade Organisation (WTO) rules over the period 1995–2005. The gradual integration is to occur in three stages based on the 1990 volume of imported textile products covered by the arrangement. The first stage began in January 1995 (integration of 16 per cent of the volume), the second stage started in January 1998 (integration of another 17 per cent) and the third stage will start in January 2002 (integration of a further 18 per cent). The remainder is to be brought under WTO rules in January 2005.

Producers of all apparel fibres are expected to benefit from the phase out of the Multifibre Arrangement. However, synthetic and cotton producers are expected to benefit more than wool producers because the volume quotas under the arrangement encouraged trade in higher value products such as those made from wool.

Conclusions

The Australian wool industry contracted greatly in the 1990s as producers responded to poor returns emanating from a significant deterioration in the demand for wool. Much of the market weakness can be explained by slower world economic growth, a severe downturn in the economies formerly comprising the Soviet Union, strong interfibre competition, competition from other consumer products, fashion changes and continuing demographic change.

Probably the single most significant factor affecting demand for wool during the 1990s was competition from other fibres in a relatively slow growing world market for apparel fibres. In particular, new easy care synthetic fibres that have many of the same physical characteristics and end uses as wool have competed strongly in the traditional sectors for woollen apparel. Falling prices for synthetic fibres, because of productivity improvements in synthetic fibre manufacturing, have resulted in apparel items with substantial proportions of these fibres also being more appealing on a price basis.

Fashion trends in recent years that have favored casual wear have also been to the detriment of wool. When this trend is combined with the likely effects on consumer spending patterns of an aging population in most developed countries, it is clear that wool is competing in what are likely to be declining market segments. Competition for a share of consumers’ discretionary budgets also grew in the 1990s. Such competition has been strongest in areas such as electronics, services, entertainment and recreation.

In looking to the future, it appears highly likely that wool will remain under strong competitive pressure from other fibres (especially synthetics) and from competing demands on consumer budgets in a changing world. Although there will be occasional relief from the longer term downward pressure on prices, usually because of short term supply limitations, the overall picture is likely to be one of unrelenting price decline in real terms and continuing adverse effects on wool grower incomes.

References