16. Global View of the Apparel Market

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Lecture 1: The global textile industry

Learning objectives

On completion of Lecture 1 you should have an understanding of the:

- Outline, size and complexity of the fibre, textile and apparel markets
- The possible end-uses for textiles
- Key drivers of demand for textiles
- Major changes taking place in the textile industry and the consequent outcome.

Key terms and concepts

Textile, apparel, man made fibres, mill demand, final demand, staple yarns, filament yarns, filament non-woven

Introduction to lecture 1

This lecture describes the global textile industry, where apparel fits in and how change is a normal feature of the industry. The change is driven by new technology and changing economic circumstances between countries. References and reading material with the lecture allow further study of the fibre, processing and distribution industries that combine to allow fibres to be sold as apparel.

When discussing textiles it is necessary to use some jargon. The technical jargon helps to avoid the generalisations that flow, and the accompanying misconceptions, if textiles and apparel are discussed as a monolithic industry.

16.1 Production-distribution chain structure

The textile and apparel industry is really a combination of fibre, textile (end uses) and distribution industries. Figure 16.1 outlines the major components of the chain. Fibres thread a complex path before emerging in some form in the hands of a consumer. The difficulty of economic analysis is to relate the impact of economic trends at the consumption end of the system to supply, demand and ultimately price through the system at different points.

From the point of view of the wool industry (the fibre or production section) the challenge is to firstly estimate changes in demand at the retail end, then relate these changes to supply flowing through from the production end. Agricultural production moves through some definite cycles (seasonal supply patterns) but otherwise trends in production move relatively slowly in comparison to events at the demand end which are a combination of economic changes (varying rates of growth) and fashion/logistic cycles (fashion seasons and stock or industrial production cycles.)

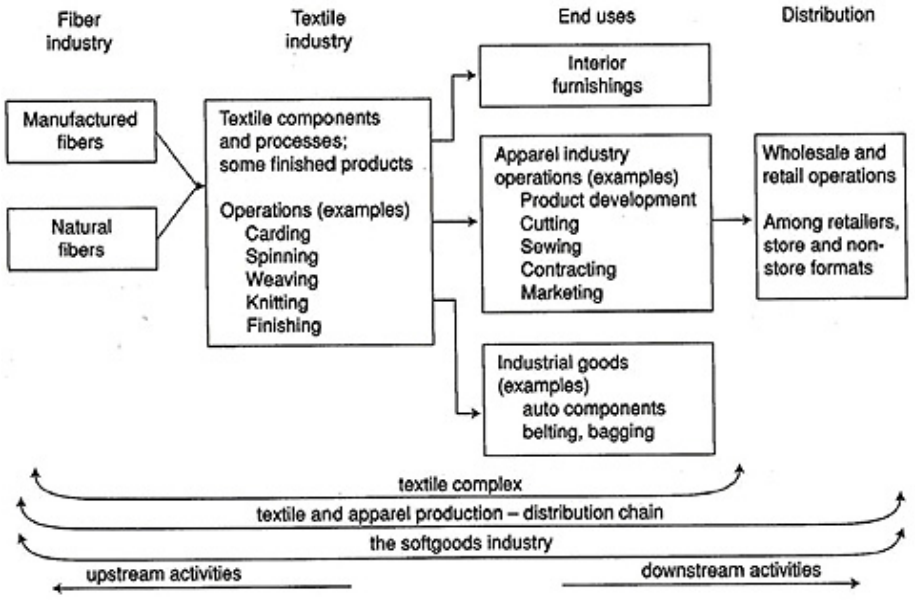


Figure 16.1 The textile and apparel production-distribution chain.
Source: Dickerson (1999).

Wool production is an agricultural activity. As such, wool as a commodity needs to compete with other agricultural commodities (meat, grains, oil seeds, dairy) for farm resources. It is the relative return of these competing commodities that determines the farm resources devoted to wool and the ultimate levels of fresh wool (fresh wool referring to wool harvested from live sheep rather than skins) production.

The early stage processing of wool (carried out by scourers, carbonisers and topmakers) is the section of the processing chain most dedicated to wool. They sink or swim with the general fluctuations (in volumes) of the industry and in a sense they are part of the fibre section of Figure 16.1.

The processing industries convert textile fibre into end-use products such as apparel.

Wholesalers and retailers make up the distribution section of the complex, linking retail demand back to the processors.

Encompassing this network of industries is the policy and legislative framework of the countries that the industries operate within and trade with.

16.2 Fibres

The fibres and textile markets are complex in terms of technology and geography.

Complexity

As an example of the technical complexity of fibres look at Figure 16.2. It shows the generic classification of man-made fibres (a course in organic chemistry will help decipher the diagram.) The example is a good one as it highlights the fact that man-made fibres, like the textile market itself, is not a monolithic market but rather a collection of related, smaller markets. In some respects the textile fibres market is akin to the grains complex where the demand, supply and prices for various grains are related in a loose federation.

The wool market itself is another subset of the textile market that is a group of related but not strictly substitutable fibres. For example the market for wool used in Zegna suits is related to (in terms of production and demand) but not the same as the wool used in home furnishings.

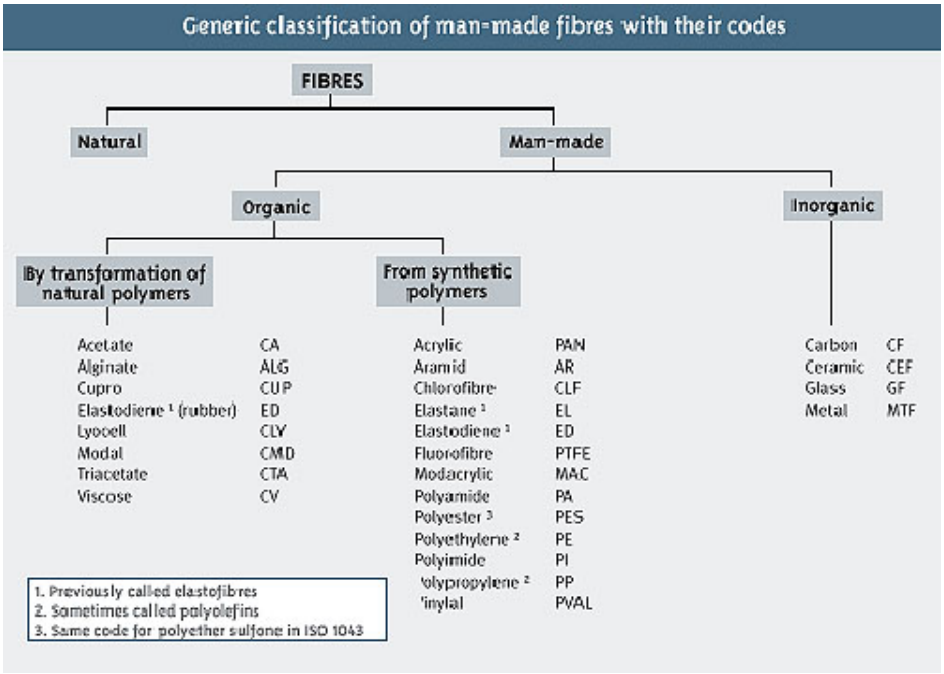


Figure 16.2 Generic classification of man-made fibres. Source: CIRFS (www.cirfs.org).

Continuing on from Figure 16.2 the complexity is added to when the fibre enters the textile industry proper with choices about yarn type, cloth type, finish and apparel design. For anyone interested in gaining a better understanding of apparel fibres through manufacturing the RMIT (Royal Melbourne Institute of Technology) regularly holds four day Product Knowledge Workshops in Textiles.

Figure 16.3 illustrates the proportion of wool in the US and Japanese apparel, men's' outerwear, women's' outerwear and knitwear markets. The annual production of fibres in the world is over 50 million tonnes and rising. Man-made fibres dominate the textile industry, accounting for over 60% of production, and will increase their dominance as demand for fibres grows. Cotton is the major natural fibre, with a falling market share. Wool accounts for a minor proportion of world fibre production, around 2%.

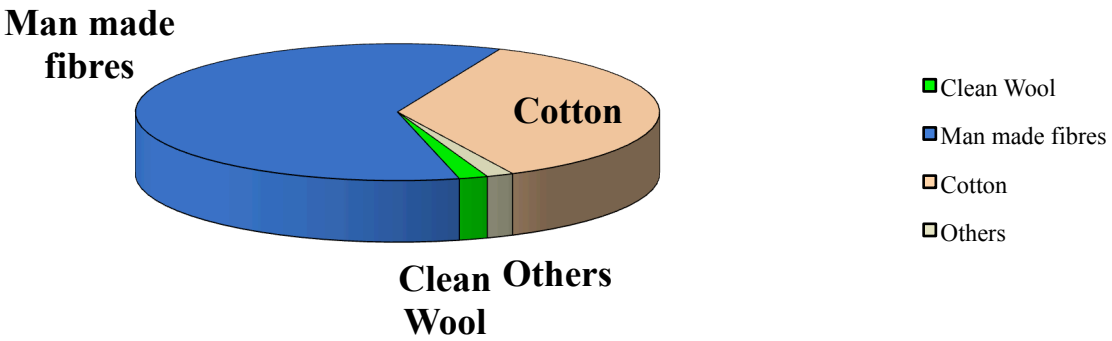


Figure 16.3 World Fibre Production – 2007 Shares
Sources: International Rayon and Synthetic Fibres Committee, Japan Chemical Fibres Association, The Woolmark Company.

Note: wool and cotton production on a seasonal basis (2006 = 2005/06), man-made fibres exclude olefin production.

16.3 Textile end-uses

The use of market share as a guide to the health of the wool industry can be misleading. There are many end uses for fibres, many of which are not suitable for wool. Figure 16.4 lists a range of possible end uses for technical (or industrial) textiles. It highlights the enormous array of uses that fibres are put to.

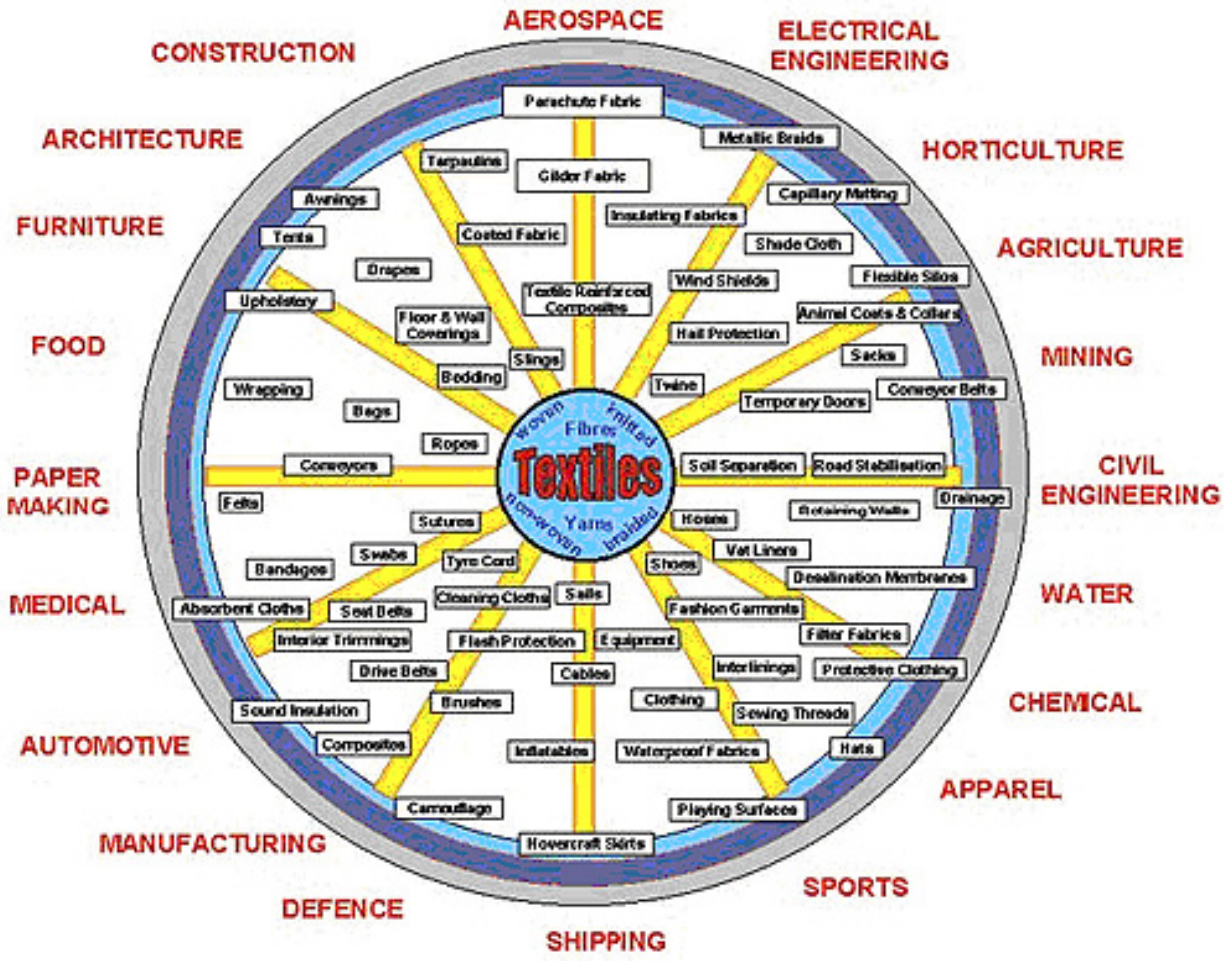


Figure 16.4 Technical Textiles Wheel. Source: CSIRO Textile and Fibre Technology (2005).

Australian Wool Innovation, the peak research and development body in the wool industry, is active in developing industrial end uses for wool as part of a strategy to diversify away from traditional end-use markets.

A more balanced perspective on the end uses that fibres are put to is shown in Figure 16.5. It shows the proportion of end uses (apparel, home furnishings and industrial) that three fibre groups are put to. For wool around 60% is used in apparel, 38% in home furnishings and the balance in industrial uses. In contrast man made fibres end use is split more evenly. Cotton end use favours apparel and home furnishings. Apparel end use accounts for 60% to 65% of overall textile fibre production.

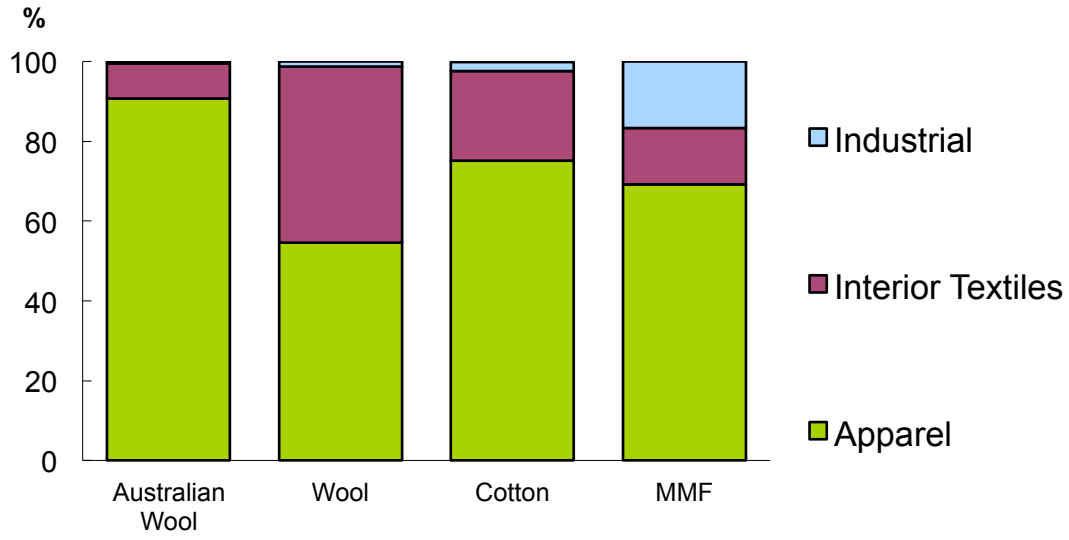


Figure 16.5 Fibre Use by Sector – 2007
Sources: The Woolmark Company, ICAC, CIRFS, CMAO.

Note: Man-made fibre includes oil based and cellulosic fibres

16.4 Fundamental drivers of demand

The textile market is a massive, complex market that produces over 50 million tonnes of textiles, in many forms, each year. Population size and growth are the major driving force for demand with income an important secondary factor.

Population growth

Textile volumes track population growth. Figure 16.6 shows world population growth and world textile volume growth annually from 1970 through to 2001. Textile volume growth follows population growth closely, dipping for periods of recession such as 1982 and the early 1990s and rising sharply (above trend) during periods of strong economic growth such as the late 1980s and the late 1990s.

The picture with regards to population growth becomes less clear when countries are considered individually. Table 16.1 shows United Nations projections for population size by selected countries for the years 2025 and 2050 using the year 2000 as the base. From the point of view of gross demand for textiles the outlook in countries in continental Europe and Japan is poor where total populations are expected to shrink. Countries such as the U.S.A. and China show much better promise during the next two decades. These projections imply that whole regions will suffer a decline in total demand for textiles during the next 50 years. This picture, in turn, is complicated by the changing demographics of populations within selected countries or regions driven by the progression of the “baby boomers” cohort.

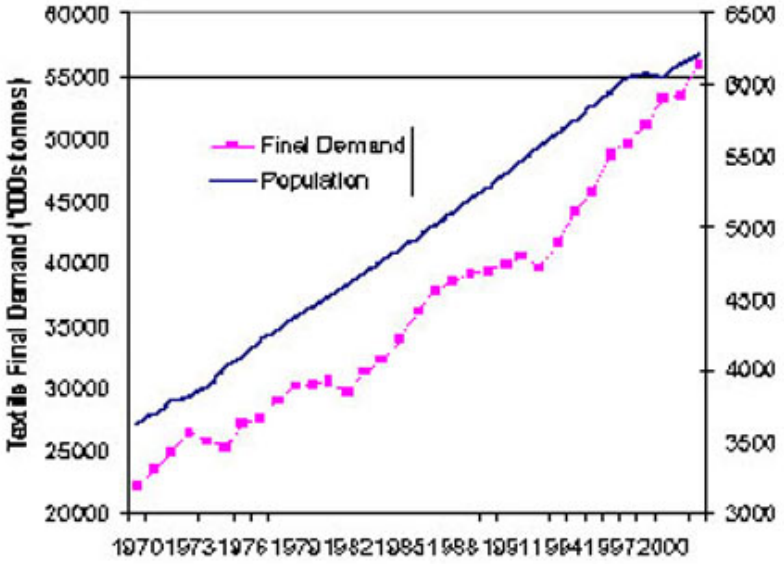


Figure 16.6 World textile final demand and population growth 1970-2001. Source: PCI Fibres and Raw Materials (2003).

Table 16.1 Forecast changes in total population in selected countries. Note: Base year (2000) = 100. Source: Dickerson (1999).

Year	2000	2025	2050
USA	100	126	144
Japan	100	97	87
France	100	108	108
Germany	100	100	96
Italy	100	91	78
UK	100	107	112
China	100	113	109
India	100	135	151

Income level

Textile and apparel demands are known to be income inelastic, in that the consumers are likely to spend extra income on goods other than textiles or apparel even if income rises (Moon, Lee & Holt 2001). Figure 16.7 looks at fibre consumption per capita as income per capita rises. It shows the levelling off of (proportion) increases in fibre consumption as income increases.

Demand for textiles depends on how many people there are and how much they have to spend. Fischer (2003) in discussing the distribution of income among the world's people rather than among nations shows the enormous change wrought by the growing incomes of India and China. The attractiveness of countries such as India and China (in terms of increased demand for textiles) that are experiencing strong population growth and also improving incomes per capita becomes apparent.

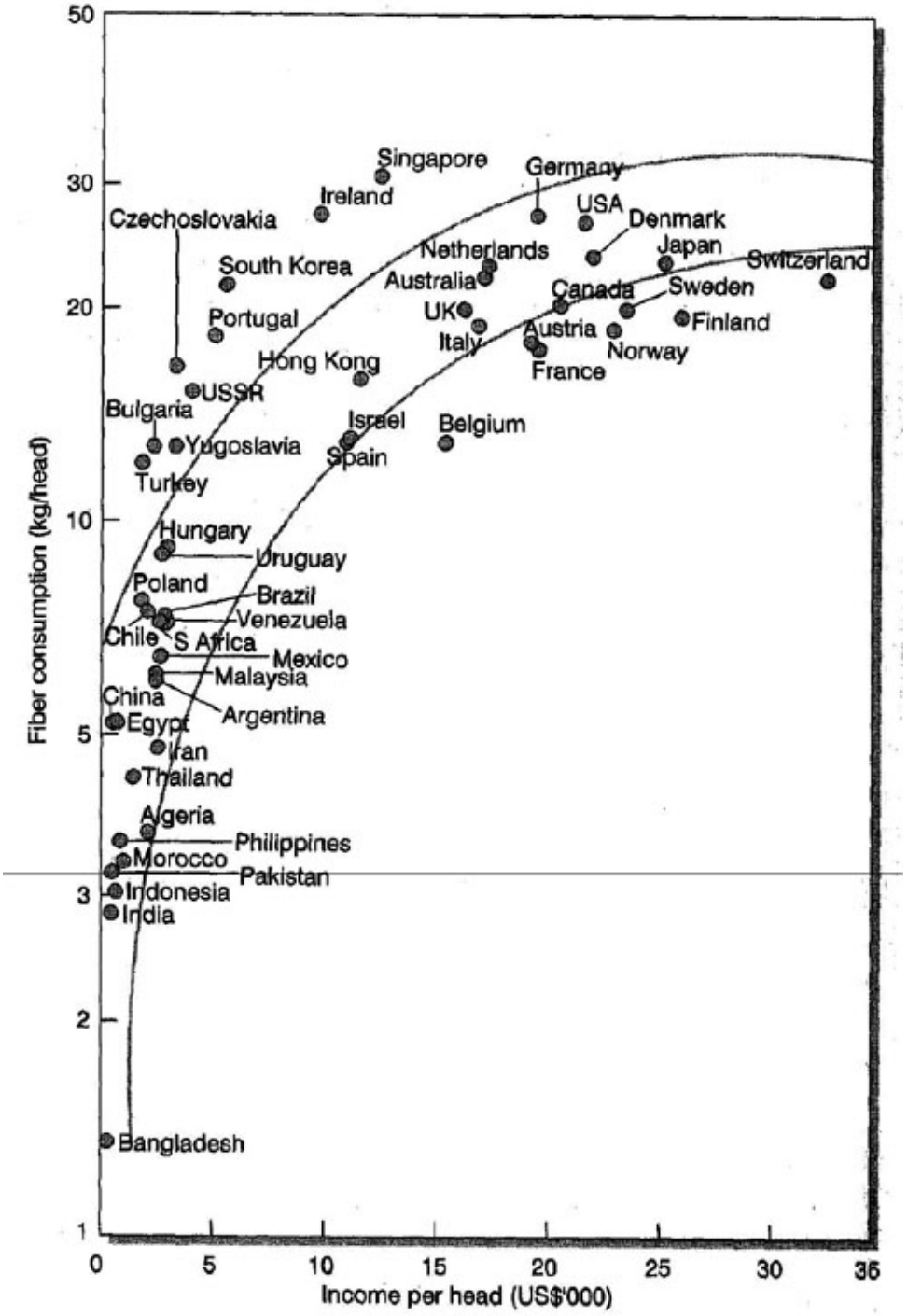


Figure 16.7 Fibre consumption and income per head for selected countries, 1990. Source: Coker, J. (pers. comm. 1993), with permission from Textiles Intelligence Ltd.

16.5 Formal demand models

Surprisingly there has been little formal modelling of demand in the apparel industry (Moon, Lee & Holt 2001). The Moon habit stock model is an interesting example of formal modelling of apparel demand in the United States of America.

Many analysts in the industry rely on macro economic models of varying degrees of complexity (most lean towards the simplistic) as monitors and predictors of demand. As can be expected with such macro models reality and projections often go their separate ways.

Surveys are another method used to monitor demand but they tend at best to be coincident indicators (helping confirm trends and changes in trend) rather than leading indicators.

16.6 Location of textile activity

Mill demand

Mill demand is the calculated consumption of fibres at the processing or intermediate stages of production. In pre-Industrial Revolution times manufacture (processing) and consumption were closely tied in terms of geography. Since then textile processing has moved around the globe. It remains locked in a process of change. Figure 16.8 shows the world share of textile mill demand in 1980 and in 2001.

In 1980 the four major centres of mill demand were North America, Western Europe, China/Hong Kong/Taiwan and Eastern Europe. Each region accounted for between 15 and 20% of production. By 2001 the China/Hong Kong region had become the dominant textile processing region, accounting for a 30% share of the world market. South Asia has become the region with the second largest market share. Textile processing in Eastern Europe, after a disastrous decade following the collapse of the U.S.S.R., has shrunk to minor levels. Finally textile processing in North America and Western Europe is under tremendous commercial pressure from the cheaper cost production regions and the respective world share for these two regions is shrinking.

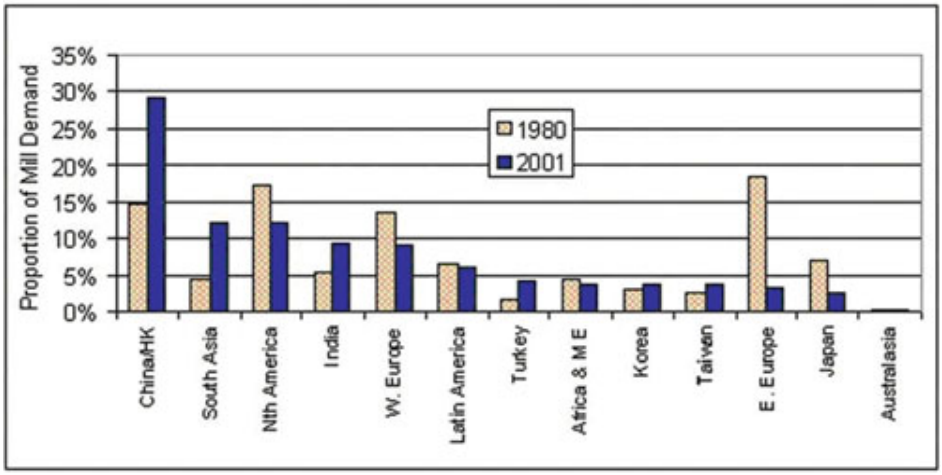


Figure 16.8 World share of textile mill demand 1980 and 2001 – processing areas. Source: PCI Fibres and Raw Materials (2003).

For further study of processing costs, the ITMO International Production Cost Comparison (2001) publication is recommended.

Final demand

Final demand is the calculated consumption of textiles at the retail level. Figure 16.9 shows the world share of final demand for textiles in 1980 and in 2001.
Mill demand is changing due to a change in the relative cost of processing - moving to lower cost areas such as from Western Europe to Eastern Europe or China.

Final demand is also changing as incomes grow in countries such as China and India. These two countries also have large populations where a rise in the per capita income creates enormous growth in demand. In contrast countries such as Italy and Japan are projected to experience declining populations (Figure 16.6). In addition there is little upside in per capita growth of apparel demand in these countries as they are relatively rich, which in total means that demand is expected to shrink in countries such as these in coming decades.

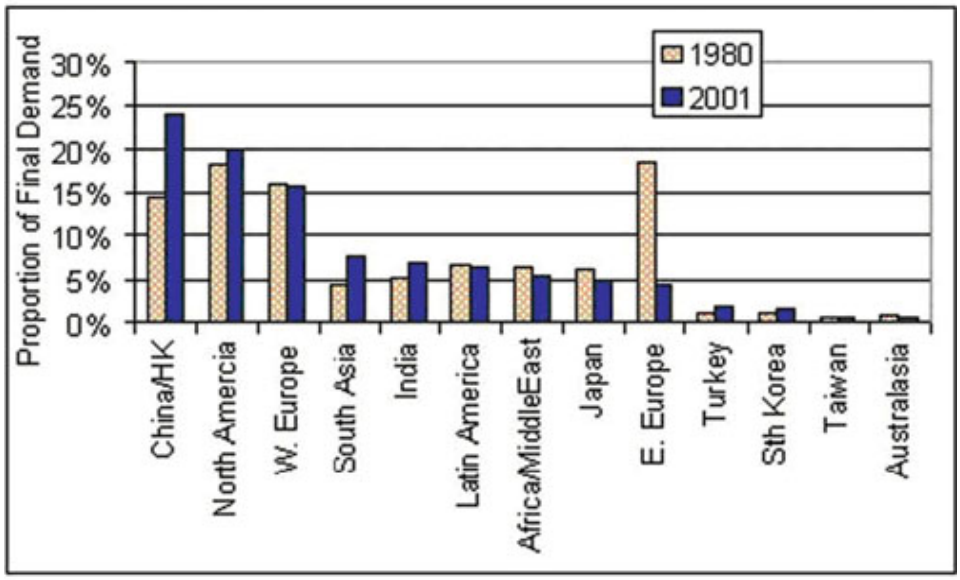


Figure 16.9 World share of textile final demand 1980 and 2001: retail consumption areas. Source: PCI Fibres and Raw Materials (2003).

Fibre demand trends

The story of fibre market share is a story of change. The relative shares of the world fibre market have been experiencing continuous change during the past 300 years, and continue to do so.

Figure16.10 shows the estimated market share for wool, linen, cotton and man-made fibres during the past 300 years with some projections for the next 50 years by David Buck (Buck 2001) and PCI Fibres and Raw Materials.

The natural fibres were dominant, although changing relative market shares, until the 20th century and the development of man-made fibres. The petrochemical industry, which produces basic feedstocks for man-made fibres, was created by a shift in the economies of petroleum refining (Ayres 1990). This happened as a consequence of the growth of the automotive industry after 1910 and the consequent need to produce motor gasoline in large quantities. Prior to 1913 gasoline was simply the by-product of kerosene production.

What the development of man-made fibres did was to effectively bypass the agricultural section of natural fibres (and early stage processing such as topmaking in wool and ginning in cotton) and deliver a staple fibre or filament yarn.

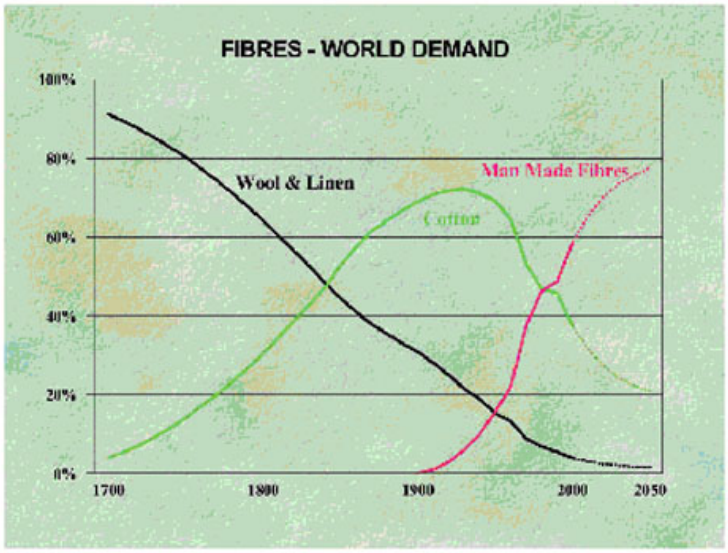


Figure 16.10 Fibres – world demand 1700-2050. Source: Buck (2001).

As mentioned earlier the man-made fibre industry is not a monolith. It can be broadly divided into staple fibre (short length fibre that approximates the staple length of natural fibres), filament (continuous) yarn and non-woven filament (fabric.) The non-woven fabric represents a further technical advance where both the spinning and weaving stages of the textile manufacturing process are bypassed.

Figure 16.11 develops from Figure 16.10 breaking man-made fibres up into staple fibre and filament yarns, from 1900 onwards. Buck (2001) shows in these graphs the continued fight between the different classes of fibres for market share.

The changing market shares for classes of fibre provides a necessary backdrop by which to help understand the on-going challenges for sub-sets of the fibre market such as the wool market.

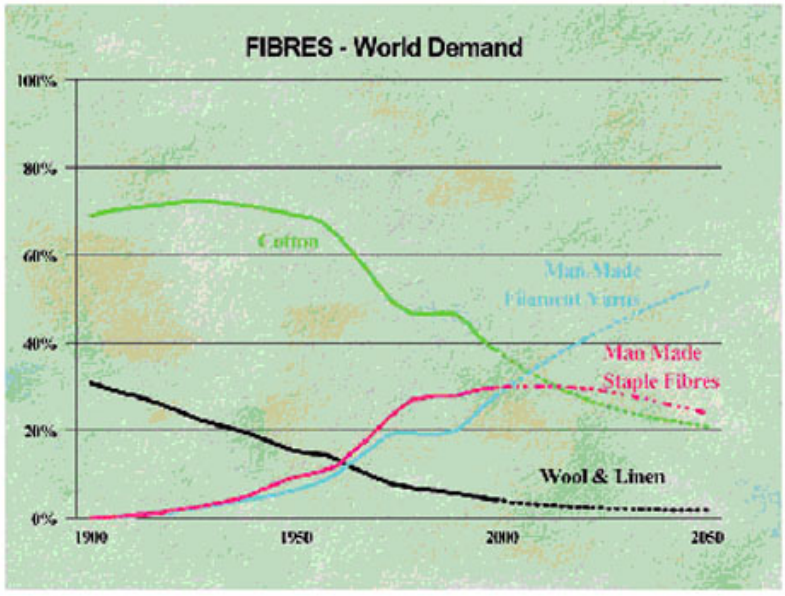


Figure 16.11 Fibres – world demand 1900-2050. Source: Buck (2001).

In Figure 16.12 Buck (2001) splits man-made fibres into staple fibres (fibres of limited and relatively short length like cotton and wool) and filament yarns (yarns that are composed of filaments that run for the whole length of the yarn.) The staple fibres are combined with cotton and the filament yarns are left on their own. In addition he adds data and projections for non-woven fabric (filament non-woven.)

The re-arrangement of the data now shows the development of the textile industry as new textiles are developed that bypass whole sections of the textile process.

Man-made staple fibres - bypass the agricultural section of growing cotton or animals Filament yarn - bypass spinners Non-woven - bypass weavers

Fortunately for the wool industry the textile market is large with many niches available for specialist fibres. However these new technological developments continue to provide strong downward pressure on the cost (and hence price) structure of the textile market generally.

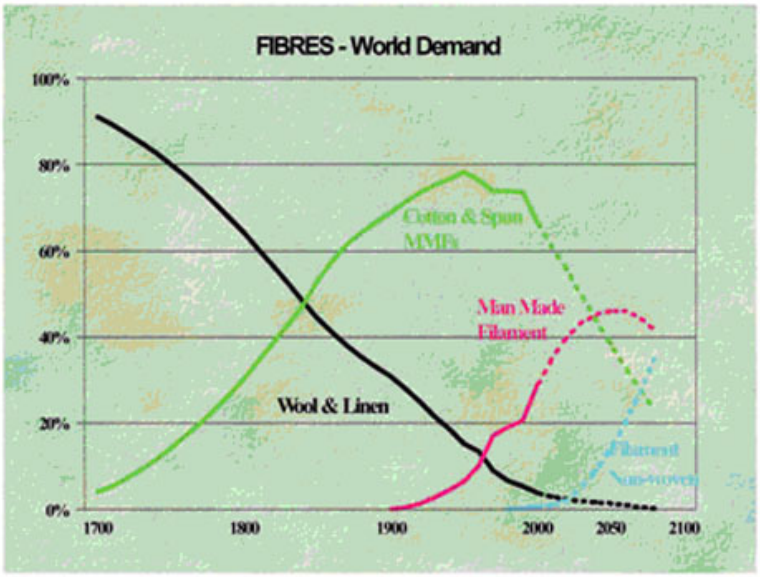


Figure 16.12 Fibres: world demand 1700-2100. Source: Buck (2001).

The projection shows that non-woven filament is the next major class of fibres expected to expand market share during the coming century, due to large cost advantages, at the expense mainly of cotton and spun man-made fibres.

16.7 Price pressure

Successful new technology exerts downward price pressure on the market it is entering, which is generally the reason for its success.

The trend in real price for polyester staple fibre from the early 1960s to the late 1990s is shown in Figure 16.13 The price learning curve theory assumes that the real cost of production of a new technology drops as more is produced. The polyester staple fibre price has dropped by around 21% every time it has doubled its historical production volume (PCI Fibres and Raw Materials.) In the early 1960s the industry was doing this every 2-3 years and thereby exerting tremendous downward pressure on price. It now takes the polyester staple fibre market around 12 years to double historical production levels so its downward pressure on price has abated.

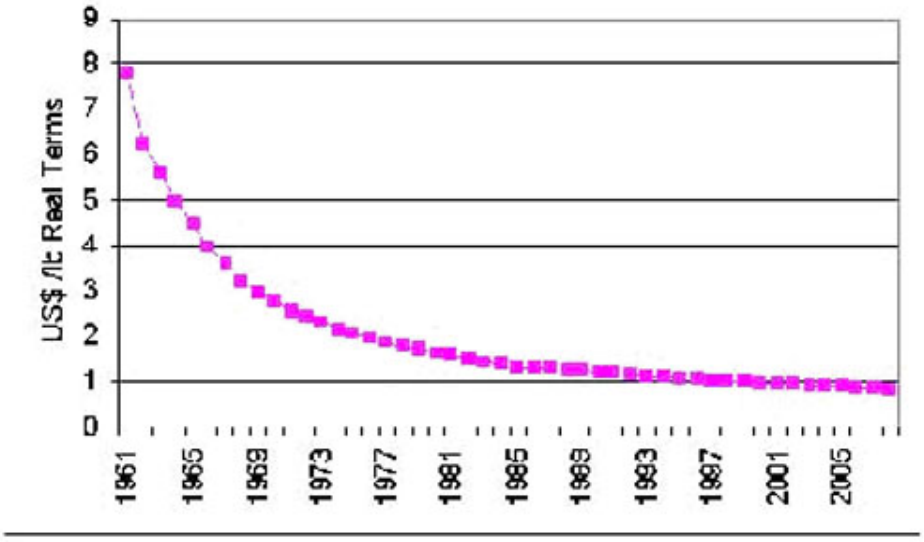


Figure 16.13 Polyester Staple Fibre price in real terms 1961-1998 plus trend. Source: PCI Fibres and Raw Materials (2003).

A log trend line fits the real polyester staple fibre price neatly. A similar trend line also explains the trend in real price for Australian wool prices from the mid 1950s onwards (Figure 16.14.) It would seem there is a causal link between the two. The agricultural nature of wool prices shows up in the occasional large deviation in the price from trend.

Figure 16.14 Real Australian dollar price for wool 21-micron indicator 1953-2002. Source: Woods - Independent Commodity Services Pty Ltd, (unpublished data).

Why should non-woven filament steal market share? The answer is cost advantage. Table 16.2 shows some indicative costs for different types of man-made fibres. Non-woven filament, by passing the early stages of textile manufacturing, delivers fabric that is 80 to 85% cheaper. The direct extrusion fabric will not suit all forms of textile or apparel use but it will add tremendous price competition to the industry, as man-made staple fibres did in the middle of the 20th century.

Table 16.2 Indicative fibre costs. Buck (2001).

MMF Spun Yarn	US$3.50/kg	
MMF Filament Yarn Fabric	US$1.30/kg	US$10/kg
Direct Extrusion Fabric		US1.50-$2.00/kg

Relative price

The relative price of wool to other fibres is used as a general measure of competitiveness. As a rule the Eastern Market Indicator (the All Ordinaries indicator of the wool industry) is used, which can be misleading at times as parts of the market can vary in terms of historical price levels. The graphs below show price ratios for 19-micron and 23-micron, to a mix of polyester and acrylic fibre prices, delivered Europe as wooltops. Both graphs cover the 1991-2003 period. Both graphs display a range of acceptable price relativities, however they do not necessarily track each other. In other words at times in the market some categories of wool can be cheap while others are expensive.

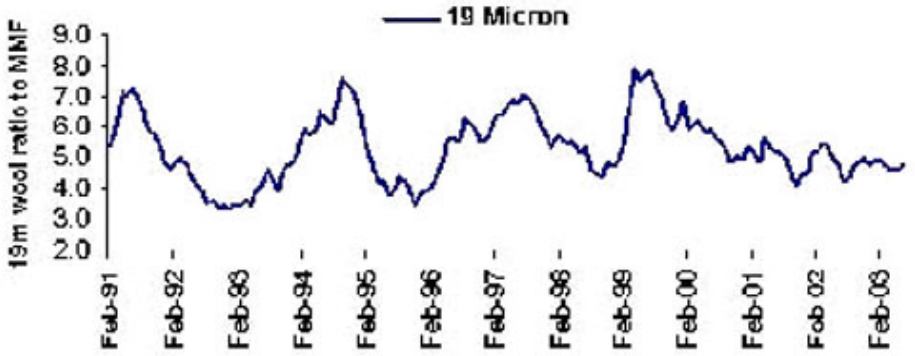


Figure 16.15 19-micron top price relative to man-made fibres.
Source: Woods - Independent Commodity Services Pty Ltd, (unpublished data).

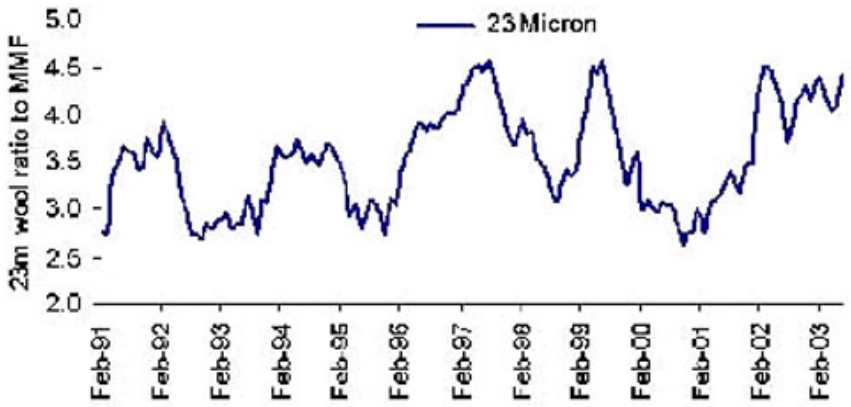


Figure 16.16 23-micron top price relative to man-made fibres.
Source: Woods - Independent Commodity Services Pty Ltd, (unpublished data).

The price relativities show that wool prices vary in relation to man made fibre prices, within a range. In the short to medium term it is a relatively loose linkage, which implies that different fibres are responding to different economic signals. If in the longer-term man made fibre prices used for apparel continue to trend downwards then it is likely that wool prices will have to follow them downwards. in many countries the price of apparel has trended downwards (deflated) in real terms in recent decades.

Even the development of wool non-woven fabrics, while opening up new areas of demand, does not allow wool to escape the pressures of price relativity with competing fibres.

Lecture 2: Where does wool fit into the global apparel market?

Learning objectives

On completion of Lecture 2 you should have an understanding of:

- the industry structure that allows wool to enter and participate in the textile industry
- which categories of wool are used for the different apparel and furnishing categories
- the geographic flow of wool around the world
- the key driver of change in the wool industry

Key terms and concepts

Scouring, wooltops, spinning, weaving, merino, crossbred, fabric weight, menswear, women's' wear, knitwear, worsted, woollen

Introduction to lecture 2

This lecture describes the relationship of the wool industry to the fibres and textile markets. The wool fibre market is currently in the throws of change that were stimulated by technological development during the past three decades and the latest greasy stockpile liquidation.

16.8 Industry structure

Figure 16.17 outlines the stages, and number of participants for each stage, that wool progresses through as it is progressed to the cloth (weaving) stage. Wool enters the textile industry fully at the yarn stage. Up until then, the industry is composed of specialist wool (rather than cotton or man-made fibre) producers and processors. The industry is described as having a wine glass shape in terms of numbers with many producers, few specialist early stage wool processors and then many spinners and weavers.

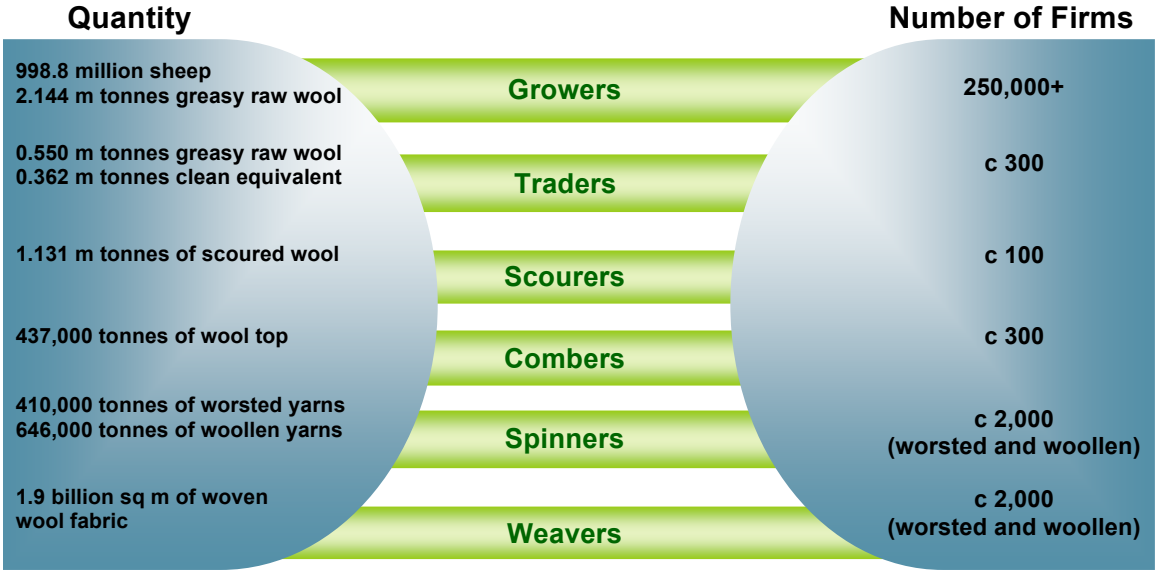


Figure 16.17: The Wool Textile Industry
Estimates are for 2005 and relate to wool content of textile products only.
Sources: Woolmark, Wool Trade Directory of the World.

16.9 Geographic flow of wool

Australia is the dominant producer of apparel wool (see Figure 16.18) as well as being the largest wool producer and exporter in the world. Figure 16.18 lists the largest wool producers in the world for 2001/2. Generally wool is produced in the Southern Hemisphere countries of Australia, New Zealand, South Africa, Uruguay and Argentina and exported to the Northern Hemisphere processing centres. The Southern Hemisphere wool production accounts for 53% of total world production but about 90 % of apparel wool. Figure 16.18 shows that China is also a major wool producer in its own right.

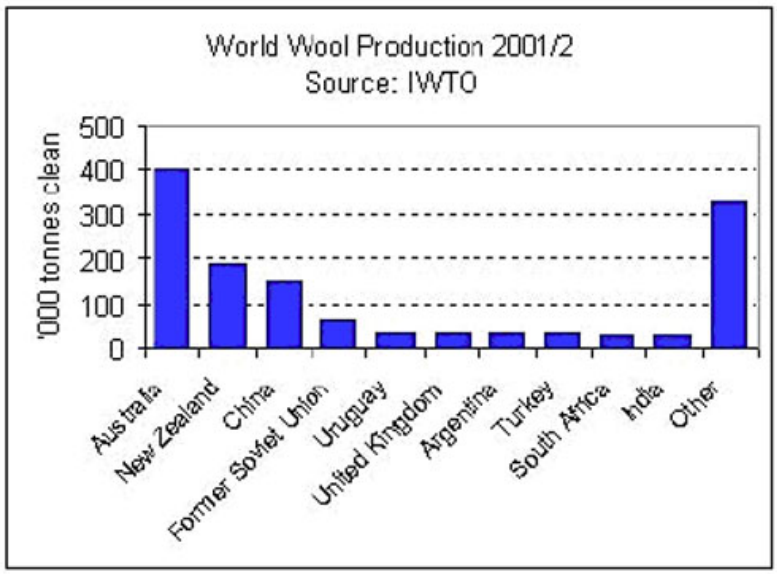


Figure 16.18 World Wool Production 2001/2. Source: I.W.T.O. (2003).

In terms of wool processing China and Western Europe are the major centres. The proportion of processing in China has grown enormously during the past two decades and looks certain to grow further. Western European processing is being re-located to Eastern Europe, China or North Africa.

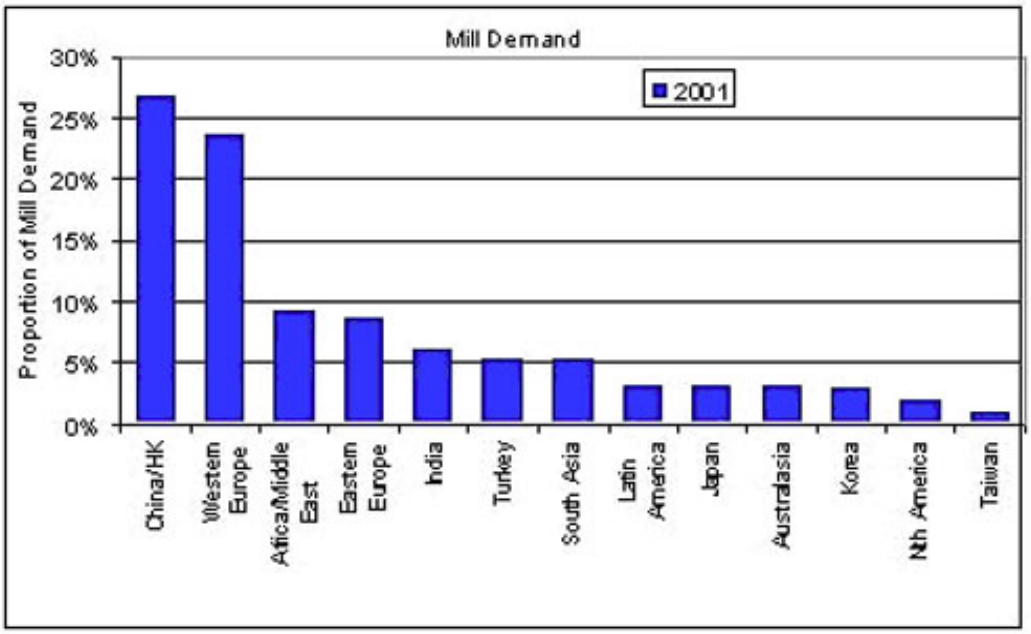


Figure 16.19 Mill Consumption of Wool 2001 by Country.
Source: PCI Fibres and Raw Materials (2003).

In terms of wool consumption Western Europe remains the major market, with China growing in importance. For Australian wool Japan and then North America are the next most important markets.

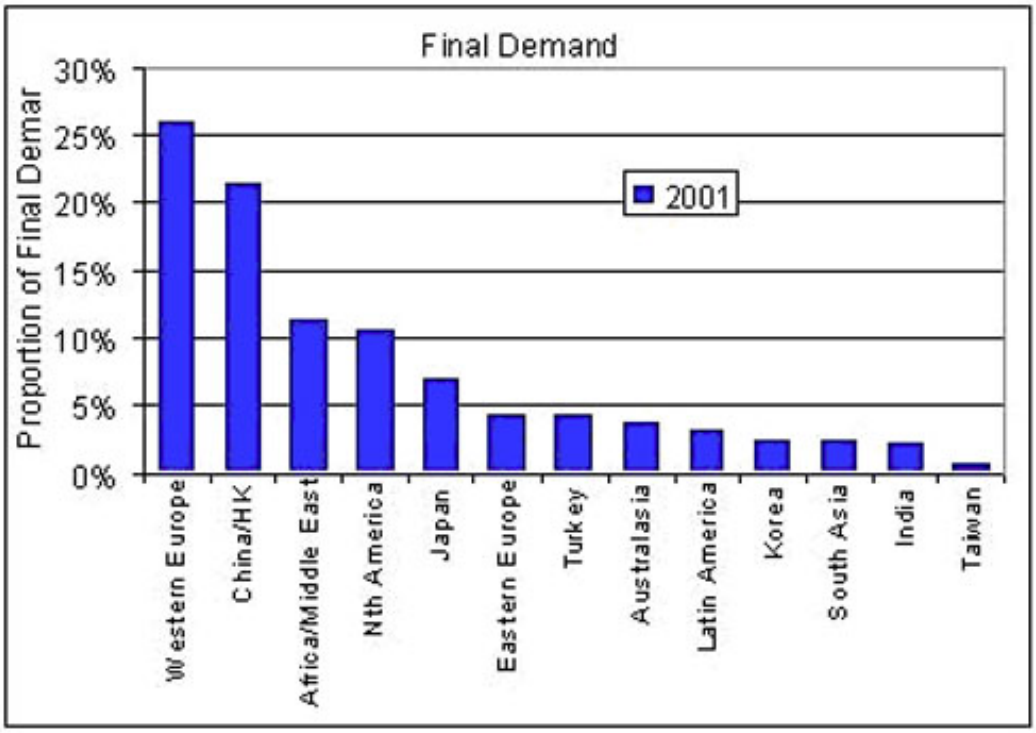


Figure 16.20 Final Demand of Wool 2001 by Country.
Source: PCI Fibres and Raw Materials (2003).

16.10 Sources of wool

The definition of apparel wool is generally wool with a fibre diameter of 25 microns or less. The fibre diameter distribution of national clips varies greatly between countries. The New Zealand clip is primarily carpet wool (a fibre diameter greater than 32 microns) while the Australian clip is mainly apparel wool.

Apparel wool makes up around one third of world production. Figure 16.21 shows the breakup of world wool production according to breed. Merino wool is mainly apparel wool, of which Australia produces about half.

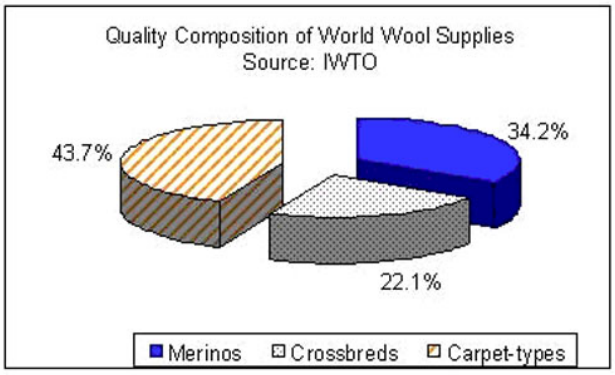


Figure 16.21 Quality Composition of World Wool Supplies.
Source: I.W.T.O. (2003).

16.11 Australian production

Australian wool production as a share of the main exporter (Australia, New Zealand, South Africa, Uruguay and Argentina as well as China and the former USSR) production varies according to micron category. For the 21-micron and finer categories Australia is by the dominant producer/exporter. For the broader apparel micron categories (23-25-micron) Australia accounts for 40-50% of production although when quality considerations (staple length and dark fibre contamination) are included, Australia's share of the high quality combing wool is higher.

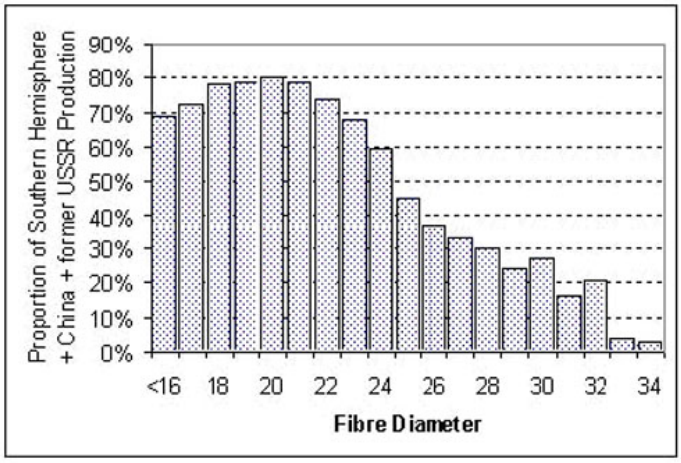


Figure 16.22 Australian share of Southern Hemisphere (and China and former USSSR) wool production and selected wool producers by point of micron 2002-3.
Source: Woods - Independent Commodity Services Pty Ltd, (unpublished data).

16.12 Where does it go?

Figure 16.23 provides a simplified outline of end-uses for wool according to fibre diameter with the supply by major wool producers by point of micron shown in the lower section.

The solid sections of the bar graph lined up against the various apparel product categories highlight the main wool, by micron, used to produce that type of apparel. The full bar represents the complete spread of microns used in the manufacture of the particular type of article. Most of the Australian clip is used to produce better quality men's woven outerwear, women's woven outerwear, knitwear, underwear, some fine socks and little hand knitting yarn.
The South African clip, much smaller in volume, is used to produce garments of similar quality.
By comparison, the bulk of the Uruguayan clip is stronger ranging from 25 to 29 microns.

The profile of the New Zealand wool clip is different again, with the bulk of the clip ranging from 33 to 38 microns. Most New Zealand wool, apart from small volumes of fine merino wool, is used in the manufacture of carpet wool.

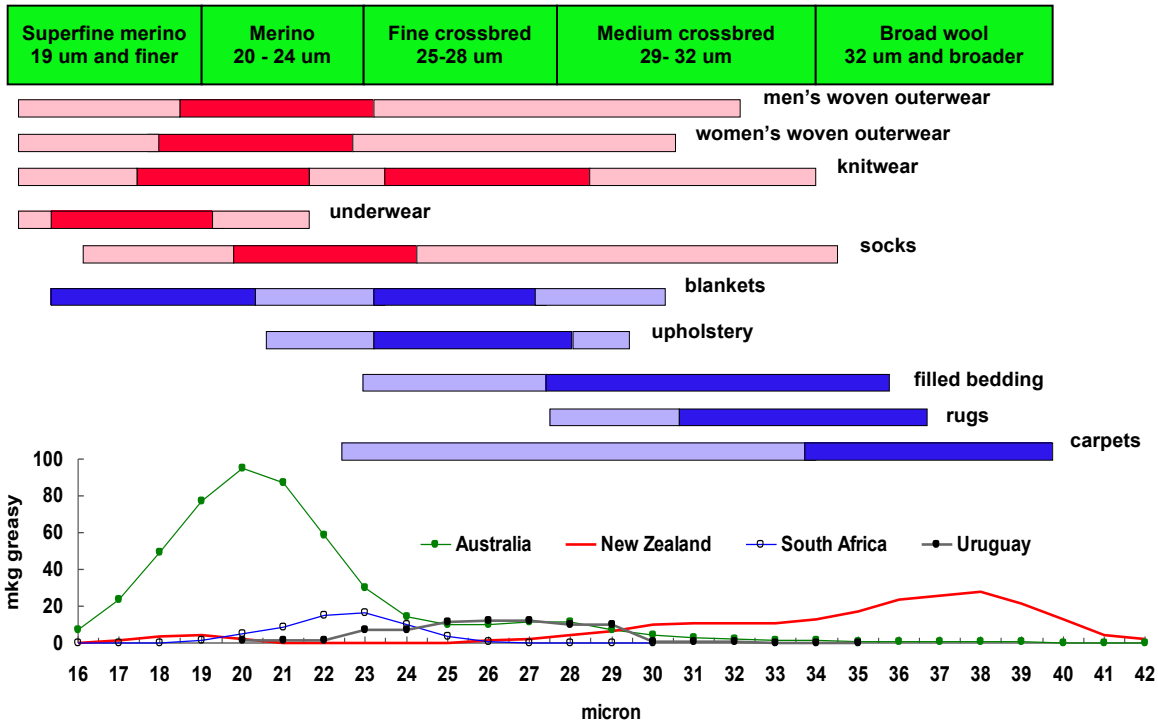


Figure 16.23: Wool Usage and Fibre Diameter
Source: The Woolmark Company

The above schematic is a good way to bring the various broad categories of wool, their main sources of production and the end uses the wool is put to, into context.

A more technically complex view of raw wool measurements and yarn types is given in work done by Stanton, Curtis and Cross (1997) in Western Australia (Figure 16.24). Wool enters the textile industry when it reaches the spinning stage. Figure 16.24 links specifications for batches of raw wool to the yarn segment of the market they are likely to be used in. In turn the type of yarn wool is used in determines the range of apparel end-uses it can be used for and in doing so the value of the raw wool to the textile industry.

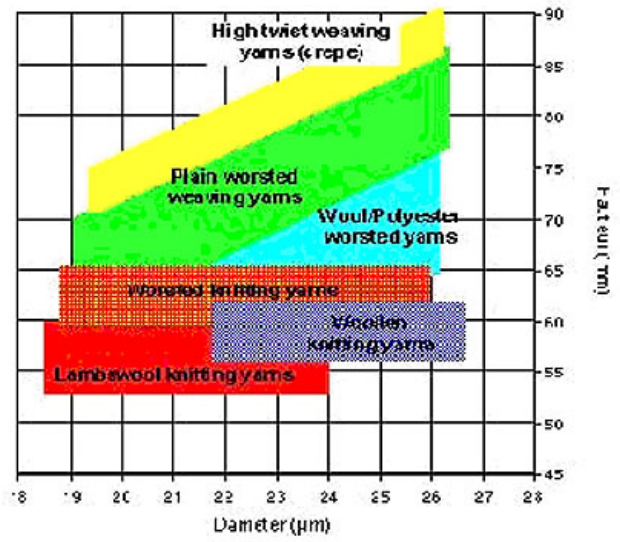


Figure 16.24 Yarn Market Segments. Note: The paper's authors now think the minimum hauteur length for the woollen system yarns (worsted and knitting) should be lower than suggested in Figure 16.24. Source: Stanton, Curtis and Cross (1997).

It is a trap to think of the wool market as homogenous, when it supplies fibre into many different sectors of the apparel market.
The share of apparel consumption held by wool in major northern hemisphere markets is much better than generally realised. Figure 16.25 shows Woolmark estimates of wool market share in the late 1990s which shows wool apparel as a significant component of the selected markets, a far different picture to the regular description of a 2% market share of all fibre consumption.

Figure 16.25(a): Fibre Shares of Imports of Men's Outerwear (Value Basis)
Sources: Japanese Trade Statistics & US Dept. of Commerce (General imports). Menswear includes suits, coats, jackets and trousers.

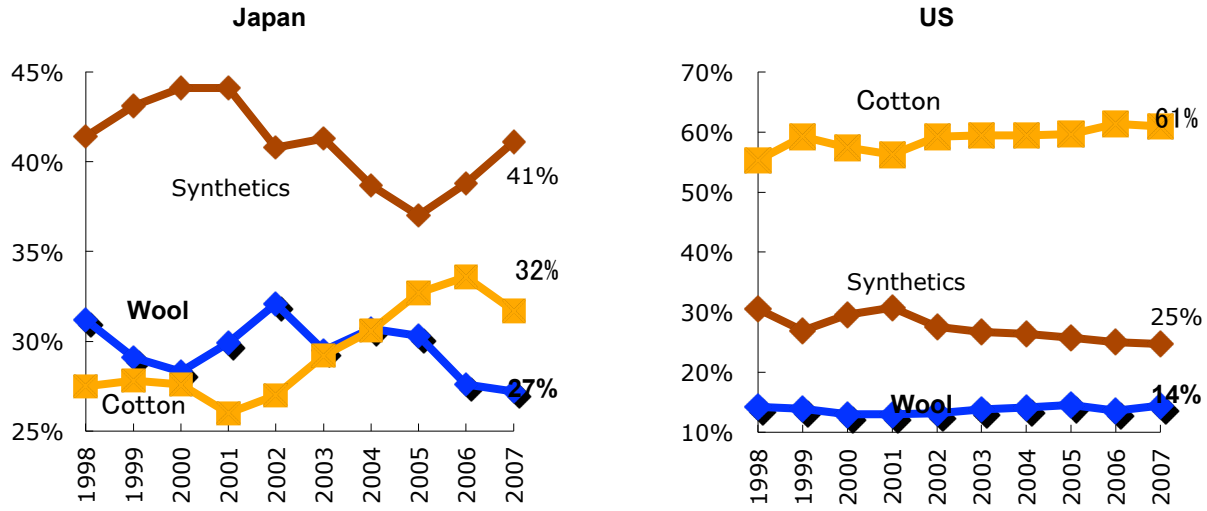
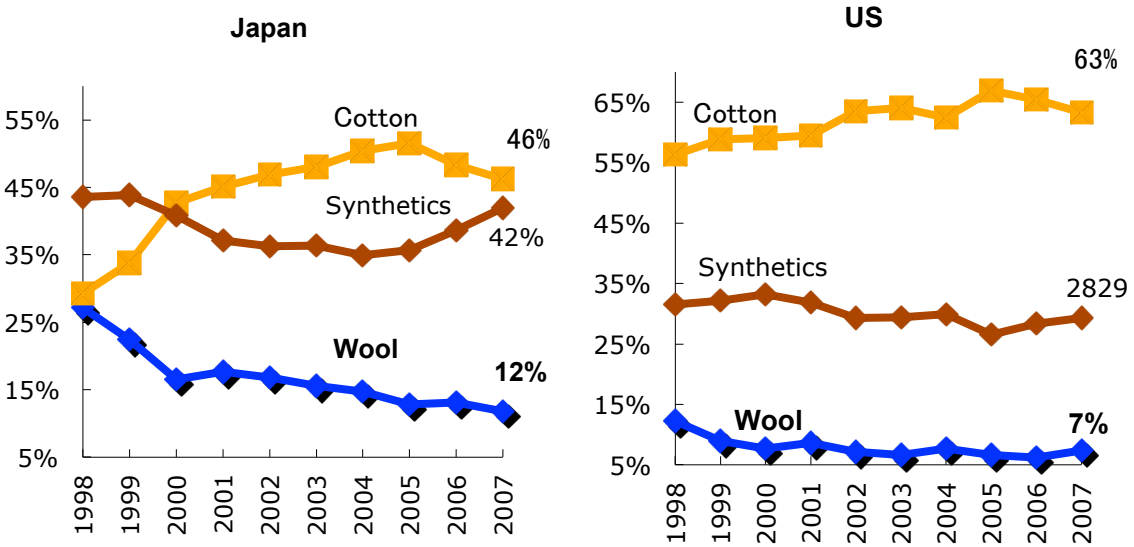


Figure 16.25(b) Fibre Shares of Imports of Women's Outerwear (Value Basis)
Sources: Japanese Trade Statistics & US Dept. of Commerce. Womenswear includes suits, coats, jackets, trousers, skirts, dresses.



In terms of apparel use the Woolmark data shows that market share is evenly spread between menswear, womenswear and knitwear. Interior textiles account for the largest end-use with a 38% share. Industrial uses, included in other, account for only 2%.

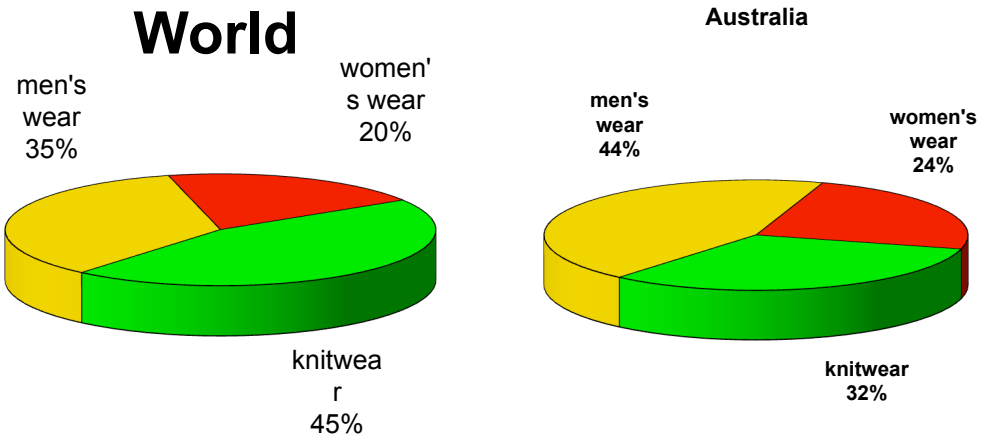


Figure 16.26: Apparel Wool End Uses (Volume Basis)
Source: The Woolmark Company estimates

16.13 Fabric weights

Since the late 1980s fabric weights (grams per square metre) have tended to decrease (see figure 16.27). Technically this means that ultimately the fibre used in the yarn must be thinner (there are limits to the number of fibres in the cross section that are used in yarns.) As the demand for lighter fabrics developed, objective measurement of fibre diameter was adopted in Australia allowing accurate purchasing of fine wool. In addition the introduction of containerisation in the early 1970s allowed batches of wool to be delivered precisely which favoured the increased use of objective specifications for raw wool. As a result the demand for finer wool has grown, with supply trending up in response to high premiums.

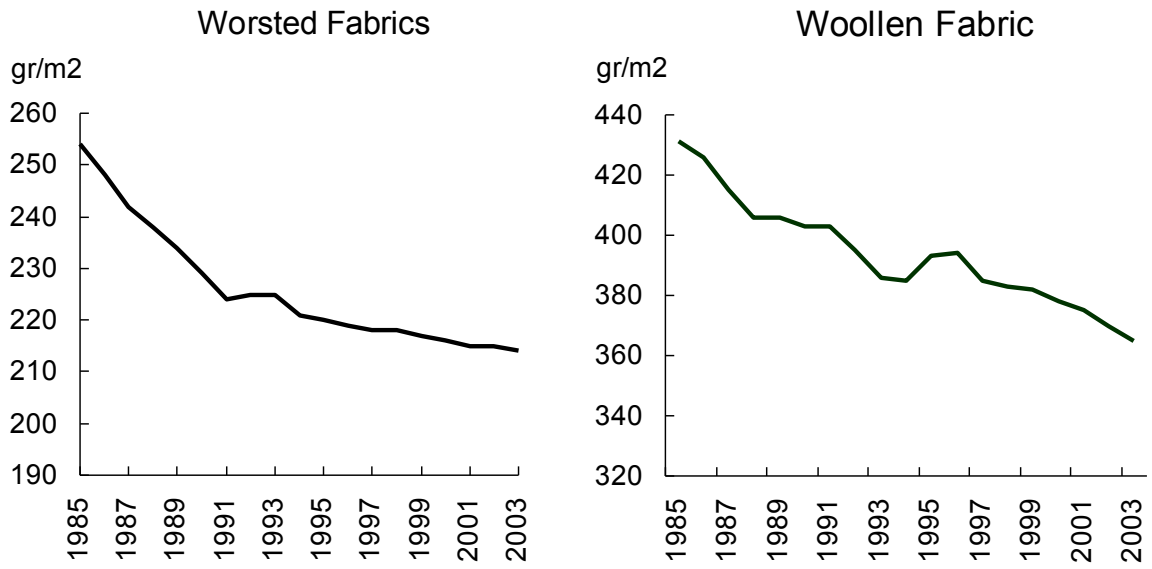


Figure 16.27 Average Fabric Weights in the Italian Wool Textile Industry.
Sources: SMI, The Woolmark Company

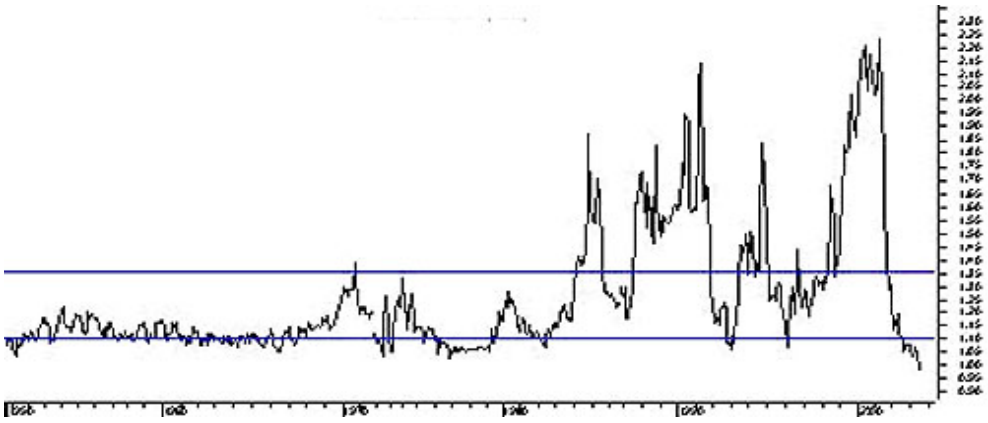


Figure 16.28 19-micron premium to 21-micron 1947-2003.

Source: Woods - Independent Commodity Services Pty Ltd (unpublished data).

Figure 16.28 shows the massive increase in the 19-micron premium to the 21micron indicator from the early 1980s onwards. In the previous 30 years the premium had averaged 12%. From the early 1980s onwards it has averaged 43%. The increase in premiums spurred a drive to grow more fine wool.

In contrast to the total volume of the Australian clip, fine wool volumes have been trending steadily upwards in Australia since the mid-1980s. Figure 16.29 shows the seasonal (fiscal year) volume of fine wool in Australia since 1981/2. The volume is shown in farm bales, which approximate to around 120 clean kilograms of raw wool.

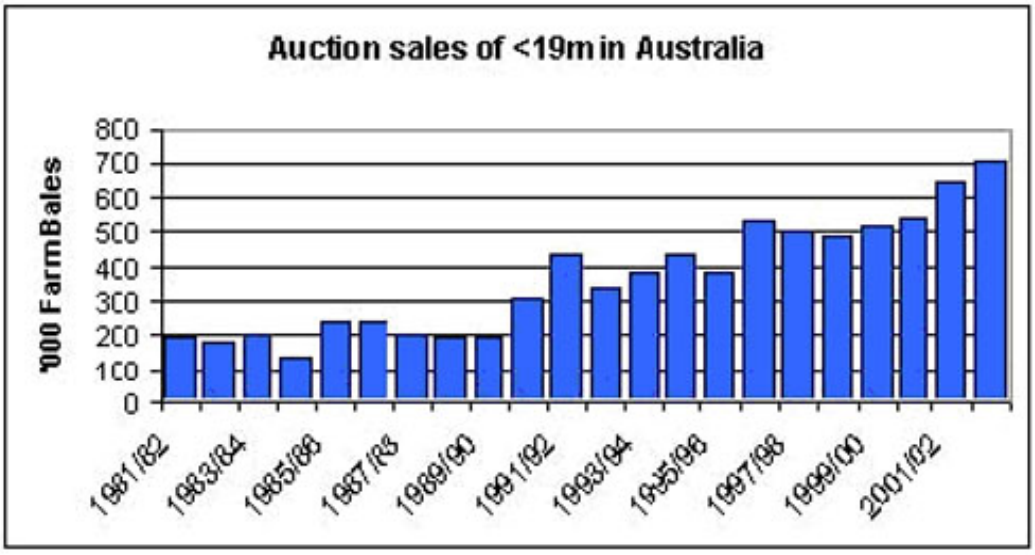


Figure 16.29 Fine wool production in Australia 1981/2 to 2002/3.
Source: Woods - Independent Commodity Services Pty Ltd (unpublished data).

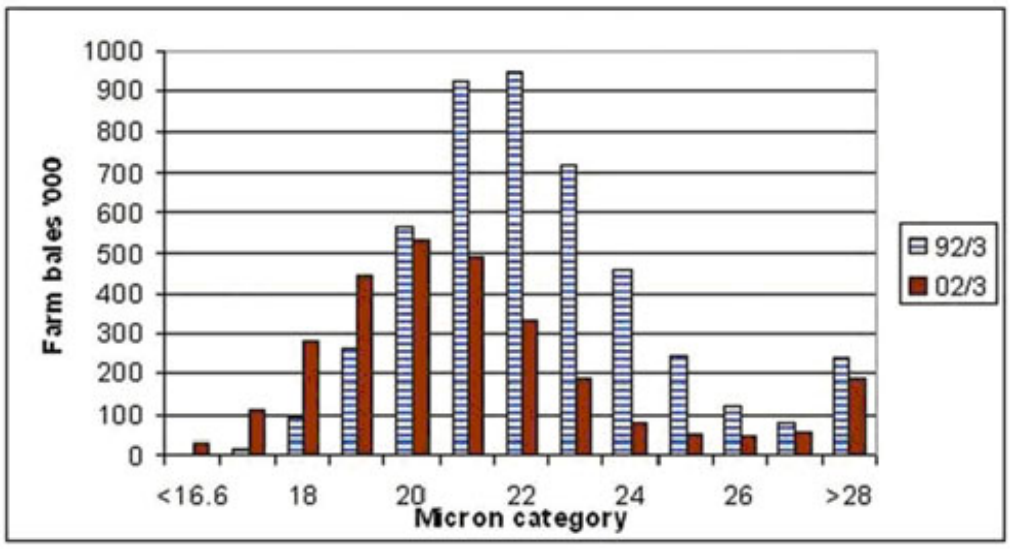


Figure 16.30 Australian wool production micron profile 1992/3 and 2002/3.
Source: Woods - Independent Commodity Services Pty Ltd (unpublished data).

To demonstrate the enormous change that has occurred in the Australian supply of wool during the past decade look at Figure 16.30. The result has been a large shift in the micron profile of the Australian clip to the finer micron categories and a massive decrease in the production of traditional medium and broad merino wool.

16.14 Wool supply

Wool prices have traditionally been driven by fluctuations in demand rather than changes to supply. A useful but crude method of estimating wool apparel demand is to use macro-economic measures as a proxy for demand.

The exception to this is when estimated greasy stock levels fall to 5% or less of world consumption and there is insufficient stock in the supply chain to act as a damper on fluctuations on supply and demand. The supply of wool is limited and as a result price rises in order to ration the limited supply. If, at the same time, demand is rising, based on an upswing in economic growth, then a boom market in the raw fibre occurs as it did in 1951, 1973 and 1988.

16.15 Stockpile liquidations

During the past 53 years there have been four greasy wool stockpiles liquidated with raw wool price rising sharply in the aftermath. Stockpiles were finally liquidated in 1950, 1972, 1987 and 2001.

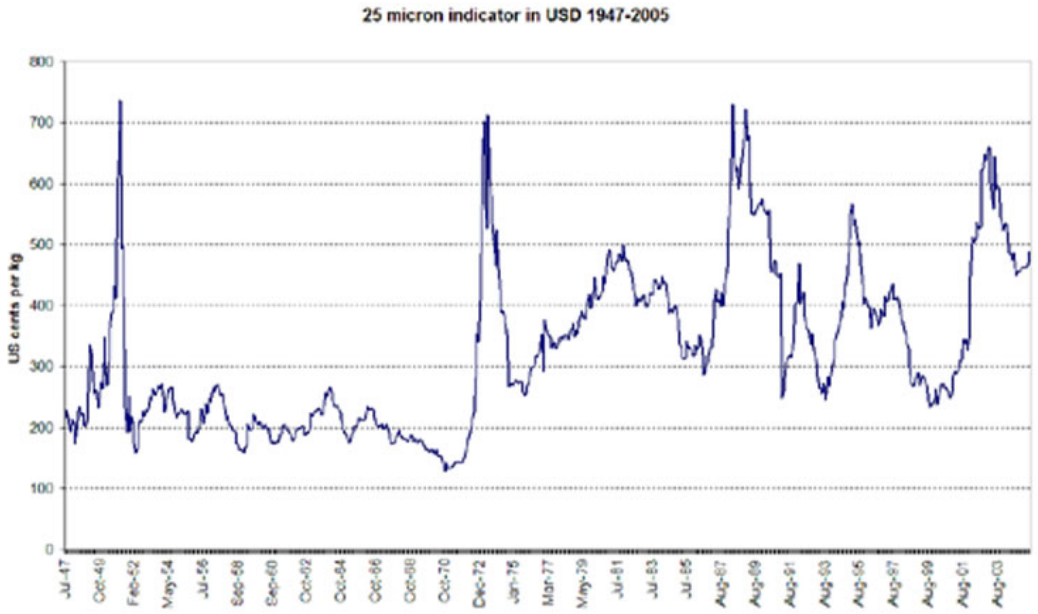


Figure 16.31 25-micron indicator in US dollar terms 1947-2003.
Source: Woods - Independent Commodity Services Pty Ltd (unpublished data).

To look back in history the 25-micron indicator in US dollars has been used in Figure 16.31. It clearly shows the price of the 25-micron indicator responding to the supply shocks that occurred as a result of the run down of greasy wool stocks.

The next graph (Figure 16.32) looks at month to month price variation for the 23-micron indicator for the same period. The supply shocks show up through increased price variation akin to the effect of an earthquake on a seismometer.

This point is of particular relevance in the current market as the industry struggles to adapt to the increased supply risk following the liquidation of the stockpile left over from the collapse of the Reserve Price Scheme in 1991.

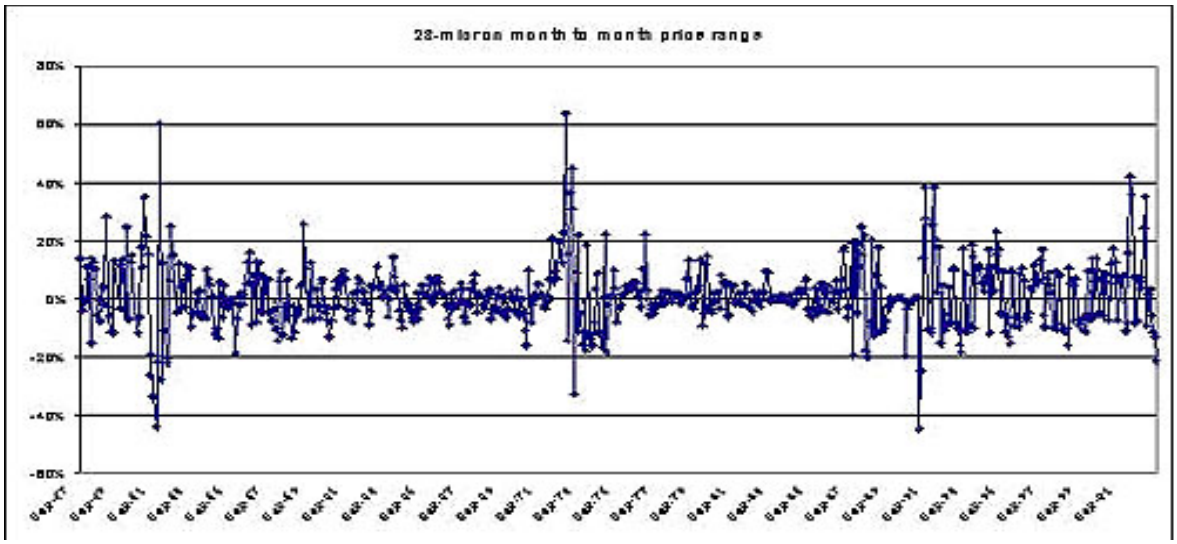


Figure 16.32 23-micron indicator monthly change in price 1947-2003.
Source: Woods - Independent Commodity Services Pty Ltd (unpublished data).

Summary

Change in the global textile market continues in terms of geography for both processing and consumption and also technically. The difficulty with wool production (that is used predominantly for apparel goods) is that its production is based in agriculture, a long way geographically, culturally and commercially from the textile and the fashion/retail industries. In terms of production the wool industry responds to the relative prices of agricultural commodities at the farm gate. Wool prices while subject to agricultural commodity fluctuations are driven in the long term by the trends in the major fibre prices, which have been falling for 40 years. Technical innovation and the shift of processing to lower cost geographic regions continue to drive textile and apparel prices downwards. Change continues with the downward pressure on fibre and apparel prices the consistent outcome.

In terms of overall textile production wool has only a market share of a couple of percent. However the textile market is so big that 2% of the overall total can equate to a profitable niche. The further breakdown of textile end-uses shows that wool has much greater market share in some categories such as men's and women's outerwear, although this varies with country. Measuring the health of the wool fibre market by its market share will never yield a positive or useful result as it is unlikely that wool production (based on agriculture) will grow at the same rate as apparel demand grows.

The real test of whether wool as a fibre has a healthy commercial future is if participants in the industry are achieving acceptable commercial returns. In the short term the industry is in the midst of a catharsis caused by the final resolution of the Reserve Price Scheme with the liquidation of the official greasy stockpile in late 2001. In combination with drought and the strong signals sent to farmers in the late 1990s by the low medium and broad merino prices apparel wool supply has crashed. The industries that process wool will take some years to recover from such a severe supply shock. These "wool" problems compound the general fibre, textile, end use and distribution industry issues caused by economic and technical changes. When you hear complaints related to the wool fibre be careful to sort out the root cause of the complaint as the cause may be a general one rather than specific to wool.

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Glossary of terms

Acrylic fibre	a generic name of a fibre composed of synthetic linear macromolecules having in the chain at least 85% (by mass) of recurring cyanoethene (acrylonitrile) groups
Apparel	personal outfit, garments, clothing or attire, including headwear and footwear
Crossbred wool	wool from sheep bred primarily for meat production. In Australia this refers to wool between 26 and 32 micron. In New Zealand it refers to wool broader than 32 micron
Fabric weight	weight of fabric usually in grams per square metre
Filament yarns	a fibre of indefinite length
Filament non-woven	fabrics normally made from continuous filaments or from staple fibre webs or batts strengthened by bonding using various techniques
Final demand	the calculated demand for retail or consumption usually from analysis of import, export and production data
Knitwear	a generic term applied to most weft-knitted outer garnets such as pullovers. Knitting refers to the process of forming a fabric by the intermeshing of loops of yarn
Man made fibres	a fibre that does not occur in nature, although the material of which it is composed may occur naturally
Menswear	men's apparel
Merino	in the fibre industry merino is synonymous with fine wool, wool with a fibre diameter of 25 microns or less
Mill demand	the calculated demand for processing usually from analysis of import, export and production data
Polyester fibre	a generic name for a manufactured fibre
Scouring	washing to remove natural fats, waxes, proteins and other constituents as well as dirt, oil and other impurities

Spinning	the process used in the production of yarn
Staple yarns	a fibre of limited and relatively short length
Textile	a textile was originally a woven fabric but the term is now also applied to fibres, filaments and yarns, natural and manufactured and most products for which these are a principal raw material
Weaving	the action of producing fabric by the interlacing of warp and weft threads
Womenswear	women's apparel
Woollen	refers to short staple length wool that is processed by carding rather than combing that produces wooltops
Wooltops	sliver of wool that forms the stating material for the worsted and certain other drawing systems, usually obtained by the process of combing. In essence the short fibres are removed as noil, fibres are aligned and a substantially homogenous distribution of fibre lengths through the sliver is present