

INFOCUS

MARCH
2019

**SHEAR
BRILLIANCE**

FOREWORD

In July 2015, an ANZ Agri delegation travelled to China in order to examine the opportunities and outlook for Australia's beef exports in this increasingly important market.

On our travels, our talk of sheep produced blank looks and some confusion ensued around whether our reference was to goats – not helped by the fact that the Chinese word for the two is essentially the same.

In March 2019, an ANZ delegation is again travelling to China, though this time with a focus on the sheep and wool supply chain.

Over the past four years, sheep meat ('the other red meat') has become a far more recognised and sought-after product in China. In 2018, lamb exports to China hit a new record as it sat just behind the US in terms of Australia's biggest export market.

For mutton, the scenario is even better with exports to China rising by almost 60 per cent last year. China is now the major leading market for Australian mutton, accounting for over 30 per cent of exports.

Overall, China is now Australia's largest sheep meat market by volume and value, a scenario which should sound familiar to beef producers.

With supply limited by record low flock numbers, Australian sheep farmers are currently enjoying sustained high and profitable prices. Clearly, the failure in seasons has limited the fortunes for some producers, as well as limiting the opportunity to rebuild the flock, although this in itself supports continued high prices.

In terms of wool, while the same fundamentals appear to be at play, the height of prices has caught many in the industry by surprise. While the drivers of rising population and middle classes of China and Asia have driven demand for quality foods, they have also had a significant impact on the natural fibre market. Wool, particularly lower-micron wool, is in short supply, and Australia is very well placed to make the most of this, having the largest flock of merino sheep in the world.

With wool prices touching 2,000c/kg, the big question, as well as for sheep meat, is how long it can last. While this is obviously very difficult to predict, the continuing growth in China and its near neighbours appears a critical element in maintaining strong prices into the future. Of course, other factors will also come into play – the strength of the AUD and total supply being two of them.

In addition to this, there are myriad local factors which impact not so much prices, but costs, efficiency and productivity in Australian agriculture. These include data, technology, genetic selection, labour efficiency, grazing management, stocking rates, and others.

Importantly, if the industry sees a return to average seasons across our continent, a further question is how quickly overall our sheep number may increase, if at all.

While the Australian sheep industry is some 100 million head short of its peak in the late 1960s, it does have the capacity to grow, particularly if sheep find their way back into the cattle-dominant zones. While it's yet to be seen if this will happen, the industry does have the capacity to grow the flock at around 5 per cent per annum.

At some point in the future, it is certainly possible that the attractive prices could force a reasonable flock rebuild, and that supply and demand for sheep could hit an equilibrium. This however, appears to be some seasons away.

Arguably, no other Australian Agri sector dominates both global production and trade to the same extent as the sheep industry. Putting China's flock aside, Australia and New Zealand almost own the global market for sheep meat, while Australia controls fine wool production through the largest fine wool producing flock in the world. With demand fundamentals strongly in place, it's the shortage of supply and the lack of global production response which makes the current scenario for both wool and sheep meat so unique.



Mark Bennett

Head of Agribusiness & Specialised Commercial,
Business & Private Bank

 @bennett2_mark

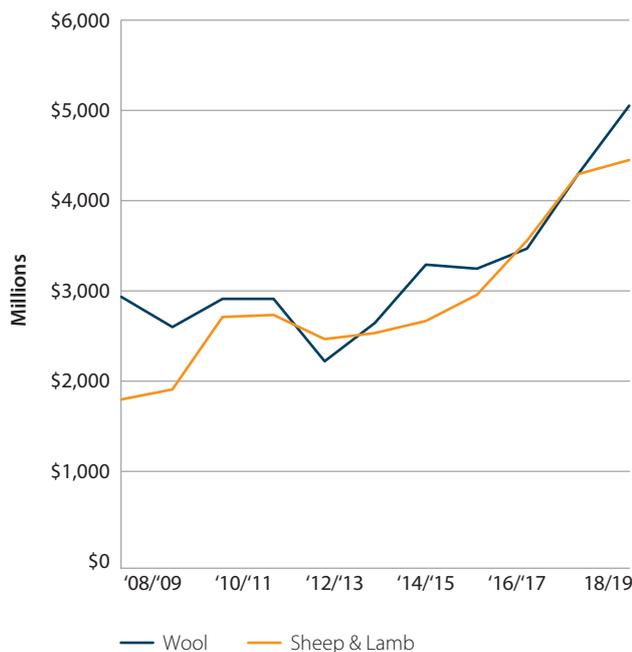
AUSTRALIAN SHEEP AND WOOL INDUSTRY

IN THE BEGINNING

When 29 head of sheep survived the long journey from Cape Town to arrive in Sydney on board the First Fleet in 1788, they formed the basis of the Australian sheep and wool industry that peaked in size at over 170 million head in 1970. Some 20 years later, in 1990/91, when the Australian Government intervened in an attempt to take control of the huge wool stockpile amassed by the Australian Wool Board, wool prices plummeted and a significant structural shift in Australian farming began to take place; as sheep flocks were sold down, broadacre cropping scaled up.

Fast forward to 2019 and the approximately 31,000 producers that are in the sheep and wool business, who collectively run around 69 million head of sheep, are experiencing both sheep meat and wool prices at record highs that are putting the industry back in the spotlight for all the right reasons.

GROSS VALUE OF AUSTRALIAN SHEEP MEAT AND WOOL PRODUCTION

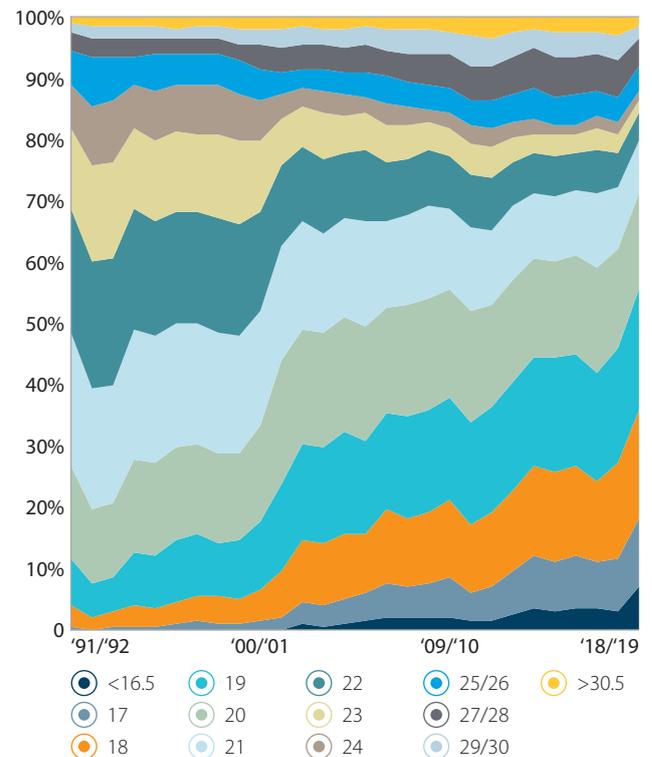


Source: Australian Bureau of Statistics, ANZ

SHEEP MEAT AND WOOL SURPASS WHEAT FOR GROSS VALUE

The Australian sheep meat and wool industry, when combined, generated around \$8.6 billion in agricultural production revenue in 2017/18, contributing some \$2 billion more to Australia's gross value of Agricultural products than wheat farming during the same period. Of this \$8.6 billion in revenue, approximately \$4.29 billion was generated from sheep meat and \$4.3 billion from wool. This approximately 50:50 revenue stream is demonstrative of the recent developments in Australian sheep and wool farming, whereby merino graziers in particular are enjoying the benefits of a dual-purpose animal with diversified income streams.

MICRON PROFILE OF AUSTRALIAN FLOCK



Source: Australian Wool Testing Authority, ANZ

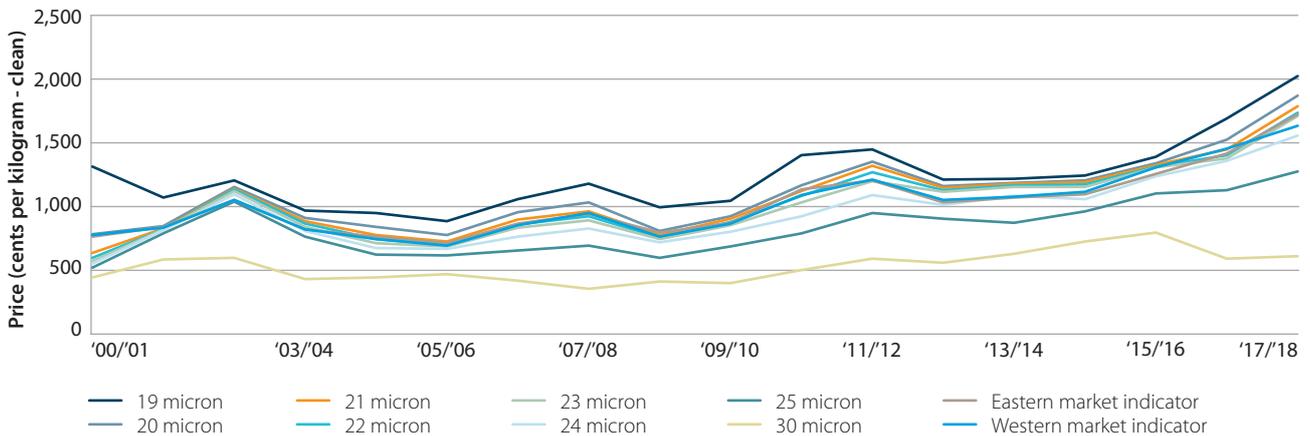
WOOL AS A LUXURY ITEM CHANGES THE AUSTRALIAN INDUSTRY

The significant increase in gross value of Australian wool production has been driven solely by price, as the quantity of wool produced has been in gradual decline since around 1990 on the back of the declining flock. Between 2009/10 and 2017/18, the mean annual Eastern Market Indicator price has increased by an average 10 per cent each year. The profile of the Australian wool clip continues to follow a long-term trend of getting finer, with over 70 per cent of wool now 20 microns or lower, as opposed to around 54 per cent 10 years ago. The trend has occurred alongside the changing use and image of wool on world markets, from a general textile fibre to a niche fibre that offers versatility across a range of apparel markets around the world.

FEWER EWES, YET MORE LAMB

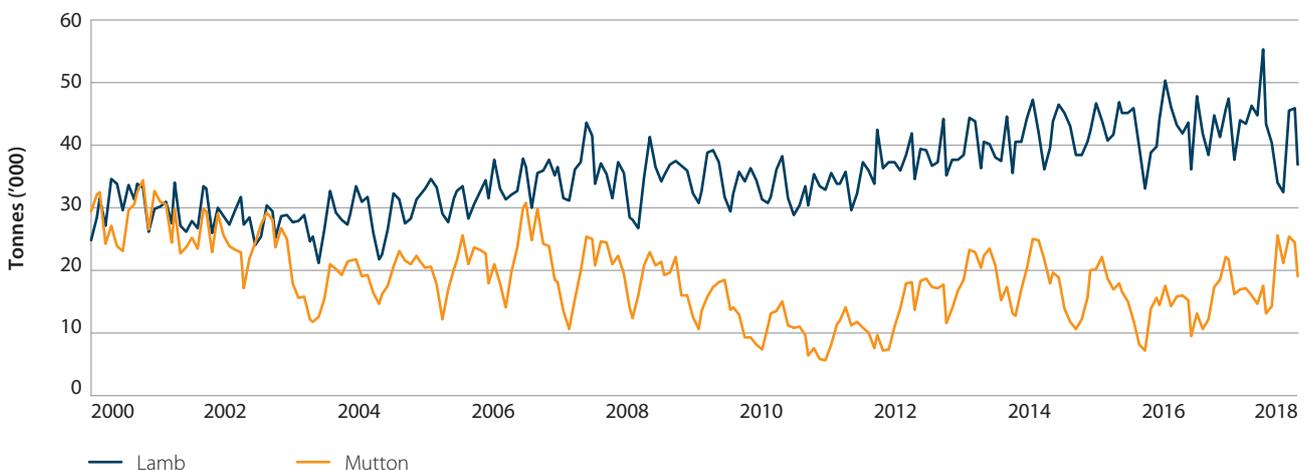
For sheep meat, the increase in gross industry value has been twofold, with both increasing annual lamb production and increasing prices playing a part. In what was once an industry dominated by wool income and surplus mutton sales, lamb production overtook mutton production in the early 2000s and has not looked back. Increases in productivity (through improved lambing rates, growth rates, carcase weight and carcase yield), supplementary feeding, and a changing flock demographic (with more emphasis on quality lamb production) have all been driving forces. Also throughout the early 2000s, total sheep meat exports overtook domestic consumption in Australia, with international demand for lamb and mutton from a variety of markets contributing to an average 10 per cent annual growth rate in trade lamb prices for the five-year period 2013–2018.¹

AUSTRALIAN WOOL PRICES BY MICRON



Source: Australian Bureau of Statistics, ANZ

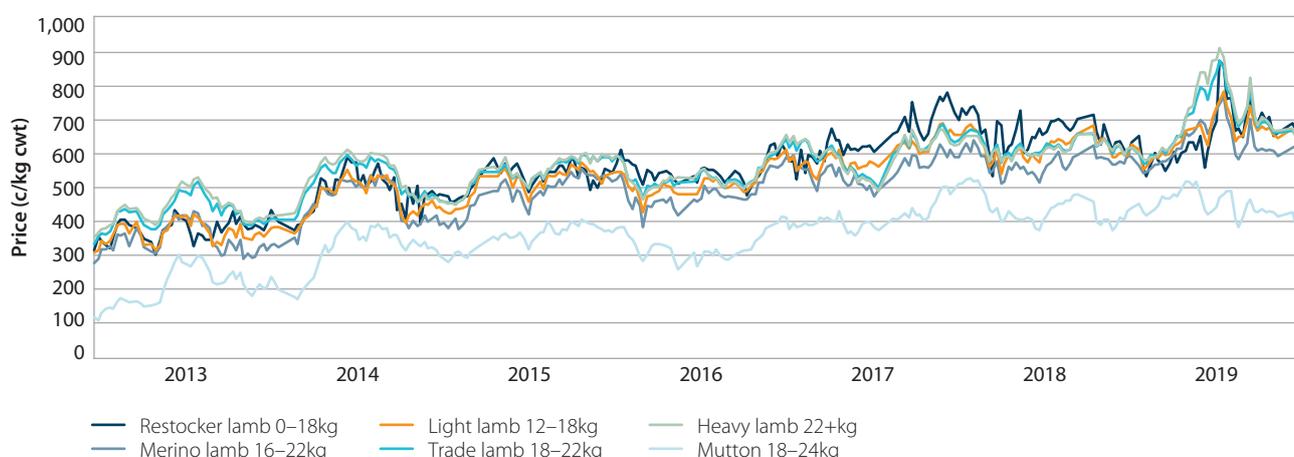
AUSTRALIAN SHEEP MEAT PRODUCTION (MONTHLY)



Source: Australian Bureau of Statistics, Meat and Livestock Australia, ANZ

¹ based on MLA Trade (22+kg) Lamb Indicator average annual prices

AUSTRALIAN EASTERN STATES SALEYARD INDICATOR PRICES JANUARY 2013 TO JANUARY 2019



Source: Meat and Livestock Australia, ANZ

THE APPROXIMATELY 50:50 REVENUE STREAM THAT THE SHEEP MEAT AND WOOL INDUSTRIES CONTRIBUTE TO AUSTRALIAN AGRICULTURE IS DEMONSTRATIVE OF THE RECENT DEVELOPMENTS IN AUSTRALIAN SHEEP AND WOOL FARMING. MERINO GRAZIERS IN PARTICULAR ARE ENJOYING THE BENEFITS OF A DUAL-PURPOSE ANIMAL WITH DIVERSIFIED INCOME STREAMS.

DRIVERS OF A FLOCK REBUILD

While the trend has been for a general reduction in the national flock, producer intent to rebuild flocks was clearly demonstrated between 2016 and 2017 when sheep numbers increased by around 7 per cent, from around 67 million to 72 million head. Favourable seasonal conditions in 2016 and steadily increasing prices assisted in producers' decisions to grow their sheep and wool businesses.

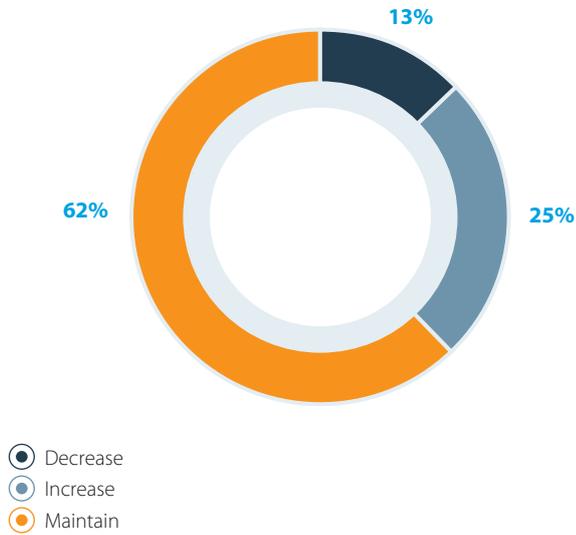
When analysing the demographics of the national flock, results of the June 2018 Meat and Livestock Australia (MLA) and Australian Wool Innovation (AWI) Sheep Meat Survey, demonstrate that approximately 74 per cent of the total breeding ewe flock is made up of merinos, accounting for around 32 million of a total 42.8 million breeding ewes.

Of those merino ewes, it is estimated that 74 per cent are utilised for pure bred merino production, and the remaining 26 per cent for cross breeding. At the time of the survey, 62 per cent of respondents hoped to maintain the size of their ewe flock, 25 per cent planned to increase and only 13 per cent had plans to decrease.

With 2018 seasonal conditions playing out poorly for the majority of producers across the eastern mainland states and parts of South Australia, a 26 per cent increase in the national rate of mutton slaughter year on year in 2018 suggests that many of these producers have been forced to change tactics to suit the conditions.

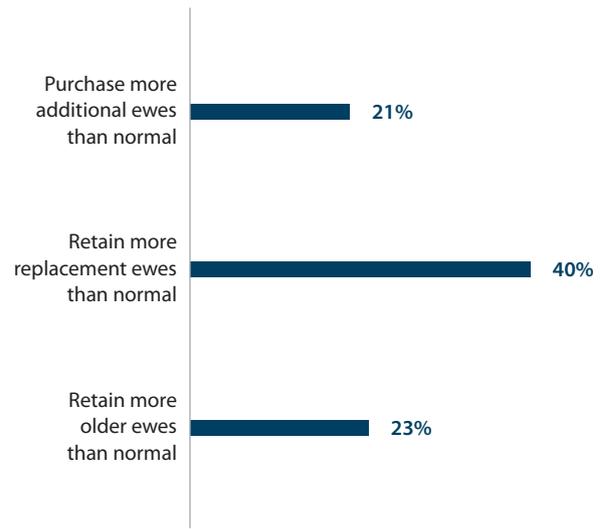
Going forward however, MLA forecasts suggest that the flock will continue a rebuild phase, providing support for firm prices when better seasonal conditions return and alleviate the current pressures. The pace at which farmers can rebuild will depend not only on the seasons, but access to capital, access to sheep, ability to offset cropping area for pastures and sheep production, and a willingness to invest in all of the above at the expense of competing priorities.

PRODUCER INTENTIONS OF EWE FLOCKS



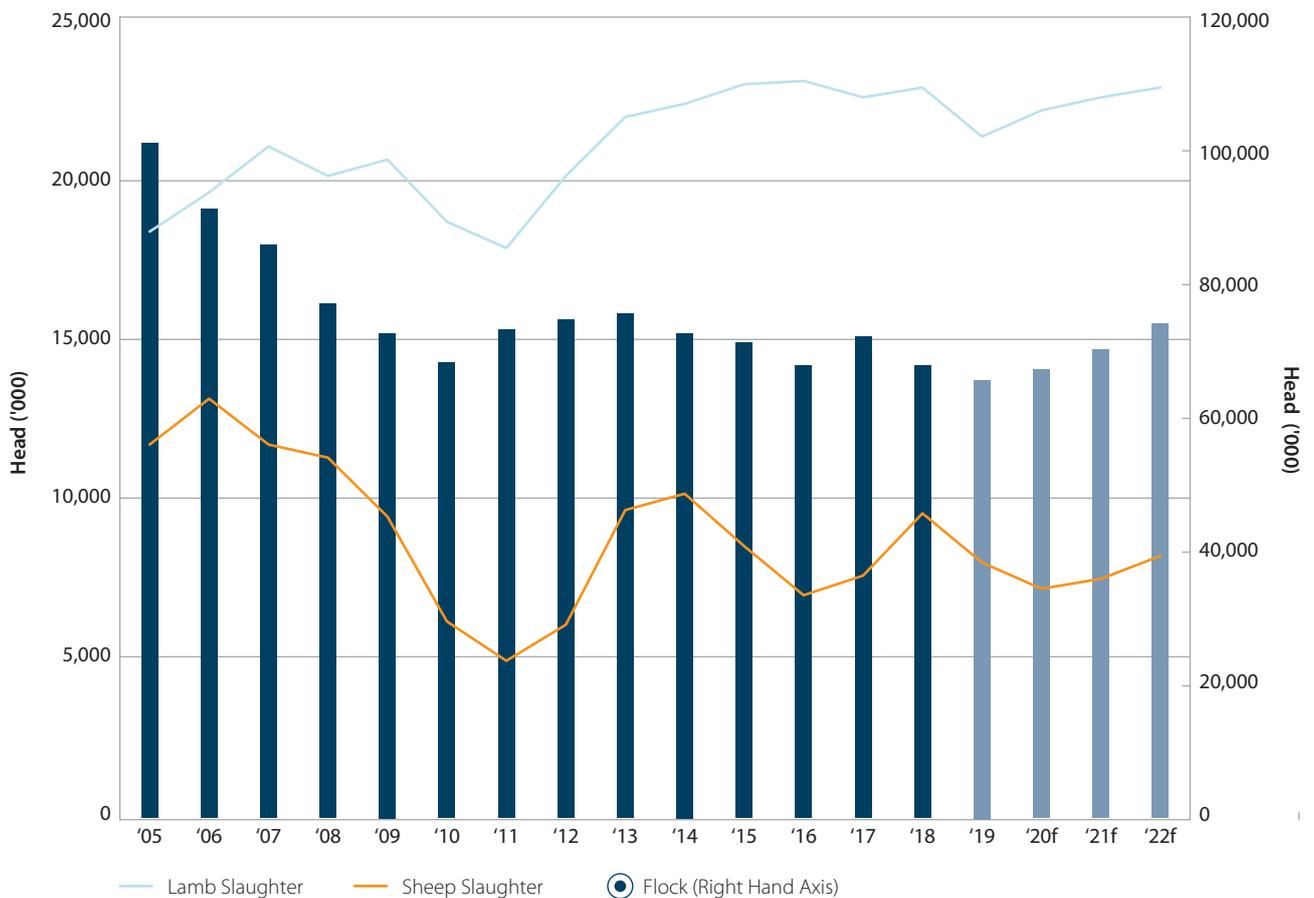
Source: MLA / AWI Wool and Sheep Meat survey, June 2018, n=1,565

METHOD OF ACHIEVING FLOCK GROWTH



Source: MLA / AWI Wool and Sheep Meat survey, June 2018, n=1,565

TOTAL FLOCK AND LAMB AND SHEEP SLAUGHTER



Source: Meat and Livestock Australia, ANZ

CONSUMPTION AND TRADE OF SHEEP MEAT

For generations in Australia, sheep meat has been a staple of the Australian diet. For many Australians in years past, mutton made up many of their week's meals – whether as a roast, chops on the grill, or cold mutton sandwiches.

In modern Australia, sheep meat consumption is very different. In place of mutton, lamb is now by far the dominant choice, boosted by extensive marketing campaigns to enhance its profile amongst consumers.

The overall volume of meat per person has stayed roughly the same since 1950, as consumption levels recovered after World War 2. Over the past 70 years, average meat consumption per capita in Australia has been roughly between 100 and 110 kg per capita per annum.

However, what has changed has been the breakdown of the meat types. In 1950, sheep meat made up over a quarter of all meat consumed; this hit a brief high of almost 50 per cent in 1958.

Since that time, domestic consumption of sheep meat has steadily declined. From the all time high in 1958 of 62.5 kg per person (or roughly three whole lambs!), Australians now eat just under 10 kg of sheep meat per year.

In percentage terms, sheep meat now makes up around 9 per cent of the average Australian diet. Of this, the predominant meat is lamb. Astoundingly, while the average Australian eats 9.25 kg of lamb per year, they now eat only 0.4 kg of mutton.

The switch of diet has been predominantly to white meat – chicken and pork. While beef consumption is around two to three times that of sheep meat, it is also declining per capita. White meat overtook red meat relatively recently, in 2002. Since that time, it has increased in popularity to the point where chicken alone now makes up 43 per cent of the average Australian's meat consumption, while pork makes up 25 per cent, and continues to rise.

In overall volume terms, while domestic sheep meat consumption has declined over the longer term, it has arguably plateaued since 2010. Over that time, domestic consumption has steadied at between 256,000 and 300,000 tonnes, with lamb making up around 85 to 90 per cent of this.

SHEEP MEAT - DOMESTIC CONSUMPTION VS EXPORTS



Source: Meat and Livestock Australia

The current halt in the decline of sheep meat in Australia can be attributed to a number of factors. Undoubtedly, the ongoing promotion of lamb, particularly through the renowned annual MLA lamb advertisements, has lifted its profile with consumers, and have made it more likely to be included in weekly household meals or on restaurant menus.

At the same time, ongoing demographic changes in Australia has seen a growth in the population of consumers whose historical culture are more likely to consume sheep meat.

Looking ahead, however, domestic consumption volumes are not without challenges.

PRICES

In somewhat of a contrast to domestic sheep meat consumption, export figures are relatively strong. Exports have continued to grow steadily in both lamb and mutton to the point where they now account for around 70 per cent of total sheep meat production, up from 48 per cent 20 years ago. The change is particularly stark for mutton, which has seen the percentage of production being exported grow from 55 per cent in 2001 to almost 90 per cent today.

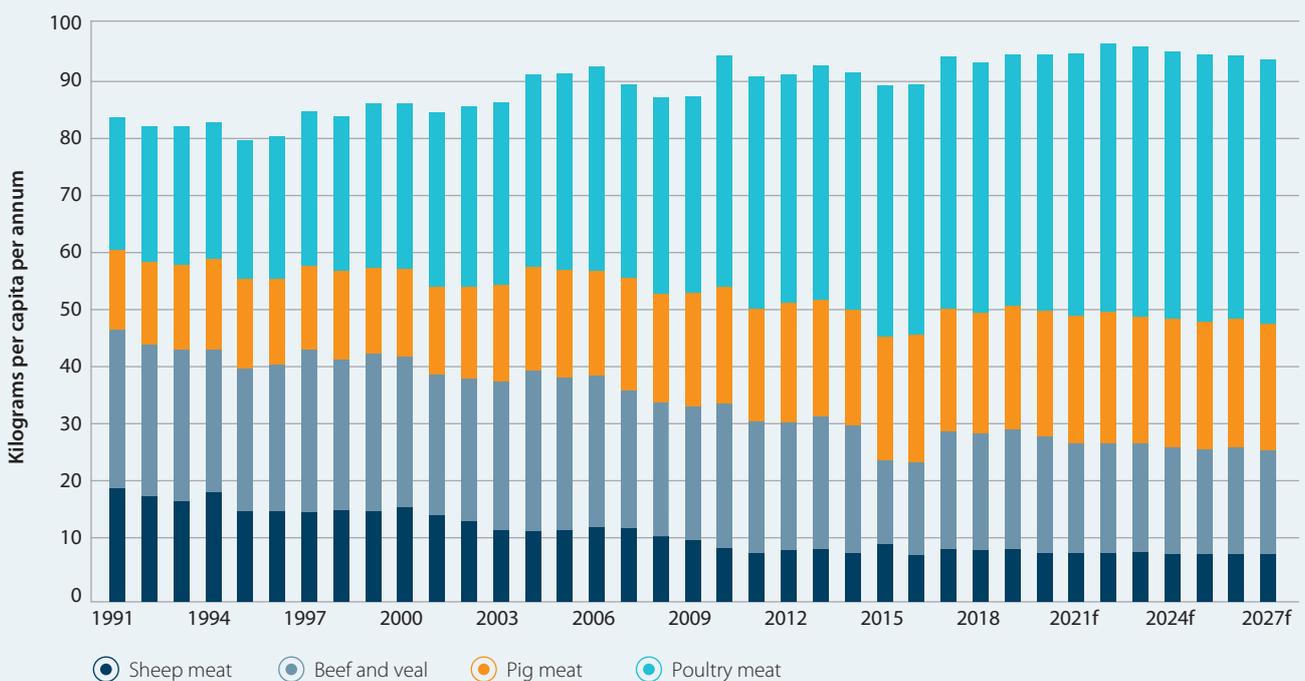
While export volumes have been strong, export value growth has been even more notable. In 2018, sheep meat exports hit a record high of \$3.3 billion. This figure was driven largely by ongoing strong rises in sheep meat export prices, driven by strong demand. In 2018, mutton exports hit \$1 billion for the first time, while lamb exports also hit a record, reaching \$2.3 billion.

Sheep meat exports from Australia service a diverse range of markets, driven by different factors. The largest market for Australian lamb is the Middle East, which is also the second largest market for mutton. For consumers in this region, sheep meat is a fundamental part of their diet. Importantly, Middle Eastern consumers also place an emphasis on a high quality product, further emphasising the preference for Australian sheep meat over most competitors. Australia remains by far the dominant supplier to the region, with around two-thirds of the market, though with some competition from New Zealand, India and Europe.

The other major export markets for Australian lamb are the United States (US) and China. For the US, while per capita consumption levels are low, growing awareness of the product by consumers continues to see demand rise, particularly through food-service channels. As with the Middle East, Australia remains by far the largest sheep meat supplier to the US, supplying over 70 per cent, while New Zealand supplies around 25 per cent of US imports.

In China, which is also the largest market for Australian mutton exports, demand is driven by a number of factors. For wealthier consumers, the quest to try alternative sources of protein to the more traditional options of pork, chicken and beef, provides a great opportunity for sheep meat demand to increase. For the wider population, sheep meat is traditionally used in hot pot dishes, as well as soups and stews. This is particularly the case in the northern provinces of China, where sheep meat has long been one of the staple dishes.

AUSTRALIAN MEAT CONSUMPTION PER CAPITA



Source: OECD

AUSTRALIAN LAMB EXPORTS (MONTHLY DATA)



Source: Meat and Livestock Australia

AUSTRALIAN MUTTON EXPORTS (MONTHLY DATA)



Source: Meat and Livestock Australia

The export outlook to China remains positive, but with challenges. As the world's largest sheep meat producer, growth in China's domestic production could see the market for imports decline.

One factor to watch closely will be any impact from the Chinese Government's declaration in 2016 that Chinese citizens should aim to consume around half their current levels of meat, as a means of improving national health levels and reducing public health costs. While this could arguably see the consumption levels of all meat types decline, it also prevents the opportunity for sheep meat to be promoted as a healthier substitute to pork.

The other notable export market for sheep meat is South East Asia where demand is again driven by a combination of wealthier consumers seeking a premium product, as well as Muslim consumers, for whom sheep meat is a traditional diet. In the markets of Singapore, Malaysia and Indonesia, Australia remains by far the major supplier of sheep meat.

While these countries are reasonable markets, the lack of familiarity with the product, as well as its relatively high price, mean that the outlook remains challenging.

SHEEP LIVE EXPORTS - A TRADE TO WATCH

As the number of sheep departing Australian shores has reduced gradually over recent years – to around 1.1 million head throughout 2018 – the impact of any further major change to the industry must be considered. On average, WA, where the trade is primarily located, accounts for around 13 per cent of total Australian sheep offtake. Of WA's total offtake, around one third is destined for the live trade market each year. This figure has reduced from around 45 per cent of total WA offtake a decade ago.

A strong price correlation exists between the live export market and the domestic WA lamb and mutton markets. Should the trade be phased out, queries over the capacity of the domestic market to handle the additional flow of livestock in terms of logistical concerns, processing capacity, and, indeed, meat offtake markets (both domestic and export) are raised.

The willingness of live export markets to accept domestically processed chilled or frozen carcasses from Australia will be a key factor in the price outcome for WA producers. Of all of the Middle Eastern live export destinations, Qatar, Kuwait and Jordan represent almost two-thirds of the trade, accounting for 27 per cent, 22 per cent and 11 per cent of live exports respectively.

Of these nations, Qatar has, to date, demonstrated the greatest willingness to adapt by importing 100 per cent more mutton (as chilled carcasses) from Australia during 2018 when compared to 2017, and 37 per cent more lamb. These chilled imports have effectively replaced (in terms of kilograms of meat) the previous quantity of live sheep imports. In Kuwait, chilled lamb and mutton imports grew 12 per cent and 17 per cent respectively year on year in 2018, however the total chilled sheep meat trade to Jordan contracted by 15 per cent over the same period. MLA reports that this is likely due to Jordan importing live sheep out of Europe to replace the Australian stock.

As the industry watches with interest as to the future of the trade, there is a common hope that whatever the outcome, that producers, intermediates, processors and key markets will all be afforded an appropriate amount of time to adapt to any change that may be forthcoming.

THE WORLD OF WOOL

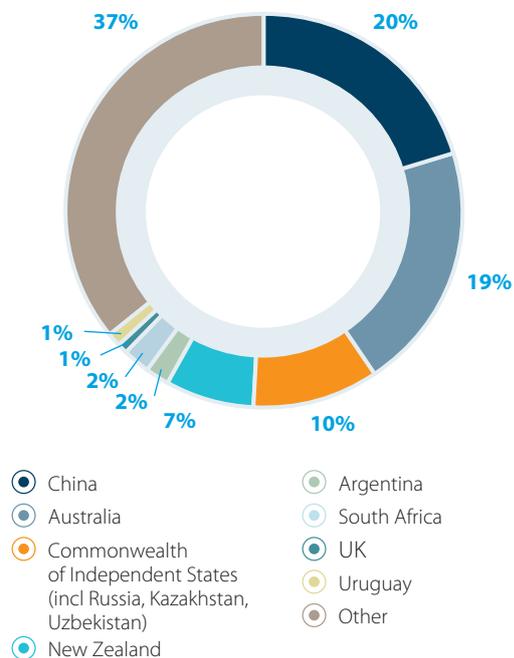
Although declining significantly over the past 20 years, Australia remains home to the world's second largest sheep flock, with the world's largest flock belonging to China at around 160 million head. Given the large merino base of the Australian flock (estimated at around 74 per cent of the breeding ewe flock), Australia has historically been responsible for world's largest wool clip. As the Australian flock has reduced, however, between 2012/13 and 2016/17, Australia's average wool production of 418 million kilograms (greasy) dropped to similar levels to that of China's domestic production, whose average for the same period was 417 million kilograms.

CAUSE AND EFFECT - THE WOOL PRICE BOOM

Analysis of world wool production demonstrates two interesting trends. Firstly, that world wool production is declining while the world sheep flock increases. This demonstrates that the focus of the majority of flock growth has been on meat production to capture the world's increasing hunger for red meat protein, with wool a secondary or by-product, or avoided altogether through non-wool breeds.

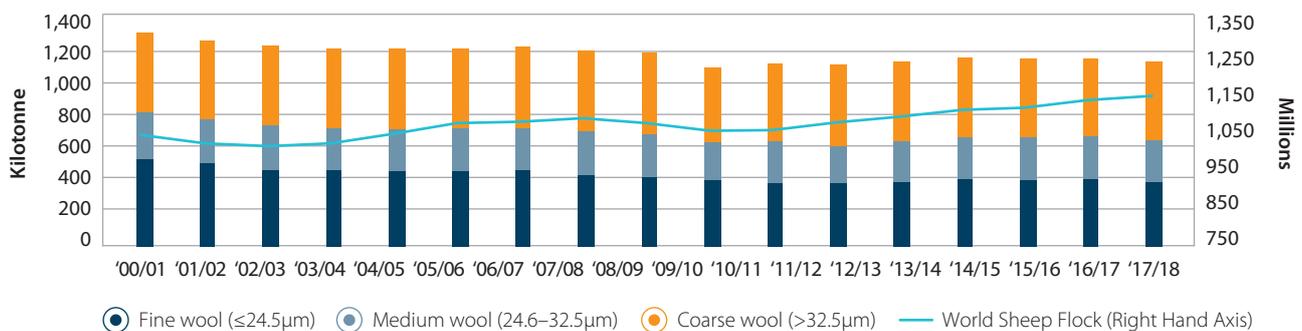
Secondly, the proportion of the world's wool that is classified as fine, that is, 24.5 microns and under, has reduced gradually over the past two decades, from 41 per cent of all wool in 2000/01, to 35 per cent in 2016/17. This world trend is in direct contrast to trends in the Australian flock, where the average micron range is becoming finer, with increasing focus particularly evident on 19 to 21-micron wool types.

WORLD WOOL PRODUCTION



Source: International Wool Textile Association

WORLD CLEAN WOOL PRODUCTION - BY MICRON



Source: ABARES, ANZ

ALTERNATIVE FIBRES LACK LUXURY APPEAL

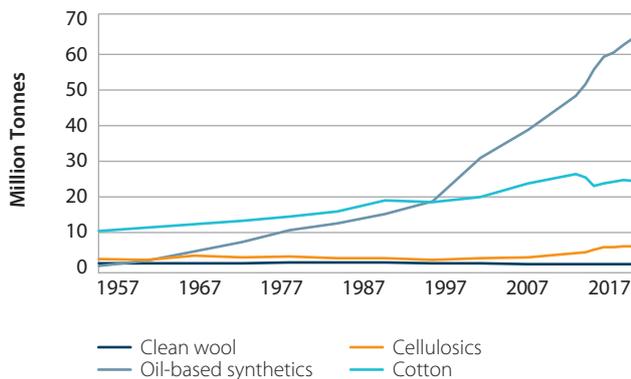
As both trends have resulted in a combined result of a reduced supply of fine apparel wool across the world, the timing of this reduced supply has coincided with strong drivers for wool demand and consumption, to create the wool price boom that the world has witnessed over the past 10 or so years. The key drivers of demand for wool include simultaneous economic growth across developed and developing economies, foreign exchange rates, the increasing sophistication of consumers with increased focus on sustainability, the way in which wool is marketed and prices for alternative or competing fibres.

As a signal of the strength of demand for wool, it is, however, important to note that the price of competing fibres appears to be a less important determinant of wool demand than it once was, with wool increasingly seen as a non comparable or superior product. As the availability of wool reduces, it is these alternative fibres that now make up the majority of world fibre consumption, with oil-based synthetic fibres in particular experiencing a remarkable boom since the late 1990s, and cotton also experiencing strong growth across the globe.

However, wool prices have surged over this time and when compared on an even price ratio from the year 2000, both 18 and 21-micron wools have increased significantly against their competitors, yet demand has remained strong.

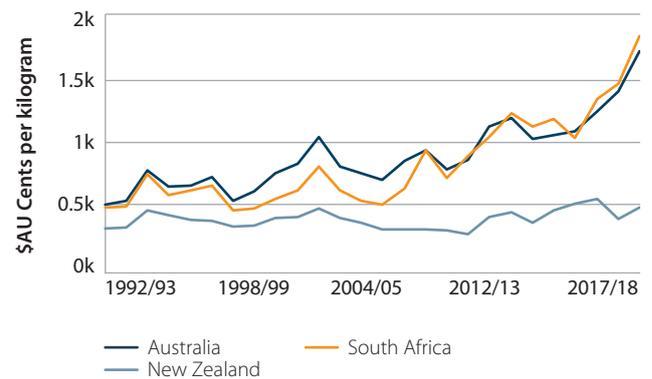
The place of wool in world fibre markets has experienced a fundamental shift from a staple and everyday product, to a niche offering that is increasingly marketed to the world as a luxury item. This luxury concept is also spreading to products that utilise wool as a blended offering, which is driving prices for not only Australian fine wools to new highs, but also carrying prices of other major wool exporters, New Zealand and South Africa, along with them. While New Zealand-grown broad wools have not experienced the same boom as the finer micron categories, they have increased steadily at an average 5 per cent annual growth rate over the past 10 years. Australian wool indicators, however, sit closer to 10 per cent price growth per annum, and South African prices have achieved an impressive 13 per cent average annual growth rate, noting, however, that South African prices commenced from a lower base than Australian prices.

WORLD FIBRE CONSUMPTION



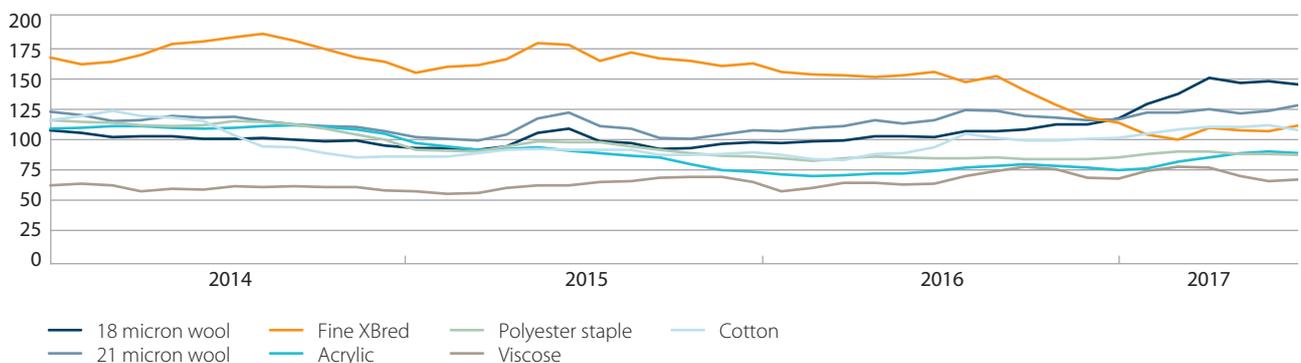
Source: International Wool Textile Association

WORLD PRICES (CLEAN WOOL) – PRINCIPAL WORLD EXPORTERS



Source: ABARES, ANZ

WOOL TO ALTERNATIVE PRICE RATIO - \$US JAN 2000 = 100



Source: International Wool Textile Association

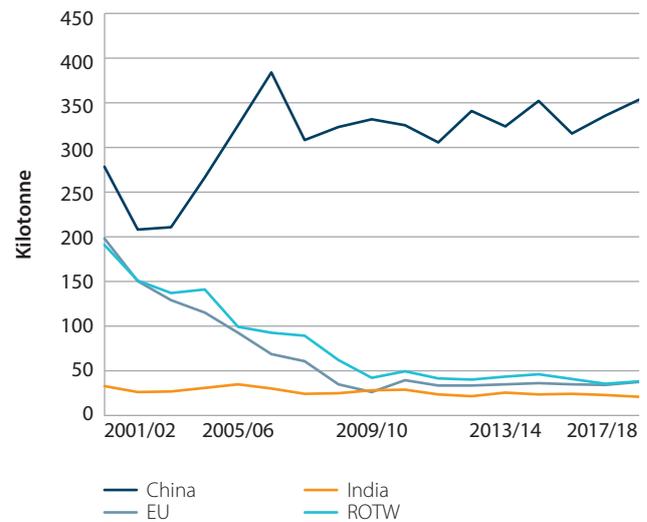
TRADE FOCUS ON CHINA

When it comes to international trade in wool, another structural shift has occurred in the industry whereby the vast majority of wool from Australia and other exporting countries leaves their shores in raw form, largely destined for the Chinese market. In Australia, as at mid-2018 there were only three wool scouring plants in operation, with 14 plants having closed down since 2000. For the financial year to February 2019, around 75 per cent of Australian wool was exported to China, with the small remaining quantities going to India (6.7 per cent), Italy (6 per cent), Czech Republic (3.7 per cent) and South Korea (2.6 per cent).

With such heavy concentration in one export market, understanding the dynamics of the Chinese wool processing market – and, indeed, semi- and fully processed wool resale market – are pivotal in understanding the likelihood of sustained demand for Australian wool. Firstly, when analysing China’s wool imports and exports, a clear increase in raw wool imports can be seen, from around 200,000 tonnes in the early 2000s, to over 350,000 tonnes in recent years. As China purchases more raw wool and processes it through worsted (long wool) or carded (short wool) processing lines, the volume of this semi-processed combed and/or carded wool on-sold to other nations is increasing. Exports of woollen yarn were down considerably according to the latest available data, however woollen fabric exports have experienced strong growth since 2014/15. China’s apparel exports have experienced a slight decline in volume, however this is on the back of a significant jump since 2005/2006, and the data also suggests that higher value products, such as men’s and women’s suiting, are becoming proportionately more important to China’s woollen exports.

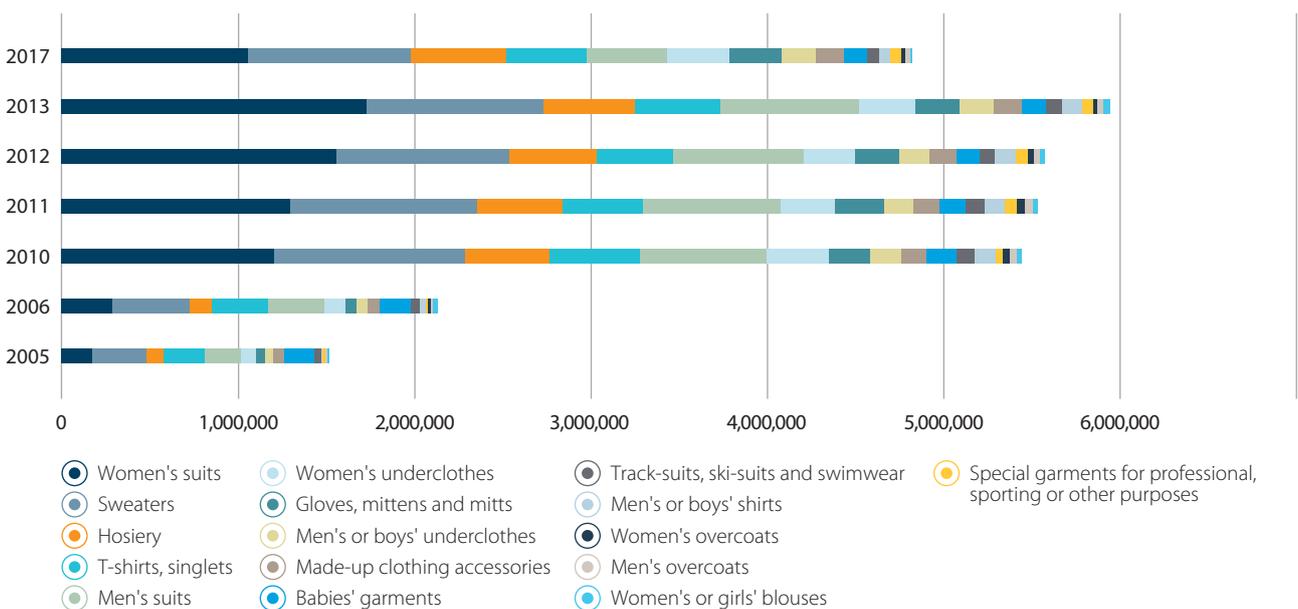
In terms of the countries that are importing semi-processed wool from China, India has demonstrated the highest level of growth, albeit from a very small base and, along with Italy and Germany, makes up the majority of the carded and combed wool trade from China. With India and Italy combined importing around 8 per cent of Australian unprocessed wool, this indicates that these nations are perhaps more important markets for Australian wool than may be often acknowledged.

AUSTRALIAN WOOL EXPORTS BY DESTINATION



Source: ABARES, ANZ

CHINA - WOOLLEN APPAREL EXPORTS - BY QUANTITY EXPORTED



Source: Trademap, ANZ

INFORMATION GAPS REPRESENT UNKNOWN RISKS

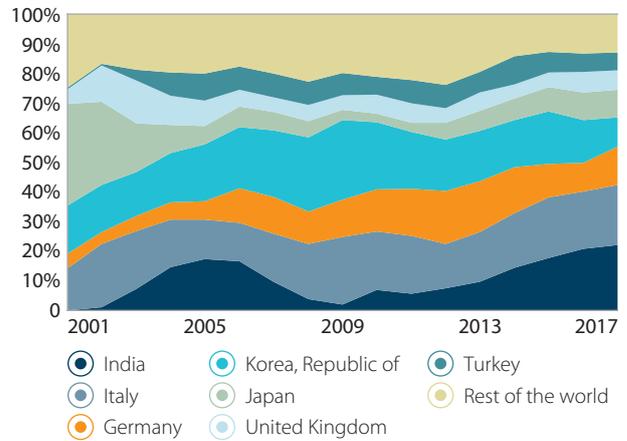
While data is available on the particulars of China's imports of raw wool and exports of semi-processed or fully manufactured woollen products, an important piece of information currently lacked by the industry is China's domestic use of wool. The size of the Chinese domestic woollen apparel and textile market, and the annual changes to this market, are not currently quantifiable, however, reducing international wool trade data suggests that a larger quantity of wool is being consumed by the Chinese domestic market. A lack of transparent information on China's wool consumption represents a risk to the industry, given the dominance of China as a trading partner for Australian wool.

DRIVERS OF DEMAND AND PRICE

Without clear data on China's domestic use of wool, an understanding of the factors driving the demand for wool, both by the Chinese consumer and, more broadly, across the globe, becomes increasingly important. A key driver for wool demand is global economic growth and stability. The wool demand and price boom have coincided with simultaneously strong economic growth in key wool consuming nations including China, the US, Japan, Italy, and Germany, and the broader ASEAN region. Any increase in uncertainty about future economic growth, such as what may stem from trade tensions between the US and China, could cause economic growth and strength forecasts to weaken.

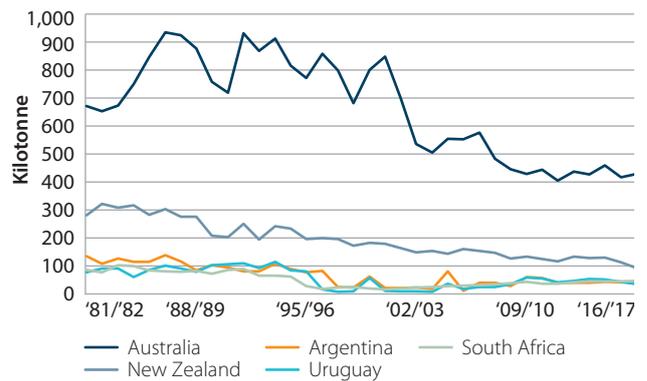
International Monetary Fund data and forecasts suggest that throughout 2019 and 2020, growth will retract slightly on 2017 and 2018 levels, however, remaining strong in the order of 6 per cent per annum increase in GDP in China. Just how interlinked China GDP and wool price in fact are, however, is an interesting trend to analyse.

CHINA - CARDED AND COMBED WOOL EXPORTS



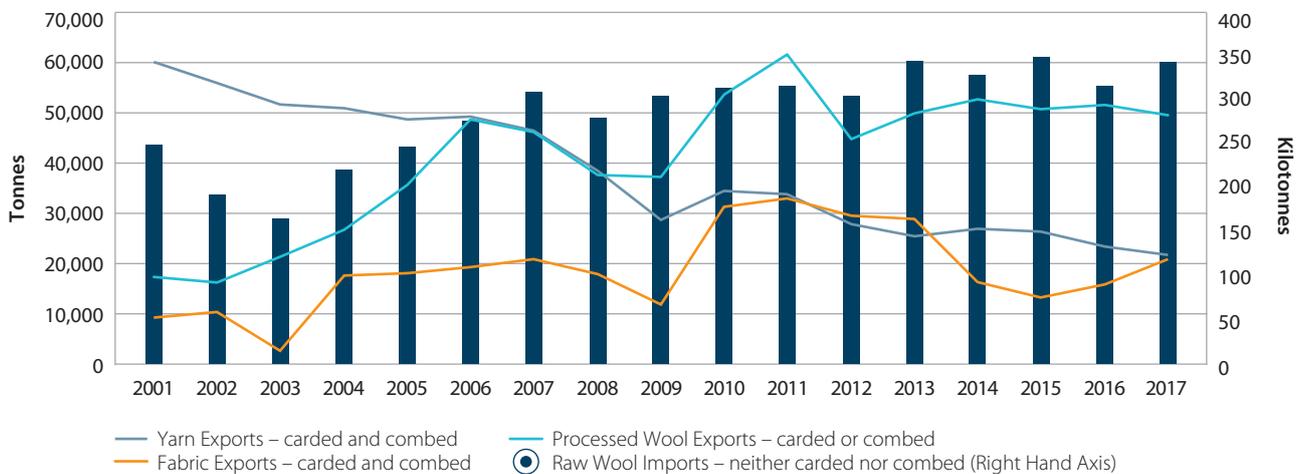
Source: Trademap, ANZ

VOLUME OF WOOL EXPORTS - BY WOOL-PRODUCING COUNTRY



Source: ABARES, ANZ

CHINA WOOL TRADE



Source: Trademap, ANZ

DO WOOL PRICES MOVE WITH CHINA GDP?

For some observers, it has been thought that with Chinese consumers being major global purchasers of wool products, that the Chinese GDP growth rate would likely be reasonably correlated to wool prices.

Interestingly, when the two are compared, it appears that there is actually little correlation at all. The rises and falls of the Australian wool price move quite independently of Chinese economic movements – with a direct correlation of just 0.14 when comparing year on year growth of each indicator.

Based on ANZ's modelling, wool prices are more likely to be impacted by a number of other factors – some which are similar to other agri commodities, and some which are relatively unique. Certainly, a shortage of wool in the market will usually drive prices up, as buyers seek to guarantee supply for their processors. This supply may extend not just to particular microns, but particular quality levels too; this impact has especially been seen in the impacts on some wool growing regions from the recent drought.

At the other end of the supply chain, the levels of wool in buyers' warehouses, or their stocks to use ratio, will also impact the prices buyers are prepared to pay at a point in time.

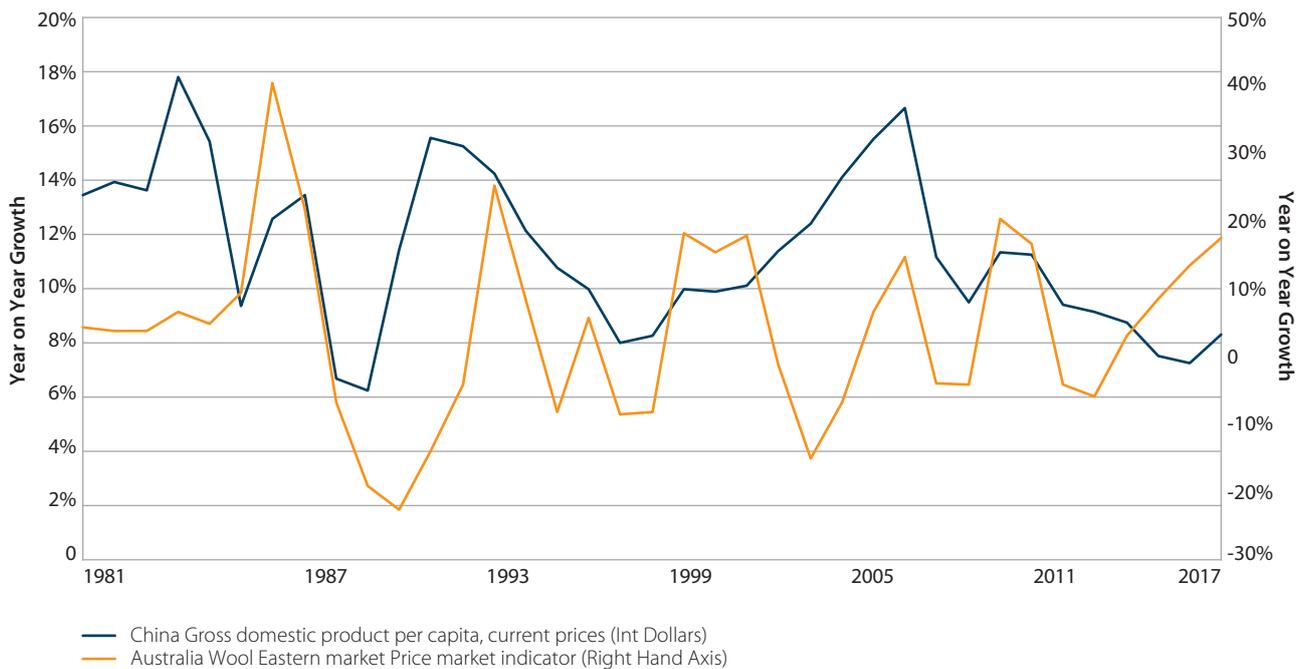
The value of the Australian dollar will also be a factor – if it is low compared to the currencies of purchasers, then buyers may well seek to grab this value. However, this would usually be at the same time as when buyers needed strong volumes.

FASHION TRENDS AND WORLD SUPPLY

The casualisation of clothing was once seen as a threat to wool demand, however, with wool now increasingly used in 'next to skin' and active wear apparel, the demand for wool need no longer be linked only to the market for suiting and outerwear. Consumer confidence and willingness to buy luxury and sustainable products are also key factors, which link back to economic conditions in each individual consumer's purchasing country.

When looking to supply as a key driver of price, it has already been noted that wool supply has been tracking downward, and changes to Australia's production will have the most significant impact to world exportable supply of apparel wool. As the current drought conditions continue to play out, indicators point toward continual reductions in supply across the finer wool categories. In broader wool categories, the continuing development of alternative uses for broad wool is likely to be important, particularly if supply of these wools increases as the world flock trends towards meat production.

CHINA GDP VS EASTERN MARKET INDICATOR



Source: International Monetary Fund, ANZ

WORLD CLEAN WOOL PRODUCTION

Total wool production

Country	2017	2018F	% change	2019F	% change
'Apparel' wool producing countries					
Australia	272	269.2	-1.00%	265.9	-1.20%
South Africa	27	25.1	-7.10%	25.8	2.70%
Argentina	26.1	25.9	-0.70%	25.9	0.10%
Uruguay	17.9	18.3	2.30%	18.8	3.00%
USA	6.6	6.4	-4.00%	6	-5.30%
'Interior textile' wool producing countries					
China	180	179.9	-0.10%	180	0.10%
New Zealand	102.8	104	1.20%	104.7	0.70%
India	33.2	33.4	0.80%	33.7	0.90%
UK	25.2	25.8	2.50%	25.6	-0.60%
Mongolia	18.5	20.5	11.10%	21.7	5.60%
Other countries	429.2	432.8	0.80%	435	0.50%
Global	1,138.30	1,141.30	0.30%	1,143.10	0.20%

Source: International Wool Textile Association

AS A SIGNAL OF THE STRENGTH OF DEMAND FOR WOOL, IT IS IMPORTANT TO NOTE THAT THE PRICE OF COMPETING FIBRES APPEARS TO BE A LESS IMPORTANT DETERMINANT OF WOOL DEMAND THAN IT ONCE WAS, WITH WOOL INCREASINGLY SEEN AS A NON COMPARABLE OR SUPERIOR PRODUCT

CASE STUDY

Australia's shearing workforce under pressure

As new technologies and techniques to replace or improve the practice of shearing are being tried and tested, the reality for all sheep farmers at present is a continual reliance on the skilled practice of shearing to harvest a bale of wool. On anecdotal evidence, it is suggested that most shearing teams in Australia are now made up of one or two foreign workers, the majority hailing from New Zealand, as a shortage of skilled local labour plays out across the industry.

According to the Shearing Contractors Association of Australia, there are a number of reasons for a relatively constant flow of New Zealand shearers and shed hands to Australian woolsheds.

Until recently in New Zealand, the amount a shearer was paid was entirely up to the farmer's discretion and largely based on skill and speed. This, combined with attractive foreign exchange rates leading up to the mid / late 2000s, led many to a more attractive remuneration structure in Australia. In Australia, the current award rate for a shearer is \$3.10 per sheep. Shearers can however earn between \$3.10 and \$3.90 per sheep, depending upon various factors including the farmer's relationship with the shearers, competition to obtain workers or different contractor's rates.

While in New Zealand, a shearer may be able to shear more sheep in a day due to the larger proportion of smaller and smoother animals. In Australia, working on the standard award pay rate, a shearer can gross more per day, even if they take slightly longer to shear the sheep.

Although Australia's current shearing workforce is assisted by a reducing New Zealand sheep flock and an attractive proposition for skilled foreign workers, an overall shortage of shearers could prove a challenging factor to increasing wool production in Australia.

"Overall, the shearing sector is facing strong employment competition, as opportunities for young people, both through alternative sectors and greater university access, has meant that the industry has to attract people who are interested in sweating more calories in a day than any other career. The lifelong career model is no longer present in many industries and shearing is no exception – the lifestyle and earning potential is often attractive for younger people but the 'roughing it' factor, being away from home and family-life, means that many people will not enter the industry or by the age of 35, change careers entirely (Shearing Contractors Association of Australia, 2018)."

Jason Letchford – Secretary–Treasurer,
Shearing Contractors Association of Australia



THE RISE OF GRAIN FINISHED LAMB

According to the latest Australian Bureau of Agricultural Resource Economics (ABARES) data, 18 per cent of Australian farmers operate a mixed farm, meaning much of Australia's sheep meat is grown on properties that also produce coarse grains. With well supplied world wheat markets contributing to an increase in foreign trade competition for Australian grain, the prices received for Australian wheat and barley in particular have failed to follow the trend of beef and sheep meat prices seen over the past 20 years. The 2018/19 season is an obvious exception due to the local drought across major Australian wheat production zones.

PRICE SPREADS CREATE OPPORTUNITY

ANZ analysis of long-term commodity prices has shown that Australian wheat prices have experienced the least growth of all major commodity prices, especially compared to beef, lamb, and wool. Over the period between 1998 and 2018, as world wheat production has gradually increased, prices received by Australian farmers have remained within a 60-point standard deviation, which is a relatively narrow band. In contrast, over the same period prices for beef, lamb and wool, while far more volatile, all trended upwards far more strongly.

Indeed, in the 20 years since 1998, wheat prices have only risen sharply (by more than 25 per cent on the long-term average) on four occasions – twice due to local drought years, and twice due to dips in world wheat production. Following each price rise, however, has come the subsequent fall back to long-term average levels of the last 20 years, of around \$260 per tonne.

These price trends have given mixed farmers in particular the perfect opportunity to capitalise on growing price spreads between commodities, finding better margins and value adding through feedlotting lambs.

NUMBERS ON FEED GRADUALLY INCREASE

Although there is little to no quantifiable data captured on the number of sheep on feed in Australia, the latest available estimates from Meat and Livestock Australia (MLA) suggest that 10 per cent of Australian lamb is finished within a feedlot system. This figure has grown steadily since 2013/14, where ABARES reported around 6 per cent of lambs slaughtered were finished with some degree of grain feeding.

The general aim of lamb feedlotting is to increase throughout of lambs, utilising feeding efficiencies to achieve quicker weight gain than possible in the paddock. The key differences between the grass-finished and grain-finished lamb production systems include labour inputs, feed inputs and animal health management.

HOW DOES PROFITABILITY COMPARE?

While it is not uncommon to see tighter margins in a feedlotting situation, as more capital is employed to construct a feedlot and purchase stock and feed, the volume and speed of turnover and quality of output would appear to be paying off for producers who successfully establish a feedlot system. ABARES data suggests that farms that grain finished lambs received slightly higher prices on a per head basis for lambs sold and also generate a higher farm cash income per hectare.

The key economic considerations within a grain-finishing system are the purchase price of lamb, including spot value for 'home-grown' lamb entering the system, lamb growth rate, carcass price, feed prices and volatility of feed prices – particularly as ration costs can make up as much as 58 per cent of total feedlotting costs.

PRICE TRENDS HAVE GIVEN MIXED FARMERS IN PARTICULAR THE PERFECT OPPORTUNITY TO CAPITALISE ON GROWING PRICE SPREADS BETWEEN COMMODITIES, FINDING BETTER MARGINS AND VALUE ADDING THROUGH FEEDLOTING

The length of time that animals are on feed is also important, and ABARES' comparisons of the financial performance of grain-finished-lamb farms point towards a link between time on feed and rate of capital return.

When comparing farms who grain feed for less than 40 days, between 40 and 60 days, and over 60 days, there was no significant difference in rates of return for the shorter feeding intervals, however once animals were on feed for over 60 days, rates of return were effectively halved, from 3.1 per cent to 1.6 per cent. It is suggested from the data that the shorter feeding intervals are likely to be utilised by producers to 'finish' lambs that have already realised good growth on pastures and are targeting trade weight lamb categories. Longer feeding times resulted in a higher average price per head, with lambs reaching heavier weights, however the additional costs to prepare the lamb for sale appear to erode returns quite significantly.

CAPITAL COST CONSIDERATIONS

Capital investment in lamb feedlots could be considered relatively small, depending on the scale and permanency of the facility. Temporary facilities can be built at low cost. Feedlot sites are ideally located close to feed storage and shed facilities, situated on well-drained soils with adequate shade and wind protection. Feedlot size is dependent on the ideal number of animals to be finished through the operation.

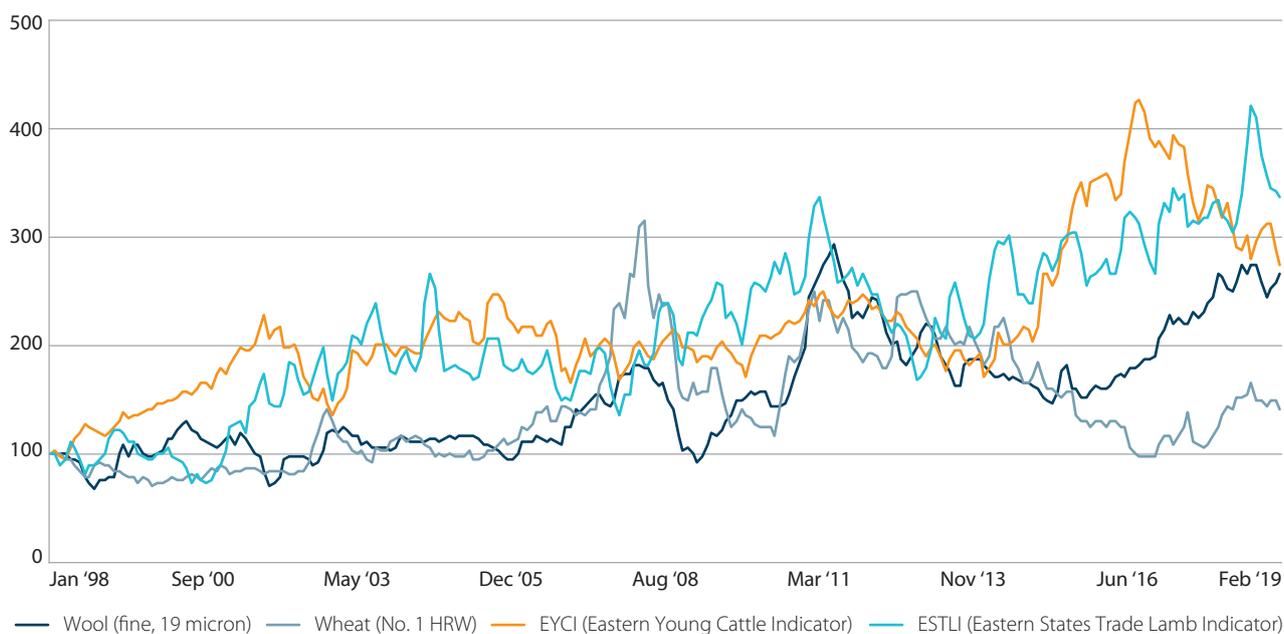
ANIMAL HEALTH AND WELFARE

If managed correctly, a grain-finishing system can provide greater consistency of finished product and forward supply. It can also relieve stocking rate pressures on individual operations, and provide more options to a producer with paddock and pasture management if young stock are removed from pastures for finishing. Animal husbandry conditions in feedlot environments, however, vary greatly from extensive grazing management systems and animal welfare should be a key focus of feedlot operations. Knowledge and management skills are required to ensure that both a high standard of animal welfare and productivity is maintained.

THE END PRODUCT - GRASSFED VS GRAINFED

Analysis of how the Australian sheep meat market differentiates between the grain finished and grass finished product concludes that at present, method of finishing is not a factor currently identified through the supply chain. Generally, this differs to the beef industry where exported product can be tracked as either grassfed or grainfed and often labelled this way for particular end users. This segregation allows trends in key beef export markets, such as South Korea as an example, to be understood, where preferences for grainfed versus grassfed product are becoming more apparent as consumers become more sophisticated in their food choices. It would perhaps be naive to think that lamb consumers, both domestically and across the world, will not seek such information on sheep meat in the future.

MAJOR COMMODITY PRICES 1998-2018



Source: Wheat – US No. 1 Hard Red Winter AUD per Metric Ton; Beef – EYCI Ac/kg cwt; Lamb – ESTLI Ac/kg cwt; Wool – 19 micron spot price USD/kg



CASE STUDY

Technology and productivity – sheep operations of the future

With productivity gains in agriculture largely driven by the innovation and uptake of new technology, one may wonder what the sheep operation of the future may look like. Two current technologies in development that demonstrate the cutting edge of sheep industry technology are focusing on opposite ends of the supply chain in their research.

Anti-Mullerian Hormone and the potential for increased lambing rates

Anti-Mullerian Hormone (AMH) is a protein found in blood plasma. It can be used as a genetic and phenotypic marker for quantitating the size of ovarian function (or dysfunction) in animals (Visser, et al., 2006). AMH can be used to measure the potential fertility and productivity of a ewe lamb from as early as one week of age using a kit known as an ELIZA assay kit. Testing for AMH levels in young ewe lambs could be a valuable selection tool, particularly for the stud industry, to assist in decision-making on the primary use of the ewe once it reaches maturity.

A project undertaken by the University of Adelaide to create a commercially viable ELIZA assay kit that would be available for producers at a much lower cost than the current kits has had some success. With the ELIZA kit, within a week of the ewe lamb being born, valuable fertility data could be available, determining the ewe's future value and productivity as a breeding sheep.

Meat Eating Quality (MEQ) Probe – revolutionising the red meat industry?

A probe has been designed to measure the intramuscular fat of the carcass as well as shear force by sending a laser beam of light into the meat. The measure of intramuscular fat can be linked to meat tenderness and juiciness of cooked red meat.

MEQ Probe provides real-time information to meat processors, which can be shared up the supply chain (distributors, butchers, consumers) and down the supply chain (on-farm growers), with details on the quality of their meat, thereby providing more transparency to the supply-chain and improving the overall quality and ability to increase meat eating quality.

"The MEQ probe uses lasers and machine learning to measure the eating quality of meat so the meat can be directed into the most suitable market – by doing this the industry can set and meet customer expectations, resulting in customers receiving a product consistent in taste and quality, ensuring returning trade.

There are huge efficiency gains to be made right along the supply chain – there are still so many pain points that could be fixed by designing, building and implementing technology. I believe Australia is in a really good position to own the AgTech space globally and export technology all over the world."

Jordy Kitschke – CEO of MEQ Probe

CONCLUSION

The Australian sheep industry approaches the future in a strong position, one which many would not have predicted just a few years ago. While the steady decline in sheep numbers may have been seen by some at the time as a sign of the industry's bleak outlook, the outcome has instead been to its benefit.

The Australian sheep industry now looks to a future where its products seem likely to remain in strong demand, where it has few, if any, competitors in most of its markets, and where the chances of oversupply of its commodities seems remote.

This is not to say the future does not hold potential challenges. Any industry which relies primarily on one major buyer will unavoidably carry a reasonable degree of risk. For both the wool and sheep meat industries, the degree of reliance on China means that in the same way they prepare for drought, both sectors should always prepare for a scenario where their major market goes quiet for a period of time.

Current global demand for wool is spurred by a confluence of factors. The fibre is rightly seen as a natural product, at a time when many clothing consumers are seeking to move away from the artificial alternatives. At the same time, global economic growth has meant millions more people are seeking to buy the quality clothing which wool represents. That said, fashion can be fickle, and it is important that the wool industry is unrelenting in continuing to promote the virtues of its fabrics.

The outlook for the sheep meat sector has two sides. Domestically, demand for lamb and mutton has plateaued, and while it remains part of the average Australian diet, the numbers would suggest that many households are only eating lamb or mutton around once a fortnight. Looking ahead, the place of sheep meat on Australian restaurant and family dining tables will be increasingly challenged, not just by white meat, but by the growth of more plant-based diets, especially by younger consumers.

However, for sheep meat exports, the opportunities outweigh the challenges. Together with their fine new woollen clothes, global consumers increasingly want new kinds of safe, quality and affordable meat, and Australian lamb and mutton fits that bill. Even if sheep meat makes up only a small proportion of the meat consumed in major global markets, this is still enough volume to continue lifting prices, and provide ongoing momentum for the industry.

China will continue to be a market with great potential; Australian sheep meat provides a quality product everywhere from hot pots across the country, to the family tables of the Northern provinces, where sheep have long been a staple of the diet. For the Middle Eastern markets in particular, any changes in live sheep trade regulations may also see a change in the consumption patterns of Australian lamb and mutton – a space to be watched. Finally, it is yet to be seen if the machinations of Brexit could present further opportunities for Australian sheep meat in the UK and Europe.

With the opportunities and challenges, how will Australia's sheep production sector play out in coming years? If it was the beef industry, it is likely that we would see a focused rebuilding and expansion of the herd, boosted by major new investment. Alternatively, the grain industry would likely respond to high prices with a major increase in planted acreage.

The sheep industry could well respond in a way which is different, yet still positive. For the national sheep flock to grow rapidly, it would theoretically require farmers with mixed and single sector operations to either switch out of cropping acreage for a number of years, or for cattle growers to switch to sheep. It seems questionable that this would happen with either sector. As such, it is likely that national sheep numbers will remain roughly the same – not declining at the same rate as recent decades, yet not climbing rapidly either.

Positively, outside investors are now joining innovative sheep producers to see the potential returns for the industry. Cropping, permanent crops and cattle will continue to see the majority of new investment, but the sheep industry is now certainly seeing increasing attention. Overall, the total number of sheep farms may decline, but this is a positive sign of the growth of consolidated operations, as producers 'buy their neighbours' and build their operations.

For those who continue to enthusiastically go forward in sheep production, the gains are likely to be strong. They know the possible challenges well – drought and weather events, trade issues, and market fluctuations are some examples. However, the future is more about increasingly efficient farms, output and management tailored to consumer needs, genetic and farming innovation, and an ongoing reputation for quality and safe products.

Like a perfectly clean and fresh fleece tossed onto a wool table, the future is looking bright.

CONTACTS

MARK BENNETT

Head of Agribusiness & Specialised
Commercial, Business & Private Bank
T: +61 3 8655 4097
E: mark.bennett2@anz.com

IAN HANRAHAN

Head of Food, Beverage & Agribusiness,
Australia – Institutional Banking
T: +61 7 3947 5299
E: ian.hanrahan@anz.com

ANZ AGRIBUSINESS AUTHORS

ALANNA BARRETT

Associate Director Agribusiness
Research, Business and Private Bank
T: +61 2 5933 0209
E: alanna.barrett@anz.com

VIVEKA MANIKONDA

Senior Analyst, Institutional
Client Insights & Solutions
T: +91 8067 953 036
E: vivekasri.manikonda@anz.com

MICHAEL WHITEHEAD

Head of Agribusiness
Insights, Institutional
T: +61 3 8655 6687
E: michael.whitehead@anz.com

ANZ CONTRIBUTORS

GEORGIA COOPER

ELLA KEARSLEY

MILES ROWLANDS

JACK SCIFLEET

JACK WILLIAMS

INDUSTRY CONTRIBUTORS

ANZ thanks the following industry representatives for their contributions

JASON LETCHFORD

Secretary-Treasurer – Shearing
Contractors Association of Australia

JORDY KITSCHKE

Chief Executive Officer – MEQ Probe

DISCLAIMER

The distribution of this document or streaming of this video broadcast (as applicable, "publication") may be restricted by law in certain jurisdictions. Persons who receive this publication must inform themselves about and observe all relevant restrictions.

1. Disclaimer for all jurisdictions, where content is authored by ANZ Research:

Except if otherwise specified in section 2 below, this publication is issued and distributed in your country/region by Australia and New Zealand Banking Group Limited (ABN 11 005 357 522) ("ANZ"), on the basis that it is only for the information of the specified recipient or permitted user of the relevant website (collectively, "recipient"). This publication may not be reproduced, distributed or published by any recipient for any purpose. It is general information and has been prepared without taking into account the objectives, financial situation or needs of any person. Nothing in this publication is intended to be an offer to sell, or a solicitation of an offer to buy, any product, instrument or investment, to effect any transaction or to conclude any legal act of any kind. If, despite the foregoing, any services or products referred to in this publication are deemed to be offered in the jurisdiction in which this publication is received or accessed, no such service or product is intended for nor available to persons resident in that jurisdiction if it would be contradictory to local law or regulation. Such local laws, regulations and other limitations always apply with non-exclusive jurisdiction of local courts. Before making an investment decision, recipients should seek independent financial, legal, tax and other relevant advice having regard to their particular circumstances.

The views and recommendations expressed in this publication are the author's. They are based on information known by the author and on sources which the author believes to be reliable, but may involve material elements of subjective judgement and analysis. Unless specifically stated otherwise: they are current on the date of this publication and are subject to change without notice; and, all price information is indicative only. Any of the views and recommendations which comprise estimates, forecasts or other projections, are subject to significant uncertainties and contingencies that cannot reasonably be anticipated. On this basis, such views and recommendations may not always be achieved or prove to be correct. Indications of past performance in this publication will not necessarily be repeated in the future. No representation is being made that any investment will or is likely to achieve profits or losses similar to those achieved in the past, or that significant losses will be avoided.

Additionally, this publication may contain 'forward looking statements'. Actual events or results or actual performance may differ materially from those reflected or contemplated in such forward looking statements. All investments entail a risk and may result in both profits and losses. Foreign currency rates of exchange may adversely affect the value, price or income of any products or services described in this publication. The products and services described in this publication are not suitable for all investors, and transacting in these products or services may be considered risky. ANZ and its related bodies corporate and affiliates, and the

officers, employees, contractors and agents of each of them (including the author) ("Affiliates"), do not make any representation as to the accuracy, completeness or currency of the views or recommendations expressed in this publication. Neither ANZ nor its Affiliates accept any responsibility to inform you of any matter that subsequently comes to their notice, which may affect the accuracy, completeness or currency of the information in this publication.

Except as required by law, and only to the extent so required: neither ANZ nor its Affiliates warrant or guarantee the performance of any of the products or services described in this publication or any return on any associated investment; and, ANZ and its Affiliates expressly disclaim any responsibility and shall not be liable for any loss, damage, claim, liability, proceedings, cost or expense ("Liability") arising directly or indirectly and whether in tort (including negligence), contract, equity or otherwise out of or in connection with this publication.

If this publication has been distributed by electronic transmission, such as e-mail, then such transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. ANZ and its Affiliates do not accept any Liability as a result of electronic transmission of this publication.

ANZ and its Affiliates may have an interest in the subject matter of this publication as follows:

- They may receive fees from customers for dealing in the products or services described in this publication, and their staff and introducers of business may share in such fees or receive a bonus that may be influenced by total sales.
- They or their customers may have or have had interests or long or short positions in the products or services described in this publication, and may at any time make purchases and/or sales in them as principal or agent.
- They may act or have acted as market-maker in products described in this publication.

ANZ and its Affiliates may rely on information barriers and other arrangements to control the flow of information contained in one or more business areas within ANZ or within its Affiliates into other business areas of ANZ or of its Affiliates.

Please contact your ANZ point of contact with any questions about this publication including for further information on these disclosures of interest.

2. Country/region specific information:

Australia. This publication is distributed in Australia by ANZ. ANZ holds an Australian Financial Services licence no. 234527. A copy of ANZ's Financial Services Guide is available at <http://www.anz.com/documents/AU/aboutANZ/FinancialServicesGuide.pdf> and is available upon request from your ANZ point of contact. If trading strategies or recommendations are included in this publication, they are solely for the information of 'wholesale clients' (as defined in section 761G of the Corporations Act 2001 Cth). Persons who receive this publication must inform themselves about and observe all relevant restrictions.

