MEAT & LIVESTOCK AUSTRALIA MARKET INFORMATION

The Korean beef market:
Insights and prospects from an Australian perspective

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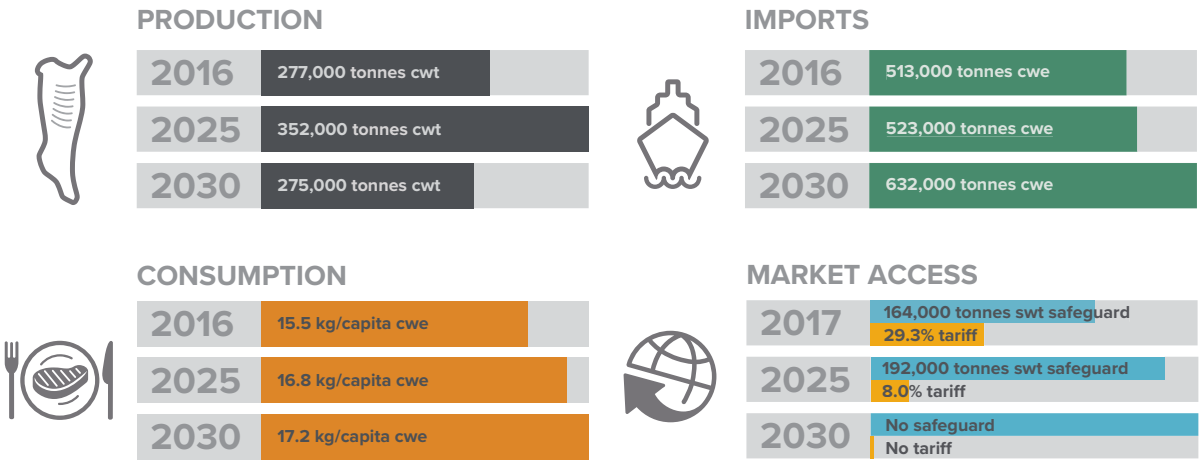
1: Key findings

Growth in Korean beef demand has been underpinned by long-term economic and demographic shifts. Based on these long-term drivers, this report provides an outlook for local production, beef consumption and imported beef volumes, and concludes:

- The Korean Hanwoo beef herd has recently recovered from the bottom of a cyclical trough, registering the first year-on-year growth since 2013. Reflecting the natural cycle of the Hanwoo herd, cattle numbers are forecast to grow to just over 3.5 million head by 2025 before receding through to 2030.
- In-line with the herd, albeit lagged one-to-two years, local beef production is expected to peak at almost 355,000 tonnes cwt by 2026, before receding towards 2030. This will only go some of the way to meeting projected beef demand.
- Underpinned by economic growth (albeit not as strong as recent decades) and tariff reductions on imported product, per capita beef consumption is forecast to grow from 15.5kg cwe (carcase weight equivalent) in 2016 to 17.2kg cwe in 2030. However, weighed-down by an aging population, beef consumption growth is expected to continually slow towards 2030.
- With modest population growth over the projected period, total Korean beef consumption is expected to grow from 785,000 tonnes cwe in 2016 to 903,000 tonnes cwe by 2030.
- Mitigated by a local production recovery, imports are anticipated to remain close to the record 2016 levels for the next decade (around 500,000 to 550,000 tonnes cwe). However, as the cyclical Hanwoo herd again recedes and demand continues to grow, imports are forecast to exceed 600,000 tonnes cwe by 2030.
- Australian beef has a strong reputation in Korea, reflected in the 50% imported beef market share in 2016. However, short-term exports from Australia will continue to be limited by a 20-year low cattle herd, and accompanied tight beef supplies and high prices.
- When Australian supplies recover, further export growth may be impacted by the Korea-Australia Free Trade Agreement (KAFTA) beef safeguard (which will grow from 164,000 tonnes swt in 2017 to 204,000 tonnes swt in 2028, before it is removed in 2029).
- While the US is unlikely to be limited by the large Korea-US (KORUS) FTA safeguard, it is likely to be constrained by cut availability; in 2016, 57% of Korean imports from the US were short ribs.

While this report closely examines long-term macro drivers, it should be noted there are a number of short-term factors (new anti-graft legislation, the presidential impeachment, concerns around import financing and job market uncertainty) that will impact the Korean imported beef market in 2017.

Figure 1: Korean outlook snapshot



Source: USDA, DFAT, MLA forecast
cwt = carcase weight, cwe = carcase weight equivalent

2: Introduction

Korea has grown to become a major market for Australian beef over the past two decades – the result of continued trade liberalisation, first in 2001 and more recently through the Korea-Australia Free Trade Agreement (KAFTA). Growth has also been assisted by consumer appreciation for quality beef; strong economic and population growth; and periodic constrained competition from the United States (US) – due to restrictions following the discovery of Bovine Spongiform Encephalopathy (BSE).

Korea was one of the better performing markets for Australian beef throughout 2016 – a time when restricted supply resulted in exports declining to most destinations. Supported by short-term tight Korean beef supplies (and high prices) and enthusiastic buying from the Korean trade, Australian exports to the market moved to a record 180,000 tonnes shipped weight (swt) in 2016, worth an estimated A$1.36 billion FOB. However, Australian beef production is forecast to contract again in 2017, when at the same time US production and competition is on the rise.

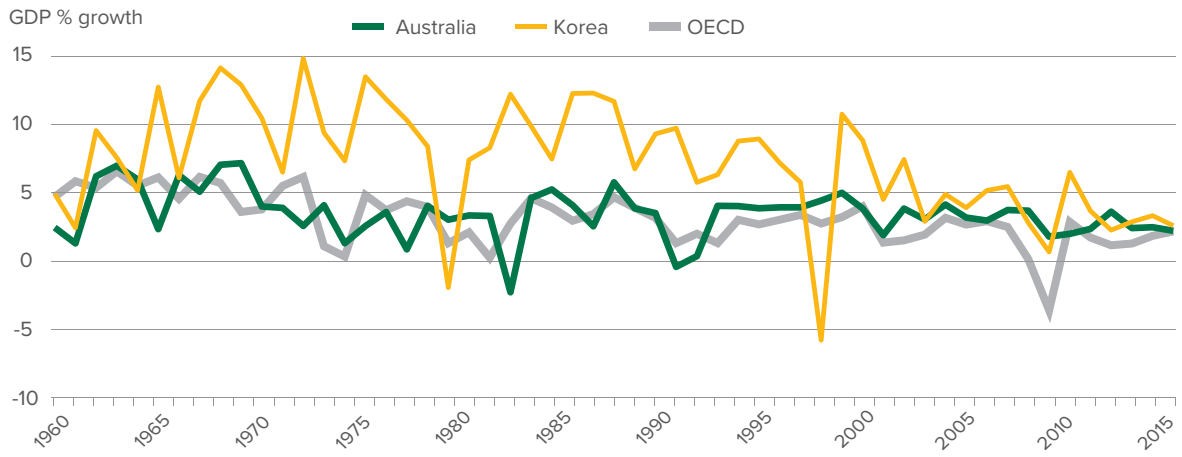
This report analyses the drivers which have made Korea the largest per capita consumer of beef in Asia and the third most valuable beef export market for Australia. In addition, this report outlines the implications of a rising but aging population; falling tariffs on beef imports from all major suppliers; a recovering Korean cattle herd; and the increased presence of Australia's primary competitor – the US. Ultimately, beef consumption growth in Korea is forecast to continue – albeit at a slower pace towards 2030.

Australia has a strong reputation in Korea – a brand built on years of promotion and reliability in the market. However, as beef demand continues to grow a range of challenges and opportunities will underpin Australia's ability to defend market share.

3: Economic growth and a transitioning population

Over the past four decades, substantial economic growth has elevated the Korean economy to the fourth largest in Asia and the fifteenth largest in the world (World Bank, 2017). As illustrated in figure 2, Korean Gross Domestic Product (GDP) has grown at an annual average rate of 7.3% since 1961 – double that of Australia or the OECD member average.

Figure 2: Korea's economic boom



Source: OECD

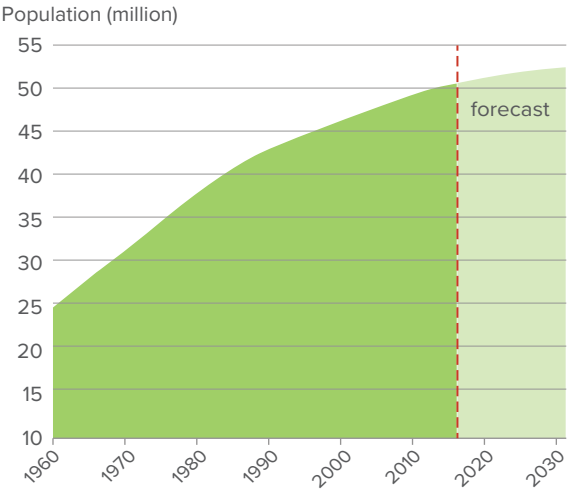
Despite recovering quickly following the Global Financial Crisis, real Korean GDP growth has since fallen to levels comparable to Australia's. Real GDP growth is forecast to average 3.3% per annum to 2025 (BMI, 2017). In comparison, during the boom years (2000 through to 2007) the Korean economy grew by an average 5.2% per annum.

In 2015, GDP in Korea was worth US$1.4 trillion, generated primarily by the industrial and service sectors, accounting for 38% and 60% of the nation's GDP, respectively (IMF, 2016). In contrast, agriculture contributed just 2% to total GDP.

As illustrated in figure 3, the population of Korea has increased significantly during the last four decades, becoming the twenty-sixth nation to reach 50 million inhabitants and doubling its entire population since 1960.

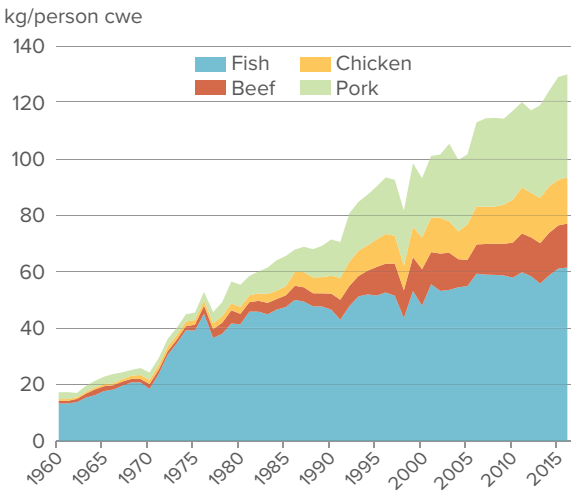
In line with strong economic development, a growing work force and a liberalising market, meat consumption has increased five-fold since 1960[1] (figure 4). This trend has also been evident in neighbouring China and, until more recently, Japan. Fish has the lion's share of animal protein consumption; however diets have shifted to livestock protein as incomes have increased and consumers have sought to diversify diets.

Figure 3: Korean Population Growth



Source: UN

Figure 4: Growing meat consumption



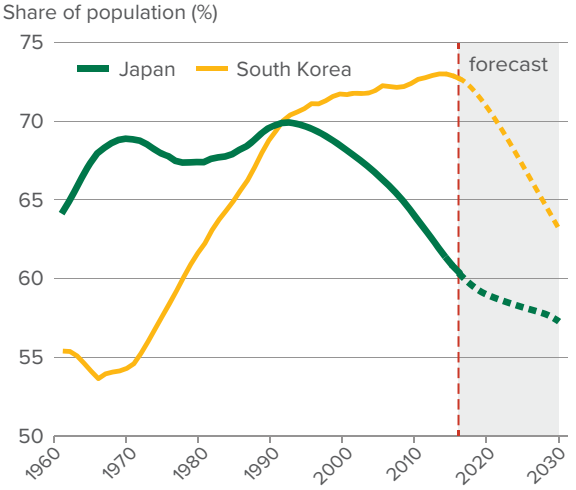
Source: FAO-OECD, USDA (beef) *sheepmeat consumption has been excluded from chart due to small volume

However, Korea faces a range of challenges that an ageing demographic presents – the proportion of over 65-year olds now stands at 14%, but is forecast to increase to 23% by 2030 (BMI, 2016). Further challenges include the current instability within the Korean job market and the rise in the number of single occupant households – both having potential to dampen overall meat consumption growth.

As illustrated in figure 5, the proportion of Koreans aged between 15-64 years (roughly the working age population and the nation's primary meat eaters) is expected to continue to decline from 73% in 2016 to 63% by 2030 – a similar, but more gradual, trend has been evident in Japan for the past 20 years.

Once an economy and population matures, as in the case of much of the developed world, total meat consumption typically plateaus, with changing diets reflecting switches between meats as opposed to an increase in total volume. However, as a population ages, meat consumption can eventually decline (unless offset by ongoing substantial income growth). This has been the case in Japan, where falling fish consumption has exceeded growth in other animal proteins since 2001 (beef consumption in Japan initially declined as a reaction to BSE but has remained stable in recent years).

Figure 5: Working age population (15-64 years)



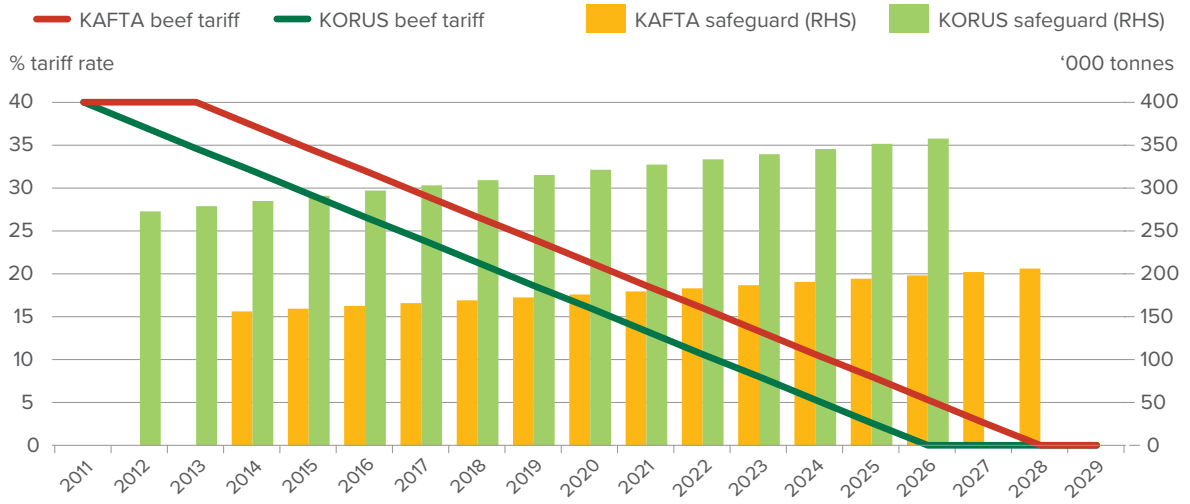
Source: UN

[1] This paper reports and calculates consumption on a carcase weight equivalent (cwe) basis. Total meat consumption includes beef, sheepmeat, pork, chicken and fish. Consumption is used interchangeably with domestic disappearance; calculated as production plus imports and minus exports, and accounting for carry-over stocks.

4: Korean Trade Agreements

Korean beef production has been unable to meet demand in recent decades, hence imported product has played an increasingly important role. Refer to Appendix A for an overview of the liberalisation of the Korean beef market and the impact on trade of BSE during the 2000s.

Figure 6: KAFTA and KORUS beef tariff schedules



Source: DFAT and USDA FAS

In March 2012 the Korea-US (KORUS) Free Trade Agreement (FTA) came into force, from which a fifteen-year tariff elimination schedule was implemented on US beef. Subsequently, the Korea-Australia Free Trade Agreement (KAFTA) came into place in 2014, working on the same phased beef tariff schedule. Under KAFTA, the current tariff (2017) on beef stands at 29.3% and this will be entirely eliminated by 2028 (DFAT, 2017). The agreed tariff elimination schedule and safeguard volume is illustrated in figure 6 and further detail is provided in Appendix B. It should be noted that the US has a 5.3% tariff advantage over Australia until 2026 when tariffs on US beef will be completely removed.

The safeguard level provides Korea with the option to reinstate a 40%[2] tariff on beef imports in excess of the safeguard level. This was enforced in November 2016, however its impact was limited due to it being triggered late in the year (additionally, product already in transit was allowed to enter under the 32% KAFTA tariff rate, while other product could be held in cold storage to clear customs in the new year).

FTAs with New Zealand and Canada – Korea's third and fourth largest imported beef suppliers, respectively – came into force in 2015, with both competitors also set to have tariff-free access by 2030.

Brazil, Argentina and India are yet to gain access into Korea due to animal health impediments. However, discussions look set to commence with Mercosur (a regional bloc made up of Argentina, Brazil, Uruguay and Paraguay) with the view of progressing to formal FTA negotiations (MOTIE, 2017). While any increased access from South American suppliers will put greater competitive pressure on the market, FTA negotiations are notoriously slow – KORUS and KAFTA both took approximately six years from the launch of formal negotiations to the agreements entering into force.

From the existing set of four major suppliers (accounting for 99% of 2016 import volume), all beef import tariffs will be reduced to zero by 2029 from a 40% base. Reduced tariffs will be enjoyed by exporters and importers alike, and will provide an additional boost to consumer demand. A study by the Centre for International Economics (CIE) in 2014 estimated import prices of Australian beef would fall by 27.1% (all else equal) as a result of remaining tariff reductions.

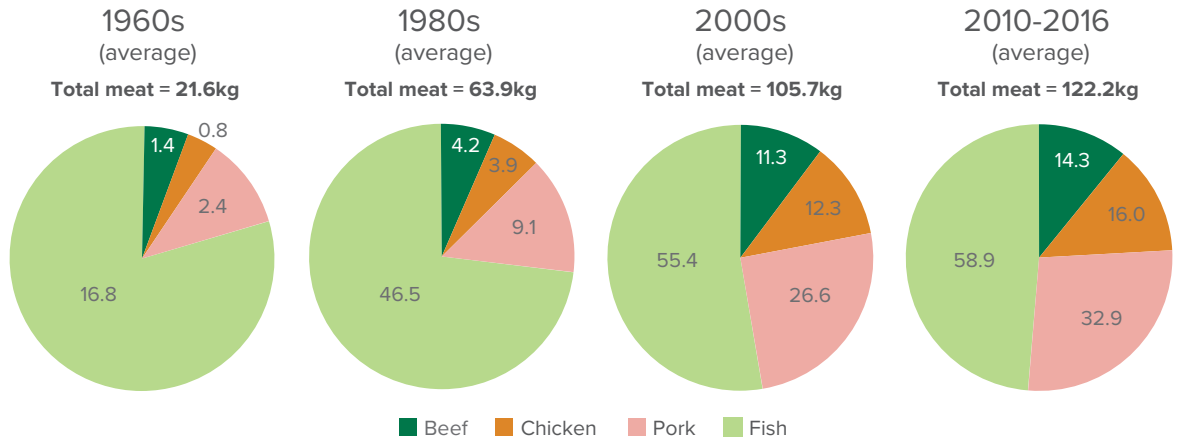
[2] The 40% out-of-safeguard tariff does decline over time, to 24% by 2028. See appendix B for detailed schedule and explanation of safeguard design.

5: Consumer trends and preferences

Evolving diets

Beef consumption in Korea has increased as the economy and population has evolved. Since 1960, per capita beef consumption growth has averaged 6.3% per annum, increasing from less than 1kg to over 15kg carcase weight equivalent (cwe) in 2016 (USDA). Per capita animal protein consumption (inclusive of beef, sheepmeat, pork, poultry and fish) has grown by 3.9% per annum, on average, over the same period. Figure 7 illustrates the transitioning makeup of consumption; the pie has grown and now features more beef.

Figure 7: Evolving meat consumption*

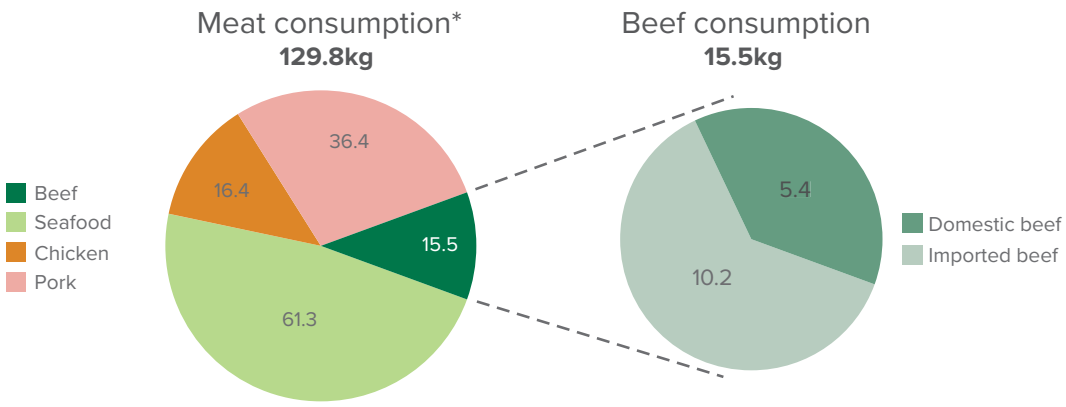


Source: FAO-OECD, USDA (beef) *sheepmeat consumption has been excluded from chart due to small volume

The continued affinity of the Korean consumer with pork will influence the competitiveness of imported beef moving forward, reinforced by the relative price differential between the two products (see appendix C for further detail of pork consumption). However, given imported beef will be largely tariff free by 2030 it will be positioned to become more price competitive with pork.

Beef consumption growth has been accommodated by both increased domestic production and imports, further supported by a pre-existing preference for beef and a growth in consumer awareness. The majority of local beef production is highly differentiated Hanwoo product (similar to Wagyu beef in Japan). Imported beef does not directly compete with higher value Hanwoo cuts, but more so with Yukwoo (domestic beef cattle). Australia's single largest competitor in the market is imported US beef, as illustrated in figure 9.

Figure 8: Beef's place on the plate – 2016

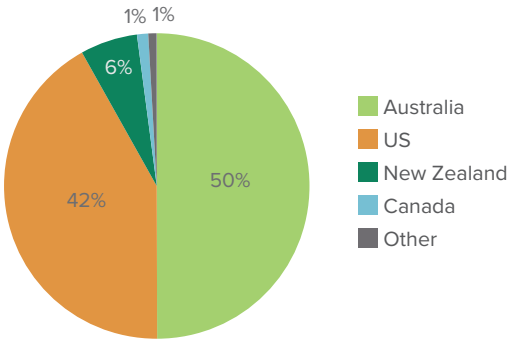


Source: FAO-OECD, USDA (beef) *sheepmeat consumption has been excluded from chart due to small volume

MLA's Statistics Database has information on livestock pricing, production and trade from Australia and around the world

Click here to explore data

Figure 9: Imported beef market share



Source: Korea Customs and Trade Development Institution. 2016 imported volume share.

Consumer drivers

According to insights from MLA's 2016 Global Tracker Survey (see appendix page 21 for further details), Korean consumers have the strongest affinity with beef of all animal proteins. Beef is widely regarded as a key source of nutrition, embraced by families in particular, and important to overall wellbeing. Further findings conclude that the most important attributes Korean consumers look for when purchasing meat proteins are:

1	Guaranteed safe to eat	beef perceived similar to chicken and pork but better than seafood
2	Freshness	beef perceived fresher than chicken and pork but less so compared to seafood
3	Family's favourite meat	beef ranked second only to pork

Source: MLA Global Tracker

When the above parameters are associated with each competing protein (beef, chicken, lamb, seafood and pork) beef has recognised strengths and weaknesses. When comparing the country of origin between the sources of beef, local Hanwoo leads all other major suppliers across these same drivers. Australian, US and local Yukwoo beef are viewed rather comparatively.

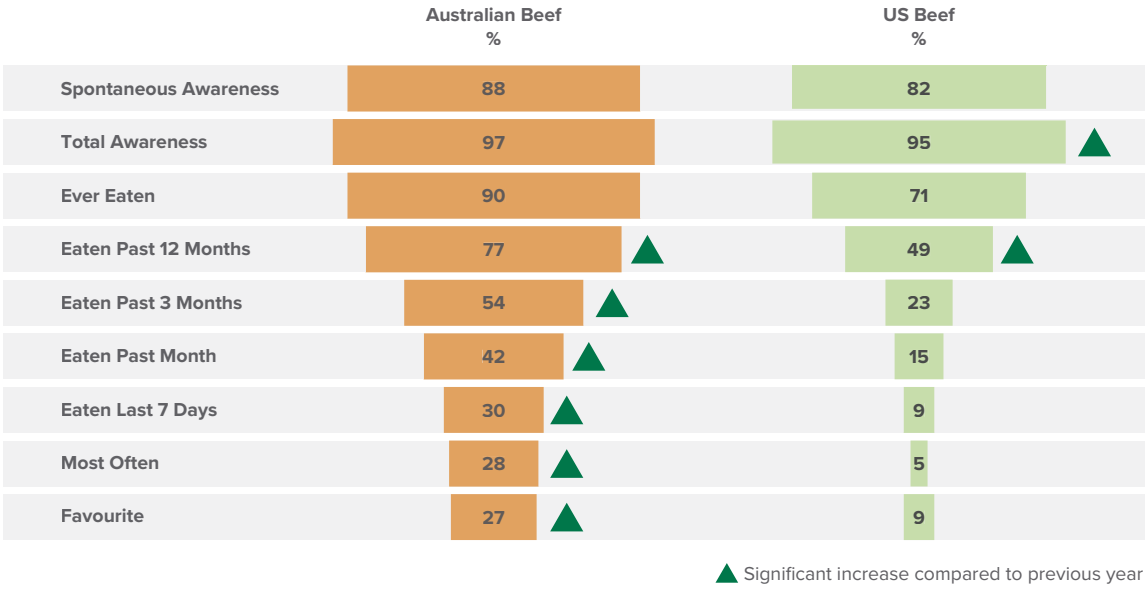
However, Australia's brand image, compared with other suppliers to the Korean market, is very strong. Australia's longevity in Korea has been built on a reputation of safety and consistency which, in the last decade, has been an overriding differential with other suppliers, in particular the US. After local Hanwoo, Australian beef has the strongest awareness and consumer penetration amongst all other origins of beef. Figure 10 illustrates the high awareness and penetration of Australian beef, in contrast to US product. Australia's position in the market is supported by the True Aussie brand, which promotes Australia's ability to provide high quality, natural and safe beef, underpinned by traceability and quality assurance systems.

However, US marketing campaigns have begun to change focus; marketing was previously aimed at reassuring consumers of US beef's safety credentials but now reinforces perceived quality advantages. The change of tack reflects the reduced fear of BSE – particularly amongst younger consumers – and its association with US beef.

TRUE AUSSIE BEEF

True Aussie Beef brand logo

Figure 10: Beef brand health



2016 consumer survey – sample includes those that purchased beef in past month (n=1000)

Source: MLA Global Tracker

Recent price movements

Despite Australia's strong history and presence in Korea, price will continue to be a major factor in purchasing decisions. Hanwoo beef, particularly high grade product, is priced at a significant premium to imported Australian and US beef (by a multiple of two or more). Amid a shortage of supply, Hanwoo prices averaged higher in 2016, pulling imported product with it.

While country of origin plays an important role for Korean consumers, and there is a strong recognition of Australian beef, consumers are becoming increasingly comfortable with US product, and many consumers readily switch between different origins of beef. Hence, price[3] and quality may continue to have greater influence on purchasing decisions.

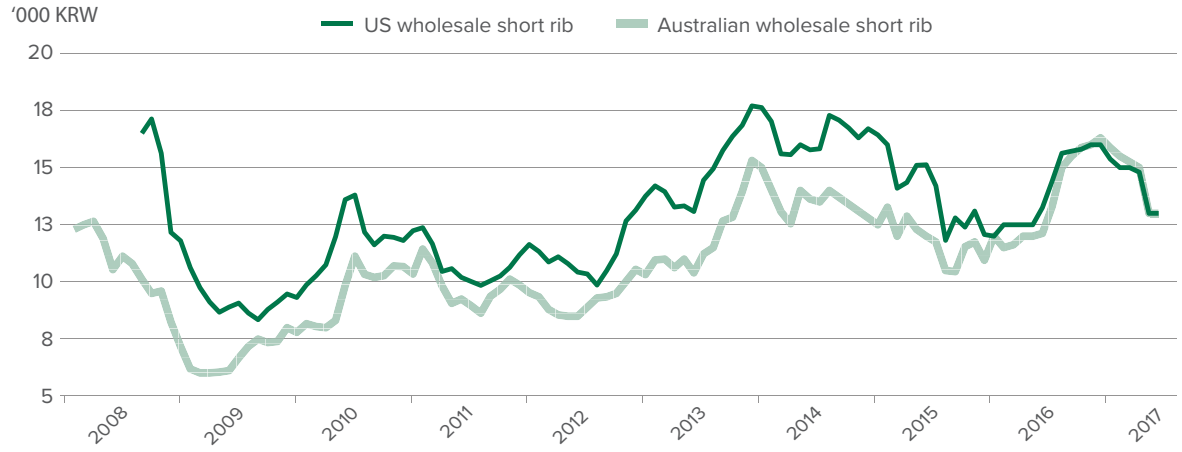
Prices for Australian cattle reached record levels in 2016, while US cattle prices consistently declined over the same period. In the last quarter of 2016 some Australian cattle indicators were priced at a premium to those in the US for the first time on record.

While cattle price movements in both countries increased the competitive pressure on Australian product in 2016, the surge in US cattle prices over the past six months – the result of robust domestic consumption, reduced imports, growing export demand and short term shortages – has provided some relief.

As illustrated in figure 11, Australian short rib prices have gone from tracking at a consistent discount to US product (primarily the result of marbling advantages of grainfed US beef) to a level pegging. However, it is likely the US price premium will return to the market once more recent movements in cattle prices flow through the supply chain and, in the longer term, Australian supplies begin to recover.

[3] Price was found to be a primary driver by Umberger and Calkins (2008); Chung, Briggeman and Han (2012); and MLA's global tracker survey (2016).

Figure 11: Australian and US wholesale short rib prices



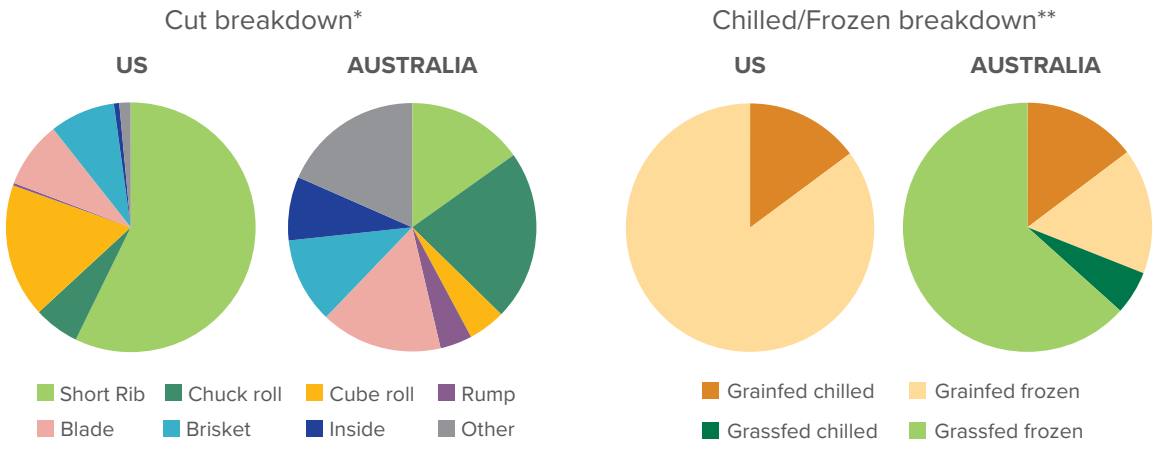
Source: Korean trade, HKJM KRW = South Korean Won

Makeup of Australian and US imports

The makeup of Korean beef imports from the US and Australia in 2016 is highlighted in figure 12. US short ribs accounted for almost 86,000 tonnes swt, equivalent to 57% of total US imports, while cube roll[4] and brisket also accounted for a significant volume (MFDS). Blade has grown significantly for the US, increasing from nearly 3,000 tonnes swt in 2015 to almost 13,000 tonnes swt in 2016.

On the other hand, Korean importers have become familiar with a more diverisfied array of Australian cuts, providing a more stable market position and greater flexibility. This is particularly important in considering how growth in Korean demand will be supported going forward and the potential supply constraints of specialised cuts. While short ribs will remain a preferred cut in Korea, as highlighted in section 8, there is only so much short rib that can produced by Australia and the US.

Figure 12: Australia and US beef breakdown



Source: MFDS, DAWR (Australia), U.S. Department of Commerce.

* Breakdown based on 2016 Korean import volume.

**Breakdown based on 2016 export volume. Assumed all US beef is grainfed.

Australia is able to provide a more diversifed offering, with grassfed beef and a greater proportion of chilled

[4] Classified as cube roll under Korean specification, much of this cut is in fact chuck roll.

product making up the trade, in comparison to the US. MLA's Global Tracker found freshness to be a significant driver of purchasing decisions; Korean consumers looked for meat colour (60% of consumers surveyed), freshness (56%), date packed (36%) and use by date (30%) when buying beef. While imported product is generally perceived as less fresh than local beef, Australia has a higher proportion of chilled product, relative to other suppliers. Australia has an ability to provide beef with some of the worlds best shelf life (Australian chilled beef can have a storage life of at least 12 weeks and up to 20 weeks under optimal storage conditions). In 2016 chilled beef accounted for 20% of Korean imports from Australia – more than double it's share compared to 2003.

According to MLA's Global Tracker Survey, the majority of retail beef purchased in Korea occurs through Hypermarkets (53%) or butchers (29%), with Australian beef having a particular skew toward Hypermarkets. As the retail sector in Korea modernises, the expansion of Hypermarkets may displace the presence of traditional butchers. It is estimated that approximately half of Australian beef is distributed through retail, with the remainder through foodservice. Australian beef caters to segments across the foodservice sector; from western-style fast food chains, through to Korean franchise restaurants and catering. In contrast, US beef likely has a greater presence in mid-to-high end foodservice, namely Korean BBQ restaurants.

The resurgence of US beef entering the Korean market looks set to continue. US production moved higher in 2016 after bottoming out the year prior; consequently more beef has become available for export, evident by the strong start to export volumes in 2017. Given Australian production is anticipated to contract further in 2017 (1% year-on-year based on MLA's latest projections) and remain below the record levels of 2014 through to the end of the decade, the US will continue to challenge Australia's market share.

6: The Korean beef industry: production and prospects

Korea is a small beef producer, with an estimated 277,000 tonnes carcase weight (cwt) produced in 2016 – close to one eighth of what Australia produced and about half of 1% of global production (USDA FAS). Nevertheless, domestic product has accounted for close to half of total consumption in Korea over the past decade and remains a major source of beef. While the bulk of domestic production is highly differentiated Hanwoo, it still competes to varying degrees depending on quality grade, with imported beef. In addition, Yukwoo and dairy cattle have contributed about 17% to domestic slaughter over the past decade, producing beef which is typically of similar quality to imported product.

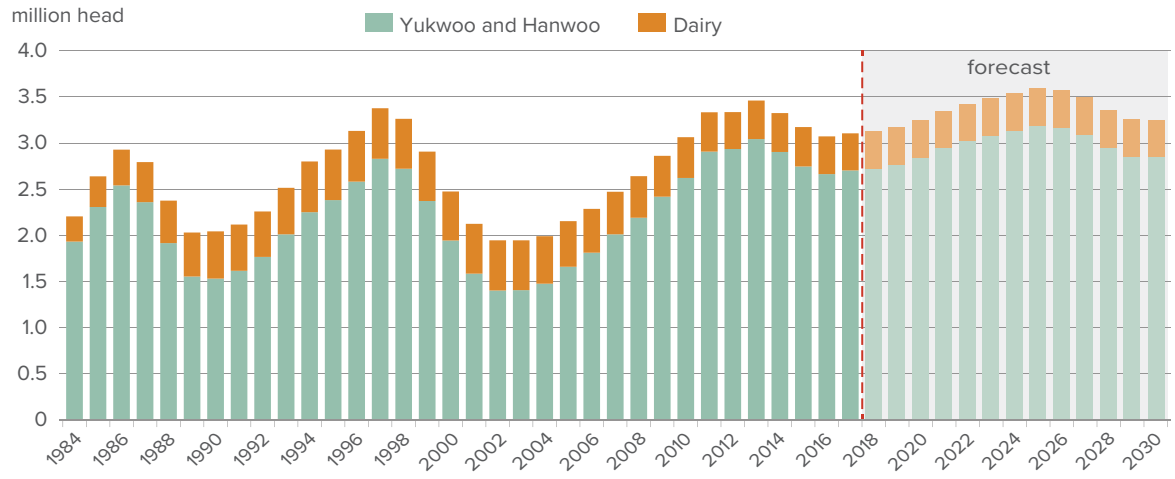
In the short-term, uncertainty surrounds the ultimate impact of the recently introduced anti-graft laws (see appendix E), and how it will flow through to high-end Hanwoo beef demand. Given the anti-graft legislation will impact the upper-end of retail and foodservice, expensive Hanwoo beef has a greater degree of exposure to the changes.

Nevertheless, after several years of herd contraction, December 2016 marked the first quarter of year-on-year Hanwoo herd growth since 2013. Herd growth also continued into the first quarter of 2017. In addition, the female component of the Hanwoo kill has tracked downwards in recent months; it was 43% during the first quarter of 2017, compared to 47% over the same time last year. Furthermore, while finished Hanwoo prices have eased, strong price signals persisted throughout 2016 and cheaper global feed grain prices provided some incentive for producers to increase production.

Assuming the Korean herd cycle follows a similar trend and timing (about 14 years) to the previous two and there is no significant government intervention in the market (further exacerbating the cycle), MLA forecast the herd to grow to just over 3.5 million head by 2025, before again contracting. Working in favour of a recovery are cheap global feed grain prices, historically high Hanwoo prices, and farm consolidation providing greater economies of scale (see appendix F for historical beef cycles).

Figure 13 maps out the MLA forecast herd expansion. Of note has been the stable size of the dairy herd in recent years; this is expected to remain the case with the cycle to be driven by the Hanwoo herd.

Figure 13: The herd to approach 3.5 million head



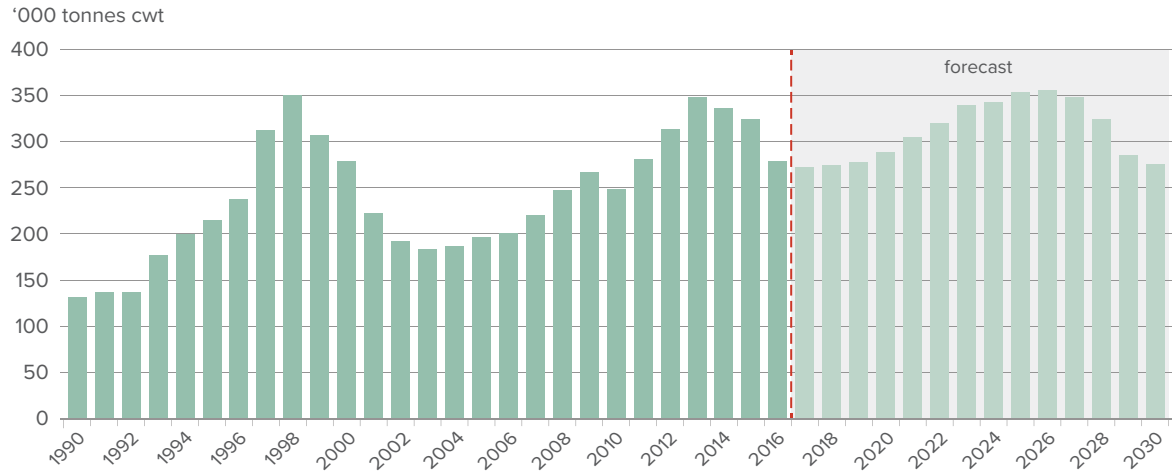
Source: KOSIS, MLA forecast

As the herd grows towards 2025, cattle slaughter and beef production will also follow – albeit at a one-to-two year lag (figure 14). While growing, local beef supplies are expected to remain below the recent peak in 2013 for the next five years. By 2026, however, beef production is anticipated to reach a new record of 355,000 tonnes cwt. In their 2016 outlook, OECD-FAO forecast production to grow to 377,000 tonnes cwt by 2025 – also a record level of production but 22,000 tonnes cwt above MLA's projection.

Given current uncertainty around the impact of new anti-graft legislation on Hanwoo beef demand – as well as a range of farmer demographic and supply constraint factors at play – a more conservative herd forecast was modelled and its impact estimated back through to import demand.

A herd which peaks at 3.3 million head in 2025 (more in line with the KREI Hanwoo herd forecast) results in 50,000 tonnes cwt less beef produced in 2026, compared to the base forecast. In contrast, a stronger herd recovery (more in line with the OECD-FAO 2016 outlook), which peaks at almost 4 million head in 2024, leads to an additional 40,000 tonnes cwe coming through the supply chain in 2026 (see page 15 and appendix G for a summary of how the alternative herd scenarios impact imported beef demand).

Figure 14: Korean beef production



Source: USDA, MLA forecast

7: Consumption and imported beef market outlook

Consumption outlook

A range of factors will drive beef consumption growth towards 2030, including: income growth; tariff reductions on imported product; an increasing but aging population; and growing local production (until 2026).

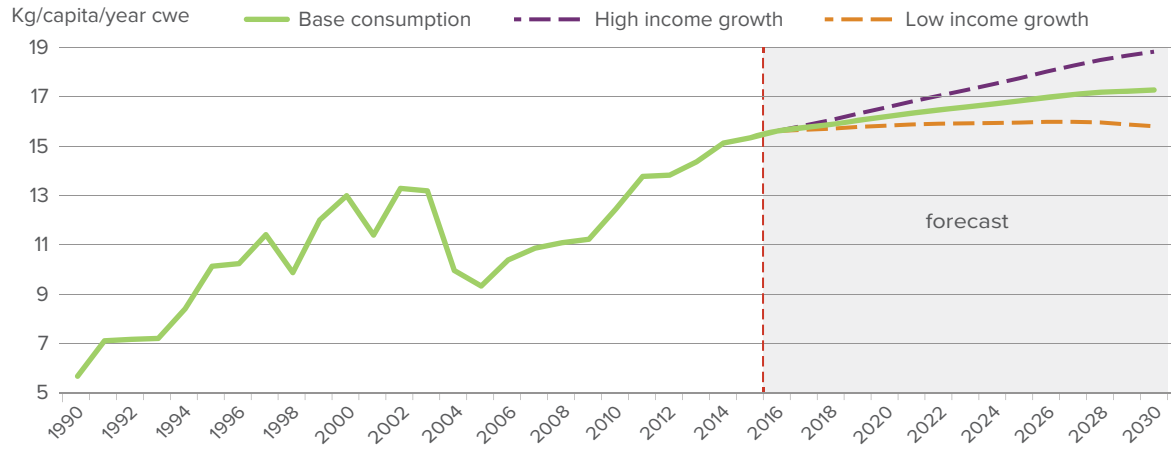
Likely the single-most significant factor driving Korean beef consumption growth over recent decades has been the increase in incomes. Real GDP per capita (used in modelling as a proxy for real income) has increased three-fold over the past 26 years (or just over 4% per annum). While there are immediate challenges facing economic growth in Korea – such as a political instability, record household debt and slower global trade – long-term real GDP growth is forecast to average 3.3% per annum over the next decade (BMI, 2017).

While the population is projected to grow, it will also age, dampening beef consumption growth particularly after 2025. The working age as a percent of the total population is projected to fall from a recent peak of 73% to 63% by 2030 (UN).

Import tariffs on beef from the two main suppliers will be completely removed by 2028 – in 2016, US and Australian beef was hit with a 26.6% and 32% tariff, respectively. The benefits of the removal of these barriers to trade will be enjoyed throughout the supply chain but a large portion will be passed on to consumers in the form of lower retail prices.

Weighing up these long-term drivers, MLA have forecast Korean beef consumption to grow – albeit at an average growth rate below the 4% per annum over the past decade, to almost 1% over the next ten years, and just 0.3% by 2030. Growth in the near term will be driven by rising income and falling tariffs on imported product. As 2030 approaches, however, further tariff reductions under existing FTAs will cease, the economy will continue to mature and potentially slow, and the population will be ever older – stemming further growth in beef consumption.

Figure 15: Consumption growth



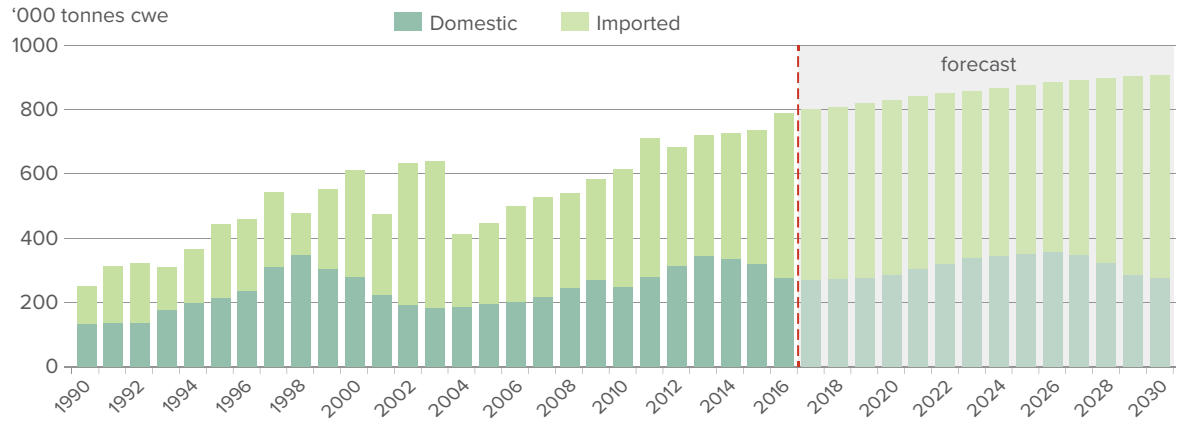
Source: USDA, MLA forecast . Income growth used in modelling based on BMI real GDP per capita forecast.
Low and high income growth are one percentage point either side of the BMI forecast.

By 2030, MLA forecast annual beef consumption to reach 17.2kg per person cwe (figure 15). Given the uncertain economic landscape out to 2030 – which is less clear than slow moving demographic shifts or tariff reductions – stronger and weaker economic growth was also modelled. A one percentage point decrease in real GDP per capita per annum out to 2030 will decrease per person consumption by 1.5kg cwe. Inversely, a one percentage point increase in real GDP per capita will increase consumption by 1.5kg cwe (see page 15 and appendix G for a summary of how the alternative economic scenarios impact imported beef demand).

Consumption by origin

The growth in demand for beef will need to be supplied by a combination of local and imported beef. As outlined earlier, beef production is expected to remain low, but grow over the next few years, before ramping up and peaking in 2026. Figure 16 breaks down the consumption outlook across domestic and imported product; the market will need to find an additional 120,000 tonnes cwe of beef by 2030 to satisfy projected demand.

Figure 16: Consumption – another 120k tonnes needed by 2030

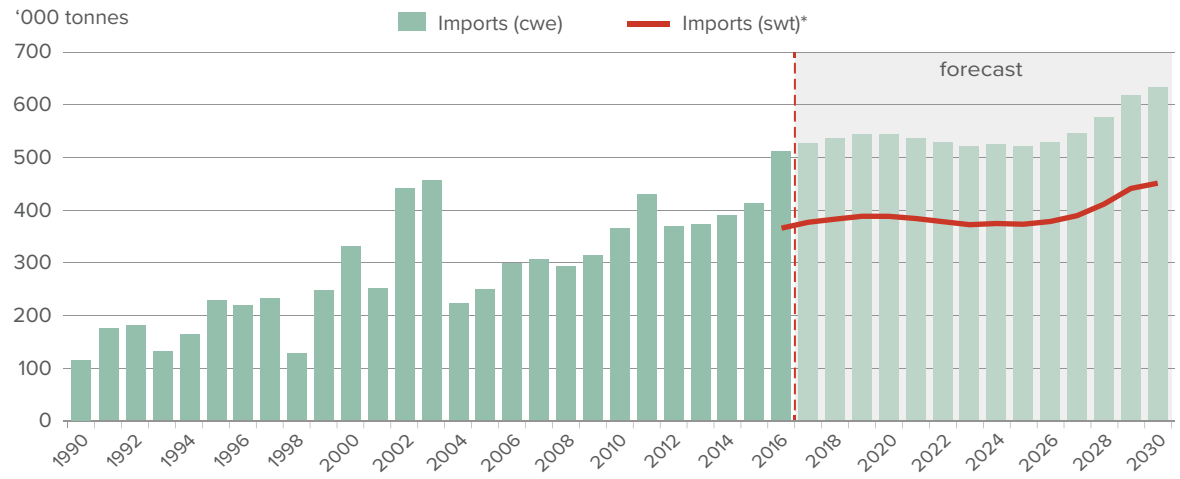


Source: USDA, MLA forecast

Breaking out the imported component of beef consumption, it will likely grow modestly over the next four years, before remaining steady or sliding as local production peaks in 2026. In the longer-term, as local production subsides and the last remaining tariffs are completely removed from existing major suppliers, imports should expand.

Importantly, as illustrated in figure 17, 2016 record imports were not an outlier and imports will likely remain close to 2016 levels for the next ten years. Imports will build even further and exceed 600,000 tonnes cwe (or an estimated 450,000 tonnes swt) towards 2030, coinciding with the removal of import tariffs and the cyclical decline in the Korean herd.

Figure 17: Imports herald long-run growth



Source: USDA, MLA forecast
* estimated swt based on historical ratio

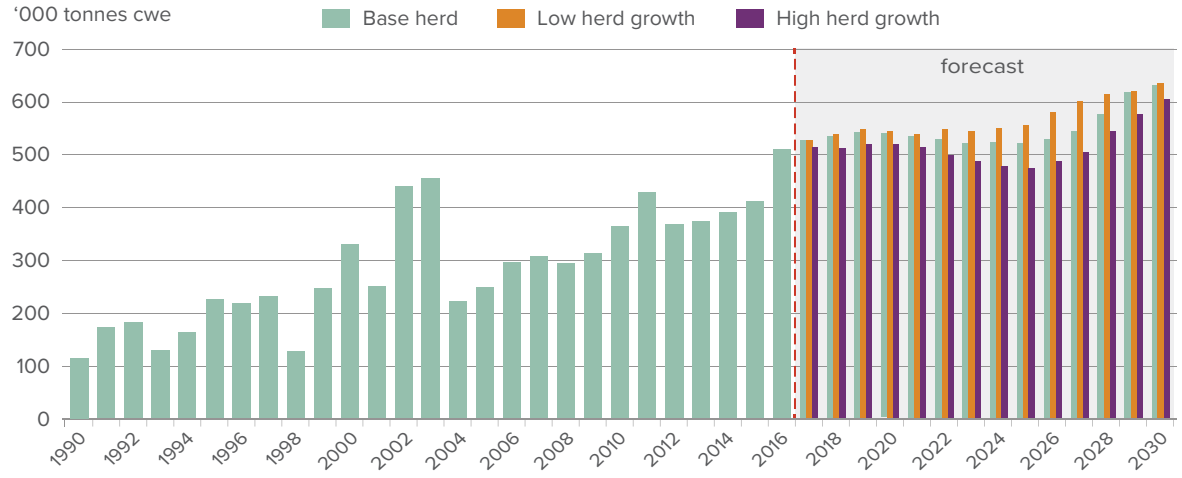
Alternative scenarios

The impact on imports from the alternative herd and economic growth scenarios are illustrated in figure 18 and figure 19, respectively. Variation to the herd causes greater deviation from the base between 2023 and 2027, while slower or faster economic growth has longer term implications for beef consumption and import demand.

Regardless, imported beef demand is forecast to remain above pre-2016 levels out to 2030 – even in the case of a strong herd recovery or sluggish income growth.

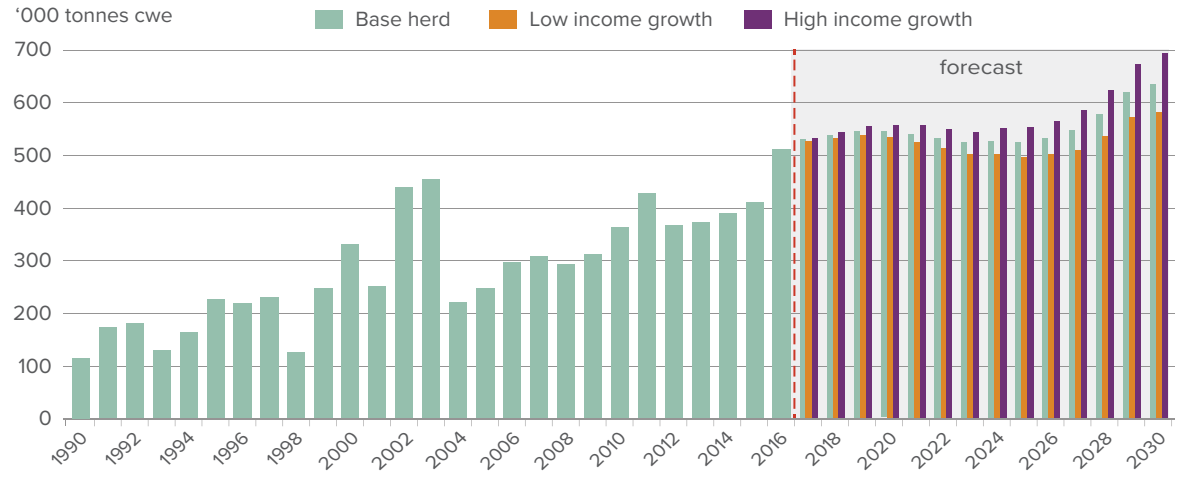
For details on the base and alternative forecasts, refer to appendix G.

Figure 18: Imports outlook – alternative herd growth



Source: USDA, MLA forecast

Figure 19: Imports outlook – alternative income growth



Source: USDA, MLA forecast

Significant imports will be required out to 2030 regardless of which scenario plays out; the key question is, how will this be divided up amongst existing suppliers, and what strengths and weaknesses does Australia possess going forward?

8: Australia's prospects in the Korean imported beef market

Demand for imported beef in Korea is forecast to remain around existing record levels for the next 10-years before expanding. With the current make-up of suppliers not likely to change in the short-term, competition between Australian and the US will largely drive trade dynamics over the next decade. Australia has some strengths and limitations with respect to the US and other competitors.

Competitor mix

While cattle turnoff in Australia will remain tight this year and is poised to recover steadily from 2018, market dynamics may support exports to Korea maintaining recent growth in the short term and expanding further over the longer-term.

Underpinned by strong production growth, competitive pricing and aggressive marketing, the US will continue to be the most significant competitor in the imported beef market over the foreseeable future. First quarter 2017 Korean imports from the US were up 29% year-on-year. However, future long-term growth may be capped by supply constraints (discussed below).

New Zealand, with 6% market share, is unlikely to grow considerably, constrained by a contracting beef cattle herd and limited safeguard capacity (38,000 tonnes in 2017 and growing to 50,000 tonnes by 2030). 2017 first quarter Korean imports from New Zealand were back 28% year-on-year.

The South American suppliers – Brazil, Uruguay, Argentina and Paraguay – and India (in terms of buffalo meat) have no or restricted beef access to Korea. With food safety at the forefront of Korean consumers' minds and the government readily implementing sanitary and phytosanitary measures, Australia's market share should remain sheltered from the aforementioned competitors in the short-term. However, such barriers are not guaranteed to remain in place indefinitely and, in particular, South American suppliers will continue to improve their disease-free status and management systems to avoid future outbreaks (ABARES, 2016).

In addition, recent currency movements continue to make the South Americans competitive in global markets. Since the start of 2010 the Australian Dollar has declined 20% against the Korean Won, but the Brazilian Real has declined 46%, the Uruguayan Peso 32% and the Argentinian Peso 76% (following the removal of currency support in 2016).

However, Australia's favourable reputation in Korea, leveraged by compulsory country of origin labelling on imported product at point of sale, will remain a point of difference from any new challengers. In addition, MLA's Global Tracker found that 69% of consumers looked at country of origin when buying beef – the highest of any other consideration.

Growing competitor penetration into other key Australian beef export markets (India into Indonesia; Brazil, Uruguay, Argentina and potentially the US into China) may see Australia's reliance on Korea increase. While exports to Korea have declined during the start of 2017 – amid an array of short-term issues – this reversion to traditional Australian markets has been evident by growing volumes to Japan.

Key cuts and supply constraints

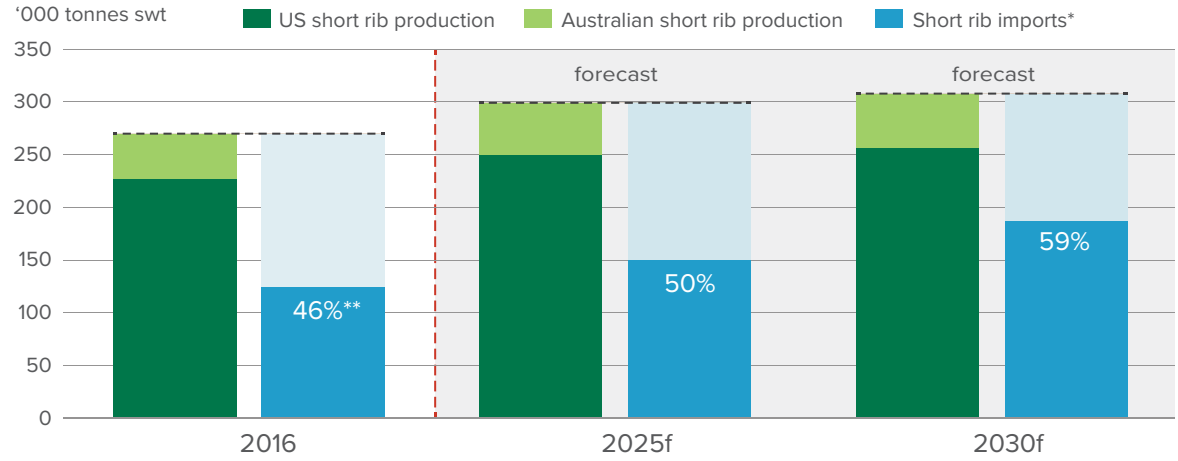
Korean consumers have an affinity with a narrow range of imported beef cuts. While there may be some potential for other beef cuts to grow, it will likely be limited to a core six: short ribs, chuck roll, blade, brisket, cube roll and manufacturing product. However, dedication to select cuts places constraints on each supplier's production system; short ribs account for almost 40% of Korean imports, but they typically make up just 2% of a carcase.

Demand for short ribs in Korea is robust. A fundamental feature of Korean BBQ, the US supplies the majority of short ribs into the market, with Australia further supplementing supply. Can the US and Australia supply the demand for short ribs to the Korea market as demand for imports grows?

Based on USDA and MLA supply outlooks, US and Australian short rib production is forecast to reach 257,000 tonnes and 51,000 tonnes[5], respectively, by 2030. Figure 20 illustrates the estimated short rib production in Australia and the US, and compares it against forecast short rib imports (assuming the short rib share of imports remains constant, at about 40%). More so than 2016, short rib demand may approach the supply frontier of Australia and the US as 2030 approaches (when Korean short rib imports are estimated to account for almost 60% of combined US and Australian short rib production).

At its peak in 2003, US short rib imports into Korea represented an estimated 55% of US short rib production. Meanwhile, imports of Australian short rib peaked in 2006 and 2016, representing about 62% of production. After removing product that is consumed in other markets or fails to meet to quality specifications of Korea, there may simply not be enough short rib in Australia and the US to meet demand. Hence, as these supply constraint dynamics play out in the market, there may be additional pressure to source a greater share of product from other cuts or countries.

Figure 20: Short ribs may hit supply constraints



Source: MLA estimates
*Forecast short rib imports are based off the (historical) share of the MLA projected total.
**The % figure is the portion of short rib imports of US and Australian production.

Fortunately for Australia, the remaining five cuts made up 70% of Australian beef exports to Korea in 2016, therefore affording the opportunity to diversify or expand exports into non-short rib cuts. In contrast, short ribs made up 57% of US product entering the market.

Australia's ability to increase exports will vary from cut to cut. Close to half of Australia's chuck roll production already goes to Korea, with the remainder going to Japan, the domestic market and, in the case of lower quality product, manufacturing. Blade export growth may also be constrained by supply, albeit less so than chuck roll, while additional product would need to be leveraged away from the same key markets.

Brisket, largely destined for China and Japan, may be a growth cut for Australian exports to Korea. In addition, brisket, primarily consumed in casual eateries, is likely to be less affected by new anti-graft legislation, due to the lower price point.

Furthermore, with the US importing significantly less lean grinding beef than it did from Australia in 2015 and in-line with recent growth in western-style fast foods chains in Korea, manufacturing beef has the potential to increase going forward. Korea received 4% of Australia's manufacturing beef exports in 2014 and 2015; last year this increased to 6%. This is also a segment likely to be sheltered from US competition, given the high degree of grinding beef consumption in the US domestic market.

While less diversified, the US may have some capacity to expand into new cuts. Blade is a clear example of this; between 2015 and 2016 blade imports from the US increased by 10,000 tonnes swt to almost 13,000 tonnes swt. As the world's largest beef producer, the US does not require large shifts in marketing channels to influence global trade flows. A slowdown in local US demand or a weakening of the US dollar could see the US divert additional product off the domestic market and into Korea.

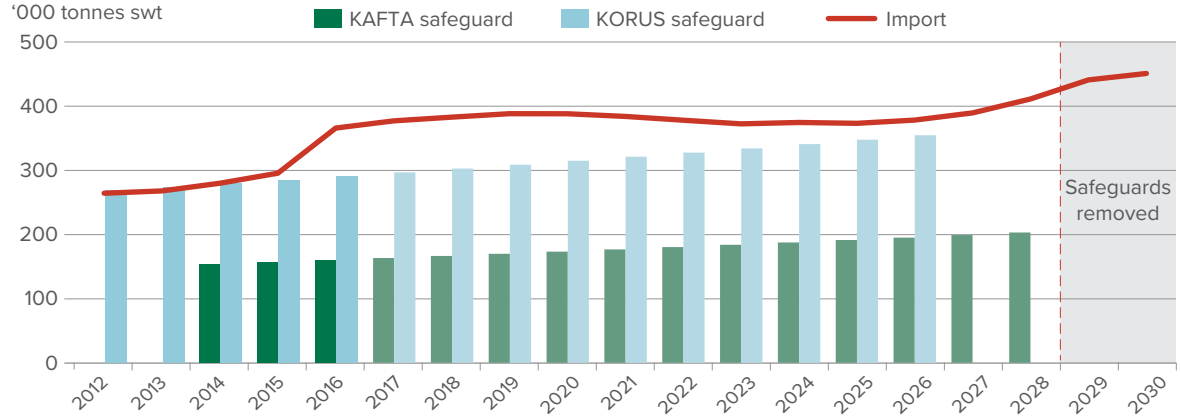
[5] This forecast is based off an assumption that 2% of the carcase is made up of short rib.

Safeguard limitation

One limitation to Australia's beef exports will be a volume safeguard contained within KAFTA. Australia triggered the safeguard in 2016 and, while the volume safeguard will increase over time, growth will be modest until it is removed entirely in 2029. While tight domestic cattle supplies may limit Australia's ability to serve the market in 2017 and 2018, it is possible that the safeguard will be triggered again over the next decade, particularly in 2027 and 2028 when import demand is forecast to increase and the safeguard remains in place.

In contrast, the US has a significantly larger volume safeguard. However, it is less likely to hit full utilisation as it would require the US to more than double exports from 2016 levels, and aggressively expands into a broader range of cuts. Figure 21, illustrates the volume safeguard applicable to Australian and US beef, and the projected import requirement going forward. It is unlikely the US will ever hit their safeguard before it is removed in 2027. Conversely, while highly dependent on year-to-year supply, it is far more likely Australia could hit the safeguard before it is removed by 2029 – particularly given it was hit in 2016 and import demand is only expected to grow.

Figure 21: Safeguards Capacity



Source: MLA estimate, DFAT, USTR and MFAT

Once the safeguard is triggered, Korea has the option to reinstate the out-of-safeguard tariff on the exporting country. Given that key competitors will be on an ever lower tariff schedule, the out-of-safeguard tariff may be damaging if imposed.

Concluding remarks

Korea will remain a significant market for Australian beef, underpinned by strong brand recognition and consumer penetration. Beef consumption in Korea will grow out to 2030, albeit at a slower pace than recent decades, and it will increasingly rely on imported product to fill the domestic production shortfall.

However, in the current environment – a rebuilding Australian cattle herd and tight beef supplies, growing US competition and a safeguard limitation – Australia may not be able to grow its share of the imported beef market in Korea in the short term. If Australia is able to defend existing market share, this will place beef exports to Korea at 180,000-200,000 tonnes swt over the next decade but with prospects of 230,000 tonnes swt by 2030 – all of which would still exceed the record 2016 volume.

ABARES, in their 2017 March quarter commodities report, forecast Australian beef exports to Korea to grow considerably over the next five years, to 232,000 swt by 2021-22. This expansion reflects a growth rate above MLA's projected expansion of the Korean imported beef market and about 40,000-50,000 tonnes swt in excess of the annual safeguard applied to Australia.

While less optimistic than the ABARES outlook, exports to Korea will likely remain above any volume prior to the 2016 record year. Furthermore, Korea will continue to solidify its position as one of Australia's largest and most valuable beef markets, through an ongoing focus on consistent quality and product safety, supported by a motivating country of origin message.

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Appendices:

A: Historical Trade Policy

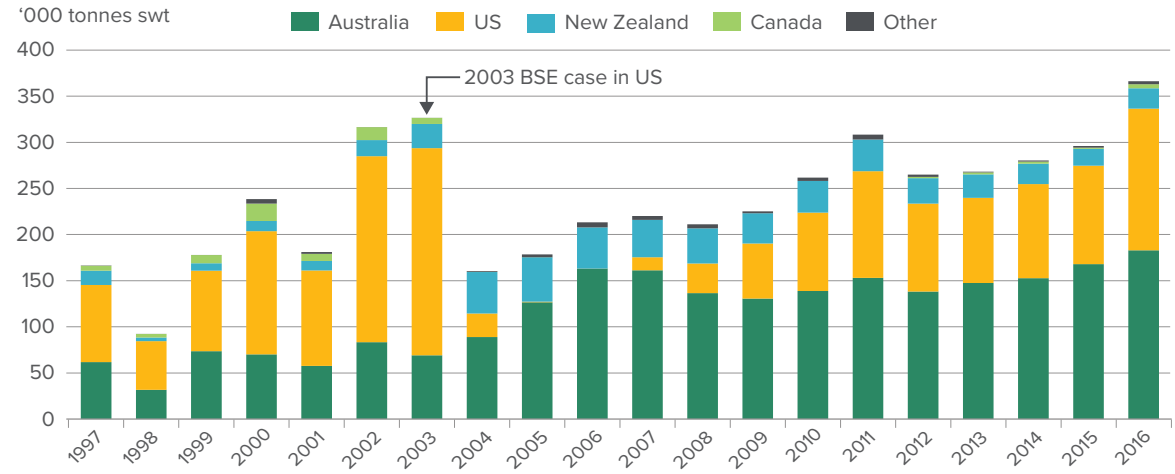
The Korean government first started importing beef in 1976, by issuing tenders for commercial imports. After achieving food self-sufficiency, agricultural policy shifted to increasing farm incomes through non-farm earnings, diversified agriculture, and the cultivation of cash crops.

The *Open Market* policy aimed to stabilise agricultural commodity prices through imports and compensate reduced income through non-farm earnings. However, livestock prices became extremely volatile, significantly impacting the farm household economy (Song, 2003). In 1984, beef prices experienced a sharp decline as the level of beef imports increased and the Korean government, subsequently, put a halt to beef imports in 1985. They were reintroduced in 1988 under a quota system, following negotiations with the US, Australia and New Zealand.

Following a period of transition, a tariff quota was established for beef imports in 1995 under the Uruguay Round of General Agreement on Tariffs and Trade (GATT) negotiations; initially there was a 123,000 tonne import volume quota and a 43.6% in-quota tariff. The implementation period of this policy ran through until 2000, by which time the import volume quota stood at 225,000 tonnes with a 41.6% in-quota tariff rate (OECD, 2008). The Korean market further liberalised in 2001, with the removal of the quota and just a 40% tariff.

In 2003, Australia accounted for 21% of Korean beef imports, and US product accounted for 69%. The outbreak of Bovine Spongiform Encephalopathy (BSE) in the US late in 2003, and consequent ban on beef imports from the US, provided Australia with the opportunity to vastly increase market share. As illustrated in figure 22, in the three years that followed, Australian beef imports increased significantly, peaking in 2006 and accounting for 77% of Korean imports. The US regained market access, under additional requirements[6], in 2007 and has since steadily continued to regain market share.

Figure 22: Korean beef imports



Source: Korea Customs and Trade Development Institution

[6] US beef was limited to product from cattle less than 30 months of age. In addition, BSE-transmitting specified risk materials were required to be removed at processing from all cattle eligible to enter the market.

B: US and Australian FTA tariff schedule

The table below provides a clear breakdown of the beef tariff schedules of both Australia and the US throughout the entirety of the FTA agreements with Korea.

Table 1: Beef tariff schedules

Year	US FTA Beef Tariff	AUS FTA Beef Tariff	Tariff Differential	KAFTA safeguard volumes (tonnes) & safeguard tariff (brackets)	KORUS safeguard volumes (tonnes) & safeguard tariff (brackets)
	%	%	%		
2011	40.0	40.0	0.0	NA	NA
2012	37.3	40.0	2.7	NA	270,000 (40%)
2013	34.6	40.0	5.4	NA	276,000 (40%)
2014	32.0	37.3	5.3	154,548 (40%)	282,000 (40%)
2015	29.3	34.6	5.3	157,676 (40%)	288,000 (40%)
2016	26.6	32.0	5.4	160,829 (40%)	294,000 (40%)
2017	24.0	29.3	5.3	164,045 (40%)	300,000 (30%)
2018	21.3	26.6	5.3	167,327 (40%)	306,000 (30%)
2019	18.6	24.0	5.4	170,673 (30%)	312,000 (30%)
2020	16.0	21.3	5.3	174,087 (30%)	318,000 (30%)
2021	13.3	18.6	5.3	177,569 (30%)	324,000 (30%)
2022	10.6	16.0	5.4	181,120 (30%)	330,000 (24%)
2023	8.0	13.3	5.3	184,742 (30%)	336,000 (24%)
2024	5.3	10.6	5.3	188,437 (24%)	342,000 (24%)
2025	2.6	8.0	5.4	192,206 (24%)	348,000 (24%)
2026	0.0	5.3	5.3	196,050 (24%)	354,000 (24%)
2027	0.0	2.6	2.6	199,971 (24%)	NA (0%)
2028	0.0	0.0	0.0	203,970 (24%)	NA (0%)
2029	0.0	0.0	0.0	NA (0%)	NA (0%)

Safeguards

Safeguards are measures whereby a country can impose temporary emergency actions in response to increased imports of a particular product. They are designed to prevent serious harm to a country's domestic industry from a surge in imports and allow the local industry time to adapt to global market forces. Safeguard measures may take the form of a suspension of concessions or obligations, and quantity restrictions or additional duties may be imposed.

MLA Global Consumer Tracker

The MLA Global Consumer Tracker, conducted by Kantar Millward Brown, is an annual quantitative consumer research study done simultaneously in numerous export markets around the world for Australian red meat.

The research project aims to accurately describe the current protein landscape in each market and identify trends over time, quantify the awareness and consumption of Australian red meat relative to competitors, and map the consumer path to purchase. Insights gained from the report are used by MLA to develop in-market strategies and tactics to further the position of Australian beef and lamb.

C: Pork in Korea

The continued affinity of the Korean consumer with pork will weigh-in on the competitiveness of imported beef moving forward, especially when factoring in the relative price differential between the two products. Additionally, MLA's Global Tracker found that consumers rated pork the easiest and most convenient meat to prepare and the most lending to a range of different meal options. Furthermore, as outlined by ABARES, in *Korean beef market: developments and prospects (2009)*, a number of cross-price elasticities suggest that imported beef and pork are substitute goods.

In 2016, per capita consumption for pork in Korea was an estimated record 36.4kg person cwe (FAO-OECD). Pork consumption has been on the rise since 2012, following a recovery in local production. The domestic pig herd in Korea reached an estimated 10.35 million head at the close of 2016, with stocks progressively recovering from a number of foot and mouth disease (FMD) outbreaks across Korea and subsequent destruction of an estimated third of the pig herd. The worst outbreaks were witnessed in 2010 and 2011. Korean consumption of pork in 2016 totalled an estimated 1.8 million tonnes with imported pork, accounting for 614,000 tonnes cwe (OECD, 2016).

While imported pork will also benefit from FTA tariff reductions, the base tariff from which they are reducing is below the 40% applied to beef. Hence, tariff reduction dynamics will support beef becoming more price competitive with pork out to 2030.

D: Presidential Impeachment

Information correct as of 29th May 2017

- **Former President Park Geun Hye – Impeached 9th December 2016 for her role in a bribery scandal**
- **The Constitutional Court upheld the impeachment ruling on the 10th March 2017**
- **Park may now face charges related to abuse of power, bribery and extortion**
- **Moon Jae-in was elected into office on the 10th May 2017 becoming the 12th President of South Korea**
- **Ms Park trial for corruption began on the 23rd May 2017**

The impeachment of President Park resulted from accusations of extortion from Korean businesses amounting to US$69 million, in conjunction with friend and associate Choi Soon-sil. Public sentiment was mostly one of discontentment, with large public protests forming on a regular basis in Seoul, demanding an immediate end to her presidency. Despite denying the allegations, President Park accepted the decision made by the Constitutional Court.

E: Anti-graft Legislation

Information correct as of 29th May 2017

- **Introduced on 28th September 2016**
- **Sets limits for government officials receiving meals at KRW 30,000 and gifts at KRW 50,000.**
- **Up to an estimated 4 million people affected by the legislation**
- **A review on the legislation is set for 2018**

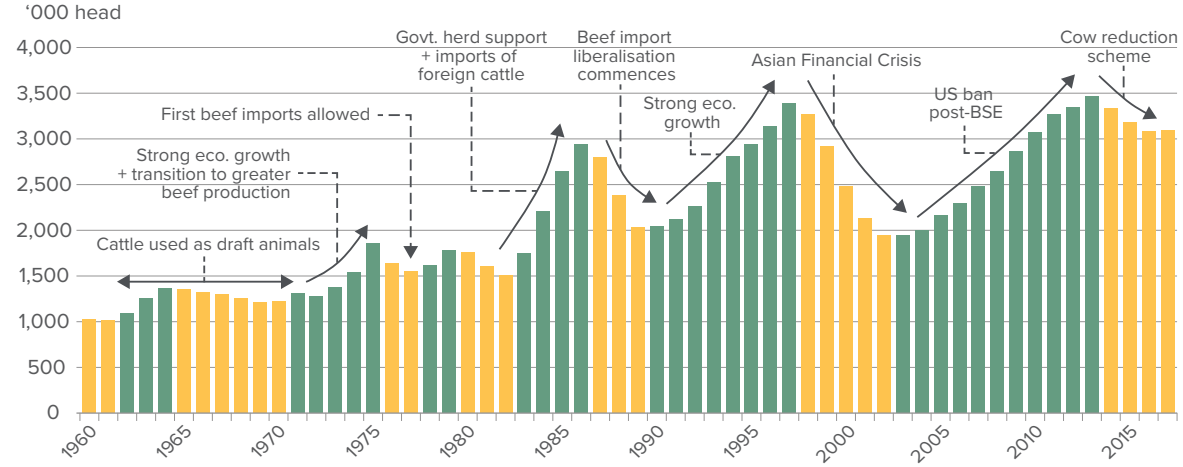
The anti-graft law was introduced to stop corruption surrounding the offering of gifts and meals to civil servants/ government workers. The policy looks to provide transparency to those who fall under the Anti-corruption legislation. However, those who breach the law could face imprisonment of up to three years and a hefty fine equivalent to US$24,000.

F: Evolution of the Korean Herd

Historical Beef Cycles

The cattle herd has gone through three major cycles – each lasting about fourteen years – since the industry transitioned from one based on cattle used as beasts of burden to one of food production. Some of the main events and factors driving this cycle are outlined in the figure below, but the natural amplitude of the cycle has been compounded by a series of intervening government policies. A detailed history and description of the Korean cattle herd is outlined in the ABARES report *Korean beef markets: developments and prospects (2009)*.

Figure 23: The Korean herd



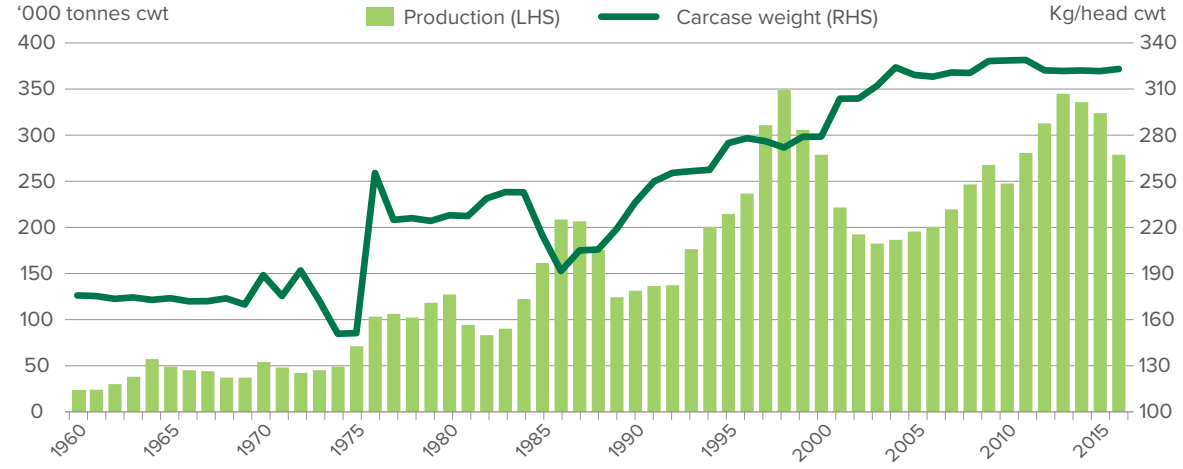
Source: USDA

Over the long-term there has been a consistent trend towards larger farm structures. Supported by government programs and global competition inherent in a liberalised market, farms have consistently increased in scale over the past four decades, and particularly since the mid-1990s. In 1983, farms with fewer than 20 head accounted for 96% of the herd, while those with greater than 100 head accounted for 1%; in 2016 those with fewer than 20 had accounted for 14%, while those with greater than 100 head accounted for 43%. As aging farmers retire out of the industry, it is likely this trend towards larger-scale operations will continue.

More recently, after the herd peaked in 2013, at 3.48 million head, low cattle prices led the government to suspend calf subsidies and introduce a cow reduction scheme to decrease overall supply. Government subsidies to slaughter cows resulted in the herd declining 11% between 2013 and 2016, to 3.09 million head.

As highlighted in the graph below, beef production has ultimately followed a similar cycle to that of the herd. However, carcase weights have continued to rise since farmers began switching cattle across to food production in the late 1970s, supporting further output gains.

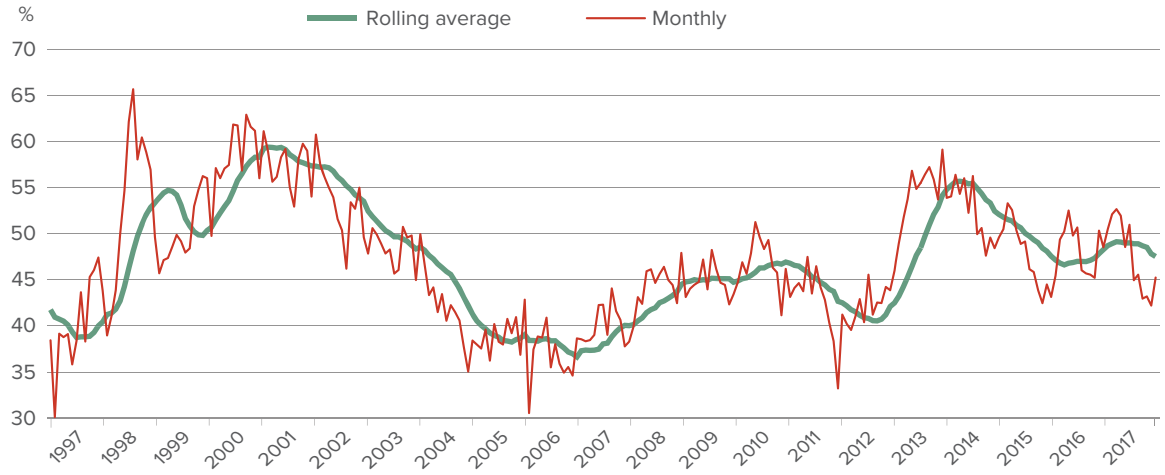
Figure 24: Korean beef production



Source: USDA

However, a rapid rise in global beef prices between 2011 and 2014 and falling local beef supply has led to a quick recovery in Hanwoo cattle prices and enticed the government to bring the cow reduction scheme to a premature end. While Hanwoo prices have eased over the past six months (in-part attributed to uncertainty surrounding the anti-graft laws) they still remain well above where they average 2011-2014, when beef production was increasing.

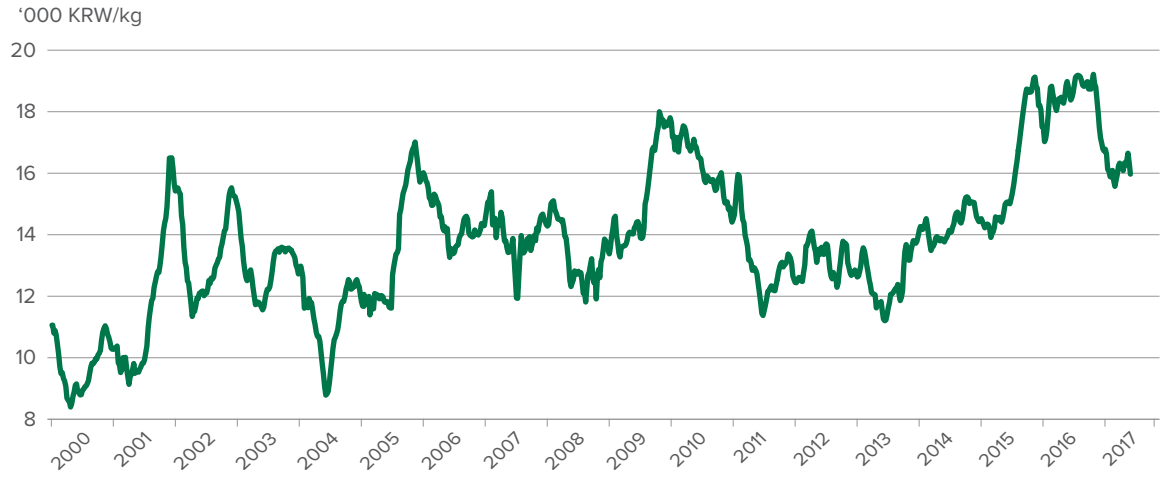
Figure 25: Female % of the Hanwoo kill



Source: KOSIS

One indication the Korean Hanwoo herd is in expansion phase is the relatively low female slaughter rates, as illustrated in figure 25. During the 2017 March quarter, the female proportion of the kill was just 43%, compared to 47% over the same time last year. Subsequently, the herd has registered year-on-year growth over for the first time since 2013. Hence, the liquidation phase of the current cycle appears to be at an end, making it the shallowest liquidation in 30 years.

Figure 26: Finished Hanwoo prices



Source: Korean trade, HKJM

G: Alternative Scenario Forecasts

Table 2: Alternative Scenarios*

Year	Low herd growth			MLA base forecast			High herd growth		
	Production tonnes cwt	Consumption kg/capita/year cwe	Imports tonnes cwe	Production tonnes cwt	Consumption kg/capita/year cwe	Imports tonnes cwe	Production tonnes cwt	Consumption kg/capita/year cwe	Imports tonnes cwe
2016	277,000	15.5	513,000	277,000	15.5	513,000	277,000	15.5	513,000
2017f	271,000	15.7	528,000	271,000	15.7	528,000	284,000	15.7	515,000
2018f	270,000	15.8	539,000	272,000	15.8	536,000	295,000	15.8	514,000
2019f	271,000	16.0	549,000	276,000	16.0	544,000	300,000	16.0	520,000
2020f	285,000	16.1	545,000	286,000	16.1	544,000	310,000	16.1	520,000
2021f	298,000	16.3	542,000	302,000	16.3	538,000	325,000	16.3	515,000
2022f	300,000	16.4	549,000	319,000	16.4	530,000	349,000	16.4	500,000
2023f	312,000	16.5	545,000	336,000	16.5	522,000	369,000	16.5	489,000
2024f	314,000	16.6	552,000	341,000	16.6	525,000	388,000	16.6	478,000
2025f	316,000	16.8	558,000	352,000	16.8	523,000	399,000	16.8	475,000
2026f	303,000	16.9	581,000	354,000	16.9	530,000	395,000	16.9	489,000
2027f	290,000	17.0	602,000	347,000	17.0	546,000	387,000	17.0	505,000
2028f	286,000	17.1	613,000	323,000	17.1	576,000	355,000	17.1	544,000
2029f	283,000	17.1	620,000	285,000	17.1	618,000	325,000	17.1	578,000
2030f	270,000	17.2	637,000	275,000	17.2	632,000	301,000	17.2	606,000

Year	Low income growth			MLA base forecast			High income growth		
	Production tonnes cwt	Consumption kg/capita/year cwe	Imports tonnes cwe	Production tonnes cwt	Consumption kg/capita/year cwe	Imports tonnes cwe	Production tonnes cwt	Consumption kg/capita/year cwe	Imports tonnes cwe
2016	277,000	15.5	513,000	277,000	15.5	513,000	277,000	15.5	513,000
2017f	269,000	15.6	525,000	271,000	15.7	528,000	272,000	15.8	531,000
2018f	269,000	15.6	531,000	272,000	15.8	536,000	275,000	16.0	542,000
2019f	271,000	15.7	535,000	276,000	16.0	544,000	280,000	16.2	553,000
2020f	280,000	15.8	532,000	286,000	16.1	544,000	293,000	16.5	556,000
2021f	294,000	15.8	523,000	302,000	16.3	538,000	311,000	16.7	554,000
2022f	309,000	15.8	512,000	319,000	16.4	530,000	331,000	17.0	548,000
2023f	323,000	15.9	501,000	336,000	16.5	522,000	350,000	17.2	543,000
2024f	326,000	15.9	501,000	341,000	16.6	525,000	358,000	17.4	550,000
2025f	334,000	15.9	496,000	352,000	16.8	523,000	371,000	17.7	551,000
2026f	334,000	15.9	499,000	354,000	16.9	530,000	376,000	17.9	562,000
2027f	324,000	15.9	510,000	347,000	17.0	546,000	370,000	18.2	583,000
2028f	300,000	15.9	535,000	323,000	17.1	576,000	347,000	18.4	620,000
2029f	263,000	15.8	570,000	285,000	17.1	618,000	309,000	18.6	670,000
2030f	251,000	15.7	578,000	275,000	17.2	632,000	300,000	18.8	690,000

Source: USDA, MLA forecast

Income growth used in modelling based on BMI real GDP per capita forecast.

Low and high income growth are one percentage point either side of the BMI forecast.