



Australian Government

# Korean and Australian Beef

markets and prospects for trade



abare **eReport** 04.22

Prepared in conjunction with the  
Korea Rural Economic Institute

Min-Kook Jeong, Terry Sheales, Trish Gleeson and Daniel McDonald

December 2004

**abare**

© Commonwealth of Australia 2004

This work is copyright. The *Copyright Act 1968* permits fair dealing for study, research, news reporting, criticism or review. Selected passages, tables or diagrams may be reproduced for such purposes provided acknowledgment of the source is included. Major extracts or the entire document may not be reproduced by any process without the written permission of the Executive Director, ABARE.

ISSN 1447-817X  
ISBN 1 920925 26 0

Jeong, M-K., Sheales, T., Gleeson, T. and McDonald, D., *Korean and Australian Beef: Markets and Prospects for Trade*, ABARE eReport 04.22 Prepared in conjunction with the Korea Rural Economic Institute, Canberra, December.

Australian Bureau of Agricultural and Resource Economics  
GPO Box 1563 Canberra 2601

Telephone +61 2 6272 2000      Facsimile +61 2 6272 2001  
Internet [www.abareconomics.com](http://www.abareconomics.com)

ABARE is a professionally independent government economic research agency.

ABARE project 2772

## foreword

The Republic of Korea and Australia play important roles in world beef markets — particularly in Pacific Rim trade. Bilateral trade, with Korea as a major importer and Australia as a major exporter, has become increasingly important. A better understanding of each country's beef industry is likely to be useful to an appreciation of how the trade may develop in the future.

For the Australian reader, this report will provide useful insights to developments in the Korean beef industry and the factors driving those developments. Korean readers are expected to gain a better understanding of the significance of the Australian beef industry in the global market and of the industry's various components.

This report is one outcome of a collaborative relationship between ABARE and the Korea Rural Economic Institute. The lead author of the report, Min-Kook Jeong, worked on this project while on exchange with ABARE in 2003-04. Collaborative research between the two organisations can lead to a better understanding of issues of mutual interest and enhance the prospects for strong relationships between our two nations in the future.

BRIAN S. FISHER  
Executive Director  
ABARE

JUNG-HUAN LEE  
President  
Korea Rural Economic Institute

December 2004

# acknowledgments

The assistance of Meat and Livestock Australia, particularly Wendy Voss, Peter Weeks, Glen Feist and Timothy Kelf is gratefully acknowledged.

# contents

Summary	1
1 Introduction	3
2 Beef supply and demand situation and outlook – Korea	4
3 Beef supply and demand situation and outlook – Australia	6
Short term BSE influence on prices	6
Herd rebuilding to constrain supply	7
Domestic production	8
BSE affects demand for Australian beef	8
Weaker US market	9
Gains in Japan	10
Exports to Korea low	11
Live export markets	12
4 Beef production – Korea	13
Productivity	15
Cattle slaughter	15
Farm incomes	17
5 Beef production – Australia	18
Trends in beef cattle numbers	20
Australian beef production systems	21
Farm incomes	24
6 Cattle marketing and beef distribution channels – Korea	26
Marketing channels for cattle and beef	26
Marketing imported beef in Korea	30

7	Cattle marketing and beef distribution channels – Australia	40
	Cattle marketing	40
	Meat processing	42
	Beef distribution	42
8	Consumption trends and consumer preferences – Korea	43
	Trends in beef consumption	43
	Beef purchase patterns	44
	Consumption patterns when eating out	45
	Willingness to pay	46
	Consumers’ preference for imported meat	47
9	Consumption trends and consumer preferences – Australia	48
10	International trade	51
	Major export markets for Australian beef	52
	Composition of Australian beef exports	54
	Live cattle trade	56
	Prospects for growth in trade between Australia and Korea	62
11	Policy – government intervention in beef marketing and trade	63
	Korea	63
	Australia	65
	References	66

map

1	Beef cattle numbers, by statistical local area (shire)	20
---	--	----

figures

A	Beef cattle productivity – Korea	15
B	Domestic beef production shares – Korea	16
C	Shares of female cattle slaughtered to total slaughter – Korea	16
D	Beef industry incomes – Korea	17
E	Cow and calf prices and ratio of cow to calf prices – Korea	17
F	Beef cattle numbers – Australia	20
G	Beef farm cash income – Australia	24
H	Meat consumption per person – Korea	43
I	Meat consumption per person – Australia	48
J	Retail meat prices – Australia	49
K	Principal markets for live cattle exports	58
L	Saleyard price of yearling cattle – Australia	58
M	Sensitivity of monthly Korean farm incomes from fattening imported cattle	61

tables

1	Beef demand and supply situation – Korea	4
2	Outlook for beef demand and supply – Korea	5
3	Outlook for beef and veal industry – Australia	7
4	Value of agricultural production – Korea	13
5	Livestock farm households and livestock numbers – Korea	14
6	Distribution of cattle farms and total cattle numbers, by herd size – Korea	14
7	Beef cattle productivity – Korea	15
8	Cattle slaughter – Korea	16
9	Value of agricultural production – Australia	18
10	Livestock farm households and livestock numbers – Australia	19
11	Cattle on feed, by intended market destination – Australia	22
12	Beef industry farm financial performance – Australia	25
13	Cattle markets – Korea	27

14	Slaughter houses, by form of operation, 2001 – Korea	27
15	Livestock processing complexes, by region – Korea	28
16	Wholesale markets, by operation, 2001 – Korea	29
17	Auction shares in livestock wholesale market – Korea	29
18	Composition of livestock retail shops – Korea	30
19	Beef import schedule from Uruguay Round negotiations	31
20	Volume of beef imports, by country of origin – Korea	33
21	Imports of beef – Korea	33
22	Volume and value of chilled beef import, by country of origin – Korea	34
23	Volume of beef imported, by selected cuts – Korea	34
24	Ratio of chilled beef imports, by selected cuts of beef – Korea	35
25	Average price of beef imports, by country of origin – Korea	35
26	Beef imports, by SBS group and others – Korea	36
27	Purchases of imported beef by wholesalers – Korea	37
28	Main factors considered by wholesalers when purchasing imported beef	37
29	Evaluation of supply qualities for imported beef – Korea	38
30	Wholesaler’s beef purchase strategy – Korea	38
31	Volume of beef sale for wholesalers after moving to tariff only import system in 2001 – Korea	38
32	Beef sale plans of wholesalers after liberalisation – Korea	39
33	Methods of selling beef cattle – Australia	41
34	Average annual rate of increase in meat consumption per person – Korea	43
35	Price elasticity of demand for meat – Korea	44
36	Place of purchase and consumers’ preferred cuts of Hanwoo beef – Korea	44
37	Place of purchase and consumers’ preferred cuts of imported beef – Korea	45
38	Frequency of eating beef when eating out and preferred cut – Korea	46
39	Willingness to pay for Hanwoo beef, by consumer income and beef grade – Korea	46



40	Imported beef purchase intentions and information impacts – Korea	47
41	Average rate of increase in meat consumption per person – Australia	48
42	Price and income elasticity of demand for meats – Australia	50
43	Exports of beef and veal, by destination – Australia	51
44	Australian beef export to Korea	53
45	Composition of Australian beef and veal exports, 2003	54
46	Composition of Australian beef and veal exports to Japan, 2003	55
47	Composition of Australian beef and veal exports to United States, 2003	55
48	Composition of Australian beef and veal exports to Korea, 2003	56
49	Australian exports of live cattle, by destination	57
50	Estimated costs of live cattle imports from Australia, 2002 – Korea	59
51	Cost of feed in fattening beef cattle, 2002 – Korea	59
52	Estimated returns from feeding imported and Korean native cattle, 2002	60
53	Measures to support beef production – Korea	63

## summary

The beef industry is important for both the Republic of Korea and Australia. The contribution of livestock production to Korean agriculture in 2001 was around 26 per cent, and the share of Korean native cattle (Hanwoo) in the total value of Korean livestock production was 21 per cent. The estimated contribution of livestock to the gross value of Australian farm production in 2003-04 was 47 per cent, with the Australian beef cattle industry contributing a little over 40 per cent of the estimated gross value of livestock production of around \$16.9 billion.

The Korean beef industry went through a significant downturn following the economy's financial difficulties in 1997-98, with the number of native Hanwoo cattle falling sharply. After reaching a peak of 2.8 million in 1996, the number of cattle halved to 1.4 million in 2002. Economic recovery in more recent years, coupled with the move to a tariff-only system of restricting imports, means that Korean consumers of beef have been turning more to imports to satisfy their requirements. Korean consumers prefer grain fed beef to grass fed beef. Consumers' interest in the hygiene and safety of beef rose greatly after the BSE (bovine spongiform encephalopathy or 'mad cow' disease) event in Europe in 2001. When buying imported beef, Korean consumers appear to prefer rib and chuck for roasting.

During 2002 and 2003 Australia faced the most severe and widespread drought since at least 1982-83. Drought induced turnoff for slaughter and increased cattle deaths resulted in beef cattle numbers falling by 1.3 million or around 5 per cent from 24.7 million at the end of June 2002 to 23.4 million at the end of June 2003.

Trade in beef between Australia and Korea is affected by import barriers, exchange rate relativities, economic growth and its effect on consumer demand, as well as by supply developments in both countries. Australian exports of beef and veal in calendar 2003 amounted to 841 000 tonnes (shipped weight), equivalent to around 68 per cent of Australia's beef and veal production in that year. Korea was Australia's third largest export market after Japan and the United States. Shipments to Korea in 2003 amounted to 62 000 tonnes (shipped weight).

---

In the first half of 2004, Australian exports to Korea fell slightly from volumes achieved in the first half of 2003. This fall was despite Korea's ban on the import of US beef following a single BSE incident in the United States in December 2003. Reduced beef production in Australia as producers retained additional cattle for herd expansion and increased exporter attention on the more well established and better returning Japanese market appear to have been the main reasons for the decline.

Over the medium term, however, increasing consumer demand driven by relatively strong economic growth and limited supply response from domestic beef producers in Korea, is expected to result in growth in demand for imported beef. This can be expected to result in rising Australian exports to Korea.

In the longer term, it seems likely that mutual dependence between Australia and Korea in the area of beef supply, demand and trade will grow. Although there may be some scope for further development of trade in live animals from Australia to Korea — for fattening and slaughter in Korea — it seems likely that the backbone of the trading relationship will remain in meat. Further reductions in trade barriers in Korea and increased Australian production of beef aligned to Korean specifications will be important to the further development of that trade.

## introduction

Australia is the largest beef exporter in the world. Over 60 per cent of Australia's beef and veal production is exported every year. Korea is the third largest export market for Australian beef after Japan and the United States. Since the Asian financial downturn in 1997-98, there has been a significant downturn in beef production in Korea. Accordingly there has been increasing reliance on imported beef, which accounts for around two-thirds of Korean beef consumption.

The discovery of BSE (bovine spongiform encephalopathy or 'mad cow' disease) in the United States in December 2003 substantially disrupted US beef exports to the major Pacific Rim beef markets of Japan and Korea. In most years, the United States is the largest supplier of imported beef for both markets. After the discovery of BSE in the United States, the Australia beef industry had an opportunity to increase its share of the Korean beef market. However, the volume of Australian beef exports to Korea in the first half of 2004 fell slightly because of reduced production in Australia and the apparent diversion of some exports to the Japanese market which had also banned the import of US beef.

In this report, the situation and outlook for production, processing, marketing and consumption of beef in both Korea and Australia are discussed. Within this context, policies affecting each industry are clearly important to the future development of these industries in both countries. Korea can be expected to become an ever more significant market for the Australian beef industry in the future. For its part, it seems likely that Korea will tend to look more to overseas sources for an increasing proportion of its beef consumption requirements.

## beef situation and outlook – Korea

Beef cattle production in Korea declined rapidly following the 1997-98 financial downturn in the region. The sharp depreciation of the Korean won meant that the cost of imported feed supplies escalated, reducing the profitability of the Korean domestic beef and dairy industries. The financial downturn also affected consumer incomes, resulting in decreased Korean beef consumption.

Uncertainty about the future market situation in Korea following partial liberalisation of barriers to imports in the latter part of the 1990s and the move to tariff-only controls on imports since 2001 contributed to some farmers abandoning beef cattle production. Between 1998 and 2002, Korean beef production fell by around 44 per cent to 147 400 tonnes (product weight basis, table 1).

As Korean supply declined, beef imports rose between 1998 and 2002. However, there was a short term decline in imports in 2001 as demand fell in response to publicity associated with discoveries of BSE in Europe.

In 2002, with improving economic conditions and growing consumer confidence, beef consumption recovered strongly. Further declines in domestic production in 2002 meant

### 1 Beef demand and supply situation – Korea

Product weight (boneless equivalent) basis

		1998	1999	2000	2001	2002
<b>Supply</b>						
Opening stocks	kt	46.6	42.2	39.0	73.5	18.0
Production	kt	264.1	226.9	214.1	162.6	147.4
Imports	kt	77.0	162.6	222.8	166.0	292.3
Total	kt	387.7	431.7	475.9	402.1	457.7
<b>Demand</b>						
Domestic consumption	kt	260.1	239.7	212.4	164.4	147.4
Import consumption	kt	85.4	153.0	190.0	219.7	255.3
Closing stocks	kt	42.2	39.0	73.5	18.0	55.0
Total	kt	387.7	431.7	475.9	402.1	457.7
Total consumption	kt	345.5	392.7	402.4	384.1	402.7
Consumption per person	kg	7.4	8.4	8.5	8.1	8.5
Rate of self sufficiency	%	75.3	61.0	52.8	42.8	36.6

Source: National Agricultural Cooperatives Federation, *Materials on Price, Supply and Demand of Livestock Products, 2003*.

that increased consumer demand for beef was met by rising imports. The volume of beef imported rose by 76 per cent in 2002 to a record 292 300 tonnes, valued at over US\$100 million.

The rapid reduction in the domestic beef cattle herd over the five years to 2002, combined with the strengthening of consumer demand for beef over the period, meant that domestic beef prices, and hence feeder calf prices, rose sharply. Given the biological lags in the cattle cycle, it is likely to take some years for Korean beef production to increase in response to higher prices.

Beef production in 2003 is estimated to have fallen by 5 per cent as farmers retained stock for breeding, while the volume of beef imported rose by 3.3 per cent. In 2004, beef production is forecast to rise by 8–9 per cent and is projected to continue rising by around this rate over the next few years (table 2).

Following the discovery of a case of BSE in the United States in December 2003 and subsequent ban on imports of US beef, the volume of Korean beef imports in 2004 as a whole is forecast to be 150 000 tonnes, half the volume imported in 2003. In 2003, US beef accounted for 68 per cent of Korean beef imports. Following the prohibition of beef imports from the United States, there is potential for Korean beef imports from Australia and New Zealand to increase. With the ban on imports of US beef in the Korean market assumed to be lifted around the end of 2004, US exports to Korea are forecast to recover gradually.

Korean consumption of beef per person is forecast to remain steady in 2004 at around 8.3 kilograms. Although beef imports are forecast to fall, higher domestic beef production and a substantial fall in beef stocks will allow consumption to remain largely unchanged.

## 2 Outlook for beef demand and supply – Korea

Product weight (boneless equivalent) basis

		2003 s	2004 z	2006 z	2008 z	2010 z
<b>Supply</b>						
Opening stocks	kt	55	100	0	44	50
Production	kt	140	152	164	182	195
Imports	kt	302	150	225	300	324
Total	kt	497	402	389	526	569
<b>Demand</b>						
Domestic consumption	kt	140	152	164	182	195
Import consumption	kt	257	250	225	296	322
Closing stocks	kt	100	0	0	48	52
Total	kt	497	402	389	526	569
Total consumption	kt	397	402	389	478	517
Consumption per person	kg	8.3	8.3	8.0	9.7	10.4
Rate of self sufficiency	%	35.3	37.8	42.2	38.1	37.7

s KREI estimate. z KREI projection.

## beef situation and outlook – Australia

The medium term outlook for beef and veal is dominated by two broad issues. On the supply side, the 2002-03 drought resulted in a significant cut to the Australian cattle herd. As seasonal conditions improve and pasture availability increases, producer efforts to rebuild herds will limit beef production in the short term. It is likely to take several years before cattle numbers recover to predrought levels.

On the demand side, the discovery of a single case of BSE in the United States has caused considerable, albeit temporary, shifts in demand for Australian beef in Australia's key export markets. However, supply constraints are limiting the extent to which Australia can alter its supply response in 2004. Overall, the discovery of BSE in the United States is expected to have short lived impacts in Australia's major export markets of Japan and the United States and demand for beef is expected to continue growing in these markets over the medium term.

With limited opportunities for further growth in Australian domestic demand and increasing production of beef and veal over the medium term, Australia's dependence on export markets will continue to increase. Trade patterns over the medium term will be influenced by issues such as further possible snapback tariff increases in Japan and growth in US market access under the recent Australia–United States free trade agreement.

### **Short term BSE influence on prices**

Australian weighted average saleyard prices are estimated to have averaged 287 cents a kilogram dressed weight in 2003-04 (July–June), up 12 per cent on the previous year (table 3). Prices for all classes of beef cattle (yearling, Japanese ox and cows) averaged higher through the course of the year. Principal reasons for the better prices were improved seasonal conditions leading to lower turnoff, strong export demand for manufacturing beef in the United States, and strengthened demand for young cattle and heavy steers for the Japanese market.

In 2004-05, saleyard prices are forecast to average 2 per cent lower at around 280 cents a kilogram (dressed weight equivalent) as restocker demand subsides and assuming that current Japanese and Korean bans on imported US beef are lifted by around the end of 2004. If the trade bans remain in place for a longer time, saleyard prices can be expected to average a little better than the forecast 280 cents a kilogram. The better than currently forecast prices would be the main impact of an extended trade ban because of the constraints on production in the short term due to herd rebuilding.

---

### 3 Outlook for the beef and veal industry – Australia

		2001-02	2002-03	2003-04 s	2004-05 f	% change a
Saleyard price (dressed)	Ac/kg	306	256	287	280	-2.4
Cattle numbers	million	27.9	26.5	26.3	26.9	2.3
– beef cattle	million	24.7	23.4	23.3	23.8	2.1
Slaughterings	'000	8 589	9 228	8 699	8 320	-4.4
Production	kt	2 028	2 073	1 992	1 958	-1.7
Exports (shipped weight)						
– United States	kt	403	350	352	348	-1.1
– Japan	kt	243	277	313	305	-2.6
– Korea. Rep. of	kt	71	82	77	75	-2.6
– total	kt	902	902	845	828	-2.0
– value	A\$m	4 189	3 756	3 675	3 512	-4.4
Live cattle	'000	797	968	519	550	6.0

a From 2003-04 to 2004-05. s ABARE estimate. f ABARE forecast.  
Source: ABARE, *Australian commodities*, June quarter 2004.

Over the medium term, saleyard prices are forecast to ease. With domestic restocker demand easing over time as herd rebuilding steadies, Australian beef prices will largely be determined on international markets.

While there will be short term volatility as a result of the trade bans, US beef prices are expected to decline moderately over the medium term as US production increases. However, an assumed depreciation in the Australian dollar between 2004-05 and 2008-09 will partially offset the impact on Australian export returns of declining prices in the Pacific Basin market. Australian beef saleyard prices are projected to average 230 cents a kilogram in 2008-09 in real terms (in 2003-04 dollars).

#### Herd rebuilding to constrain supply

Seasonal conditions across the country remain patchy, with drought still affecting some regions. High slaughter, particularly of cows and heifers during the drought, meant that many producers were either unable to rebuild herds or were forced to destock further because of poor pasture availability. With herd rebuilding delayed in some areas by the ongoing drought, cattle numbers are estimated to have been 26.3 million in June 2004, down slightly from the previous year. Assuming that seasonal conditions improve in 2004-05, more producers will begin to rebuild their herds. As a result, the Australian cattle herd is forecast to increase by 3 per cent by June 2005 to almost 27 million.

However, because of the widespread nature of the 2002-03 drought and its aftermath, and the biological lags in increasing breeding cow numbers — for instance, it takes at least two years for retained heifer calves to produce calves themselves — it is expected to take several years before cattle numbers recover to predrought levels.



Reasonably attractive returns from beef relative to alternative farm enterprises and assumed average seasonal conditions are expected to assist the rebuilding of herd numbers in the next few years. The national herd is projected to rise to 28.2 million by June 2009.

## **Domestic production**

In the short term, production will be constrained by lower overall cattle numbers, a reduced calf crop, and the retaining of stock to build herd numbers. Slaughterings are estimated to have fallen by 6 per cent in 2003-04 to 8.7 million. An increase in average slaughter weights, with fewer calves and fewer drought affected stock making up slaughter numbers, partially offset lower slaughterings. Production is estimated to have fallen by 4 per cent to 1.99 million tonnes in 2003-04. Herd building activity will continue to constrain slaughter in 2004-05, with production forecast to be down about 2 per cent on the preceding year.

Over the medium term, beef and veal production is forecast to increase in line with the expanded cattle herd. Increases in average slaughter weights, in part through greater fed cattle turnoff will also contribute to increased production. Beef and veal production is projected to be around 2.2 million tonnes in 2008-09.

Fed cattle turnoff reached a record 2.1 million in 2003, driven by a considerable increase in consumption of grain fed beef on the domestic market as seasonal conditions prevented cattle being finished to specifications on grass. While much of the increase was a response to drought, it is expected that domestic demand for grain fed beef will increase over time as quality and consistency characteristics become increasingly important to Australian consumers. Grain feeding for markets such as Japan and Korea is also forecast to increase over the outlook period to 2009 as demand in those countries improves. As a result, total annual feedlot turnoff is projected to reach 2.3 million by 2009.

## **BSE affects demand for Australian beef**

On 23 December 2003 a case of BSE was diagnosed in the United States. Traceback operations determined that the cow originated in Canada and authorities attempted to trace all of its cohorts that entered the United States. US authorities also implemented additional safeguard measures to prevent BSE infected material from entering the food chain, including the banning of nonambulatory cattle from slaughter for human consumption. In response to the discovery, many countries temporarily banned imports of US beef, including the key markets of Japan and Korea.

BSE can affect beef markets in two distinct ways. First, it can reduce beef demand as consumers reduce their consumption in response to food safety concerns. Second, it can affect export supply, altering international trade patterns as trade bans restrict exports from afflicted countries. For the case of BSE in the United States, it is the trade impacts that will have the greatest influence on Pacific Rim beef markets and, hence, Australian beef.

In recent years, the discovery of BSE in both Europe and Japan had considerable adverse effects on domestic consumer demand in the respective countries. In the case of Japan, consumption initially fell by over 50 per cent. Consumer confidence in these cases was

---

relatively slow to recover for a number of reasons, including multiple disease occurrences, limited consumer knowledge of food safety risks, and the relatively small role of beef in European and Japanese diets.

The May 2003 incident of BSE in Canada had little apparent impact on Canadian or US consumer demand for beef. In fact, an increase in domestic supply because of bans on Canadian beef imports by other countries and subsequent lower prices resulted in an increase in consumption of beef in Canada. The limited consumer reaction in this case can be attributed to a number of factors, including the small scale of the incident, greater awareness of the risks, confidence in the safety measures in place to prevent risk material entering the food chain, and the higher significance of beef in Canadian and US diets.

Based on events in Canada, it is not expected that the US case of BSE will have a significant negative impact on consumer demand in the United States. It has also been assumed that the US case of BSE will have minimal impacts on consumer demand for beef in other Pacific markets, including Japan and Korea.

Turning to the trade impacts, a ban on US exports has two broad effects on the Australian beef industry. First, supply is reduced in the key north Asian markets of Japan and Korea. Assuming that consumer demand is unaffected, the reduction in supply should result in an increase in demand for Australian beef (although total demand will remain unchanged) and higher prices for imported beef.

Second, the import bans will result in increased supplies on the US domestic market, possibly reducing demand for imported Australian beef and hence lowering prices for beef shipped to this market. The net effect of the US BSE incident on the Australian beef industry depends on the gains and losses in each market. For the duration of the trade ban there is likely to be some benefit to the Australian beef industry, with saleyard prices for cattle in Australia estimated to average around 8 per cent higher than would have otherwise been the case during the ban period.

## **Weaker US market**

Although the United States exports around 10 per cent of its beef production, in recent years it has been a net importer. Over the trade ban period, US exports are estimated to fall by around 90 per cent, with Canada remaining the only major importer of US beef.

Sharply reduced exports and only a modest decline in imports are forecast to result in an increase in domestic US consumption of about 7 per cent in 2004. US beef prices are forecast to decrease proportionally more, falling by 11 per cent. Prices of imported Australian 90CL beef may be slightly less affected because US supply increases will be in the form of grain fed beef (which would otherwise have been exported) rather than in pasture fed cow beef.

Australian beef exports to the United States are estimated have risen slightly in 2003-04 to 352 000 tonnes (shipped weight). The rise in exports to the United States reflects strong US demand for red meats and the fact that the bulk of Australian exports to that market are of

---

manufacturing beef that is not a perfect substitute for the grain fed beef that the US typically exports to Japan. Australian exports to the United States in the first half of calendar 2004 were down about 4 per cent from the corresponding period of 2003.

Assuming the United States resumes exporting from around the end of 2004, Australian exports of beef to the United States are forecast to fall 1 per cent to 348 000 tonnes in 2004-05. Driven mainly by higher Australian production, exports are projected to recover over the medium term. The recent US–Australia free trade agreement, will allow for some increase in shipments beyond the WTO Uruguay Round agreed tariff rate quota of 378 000 tonnes (product weight) a year. The trade agreement will also result in the lifting of the 4.4 US cents a kilogram tariff applied to in quota beef exports to the United States.

## **Gains in Japan**

The main gains for Australia from the BSE related banning of imports of US beef since the end of 2003 have been in the Japanese market. Around 45 per cent of Japanese beef imports are supplied by the United States. In the first half of 2004 exports to Japan from Australia were 38 per cent greater than in the first half of 2003.

Total Japanese imports during the ban period are estimated to be around 25 per cent lower than would otherwise have been the case. While there will be a very limited increase in domestic Japanese production and a rundown of stocks, it is expected that Japanese consumption would be around 15 per cent lower during the ban period than would otherwise be the case.

Because consumer demand for beef in Japan is relatively unresponsive to beef price, the proportional increase in price will be greater than the proportional decrease in consumption. Immediately following the implementation of the ban, wholesale prices for selected Australian beef cuts in Japan recorded price rises of over 50 per cent compared with pre-ban prices. It is estimated that the unit value for Australian beef exports to Japan will average around 25 per cent higher than pre-BSE expectations during the trade ban period as a whole.

There are a number of factors that limit the potential gains to Australia from the US beef ban in Japan, with the main one being the nonperfect substitution between Australian and US beef. US product is grain fed for long periods and the scale of the US beef industry allows the United States to send large quantities of specific cuts to overseas markets. The bulk of Australian trade consists of grass fed and short period grain fed beef and is typically shipped as full sets rather than specific cuts. While there is some capacity to increase grain fed beef production in Australia and divert some cattle on feed for the domestic market to the Japanese market, significant increases in fed beef production will not be possible in the short term because of the long feeding times required.

Australian beef exports to Japan are estimated to have risen by 13 per cent to 313 000 tonnes (shipped weight) in 2003-04. Beef exports to Japan in the first quarter of calendar 2004 were up 39 per cent on the corresponding months of the preceding year, and exports in the second quarter were up 37 per cent.

Australian beef exports to Japan are forecast to be down 2-3 per cent in 2004-05 as US beef re-enters the Japanese market. The volatility in Japanese beef imports over the short term may result in Japan's snapback provisions (which were in place up to 31 March 2004 on chilled beef imports) being retriggered. A resumption of US trade in 2004-05 could result in Japanese beef imports in the 2005 June quarter triggering the snapback provisions. However, this is not expected to have a significant longer term impact on growth in Australian exports to Japan. Beef exports to Japan are expected to increase over the medium term as Australian beef production increases and Japanese consumer demand continues to recover from the effects of the 2001 discovery of BSE.

### Exports to Korea low

Australian beef exports not destined for the major markets of Japan and the United States tend to be quite volatile, resting on the fortunes of the major markets. For instance, following the BSE incident in Japan in 2001, sharply lower demand in that market resulted in an increase in the proportion of Australian beef exported to small markets. Conversely, the very strong US market in the first half of 2003-04 resulted in a curtailing of shipments to the smaller markets. The strong demand from Japan following the trade ban imposed on the United States is likely to restrict exports to smaller markets during the ban period. Many of these smaller markets are also more open to competition from beef from countries such as Brazil, whereas countries such as Japan import from just a handful of countries because of its stricter biosecurity measures.

The most significant of the smaller markets is Korea. Exports to Korea for 2003-04 are estimated to have been 77 000 tonnes, down 6 per cent from the previous year because of lower Australian production and strong demand from other export markets. These factors seem likely to affect exports again in 2004-05, with exports to Korea forecast to ease by a further 3 per cent to 75 000 tonnes. Despite declining in 2003-04, Australian exports of beef to Korea actually rose by 6 per cent in the first quarter of 2004 to 18 300 tonnes, compared with the corresponding quarter of 2003, and exports in the April-June quarter were up 71 per cent to 29 000 tonnes.

Since the Asian financial downturn there has been a significant drop in beef production in Korea, with a halving of the cattle herd. Accordingly there has been increasing reliance on imported beef, which now accounts for around two-thirds of Korean beef consumption.

Increasing consumer demand over the outlook period driven by relatively strong economic growth and limited response from domestic beef producers will result in increasing demand for imported beef. This is expected to result in a higher proportion of Australian exports being shipped to Korea, with exports to that market projected to reach 103 000 tonnes in 2008-09.

### Live export markets

Limited supply caused by herd rebuilding, increased demand for cattle from domestic processors, weaker demand in the key export markets, particularly Indonesia and a sharp

appreciation in the Australian dollar are estimated to have resulted in exports of live cattle for slaughter falling in 2003-04 by 46 per cent to 519 000 animals.

In the second half of calendar 2003, there was a marked fall in live cattle exports, reflecting weaker demand. Exports of slaughter cattle in the six months to December were just 312 000 animals, down 48 per cent on the same period a year earlier. In the first half of calendar 2004, live exports from Australia, totaled 263 000, a fall of 29 per cent from a year earlier.

In Indonesia, ongoing drought conditions filled feedlots to near capacity, with increasing numbers of domestic cattle. As a result, Australian cattle exports to Indonesia in the six months to December 2003 were down by 40 per cent compared with the same period in 2002. Shipments to Indonesia in the first half of calendar 2004 were down 20 per cent (to 171 000) relative to the corresponding period of 2003.

In the Philippines, the strength of the Australian dollar relative to the peso affected the competitiveness of Australian cattle in that market and exports of slaughter cattle to the Philippines in the second half of 2003 were 29 per cent lower than in the same period of 2002. A total of 25 000 Australian cattle were shipped to the Philippines for slaughter in the first half of 2004, a fall of 45 per cent on the figure for the first half of calendar 2003.

Live cattle exports to Egypt (the second most important market after Indonesia in 2002) in 2003 were down 95 per cent from the previous year. The major factor contributing to the decline in demand for Australian cattle was a sharp depreciation in the Egyptian pound, which fell 60 per cent against the Australian dollar over the course of 2003. No Australian cattle were shipped to Egypt in the first six months of 2004.

Over the medium term, live exports for slaughter are projected to rebound and exceed the highs of 2002-03, reaching over 1 million cattle in 2008-09. This will be driven by a combination of income growth in southeast Asian markets, an easing Australian dollar and greater availability as herd expansion plateaus in Australia.

## beef production – Korea

The gross value of livestock production in Korea rose from around 6000 billion won in 1995 to over 8300 billion won in 2001 (table 4). The contribution of livestock production to the total value of agricultural production increased from 23.0 per cent in 1995 to 25.6 per cent in 2001.

In contrast to the broader picture, after the Asian financial downturn, the value of Korean native cattle (Hanwoo) production declined — from 31 per cent of total livestock value in 1997 to only 21 per cent in 2001. Of all the livestock industries, the Korean native cattle sector suffered the largest loss from the financial downturn.

Since the mid-1990s, there has been a reduction in the number of farms producing Korean cattle as well as in the total number of cattle (table 5). The number of farms carrying Korean native cattle fell by around 60 per cent over the seven years to 2002 — from 520 000 in 1995 to 212 000 in 2002 — while the total number of cattle fell over the same period. After reaching a peak of 2.8 million in 1996, the number of cattle halved to 1.4 million in 2002.

Historically, smaller scale farmers (under 10 animals per farm) have played an important role in breeding Korean native cattle, with most of these farmers producing both calves and crops.

### 4 Value of agricultural production – Korea

Nominal market prices

		1995	1996	1997	1998	1999	2000	2001
Livestock production (A)	billion won	5 958	6 934	6 903	7 515	7 937	8 082	8 312
– Korean cattle (B)	billion won	1 776	2 105	2 107	1 836	1 778	1 878	1 700
– dairy	billion won	1 103	1 162	1 025	1 161	1 455	1 423	1 500
– pigs	billion won	1 406	1 901	1 960	2 390	2 687	2 372	2 692
– chickens	billion won	773	769	773	858	768	821	863
– eggs	billion won	563	636	634	778	655	651	828
Cultivation	billion won	19 855	21 191	22 351	22 123	23 520	23 715	24 136
– rice	billion won	6 779	8 613	9 192	9 182	10 015	10 504	10 721
Agriculture (C)	billion won	25 855	28 129	29 258	29 638	31 857	31 828	32 447
Korean cattle share of total livestock (B/A)	%	29.8	30.4	30.5	24.4	22.4	23.2	20.5
Livestock share of total agriculture (A/C)	%	23.0	24.7	23.6	25.4	24.9	25.4	25.6

Source: Ministry of Agriculture and Forestry, *Statistical Yearbook of Agriculture and Forestry*, 2002, Seoul.

## 5 Livestock farm households and livestock numbers – Korea

	1995	1996	1997	1998	1999	2000	2001	2002
	'000	'000	'000	'000	'000	'000	'000	'000
<b>Korean native cattle (Hanwoo)</b>								
– households	520	513	464	427	350	290	235	212
– number of cattle	2 594	2 843	2 735	2 383	1 951	1 590	1 405	1 410
<b>Dairy cattle</b>								
– households	24	21	17	16	14	13	13	12
– number of cattle	553	551	544	539	535	544	548	544
<b>Pigs</b>								
– households	46	33	27	27	24	24	20	17
– number of pigs	6 461	6 516	7 096	7 544	7 864	8 214	8 720	8 974
<b>Poultry</b>								
– households	203	187	162	168	210	218	201	176
– number of chickens	85 800	82 829	88 251	85 847	94 587	102 547	102 392	101 693

Source: National Agricultural Product Quality Management Service, *Livestock Statistics, 2003*.

The proportion of farms that raise less than 10 cattle has fallen slightly from 88 per cent in 1995 to 86 per cent in 2002 (table 6) but the total number of cattle raised by farms in this category has fallen much faster from 52 per cent in 1995 to 33 per cent of the herd in 2002.

The proportion of farms that raise more than 30 cattle increased from 1.7 per cent in 1995 to 4.3 per cent by 2002. The share of the total herd that was raised by these larger farms also increased significantly over this period — from 17 per cent in 1995 to 44 per cent in 2002. The average herd size per farm increased because the total number of farms fell proportionally more than the number of cattle in the total herd.

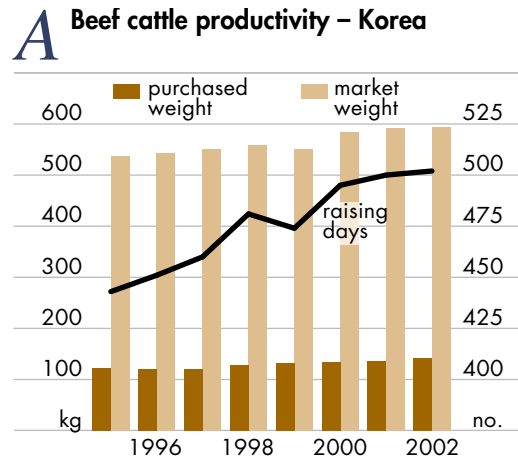
## 6 Distribution of cattle farms and total cattle numbers, by herd size – Korea

	1995	1996	1997	1998	1999	2000	2001	2002
	%	%	%	%	%	%	%	%
<b>Under 10 cattle</b>								
– households	88.1	86.0	85.5	87.5	87.9	88.6	87.9	86.2
– number of cattle	51.9	48.6	43.6	42.3	39.2	39.4	35.9	33.1
<b>10–29 cattle</b>								
– households	10.2	11.9	11.7	9.5	8.7	8.3	8.5	9.5
– number of cattle	31.5	33.1	31.1	26.6	24.7	24.1	23.1	23.0
<b>30 cattle and over</b>								
– households	1.7	2.1	2.8	3.0	3.3	3.1	3.7	4.3
– number of cattle	16.6	18.3	25.3	31.1	36.1	36.4	41.0	43.9

Source: National Agricultural Product Quality Management Service, *Livestock Statistics, 2003*.

## Productivity

Most beef cattle farmers purchase calves for beef production in cattle markets or from farms in their district. The average calf purchase weight increased from 122 kilograms in 1995 to 141 kilograms in 2002 and the average market weight increased from 538 kilograms to 593 kilograms during the same period (table 7). The major reason for the increase in market weight was that the number of raising days rose over the period in response to Korean consumers' growing preference for highly marbled beef (figure A). Increasing the number of raising days increases the amount of marbled fat in the beef.



A decline in productivity is evident with the longer raising period, however, as the average daily weight gain declined from 0.94 kilograms in 1995 to 0.90 kilograms in 2002.

## 7 Beef cattle productivity – Korea

		1995	1996	1997	1998	1999	2000	2001	2002
Purchased weight	kg	122	120	121	128	133	135	136	141
Market weight	kg	538	543	551	559	550	584	592	593
Raising days	no.	443	451	460	481	474	495	500	502
Daily gained weight	kg	0.94	0.94	0.94	0.90	0.88	0.91	0.91	0.90

Source: National Agricultural Product Quality Management Service, *Livestock Statistics*, 2003.

## Cattle slaughter

Until 1998, the total number of cattle slaughtered (Hanwoo beef cattle and dairy cattle) had been rising — from around 780 000 in 1995 to over 1.28 million in 1998 (table 8). Between 1998 and 2002, however, the number of cattle slaughtered annually halved with only 633 000 cattle being slaughtered in 2002. The number of Hanwoo cattle slaughtered increased by 76 per cent from 1995 to 1.02 million in 1998. After 1998, however, Hanwoo cattle slaughter fell by 56 per cent to 449 000 in 2002.

With the onset of the Asian financial downturn, the cost of raising cattle rose sharply and the number of cattle sent to market increased temporarily as farmers liquidated herds. But the decline in the number of breeding cattle subsequently resulted in an overall decline in the number of cattle available for slaughter. From table 8, it can be seen that the proportion of females in the total Hanwoo cattle slaughter increased sharply in 1997 (the onset of the Asian financial downturn) to over 50 per cent and remained relatively high until 2001. By the end of 2002, some herd rebuilding was evident, with the share of female cattle in the slaughter falling below 50 per cent in that year.



## 8 Cattle slaughter – Korea

		1995	1996	1997	1998	1999	2000	2001	2002
<b>Hanwoo cattle (A)</b>	'000	579.8	639.9	887.4	1023.2	911.5	816.9	550.5	448.6
– female (B)	'000	234.4	254.5	471.0	506.9	524.9	464.8	290.7	216.7
– male	'000	345.4	385.5	416.4	516.3	386.7	352.1	259.8	231.9
– female share (B/A)	%	40.4	39.8	53.1	49.5	57.6	56.9	52.8	48.3
<b>Dairy cattle (C)</b>	'000	189.0	193.0	213.4	233.7	171.0	165.1	164.5	173.7
– female (D)	'000	83.8	94.5	92.1	121.6	83.0	76.6	74.5	93.1
– male	'000	105.2	98.5	121.3	112.1	88.1	88.6	90.0	80.6
– female share (D/C)	%	44.3	49.0	43.2	52.0	48.5	46.4	45.3	53.6
<b>Total cattle (E)</b>	'000	779.8	849.7	1125.4	1282.3	1094.9	997.3	729.2	633.0
– female (F)	'000	322.2	354.5	574.0	643.3	613.3	547.7	369.0	313.5
– male	'000	457.6	495.2	551.5	639.0	481.6	449.6	360.2	319.6
– female share (F/E)	%	41.3	41.7	51.0	50.2	56.0	54.9	50.6	49.5

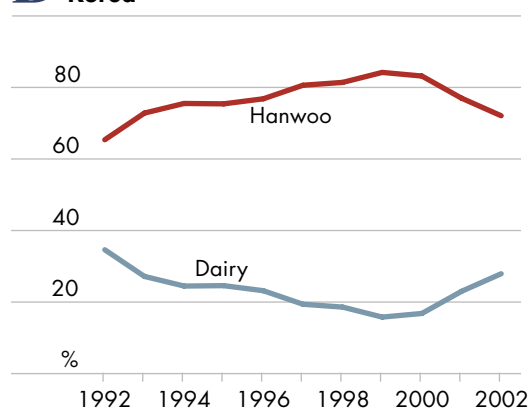
Source: National Agricultural Cooperatives Federation, *Materials on Price, Supply and Demand of Livestock Products, 2003*.

Hanwoo cattle comprised 71 per cent of total cattle slaughter in 2002, while dairy cattle comprised 27 per cent (figure B). For the past ten years, dairy cattle slaughter has averaged around a 22 per cent share of cattle slaughter for beef production. As beef cattle numbers have declined in recent years, the proportion of Hanwoo cattle in total slaughter has fallen.

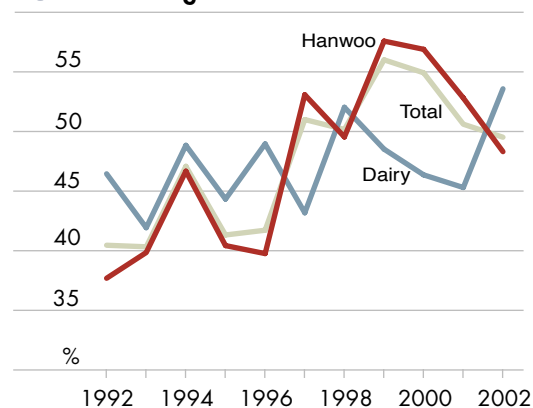
The ratio of females in the Hanwoo cattle slaughter is an important indicator of breeding intentions and, therefore, of any expansion or contraction in total cattle numbers. The proportion of female cattle in the total cattle slaughter, which was 40 per cent in 1992, had risen to 56 per cent by 1999 (figure C). In 2000 it fell to 50 per cent (table 8). In 2002, the ratio of female Hanwoo slaughter fell to 48 per cent as producers held on to more females to rebuild herds, encouraged by strong demand for calves and high calf prices.

The slaughter of dairy cows exceeded 50 per cent in 1998 and 2002 (figure C). In 1998, increased slaughter of older dairy cows occurred when higher penalties were applied for milk quality — the penalty for

### B Domestic beef production shares – Korea



### C Shares of female cattle slaughter to total slaughter – Korea



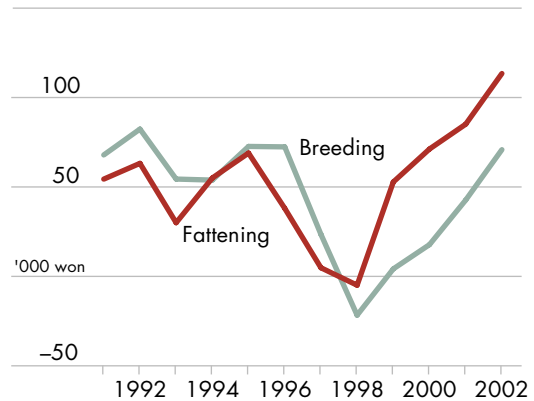
somatic cell 3 grade rose from 30 won to 60 won a kilogram of milk. In 2002, high stocks of powdered milk resulted in the dairy termination program being enforced.

### Farm incomes

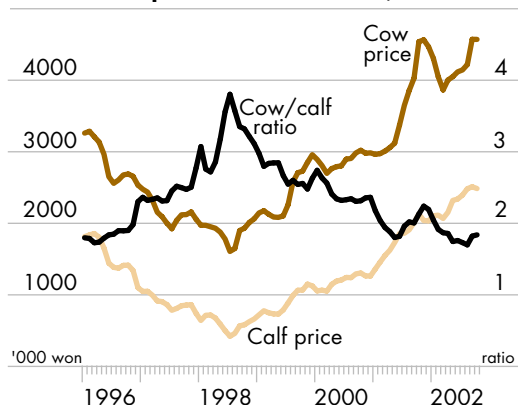
In Korea, Hanwoo producers tend to either be involved in breeding calves or involved in fattening cattle for slaughter. Before the Asian financial downturn, breeding farmers had higher income than farmers who fattened cattle (figure D). From 1991 to 1996, average monthly income from fattening activities was 51 600 won per animal turned off, while average monthly income for breeding farmers was 66 300 won per animal. But from 1999 to 2002, fattening activities were favored with average monthly income at 80 600 won per beast, while income from breeding activities had fallen to an average of 33 900 won per beast. Both activities returned negative incomes in 1998 as a result of the effects of the financial downturn (figure D). Fattening activities resulted in a loss of 4830 won per head per month and breeding activities resulted in a loss of 21 700 won per head per month. From a farm household perspective, since the Asian financial downturn, cattle fattening activities have been much more profitable than breeding activities (figure D).

During the downturn, prices fell for both calves for fattening and for adult cattle for slaughter (figure E). Because the industry moved into a contractionary phase, it was more profitable for farmers to sell cows than to have the cow produce a calf for sale. This resulted in the high rate of cow slaughter at that time and in the years following.

**D** Beef industry incomes – Korea monthly



**E** Cow and calf prices and ratio of cow to calf prices – Korea Monthly



## beef production – Australia

The livestock sector is one of the most important in the Australian rural economy, accounting for an estimated 47 per cent of the gross value of agricultural production in 2003-04 (table 9). The beef cattle industry (comprising cattle slaughtered and live cattle exported for slaughter) contributed some \$6.9 billion or close to 40 per cent of the gross value of livestock production. The beef cattle industry also makes a substantial contribution to Australian export earnings, with shipments of meat and live animals for slaughter valued at an estimated \$4.0 billion in 2003-04 — around 16 per cent of the value of all farm exports.

As at June 2003, there were around 71 000 farming establishments running beef cattle (table 10). The number of cattle on these farms was 23.6 million. The number of dairy cattle, which also contribute to beef production as cast for age cows and other surplus stock amounted to 3.0 million. Almost 12 000 farms ran dairy cattle in 2003.

### 9 Value of agricultural production – Australia

		1997	1998	1999	2000	2001	2002	2003
		-98	-99	-2000	-01	-02	-03	-04 s
Livestock (A)	A\$m	12 916	12 663	13 310	15 771	18 334	17 404	16 934
– beef cattle (B)	A\$m	4 138	4 477	5 048	6 431	7 143	6 413	6 918
– sheep	A\$m	1 066	1 054	1 054	1 402	2 117	2 039	2 267
– pigs	A\$m	710	690	792	822	968	911	854
– poultry	A\$m	1 054	1 019	1 031	1 060	1 175	1 273	1 229
– wool	A\$m	2 754	2 141	2 149	2 541	2 713	3 547	2 508
– milk production	A\$m	2 817	2 900	2 845	3 053	3 717	2 797	2 697
– other livestock	A\$m	377	384	392	462	501	423	461
Crops	A\$m	15 503	16 140	17 107	18 847	21 399	14 096	19 055
– grains and oilseeds	A\$m	6 621	6 922	7 893	8 448	10 596	5 023	9 591
– industrial crops	A\$m	3 508	3 466	3 402	3 803	3 955	2 943	2 788
– other crops	A\$m	5 373	5 752	5 812	6 596	6 849	6 130	6 676
Agriculture (C)	A\$m	28 418	28 803	30 418	34 618	39 733	31 499	35 989
Beef cattle share of total livestock (B/A)	%	32.0	35.4	37.9	40.8	39.0	36.8	40.9
Livestock share of total agriculture (A/C)	%	45.5	44.0	43.8	45.6	46.1	55.3	47.1

s ABARE estimate.

Source: ABARE, *Australian Commodities*, June quarter 2004.

## 10 Livestock farm households and livestock numbers – Australia

As at 30 June

	1996	1997	1998	1999	2000	2001	2002	2003
	'000	'000	'000	'000	'000	'000	'000	'000
<b>Beef cattle</b>								
– establishments	–	–	77.3	75.9	76.7	72.0	69.7	71.3
– number	23 569	23 736	23 776	23 358	24 448	24 504	24 739	23 615
<b>Dairy cattle</b>								
– establishments	–	–	15.5	15.3	14.8	13.8	11.9	11.9
– number	2 808	2 958	3 076	3 220	3 140	3 217	3 131	3 049
<b>Sheep</b>								
– establishments	–	–	54.7	52.9	53.2	49.8	48.1	47.2
– number	121 116	120 228	117 491	115 456	118 552	110 928	106 166	99 252
<b>Pigs</b>								
– establishments	–	–	3.9	3.5	3.4	3.5	3.2	2.9
– number	2 526	2 555	2 768	2 626	2 511	2 748	2 940	2 658
<b>Poultry</b>								
– establishments	–	–	–	–	1.4	–	1.3	1.2
– number	–	–	89 540	91 775	84 928	91 507	85 597	83 825

Sources: Australian Bureau of Statistics, Bulletins 7113.0, 7121.0.

While the size of Australia's beef herd is small when compared with countries such as the United States, Brazil and China, Australia is the largest exporter of beef in the world. In 2002 Australia exported 1.41 million tonnes (carcass weight equivalent) of beef — 22 per cent of all beef traded globally — while the United States, the next largest trader, exported 1.1 million tonnes (cwe).

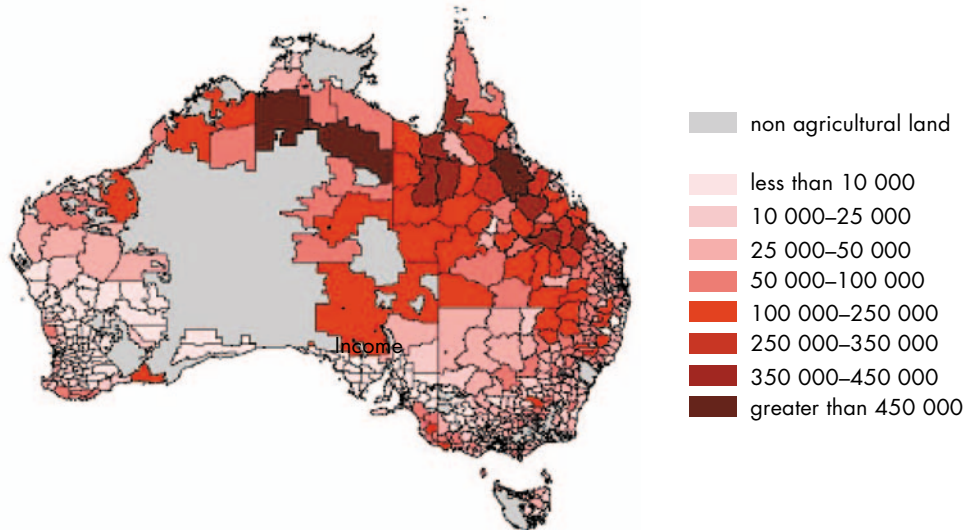
Beef cattle production is the most common enterprise on Australian farms. Properties running beef cattle can be found in almost all parts of Australia, except for the arid central area of Western Australia. Production is generally more intensive in the higher rainfall regions of the southern states. In northern Australia, the number of hectares needed per animal is much higher.

Australian beef and veal production takes place in two major production systems — the northern pastoral zone, where the year is marked by wet and dry seasons, and the high rainfall and wheat–sheep zones in southern Australia. The largest number of beef cattle are located in Queensland (map 1).

In the northern pastoral zone, cattle are run extensively on large holdings, grazing native pastures at low stocking densities. Cattle in the harsh northern conditions are principally of *Bos indicus* type such as Brahman, Santa Gertrudis and various related cross breeds. Given the vast size of properties in the north, and the fact that cattle grazing is the only broadacre activity carried out, average herd sizes per farm are generally higher in this zone than in other regions in Australia.

In the south, cattle are produced on smaller holdings, grazing largely on improved pastures. With the greater availability of pasture, stocking rates tend to be higher. However, because

## 1 Beef cattle numbers, by statistical local area (shire)



source: ABS preliminary Agricultural Census information 2001.

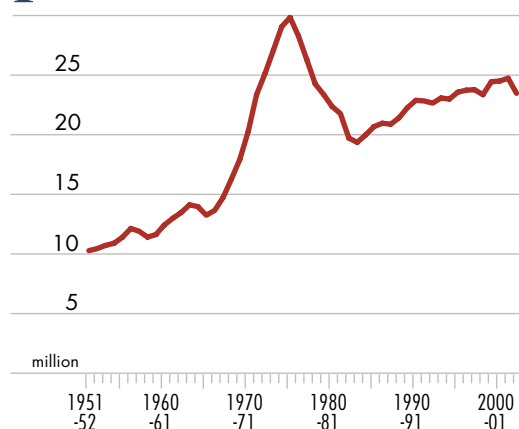
properties are generally smaller, herd sizes are smaller and hence the number of cattle turned off per farm is lower than in the northern cattle production system. Cattle in the south, are principally of *Bos taurus* type such as Angus, Hereford and Murray Grey. Beef production in the southern regions of Australia is often carried out alongside other broad-acre farming activities such as sheep grazing (for wool and/or sheep meat) and cropping.

The markets targeted by beef producers vary across the two production systems. Specialist beef properties in northern Australia produce slaughter cattle for the manufacturing beef market, store cattle for southern markets or feeder cattle for the feedlot sector. A large number of these properties also turn off cattle targeted at the live export trade. Properties in southern Australia generally sell younger cattle for slaughter to supply beef to the domestic market and to Korea and Japan. Southern properties also produce store cattle for feedlots, with cull cows from both beef and dairy farms being slaughtered for the manufacturing beef market.

### Trends in beef cattle numbers

Beef cattle numbers increased to a peak of 29.8 million in 1976 before declining to a low of around 19.4 million in 1984. Numbers since have generally increased (figure F). The number of beef cattle in Australia increased by 1 per cent from 24.5 million in June 2001

### F Beef cattle numbers – Australia



to an estimated 24.7 million at the end of June 2002. With the addition of an estimated 3.1 million dairy cattle, the total number of cattle in Australia at the end of June 2002 is estimated to have been 27.9 million.

During 2002 and 2003 Australia faced the most severe and widespread drought since at least 1982-83. All states and territories felt its impact and in some areas of Queensland, Western Australia and New South Wales, farms experienced more than two years of unusually low rainfall. Drought induced turnoff and increased cattle deaths are estimated to have resulted in beef cattle numbers falling by 1.2 million or around 4 per cent from 24.7 million at the end of June 2002 to 23.6 million at the end of June 2003.

## Australian beef production systems

The Australian beef industry has developed a number of beef production systems in order to meet demands from various domestic and overseas markets. For example, producers may turn off young cattle for the domestic meat market, store cattle for the feedlot industry or older cows for the manufacturing beef market.

### Grass fed beef production

Australia has a comparative advantage over other countries in the production of grass fed beef because land is abundant and relatively inexpensive. Production is based on both native pastures and improved or sown pastures. Sown pastures are usually of introduced plant species, with significant fertiliser inputs. Other sources of nutrients, including fodder and grain, are used to supplement the pasture based diet.

Four main production and fattening systems for grass fed beef are used in Australia. The first two account for most of the cattle turned off for slaughter. Many producers operate under two or more of the following systems.

#### ■ Breeding and fattening vealers

This system involves the breeding and fattening of vealer cattle of either sex that are turned off for slaughter at 6–12 months of age. The liveweight at turnoff ranges from 170 to 340 kilograms, resulting in carcass weights of about 90–180 kilograms. The carcasses are targeted primarily at the domestic market as table beef.

#### ■ Breeding and fattening older cattle

In this system male cattle of 12 months or more are produced and sold for slaughter. These cattle comprise yearlings (12–16 months, with live weights of 300–400 kilograms), steers (16 months to 3 years, with live weights of 400–540 kilograms) and bulls (more than 3 years old, with similar or heavier weights than for steers). Because of the range in ages, there is a wide variety in the weight of cattle turned off and in the degree of finish of the carcass.

#### ■ Breeding and selling store cattle

In this system, cattle (mainly males) are produced to the stage at which they require further fattening and possibly growing before slaughter. The system differs from the two above in that it is oriented to producing cattle to be sold as store animals instead of

being finished for slaughter on the farm on which they are bred. The range of ages is 1–2 years.

■ **Purchasing and fattening store cattle**

This system involves the purchase and fattening of the store cattle described above, turning them off for slaughter generally within 12 months. This type of system provides greater scope for flexibility than the first two fattening systems, where the cattle are bred on the property.

## Grain fed beef production

While pasture fed production dominates the industry, the use of feedlots as a means of finishing cattle for specific markets has developed dramatically from the mid-1980s. Feedlot production exists both in the north and south, close to grain growing areas. This sector provides high quality marbled product aimed primarily at Japanese consumers, with some beef fed for shorter periods also being suitable for the domestic market. The domestic market for grain fed beef is growing and currently accounts for 50 per cent of cattle on feed (table 11).

In Australia, cattle are usually placed in feedlots at around 12–22 months of age, with the period of feeding varying depending on the market being targeted. Production can range from between 60–70 days on feed for the domestic market, which prefers leaner beef, up to 300 days on feed to produce the highly marbled beef preferred in the Japanese market.

Lightweight feeder cattle (230–360 kilograms) are required for a wide range of domestic and export markets. Where markets such as the domestic, restaurant and Korean, require a shorter feeding period (70–120 days), both steers and heifers of most breeds and crosses are generally acceptable.

Feeder cattle for the long fed (150 days and 200 days plus) Japanese market are required to be about 360–500 kilograms live weight. They must be well grown 16–22 month old steers with good frame and muscling. Most feedlots prefer British breeds, particularly Angus, Murray Grey and Hereford to maximise marbling.

Large numbers of British breeds are fed for the 150 day markets where moderate marbling is required. For the short fed (100–120 day) markets, marbling is not as important and a wider range of breeds is suitable.

The feedlot system in Australia has been almost entirely confined to dry lot feeding. Cattle are fed mainly on grain sorghum, barley and, to a lesser extent, wheat and oats plus roughage.

### **11 Cattle on feed, by intended market destination – Australia** at 30 June 2003

	<b>Cattle on feed</b>	<b>Proportion of total</b>
	no.	%
Domestic	335 300	50.2
Japan	288 283	43.2
Korea	13 314	2.0
Other export	21 859	3.3
Unknown	8 839	1.3
<b>Total</b>	<b>667 595</b>	<b>100.0</b>

*Source:* Meat and Livestock Australia and Australian Lot Feeders Association.

There are two types of feedlot operations — commercial feedlots and ‘farmer’ or ‘opportunity’ feedlots. Commercial feedlots feed and turn off cattle all year round, with capacity for more than 1000 animals at a time, while opportunity feedlots are used on an intermittent basis and have much smaller feeding capacity. Many opportunity feedlots are set up with facilities for 200–300 animals. Whereas the commercial feedlots are heavily capitalised and rely on operational efficiency to generate returns, opportunity feedlots are highly flexible and can be used when cattle and grain prices are favorable or in time of drought.

Many commercial feedlots are used for ‘custom’ feeding — that is, cattle owners place their store cattle in the feedlots, and the feedlot owners do not own these cattle but charge a fee to the cattle owners. The custom feeding of cattle in feedlots is becoming increasingly important. Custom feeding is used by cattle producers, processors and investors who either want to retain ownership longer, source cattle earlier or merely profit from the value added opportunities in the beef production chain.

### **Feedlot situation**

As at 30 June 2003 Australia had around 667 600 cattle on feed. Around half of these cattle were located in Queensland, Australia’s largest state for lot feeding cattle. Prior to the 2002-03 drought, the lot feeding industry had been expanding in response to favorable beef prices, and low feed costs as a result of good growing conditions and abundant feed grain harvests. Feedlot turnoff grew from only 5 per cent of total adult cattle slaughter in 1990 to 23 per cent of adult slaughter in 2002-03.

There are currently 703 accredited feedlots in Australia, representing a total capacity of around 900 000 cattle (Australian Lot Feeders Association / Meat and Livestock Australia June 2003 survey). Of the total feedlot capacity, Queensland holds 50 per cent, New South Wales 36 per cent, Victoria 6 per cent, South Australia 2 per cent and Western Australia 5 per cent.

However, with the relatively less favorable market conditions experienced during 2002-03, the feedlotting sector operated well below capacity (73 per cent as at June 2003, compared with 82 per cent in June 2002). The reduction in feed lot capacity usage was largely brought about by high grain prices, continued weak Japanese demand, and the appreciation of the Australian dollar that adversely affected the competitiveness of Australian beef in export markets.

The lot feeding industry turned off approximately 2.1 million cattle in 2002-03 (July–June). The number of cattle on feed destined for the domestic market continues to increase, as beef demand remains firm, particularly for grain fed beef.

### **Live cattle**

The live export market sources cattle from both northern and southern production systems in Australia. The close proximity to south east Asian markets and the suitability of *Bos indicus* cattle to these markets and those of the Middle East and north Africa has resulted in enormous growth of the live export industry in northern Australia. This region, covering



the Northern Territory and the north western regions of Queensland and northern Western Australia, supplies 75–80 per cent of the live cattle trade.

Live cattle exports increased rapidly in the mid-1990s, encouraged by a growing Asian feedlot industry. The economic downturn in several south east Asian countries in 1998 dramatically reduced live cattle demand from the region, especially from the largest market, Indonesia. Some of the effects of the downturn in demand from south east Asia were offset by improved demand for live cattle in the north African and Middle East markets and cheaper freight costs. Market recovery in south east Asia in 1999 was led by Indonesia and the Philippines and resulted in live cattle exports returning to their pre-Asian economic downturn levels.

Results from ABARE’s survey of agricultural and grazing industries (ABARE 2003), reveal that almost all properties in the upper Northern Territory sell some live export cattle. In the Kimberley area of Western Australia around 65 per cent of properties sold live export cattle in 2001-02 and in the southern Northern Territory, north west Queensland and Pilbara region of Western Australia up to 30 per cent of properties sold cattle for live export.

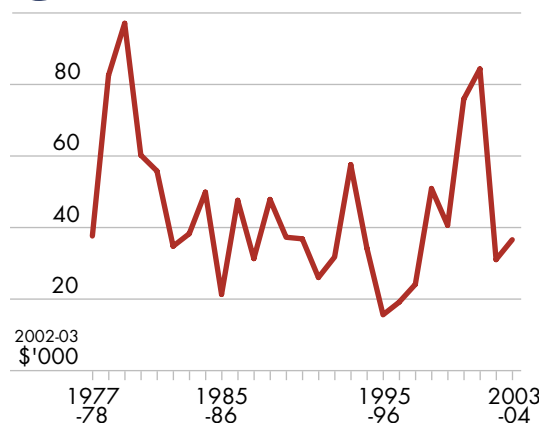
### Farm incomes

The beef industry covers properties engaged mainly in running beef cattle and accounts for around 60 per cent of Australia’s beef production. The beef industry contains a large number of small farms.

Beef cattle numbers decreased by around 4 per cent on beef industry farms in 2002-03 as a result of increased turnoff in response to drought. Death rates were low in comparison with many past droughts when there were fewer market opportunities and greater difficulties in moving livestock and fodder. Despite increased turnoff, total cash receipts fell because of lower saleyard prices and sales of unfinished stock (table 12). At the same time, total cash costs increased as expenditure on supplementary feeding and agistment increased and farm cash income declined by over 40 per cent from the historical high recorded in 2001-02 (figure G).

Beef cattle turnoff fell in 2003-04 as farms began to rebuild herds. So, despite higher saleyard prices, average beef cattle receipts per farm are estimated to have fallen for another year. Purchases of beef cattle increased by over 40 per cent, partly offsetting a reduction in fodder expenditure as pasture growth recovered. With total cash receipts having fallen by more than total cash costs, average farm cash income for specialist beef farms is estimated to have fallen for a second successive year — down by 11 per cent to around \$170 000 (table 12).

**G Beef farm cash income – Australia**



The extent of overall herd rebuilding in 2003-04 was subdued by continued drought into 2004 in Queensland, where around 50 per cent of Australia's beef cattle are located. The rate of turnoff of beef cattle in parts of northern and western Queensland increased in 2003-04. However, despite higher cattle prices and some building of inventory values as Australian cattle numbers held reasonably steady, average farm business profit is estimated to have been a negative \$14 000 (table 12).

## 12 Beef industry farm financial performance – Australia <sup>a</sup>

Average per farm

		2001-02	2002-03 <sup>p</sup>	2003-04 <sup>s</sup>
Total cash receipts	\$	256 670	216 800	201 000
Total cash costs	\$	176 600	182 100	170 000
<b>Farm cash income <sup>b</sup></b>	\$	80 080	34 700	31 000
– farms with less than 300 beef cattle	\$	9 870	9 600	2 000
– farms with 300–1200 beef cattle	\$	51 030	23 500	43 000
– farms with more than 1200 beef cattle	\$	346 200	140 500	114 000
<b>Farm business profit <sup>c</sup></b>	\$	31 050	–42 100	–14 000
– farms with less than 300 beef cattle	\$	–31 620	–48 400	–37 000
– farms with 300–1200 beef cattle	\$	10 080	–37 100	–500
– farms with more than 1200 beef cattle	\$	276 960	–30 500	46 000
Farm capital at 30 June <sup>d</sup>	\$	2 000 040	1 878 100	1 904 000
Farm debt at 30 June <sup>e</sup>	\$	153 820	131 500	146 000
Farm liquid assets at 30 June <sup>e</sup>	\$	74 110	109 900	na
<b>Rate of return <sup>f</sup></b>				
Excluding capital appreciation	%	2.2	–1.4	0.1
– farms with less than 300 beef cattle	%	–3.5	–6.4	–4.7
– farms with 300–1200 beef cattle	%	1.0	–1.3	–0.5
– farms with more than 1200 beef cattle	%	5.0	0.4	1.7
Including capital appreciation	%	6.9	6.8	na
Off-farm income <sup>g</sup>	\$	27 230	30 400	na

<sup>a</sup> Data are for specialist beef properties where the main enterprise is the running of beef cattle. <sup>b</sup> The difference between total cash receipts and total cash costs. <sup>c</sup> Farm cash income plus buildup in trading stock, less depreciation and the imputed value of operator partner and family labor. <sup>d</sup> Excludes leased plant and equipment. <sup>e</sup> Average per responding farm at 30 June. <sup>f</sup> Defined as profit at full equity, excluding capital appreciation, as a percentage of opening capital. Profit at full equity is defined as farm business profit plus rent, interest and lease payments less depreciation on leased items. <sup>g</sup> Off-farm income of owner manager and spouse, per responding farm. <sup>p</sup> Preliminary estimates. <sup>s</sup> Provisional estimates. **na** Not available.  
Source: ABARE 2004, *Australian Beef Industry Productivity and Financial Performance*, Australian Beef 04.1, Canberra, June.

# cattle marketing and beef distribution channels – Korea

## Marketing channels for cattle and beef

Beef is marketed through two channels — either through merchants that purchase cattle and market beef or through agricultural cooperatives. In the case of the first option, the producer sells cattle to the collection merchant, who has them slaughtered and sent to wholesale stores, and then to traditional meat shops or large shops (discount or department stores). Prices are negotiated between farmers and merchants, with payment occurring on the transfer of cattle. The second option is through agricultural cooperatives, with the farmer sending out cattle to an area cooperative association that lists cattle in wholesale market auctions. Beef from wholesale markets is sold through meat shops or large shops.

### *Merchant path*

producer ⇒ cattle market ⇒ merchant for slaughter ⇒ wholesale store ⇒ retailer ⇒ consumer

### *Agricultural cooperative path*

producer ⇒ agricultural cooperative ⇒ wholesale market ⇒ retailer ⇒ consumer

Using the Hoeng Seong region, the main Hanwoo producing area in Korea, as an example, about 70 per cent of cattle are sold to merchants through cattle markets or commission agents. Around 40 per cent of cattle are sold through cattle markets. Hanwoo meat distribution is heavily dependent on the merchant and wholesale store. About half of the product going through merchants is distributed through wholesale stores. About 20 per cent of sales are through regional agricultural cooperatives (Agricultural and Fishery Marketing Corporation, *Situation of Main Agricultural Product Marketing*, 2001).

## Cattle market

The number of Hanwoo cattle marketed fell to 515 000 in 2001 from 1.25 million in 1990 (table 13). At the same time the number of cattle markets decreased from 287 to 106. The number of Hanwoo sold per market increased from 4358 to 4855. Sales of Hanwoo cattle as a percentage of total cattle delivered to markets fell to 67 per cent in 2001 from 76 per cent in 1990.

## 13 Cattle markets – Korea

		1990	1995	1997	2000	2001
Number of cattle markets (A)	no.	287	159	143	128	106
Number of Hanwoo delivered to market (B)	'000	1 251	1 129	1 272	670	515
Number of Hanwoo per market (B/A)	no.	4 358	7 101	8 895	5 234	4 855
Annual sales of Hanwoo (C)	'000	951	789	888	435	345
Proportion of Hanwoo sold (C/B)	%	76.0	69.9	69.8	64.9	67.1

Source: National Livestock Cooperatives Federation.

Cattle market numbers are falling because the number of Hanwoo cattle delivered is also falling, and mergers and closures have occurred in the smaller cattle markets. The reason why Hanwoo numbers marketed fell is that in 1995 compulsory marketing of cattle through livestock markets was abolished. The number of Hanwoo marketed has decreased continuously since 1997.

## Slaughter houses and livestock processing complexes

The number of slaughter houses fell to 114 in 2001 from 179 in 1980. Average capacity utilisation of slaughter house equipment is low — cattle 23 per cent and pigs 46 per cent in 2001 (table 14). Capacity utilisation rates in private slaughter houses in 2001 were cattle 21 per cent and pigs 41 per cent; in local government operations they were cattle 14 per cent and pigs 18 per cent; and in cooperatives they were cattle 42 per cent and pigs 83 per cent.

Slaughter houses are mostly small in scale, equipment is outdated, and hygiene is often inferior. Slaughter fees are the main source of income. With slaughter taxes being paid to local governments, the decline in number of establishments means that tax revenues have also fallen.

A system of livestock processing complexes was established in 1994 to change the circulation system of beef carcasses and frozen meat to a system of chilled meat and branded

## 14 Slaughter houses, by form of operation, 2001 – Korea

	Number of slaughter houses	Slaughter capacity		Capacity utilisation <sup>a</sup>	
		Cattle	Pigs	Cattle	Pigs
		no./day	no./day	%	%
Private	102	9 209	92 659	20.7	41.0
Local government	4	118	361	14.4	18.3
Cooperative	8	232	12 148	42.3	82.5
Total	114	10 559	105 168	23.2	45.7

<sup>a</sup> Actual slaughterings relative to aggregate capacity of establishments.

Source: Ministry of Agriculture and Forestry, Livestock Workshop, February 2002.

## 15 Livestock processing complexes, by region – Korea

	Slaughter capacity		Slaughter capacity utilisation rate					
			2001		2002		2003(1/4)	
	Cattle	Pigs	Cattle	Pigs	Cattle	Pigs	Cattle	Pigs
	no./day	no./day	%	%	%	%	%	%
Ansung	110	2 250	28	63	16	46	18	66
Wonju	50	750	–	39	58	130	82	129
Cheongwon	160	2 000	50	69	45	74	39	76
Chechon	50	750	14	22	12	55	16	33
Hongsung	100	2 000	–	–	11	26	15	31
Kimjae	–	2 000	–	84	–	60	–	57
Iksan	120	2 000	–	–	–	18	–	30
Kunwi	100	1 500	10	30	16	83	5	53
Pohang	50	750	52	19	36	19	38	22
Total	740	14 000	20	38	23	53	23	54

Source: Ministry of Agriculture and Forestry.

meat. These complexes contract production from farmers, and then carry out the slaughter, processing and sale of brand name meat.

As at March 2003, there were nine livestock processing complexes in operation, with slaughter capacity for cattle of 740 a day and pigs 14 000 a day (table 15). Slaughter capacity utilisation in the first quarter of 2003 averaged 23 per cent for cattle and 54 per cent for pigs — about the same as for the whole of the preceding year. These processing complexes account for 34 per cent of total Korean cattle slaughter capacity and 27 per cent of pig slaughter capacity.

Currently, livestock processing complexes are suffering some financial difficulty because of the cost of meeting HACCP (Hazard Analysis and Critical Control Points) requirements and low slaughter throughput. The reason why their actual slaughter rates are low is that pork exports were discontinued because of the occurrence of foot and mouth disease. Small scale slaughter houses are discounting slaughter commissions in order to maintain capacity utilisation. Also, the burden of financing daily working expenses because of the time lag between raw material purchase and sale of product is a problem for many. Whereas payment for farmers takes about two days, receipts from sales of beef take one month for domestic sales, and seven days for exports to Japan.

### Livestock wholesale market

There were fourteen livestock wholesale markets in operation in 2001, with slaughter capacity of cattle of 2571 a day and pigs 22 374 a day (table 16). Average slaughter capacity utilisation rates per day were cattle 34 per cent and pigs 66 per cent. Capacity utilisation rates in private livestock wholesale markets were cattle 25 per cent and pigs 52 per cent, while in cooperatives they were cattle 47 per cent and pigs 82 per cent.

## 16 Wholesale markets, by operation, 2001 – Korea

	Number of wholesale markets	Slaughter capacity		Slaughter capacity utilisation	
		Cattle	Pigs	Cattle	Pigs
		no.	no./day	no./day	%
Private	7	1 510	12 000	25.4	51.8
Cooperative	7	1 061	10 374	47.2	82.3
Total	14	2 571	22 374	34.4	65.9

Source: Ministry of Agriculture and Forestry, Livestock Workshop, February 2002.

## 17 Auction shares in livestock wholesale market – Korea

	Wholesale number auctioned (A)		Total number slaughtered (B)		Proportion auctioned (A/B)	
	Cattle	Pigs	Cattle	Pigs	Cattle	Pigs
	'000	'000	'000	'000	%	%
1990	161	3 418	554	8 605	29.1	39.7
1995	180	3 224	798	10 178	23.0	31.7
2000	262	3 366	997	13 293	26.2	25.3
2001	234	4 482	728	14 333	32.2	31.2

Source: Ministry of Agriculture and Forestry.

The proportion of cattle and pigs auctioned declined between 1990 and 1995, but rose in 2000 and 2001 (table 17). The proportion of stock that went through wholesale markets in 2001 was 32 per cent of cattle and 31 per cent of pigs. The reason that the number increased in 2000 and 2001 was that, in the case of beef, prices offered by bidders rose because of reduced supplies. In the case of pork, with a halt to exports due to food and mouth disease in 2000, pork previously sent directly to meat processing companies flowed to the wholesale market. Whereas most of wholesale market is largely concerned with slaughter and auction functions, a high dependence on wholesale brokers means that there is limited direct sales activity.

As sales from wholesale markets are mainly of whole carcasses the added value is low. Recently the amount of meat cuts in circulation has increased. However, cut meat processing infrastructure at wholesale markets is generally poor and auctions of meat cuts are limited. For these reasons, the diversification of product from wholesale markets is limited.

## Beef retail sector

The number of beef retail shops increased from around 16 300 in 1980 to 52 000 in 1997. But after the 1997-98 financial downturn, the number of beef retail shops fell to around 48 300 in 2000, with the main type being traditional butchers (around 31 600) – table 18.

The system of separating domestic and imported sales was abolished in 2001, as agreed under the Uruguay Round Agreement on Agriculture. Previously, imported beef was handled only by import beef shops, including beef corners in department stores and discount stores. This represented discrimination against the marketing of imported beef. After 2001, all retail stores were permitted to sell domestic and imported beef simultaneously.

The scale of retail stores that sell beef is small. Up to now, small scale traditional meat shops were the leading retailers of meat. But the amount of meat sold through big stores such as supermarkets, discount stores, department stores etc, where one-stop shopping is available, is increasing quickly. Forward purchases of beef and sales by big retail stores may greatly influence the amounts of imported and domestically produced beef sold.

## Marketing imported beef in Korea

### History of beef imports

After Korea joined the GATT (General Agreement on Tariffs and Trade, superseded by the World Trade Organisation) in 1967, it maintained self sufficiency in beef until 1975. Korea imported 694 tonnes of beef in 1976, and imported live cattle in 1978. Both beef and live cattle were imported from 1981 to 1983. When prices of cattle slumped in 1983 and 1984, the government discontinued imports of beef and live cattle, but subsequently came under pressure from the US Government to reopen the market to imports. Korea resumed beef imports in July 1988. Later, by negotiation between Korea and the United States, and as a result of the Uruguay Round negotiations, a compromise settlement was reached in 1993 that provided for Korean beef and live cattle import liberalisation schedules.

Under the Uruguay Round Agreement on Agriculture, Korean beef imports were limited by quota between 1994 and 2000. The quota was increased to 225 000 tonnes in 2000 from 106 000 tonnes in 1994 (table 19). The SBS ('simultaneous buy and sell' tender system) part of the quota was raised from 20 per cent to 70 per cent over this period. The tariff rate was increased in 1995 as part of the Uruguay Round implementation, but was then subject to a scheduled reduction of 0.4 percentage points each year to 2004. Beef imports were subject to tariff-only measures from January 2001. The imported beef tariff rate was 41.2

## 18 Composition of livestock retail shops – Korea December 2000

	no.	%
Department store	195	0.4
Supermarkets	3 937	8.1
Discount store	538	1.1
Convenience store	157	0.3
Cooperative shop	1 085	2.3
Beef import shop	4 363	9.0
Restaurant	5 225	10.8
Traditional butchers	31 561	65.3
Other	310	0.6
Total	48 315	100.0

Source: Ministry of Agriculture and Forestry.

## 19 Beef import schedule from Uruguay Round negotiation – Korea

		1994	1995	1996	1997	1998	1999	2000	2001
Volume of quota	kt	106	123	147	167	187	206	225	na
SBS ratio	%	20	30	40	50	60	70	70	na
SBS volume	kt	21	37	59	84	112	144	158	na
Markup <sup>a</sup>	%	95	70	60	40	20	10	0	na
Tariff rate	%	20	43.6	43.2	42.8	42.4	42.0	41.6	41.2

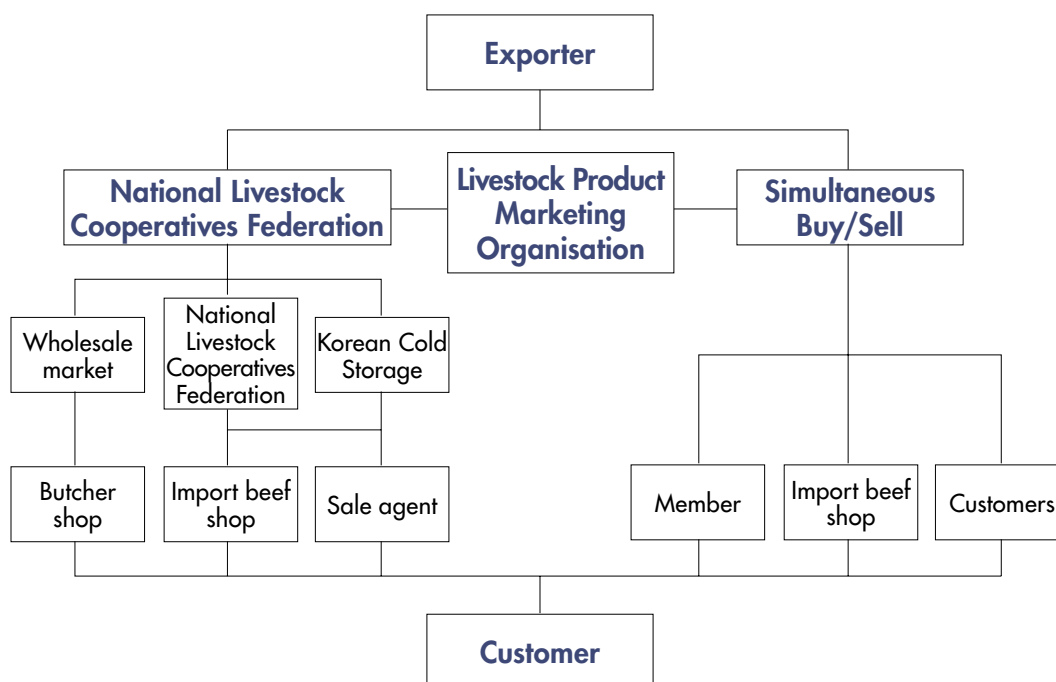
<sup>a</sup> Markup was imposed to narrow the gap between imported beef price and internal beef price. This amount was reduced as part of Uruguay Round Agreement. **na** Not applicable

per cent in 2001, scheduled to fall to 40 per cent by 2004. Live cattle imports were subject to tariff-only restriction (41.2 per cent and decreasing by 0.4 percentage points a year) from January 2001. Tariffs beyond 2004 are to be decided in the Doha round of WTO negotiations.

### Distribution channels for imported beef

Internal distribution of imported beef during the period when imports were subject to quota was divided between the NLCF (National Livestock Cooperatives Federation) channel with releases adjusted to stabilise domestic prices and the SBS (Simultaneous Buy/Sell) channel of private trade. Most of the SBS group’s imported beef was ordered by members and supplied from within the import quota allocated by government. After the move to

### Distribution of imported beef in Korea before import quotas abolished

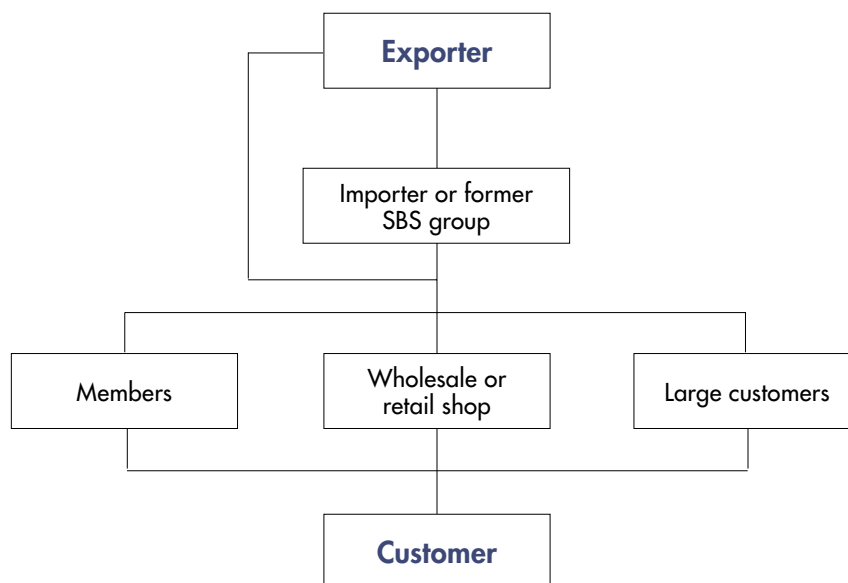




---

**Distribution of imported beef in Korea, after removal of import quotas**


---



tariff-only restraints on imports, the NLCF channel for adjusting demand and supply disappeared, with former members of the SBS group and new companies taking part in the imported beef market.

The essential differences in internal circulation of imported beef after the move to a tariff only system of import restraints were:

- Regulation of beef demand and supply disappeared.
- Former SBS members, wholesale shops and retail shops could directly import beef.
- Foreign suppliers could sell beef wholesale.
- At the retail level, imported beef shops disappeared, with all shops now permitted to handle domestic and imported beef.

### Beef imports, by nation

Except during the financial downturn in 1998 and the BSE events in Europe in 2001, Korean beef imports have increased every year. The main sources of beef imports are the United States, Australia, Canada and New Zealand (table 20). Imports from the United States and Australia accounted for about 90 per cent of the total volume of beef imported in 2003. Most of the beef imported from the United States is grain fed, while most of the beef imported from Australia is grass fed.

Whereas the amount of beef imported from the United States increased in 2003, that imported from Australia fell. The proportion of beef imported from the United States

---

## 20 Volume of beef imports, by country of origin – Korea <sup>a</sup> boneless

	United States		Australia		Canada		New Zealand		Total	
	kt	%	kt	%	kt	%	kt	%	kt	%
1994	63.4	50.3	43.9	34.8	1.6	1.3	17.1	13.6	126.0	100.0
1995	77.2	52.2	46.5	31.4	2.5	1.7	21.7	14.7	148.0	100.0
1996	77.3	52.6	45.7	31.1	3.7	2.5	20.3	13.8	147.0	100.0
1997	90.4	54.1	56.9	34.1	5.9	3.5	13.9	8.3	167.0	100.0
1998	49.0	56.2	30.2	34.6	4.0	4.6	3.9	4.5	87.1	100.0
1999	97.7	49.5	79.6	40.3	11.6	5.9	8.5	4.3	197.5	100.0
2000	131.5	55.3	70.3	29.5	18.6	7.8	11.2	4.7	237.8	100.0
2001	95.7	57.5	54.4	32.7	5.7	3.4	10.2	6.1	166.3	100.0
2002	186.6	63.9	76.8	26.3	11.6	4.0	17.2	5.9	292.2	100.0
2003	199.4	67.9	64.1	21.8	4.8	1.6	25.3	8.6	293.6	100.0

<sup>a</sup> Calendar years.

Source: Korea Meat Trade Association.

increased to around 68 per cent of total imports in 2003 from 50 per cent in 1994, but the proportion of beef imported from Australia decreased to around 22 per cent in 2003 from 35 per cent in 1994. Canada's share of Korean imports fell in 2003 because of the BSE related ban on product from Canada.

### Imports of chilled beef

The volume of chilled beef imports increased to nearly 8 per cent in 2003 from 0.01 per cent in 1995 (table 21). The reason why the volume of chilled beef imports are low is that the maximum period of circulation for this category of beef is 90 days under law. But when the period required for shipment and entry is taken into account, the actual circulation period may be only 45–60 days. Prior to 2002, chilled beef was not permitted to be sold after being converted to frozen beef. But amendments to the relevant law mean that since August 2002 chilled beef can be sold after being converted to frozen beef. Furthermore, a lack of infrastructure suited to chilled meat circulation did not favor the development of the trade. As a result of the changes in 2002, the risks associated with chilled meat circulation have decreased, with the result that imports of chilled beef are forecast to increase.

Australia's chilled beef share of exports to Korea, by volume, is higher than for other exporters. In 2003, 10 per cent of Australian exports to Korea were of chilled beef (table 22), compared with the US proportion of 8 per cent, Canada's 6 per cent and New Zealand's 0.4 per cent.

## 21 Imports of beef – Korea boneless

	Frozen beef (A)	Chilled beef (B)	Total (C)	B/C
	t	t	t	%
1995	147 787	8	147 995	0.01
1996	146 968	23	147 000	0.02
1997	166 937	49	166 986	0.03
1998	86 919	159	87 078	0.18
1999	195 649	1 837	197 489	0.93
2000	234 264	3 577	237 841	1.50
2001	160 937	5 336	166 273	3.21
2002	278 323	13 923	292 246	4.76
2003	270 829	22 777	293 606	7.76

Source: Korean Meat Trade Association.

## 22 Volume and value of chilled beef import by nation, 2003

C&F (cost and freight) basis, boneless

		United States	Australia	Canada	New Zealand	Total
Chilled						
– volume	kt (%)	16.0 (8)	6.4 (10)	0.3 (6)	0.1 (1)	22.8 (8)
– value a	US\$m (%)	87.9 (10)	33.7 (17)	1.6 (10)	0.6 (1)	123.9 (11)
Frozen						
– volume	kt (%)	183.4 (92)	57.7 (90)	4.5 (94)	25.2 (99)	270.8 (92)
– value a	US\$m (%)	759.0 (90)	162.2 (83)	15.3 (90)	66.4 (99)	1 002.9 (89)
Total						
– volume	kt (%)	199.4 (100)	64.1 (100)	4.8 (100)	25.3 (100)	293.6 (100)
– value a	US\$m (%)	846.9 (100)	195.9 (100)	16.9 (100)	67.0 (100)	1 126.8 (100)

Source: Korea Meat Trade Association.

On a value basis, in 2003, chilled beef accounted for 17 per cent of total Australian shipments of beef to Korea (table 22). The US chilled beef export value ratio to Korea was 10 per cent, Canada's 10 per cent and New Zealand's 1 per cent.

Imported beef is sold in ten selected cuts — rib, loin, chuck, shank, round, tenderloin, fore-shank, brisket, rump and striploin. Korean consumers prefer mostly ribs, and then chuck. In 2003, on a selected cuts basis, rib accounted for 55 per cent of total imports and chuck 20 per cent (table 23). Brisket was 6.8 per cent and loin 5.2 per cent. Ribs' share has generally remained over 50 per cent, while chuck's share has been increasing. Loin's share has decreased over time.

By selected cuts of imported beef, in 2003 the ratio of chilled beef imports for tenderloin was around 35 per cent, chuck 17 per cent, loin 15 per cent, striploin 11 per cent and rib 5.5 per cent (table 24). The proportion of chilled beef imports in most cuts rose after the

## 23 Volume of beef imported, by selected cuts – Korea

Boneless equivalent

	2001		2002		2003	
	kt	%	kt	%	kt	%
Rib	92.6	55.8	145.2	49.7	160.7	54.7
Loin	11.8	7.1	15.8	5.4	6.4	2.2
Chuck	12.5	7.5	54.1	18.5	58.3	19.9
Shank	5.8	3.5	11.3	3.9	9.6	3.3
Round	7.5	4.5	4.2	1.4	2.2	0.8
Tenderloin	2.2	1.3	2.5	0.8	2.4	0.8
Foreshank	8.8	5.3	14.0	4.8	14.8	5.0
Brisket	10.0	6.0	20.9	7.1	20.1	6.8
Rump	–	–	9.2	3.2	6.9	2.4
Striploin	–	–	1.5	0.5	2.0	0.7
Other	14.8	8.9	13.6	4.7	10.3	3.5
Total	166.0	100.0	292.2	100.0	293.6	100.0

August 2002 revision to the law requiring chilled beef to be frozen if not sold within 90 days. The weight of chilled beef imports in tenderloin increased from 24 per cent in 2001 to 35 per cent in 2003. The share of chilled beef in imports of rib increased from 0.8 per cent in 2001 to 5.5 per cent in 2003 (table 24).

## 24 Ratio of chilled beef imports, by selected cuts of beef – Korea

	2001	2002	2003
	%	%	%
Rib	0.8	2.8	5.5
Loin	12.0	6.1	15.2
Chuck	16.6	10.1	16.6
Shank	0.2	0.7	1.4
Round	2.5	2.0	6.0
Tenderloin	23.6	30.4	35.0
Foreshank	2.2	3.0	2.5
Brisket	0.7	2.3	2.5
Rump	–	4.8	10.1
Striploin	–	8.6	11.0
Other	1.0	8.1	4.3
Total	3.2	4.8	7.8

## Price of imported beef, by source

From a recent low in 2001 (the year of import quota removal), average prices of imported beef have risen. The average price of imported beef was US\$3.84 a kilogram in 2003, compared with US\$2.84 in 2001 (table 25). Import beef prices rose as the proportion of chilled meat imports increased. By nation, the price of beef imported in 2003 averaged US\$4.25 from the United States, US\$3.05 from Australia, US\$3.56 from Canada, and US\$2.65 from New Zealand. The principal reason for US and Canadian sourced beef being at higher prices than that from Australia and New Zealand is likely to be that US and Canadian beef is principally grain fed, whereas beef from Australia and New Zealand is mainly grass or pasture fed.

## Importer or import group

The total volume of beef imports increased by close to 90 per cent to 238 000 tonnes in 2000 from 126 000 tonnes in 1994 (table 20). The amount of beef imported under SBS arrangements increased by 684 per cent to 158 000 tonnes from 21 000 tonnes over the same period (table 26). Of SBS imports, Korean Meat Industries Association accounted for 23 per cent of the SBS volume in 2000, and Korean Cold Storage 17 per cent. The number of groups importing under SBS arrangements increased to thirteen in 2000 from six in 1994.

## 25 Average price of beef imports, by country of origin – Korea

	United States	Australia	Canada	New Zealand	Total
	US\$/kg	US\$/kg	US\$/kg	US\$/kg	US\$/kg
1994	3.99	2.93	3.85	2.96	3.48
1996	3.92	2.60	3.94	2.62	3.33
1998	3.18	1.80	2.94	2.24	2.65
2000	3.75	2.00	3.46	2.47	3.10
2001	3.21	2.33	2.92	2.15	2.84
2002	3.31	2.39	2.67	2.37	2.99
2003	4.25	3.05	3.56	2.65	3.84

Source: Korean Meat Trade Association

## 26 Beef imports, by SBS group and others – Korea <sup>a</sup>

		1994	1995	1996	1997	1998	1999	2000	2001
NLCF	tonnes	3 330	5 582	8 698	12 351	15 830	10 000	6 980	–
	%	15.7	15.1	14.8	14.8	14.1	7.3	4.4	
KCSC	tonnes	3 330	5 582	8 698	12 351	17 810	23 139	27 430	15 000
	%	15.7	15.1	14.8	14.8	15.9	16.8	17.4	9.0
KTHSC	tonnes	4 664	5 762	7 961	9 281	11 090	7 139	9 055	6 500
	%	22.0	15.6	13.6	11.1	9.9	5.2	5.7	3.9
KMIA	tonnes	4 676	7 118	7 420	12 491	16 710	30 836	36 190	300
	%	22.1	19.3	12.6	15.0	14.9	22.4	23.0	0.2
KOSCA	tonnes	3 200	8 644	10 073	13 887	12 700	5 673	15 150	6 000
	%	15.1	23.4	17.1	16.6	11.3	4.1	9.6	3.6
KRSC	tonnes	2 000	4 212	6 290	9 421	10 420	5 673	6 700	5 000
	%	9.4	11.5	10.7	11.3	9.3	4.1	4.3	3.0
KFMP	tonnes	–	–	6 660	9 458	12 020	14 120	15 190	4 134
	%			11.3	11.3	10.7	10.3	9.6	2.5
KLMC	tonnes	–	–	3 000	4 260	11 120	18 497	8 420	7 800
	%			5.1	5.1	9.9	13.5	5.3	4.7
KMPA	tonnes	–	–	–	–	6 000	11 230	13 540	–
	%					5.3	8.2	8.6	
CJ	tonnes	–	–	–	–	–	–	–	15 000
	%								9.0
LG	tonnes	–	–	–	–	–	–	–	2 000
	%								1.2
Other	tonnes	–	–	–	–	–	11 190	18 845	104 530
	%						8.1	12.0	62.8
Total	tonnes	21 200	36 900	58 800	83 500	112 200	137 497	157 500	166 273
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Ratio of SBS	%	20	30	40	50	60	70	70	100

<sup>a</sup> NLCF: National Livestock Co-operatives Federation; KCSC: Korean Cold Storage; KTHSC: Korean Tourist Hotel Supply Centre; KMIA: Korean Meat Industries Association; KOSCA: Korean Super Chain Association; KRSC: Korea Restaurant Supply center; KFMP: Korea Federation of Meat Purveyors; KLMC: Korea Livestock Marketing Cooperation; KMPA: Korea Meat Packers Association; Etc; in 1999: Meat Processing Cooperative (MPC), Uzo Industry(UI), Korea Import Meat Distribution Association (KIMDA); 2000: MPC, UI, KIMDA, Meat Mart Auction; 2001: former SBS members, wholesaler, large customer, and so on.

Source: M.K. Jeong et al. *An Analysis on Beef Marketing and Consumption Pattern after the Tariffication in 2001*, KREI, December 2002.

In 2001 the first year of beef imports under a tariff-only regime, the number of SBS groups decreased, and former group member companies such as CJ, and LG, became entrants to the new beef import market in their own right. As a result, the proportion of the beef import market held by KMIA (Korean Meat Industries Association) fell sharply to 0.2 per cent in 2001 from 15 per cent in 2000.

The situation of others in the SBS group, such as KCSC (Korean Cold Storage) was similar to that of KMIA. The proportion of KCSC in the beef import market decreased to 9.0 per cent in 2001 from 17.4 per cent in 2000; KOSCA (Korean Super Chain Association) to 3.6 per cent from 9.6 per cent; and KFMP (Korean Federation of Meat Purveyors) to 2.5

per cent from 9.6 per cent. Overall the proportion of beef imports through the former SBS group decreased to 37 per cent in 2001 from 88 per cent in 2000.

## Wholesaler and retailer purchasing and selling of imported beef

The wholesalers and retailers referred to here are large discount stores (both wholesale and retail) and department stores (retail only). The survey period was June–July 2002. The number in the sample was 54. The proportion of large discount stores in the survey was 58 per cent. This survey was conducted by the Korea Rural Economic Institute (KREI).

Wholesalers who are also involved in retail selling and who purchase imported beef from importers accounted for 45 per cent of total purchases. Those who import directly accounted for 19 per cent, and those who purchase imported beef from food wholesale companies accounted for 19 per cent. Wholesalers' frequency of purchase in a week averaged 3.5 times, and the average purchase amount was 593 kilograms (table 27).

When wholesalers purchase imported beef, the main factors that they consider in beef imported from Australia are freshness and safety (24 per cent), and price (18 per cent) (table 28). In the case of the United States the main factors are freshness and safety (21 per cent), and quality grade (20 per cent). When wholesalers buy Australian beef, it appears that they consider important the quality grade and whether it is chilled or frozen. Packaging was not considered important.

Wholesalers' preference for US beef appeared to be based on its popularity with consumers, and its quality. The quality ranking of US beef was mostly choice (62 per cent) and prime (36 per cent), and US beef was regarded more highly than Australian beef. When wholesalers purchase imported beef, one problem that they face is freshness management. Australian beef is regarded more favorably than US beef in this regard because of a perceived greater shelf life.

In evaluating the qualities of imported beef supplied to wholesalers, Australian beef was

### 27 Purchases of imported beef by wholesalers – Korea

	Purchase frequency per week
	%
None or one	22.4
Two or three	40.9
Four or five	22.4
Six or more	14.3
Average number of purchases	3.5 times
	Amount per purchase
	%
Less than 300 kilograms	36.2
300–700 kilograms	34.0
700–1000 kilograms	6.4
More than 1000 kilograms	23.4

### 28 Main factors considered by wholesalers when buying imported beef

	Australian beef	US beef
	%	%
Price	17.7	19.8
Quality grade	16.5	20.1
Chilled or frozen	16.5	12.1
Package	2.5	4.7
Freshness, hygiene, safety	24.1	20.6
Place of origin, brand	8.9	12.1
Other	13.8	10.6
Total	100.0	100.0

rated slightly lower than US beef in all areas except promotion (table 29). The US rated higher than Australian beef in timely supply of meat cuts, and hygiene control and safety of distribution process. The latter response seems possibly inconsistent with the greater importance that wholesalers place on freshness, hygiene and safety when purchasing Australian beef (table 28).

Based on the survey, it appears that wholesalers' beef purchase strategy is that if quality is good they will purchase beef, particularly Hanwoo beef, even if the price is high (table 30). In the case of imported beef, if price and quality are about middle or if quality is good and price is high, they will purchase such beef. Beef quality here is taken to mean high grade, and the meat is fresh and safe. Wholesalers think quality rather than price is important in imported beef as well as in Hanwoo beef. In the current beef grading system, grades are determined mainly according to degree of marbling. Some 61 per cent of wholesalers considered the current grading system to be suitable to evaluate beef quality, and that the system meets consumers' needs.

Over half of beef wholesalers reduced their total volume of Hanwoo beef sales since import quotas were removed in 2001 (table 31). However, about half of the wholesalers increased sales of branded Hanwoo beef. In

## 29 Evaluation of supply qualities for imported beef – Korea

On a 1–5 scale <sup>a</sup>

	Australian beef	US beef
Cutting beef suitable to Korean food culture	3.6	4.0
Timely cut meat supply	3.3	3.6
Uniformity of quality standard	3.3	3.5
Hygiene control and safety of distribution process	3.4	3.6
Information offer on production, marketing, price etc	3.3	3.4
Advertising, sale promotion activity and support	3.5	3.5

<sup>a</sup> Scale: 5 = very good, 4 = good, 3 = middle (not good, not bad), 2 = bad, 1 = very bad.

## 30 Wholesalers' beef purchase strategy – Korea

	Hanwoo beef %	Imported beef %
Even if quality drops, if price is cheap, purchase	5.5	5.6
Even if price is high, if quality is good, purchase	78.2	37.8
If price and quality are middle level, purchase	12.7	38.9
Other	3.6	18.5
Total	100.0	100.0

## 31 Volume of beef sales for wholesalers after moving to the tariff only import system in 2001 – Korea

	Increase %	Decrease %	No change %	Total %
Hanwoo beef	24.5	52.8	22.6	100.0
Hanwoo beef – brand	50.0	29.2	20.8	100.0
Imported beef – frozen	34.6	36.5	28.8	100.0
Imported beef – chilled	91.8	2.0	6.1	100.0

Source: M.K. Jeong et al., *An Analysis on Beef Marketing and Consumption Pattern after the Tariffication in 2001*, KREI, December 2002.

## 32 Beef sale plans of wholesalers after liberalisation – Korea

	Increase	Decrease	No change	Total
	%	%	%	%
Hanwoo beef	32.1	26.4	41.5	100.0
Hanwoo beef – brand	62.1	6.9	31.0	100.0
Imported beef – frozen	28.6	57.1	14.3	100.0
Imported beef – chilled	96.0	2.0	2.0	100.0

Source: M.K. Jeong et al., *An Analysis on Beef Marketing and Consumption Pattern after the Tariffication in 2001*, KREI, December 2002.

the case of imported beef, 92 per cent of wholesalers increased chilled beef sales and two-thirds either decreased or kept constant their sales of frozen beef.

The observed behavior of wholesalers contrasts with their stated plans at about the time of beef import liberalisation. About 32 per cent of respondents indicated that they would increase sales of Hanwoo beef and 62 per cent had plans to increase sales of branded Hanwoo beef (table 32). Some 57 per cent of respondents had plans to reduce sales of frozen imported beef, and most (96 per cent) had plans to increase sales of chilled imported beef.

With respect to marketing margins of imported beef and Hanwoo beef, most respondents (91 per cent) replied that the margin was greater for imported beef than Hanwoo beef, and that the marketing margin of imported beef was, on average, 1.4 times that for Hanwoo beef.



# cattle marketing and beef distribution channels – Australia

## Cattle marketing

### Cattle production

ABARE conducts annually an Australian agricultural and grazing industries survey that provides a unique farm database combining physical, financial and socioeconomic information.

Of the 67 900 farms represented in the 2001-02 survey, an estimated 17 500 farms were engaged in mainly running beef cattle. These properties are termed ‘specialist beef properties’. A further 22 000 properties in the surveyed broadacre industries ran more than 50 beef cattle but were engaged mainly in enterprises other than beef cattle. These properties are termed ‘nonspecialist beef properties’. Specialist beef properties carried 62 per cent of Australia’s beef cattle in 2001-02 and nonspecialist beef properties around 27 per cent. In addition, properties with fewer than 50 beef cattle (in the surveyed industries) carried a further 1 per cent of the national beef herd.

Overall it is estimated that the survey covered a total of around 23 million beef cattle (around 91 per cent of the national beef herd) in 2001-02. The remaining beef cattle not covered by the survey, or 9 per cent of the national beef herd were on dairy farms, farms with an estimated value of operations less than \$22 500, in feedlots, and on properties in other industries not covered by ABARE’s surveys.

Dairy farms are an important source of beef cattle for slaughter in southern Australia. Estimates from ABARE’s Australian dairy industry survey indicate that around 434 000 beef cattle, or around 2 per cent of the national beef herd, were held on dairy farms in 2001-02. Small beef herds are often run by dairy farmers in conjunction with their dairy herd and many dairy farmers often mate cows from the dairy herd with a beef breed bull. The resultant crossbred calves are reared either as vealers or as yearlings. Farmers in industries other than dairying raise a proportion of these cattle up to slaughter weight. Cull dairy cows and bobby calves (less than a week old) also contribute to the total slaughter of cattle in Australia. In 2001-02, dairy farmers sold an estimated 1.6 million cattle for slaughter comprising 250 000 beef cattle, 1 million bobby calves and 320 000 cull dairy cows. In total, cattle sold for slaughter by dairy farmers accounted for an estimated 18 per cent of the national cattle slaughter in 2001-02.

---

## Cattle sale methods

Over the longer term, changes in the distribution of property size and the distribution of the beef herd across beef production region are likely to have had a significant effect on survey estimates of cattle selling methods. Large producers are more likely to sell over the hooks or over the scales live weight. Smaller producers, who are largely in the higher rainfall areas of the southern states, are much more likely to use the traditional auction system as opposed to other selling methods. Smaller producers, often with limited quality control systems prefer liveweight and saleyard selling systems where they are not directly penalised for poor carcass quality.

Sale by auction remains the most common method used to sell beef cattle in Australia. But the proportion of beef cattle sold per farm through the auction system has declined over the long term — dropping from as high as 51 per cent in 1996-97 to as low as 42 per cent in 2001-02 (table 33). Auction sales accounted for a relatively large proportion of total beef cattle turnoff per property, particularly in the southern states because a wide variety of live-

### 33 Methods of selling beef cattle – Australia <sup>a</sup>

	1996-97	1997-98	1998-99	1999-2000	2000-01 p	2001-02 p
	%	%	%	%	%	%
Paddock sales	9 (13)	9 (16)	8 (15)	12 (16)	12 (19)	10 (18)
Over the hook sales	24 (13)	28 (7)	33 (9)	25 (11)	26 (10)	27 (10)
Auction sales	51 (6)	45 (5)	43 (7)	46 (7)	48 (6)	42 (7)
Over the scale	8 (19)	11 (15)	7 (27)	9 (30)	8 (20)	12 (21)
Transfers off farm	7 (17)	8 (17)	8 (23)	8 (37)	6 (20)	10 (24)

<sup>a</sup> Figures in parentheses are standard errors expressed as percentages of the estimates.

Source: ABARE 2003, *Australian Beef Industry*, Canberra.

### Cattle sale methods

**Paddock sales:** Buyers inspect stock on the producer's property, price is negotiated on a dollars per head basis, and ownership is generally transferred at the farm gate. This method is used for stud, store and slaughter sales.

**Over the hooks:** Cattle are sold direct to the abattoir, with ownership usually transferred at the point of slaughter. Prices offered are based on categories such as age, weight, fat score, etc.

**Auction sales:** Stock are sold by open auction on either a dollars per head basis or, if stock are weighed, on a cents per kilogram live weight basis. Auction sales are usually conducted at council saleyards, although they may also be held on the farm. Ownership is generally transferred at point of sale. This method is used for stud, store and slaughter sales.

**Over the scales:** Stock are sold on a cents per kilogram live weight basis. This method is generally used for slaughter sales.

**Other sale methods:** These include various computer or video aided selling methods. These methods are used mainly for slaughter and store cattle sales.

stock can be sold by this method (for example, stud and store stock, and slaughter cattle). The proportion of auction sales was temporarily higher in 1999-2000 and 2000-01, with the recent increase reflecting a temporary shift by producers, especially in Queensland, to turning off cattle through the auction during a period of higher cattle prices.

The proportion of over the hooks sales has varied from year to year according to producer preferences, especially in Queensland. The proportion of over the hooks sales in Australia increased from a low of 24 per cent in 1996-97 to an historical high of 33 per cent in 1998-99. Over the hooks sales declined to 27 per cent in 2001-02 as producers switched to using paddock sales and the auction system to turn off beef cattle.

## **Meat processing**

There are around 250–300 meat processors (beef and sheep meat) in Australia. The largest 25 processors located across Australia process around 60 per cent of production. Boning (where bones are removed from slaughtered carcass) is done primarily at the abattoir where the animal is killed. A substantial part of Australia's overseas trade in beef is in the form of boneless meat.

Increasingly, large producers are retaining ownership of their beef beyond the farm gate and marketing it under their own brands. Therefore they use toll processors. Processors are looking to embark increasingly on value based livestock selling and marketing. Increasing integration up and down the value chain is reducing the role and influence of a separate wholesale function in Australia meat supply.

Because of the large scale of major processing establishments, barriers to new entrants (in terms of required capital, access to export markets and access to sufficient throughput of carcass volumes) are relatively high. A high degree of foreign investment in beef processing is a feature of the Australian industry.

## **Beef distribution**

Fresh beef is sold through major supermarket chains and butcher shops. Of the beef marketed domestically, 68 per cent is marketed through the retail sector, while 27 per cent is marketed through the food service sector (92 per cent of which is through commercial food service outlets and 8 per cent is distributed through institutional food service providers). The remaining 5 per cent is marketed to the processing sector to be further transformed into other food products.

Supermarkets account for 64 per cent of all retail sales of beef, with the main firms being: Woolworths (around 30 per cent of total domestic sales); Coles (around 20 per cent of sales); and Bilo (a little under 10 per cent of sales). Butcher shops account for 29 per cent of retail sales and 7 per cent of beef sales are retailed through other outlets.

The large retailers possess significant capacity in processing that provides them with scope to improve their control over product quality, packaging and the overall returns from the sale of different parts of the carcass.

---

## consumption trends and consumer preferences – Korea

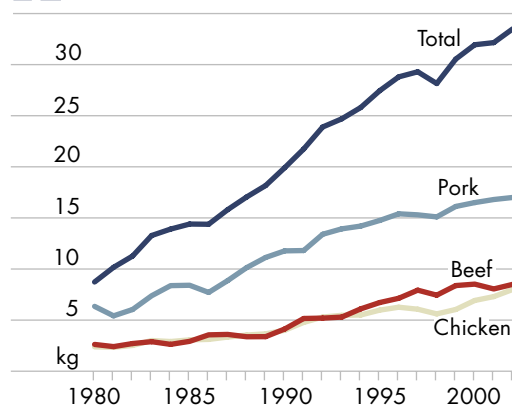
### Trends in beef consumption

Total consumption of meat in Korea has increased strongly over the past two decades (figure H). Total consumption of meat per person increased by 5 per cent a year from 11.3 kilograms in 1980 to 33.5 kilograms in 2002 (table 34). Beef consumption per person in Korea increased from 2.6 kilograms in 1980 to 8.5 kilograms in 2002, a yearly average increase of 5.5 per cent. Pork consumption per person increased from 6.3 kilograms in 1980 to 17.0 kilograms in 2002, a yearly average rate of increase of 4.6 per cent. Chicken consumption per person increased by an average of 5.7 per cent a year from 2.4 kilograms in 1980 to 8.0 kilograms in 2002.

Examination of rates of consumption increase in the 1980s and 1990s reveals that beef consumption accelerated in the latter decade (table 34). Between 1990 and 1999 per person consumption rose by 8.2 per cent a year on average, while consumption of pork and chicken increased at slower rate than in the preceding decade.

Such behavior is consistent with estimates by Lee et al. (1999) that demand for beef was more responsive to income growth than was the case for the other two meats. A 1.0 per cent rise in expenditure is estimated to have resulted in consumption of beef rising by 1.3 per cent, chicken by 0.4 per cent and pork by 0.3 per cent (table 35). This result implies that as income increased, an upward trend in beef consumption occurred. These relationships are expected to be largely maintained into the medium term future, with further rises in income per person giving rise to greater consumption of beef. Consumption is also sensitive to prices of each meat and of substitute meats. For example, when beef prices rose by 1.0 per

### H Meat consumption per person – Korea



### 34 Average annual rate of increase in meat consumption per person – Korea

	Beef	Pork	Chicken	Meats
	%	%	%	%
1980 to 1989	2.9	6.4	4.9	5.4
1990 to 1999	8.2	3.6	4.7	4.9
1980 to 2002	5.5	4.6	5.7	5.0

### 35 Price elasticity of demand for meat – Korea <sup>a</sup> Change in consumption for a 1.0 per cent change in price or consumer expenditure

	Price				Expend- iture
	Beef	Pork	Chicken	Other food	
	%	%	%	%	
<b>Consumption</b>					
Beef	-0.621	0.215	0.037	-0.891	1.261
Pork	0.248	-0.352	0.001	-0.163	0.266
Chicken	0.210	0.003	-0.294	-0.296	0.378
Other food	-0.012	-0.015	-0.003	-0.980	1.010

<sup>a</sup> Model: LA/AIDS, data: 1976-98 time series.  
Source: Lee et al. (1999)

cent, beef consumption decreased by 0.6 per cent, and when pork prices rose by 1.0 per cent, beef consumption increased by 0.22 per cent as demand for pork fell.

Lee et al. also found that if imported beef prices rose by 1.0 per cent, imported beef consumption decreased by 0.9 per cent; if domestic beef prices rose by 1.0 per cent, imported beef consumption increased by 1.4 per cent. When income increased by 1.0 per cent, consumption of imported beef rose by 1.1 per cent.

### Beef purchase patterns

To analyse consumers' purchasing patterns for beef, a survey of households was conducted in the capital region (Seoul, Kyonggi). The survey period was 1–15 July 2002. The number in the sample was 700, with a response rate of 86 per cent. The survey was conducted by the Korea Rural Economic Institute.

When consumers purchase beef, the main factors indicating quality were freshness and safety (42 per cent). Other decision factors were whether the beef was imported or Hanwoo (38 per cent), and quality grade (9 per cent). But Lee et al. (1999) showed that consumers rank color of meat higher than hygiene and safety of meat. From the more recent study, it seems that consumers' interest in hygiene and safety of beef rose significantly after the mad cow disease event in Europe in 2001.

### 36 Place of purchase and consumers' preferred cuts of Hanwoo beef – Korea

	Place of purchase
	%
Large supermarket	20.5
Large discount store	13.2
Traditional butcher	33.8
Department store	14.2
Cooperative shop	16.3
Other	2.0
Total	100.0
Number of responses	600
	Preferred cuts (cooking method)
	%
Rib (braised, grilled spare ribs)	18.2
Chuck (roast)	12.8
Brisket (soup)	29.7
Loin (grilled, steak)	16.5
Tender loin (grilled, steak)	11.5
Other	11.2
Total	100.0
Number of responses	593

## Hanwoo beef

In the 2002 KREI survey, it was found that households buy Hanwoo beef once (34 per cent) or twice (24 per cent) a month in 600 gram lots. Around 26 per cent of households buy Hanwoo beef more than four times a month. Most (75 per cent) of the Hanwoo beef that households buy is chilled meat. More households preferred unpackaged Hanwoo beef to packaged Hanwoo beef. The stated reason that consumers prefer chilled Hanwoo beef is that it is fresh (50 per cent) and tasty (47 per cent). The reason that consumers prefer unpacked meat is because they think that unpacked meat is fresher and of higher quality than packed meat.

Consumers buy Hanwoo beef from traditional butchers (around 34 per cent) and large supermarket (21 per cent) mainly (table 36). When consumers buy Hanwoo beef, the preferred cut was brisket (nearly 30 per cent) for soup making, and rib (18 per cent).

## Imported beef

Respondents to the 2002 survey mainly bought imported beef once (53 per cent) or twice (21 per cent) a month in 600 gram lots. Around 5 per cent of households buy imported beef more than four times a month. Most (78 per cent) of the imported beef that households buy is frozen. In terms of intentions, 51 per cent of consumers with previous experience in buying chilled meat would buy chilled imported beef again. Households preferred packed imported beef to unpacked imported beef, something that contrasts with their preference for Hanwoo beef.

Consumers buy imported beef mainly in large supermarkets (33 per cent) and large discount stores (22 per cent) (table 37). When consumers buy imported beef, the cut of beef that they prefer was rib (45 per cent) and chuck (13 per cent) for roast. The reason that consumers buy imported beef was because the price is cheap (47 per cent) and uncertainties about whether Hanwoo beef was correctly labeled or described (27 per cent).

## Consumption patterns when eating out

In this section, the consumption patterns of households that ate out alone or with family within one month of the survey starting time are discussed.

### 37 Place of purchase and consumers' preferred cuts of imported beef – Korea

	Place of purchase
	%
Large supermarket	33.2
Large discount store	21.7
Traditional butcher	19.1
Department store	16.7
Brand shop	3.8
Other	5.4
Total	100.0
Number of responses	497
	<b>Preferred cuts (cooking method)</b>
	%
Rib (braised, grilled spare ribs)	45.0
Chuck (roast)	13.0
Brisket (soup)	11.2
Loin (grilled, steak)	8.4
Tender loin (grilled, steak)	8.1
Other	14.2
Total	100.0
Number of responses	491

Where consumers' eating out frequency was more than once a month, the proportion who answered that they ate beef more than once a month when eating out was around 10 per cent. The proportion that eat out more than once every two months, and answered that the frequency with which they eat beef when eating out was 35 per cent. The place that they eat beef was mainly Korean restaurants (50 per cent) and Hanwoo beef specialized restaurants (38 per cent).

The average proportion of respondents who eat beef when eating out was nearly 31 per cent. The proportion of household consumers who answered that they eat beef more than 60 per cent of the time when they are eating out was 17 per cent (table 38). The cut of beef preferred when eating out was ribs (60 per cent), followed by loin (15 per cent).

### Willingness to pay

In June 2002 the retail price of beef per 600 grams was: Hanwoo rib 23 400 won, imported rib 5340 won, first grade Hanwoo loin 32 400 won, second grade Hanwoo loin 27 600 won and imported beef loin 11 340 won. Most consumers regarded Hanwoo beef as expensive relative to imported beef.

## 38 Frequency of eating beef when eating out and preferred cut – Korea

<b>Response rate</b>	
	<b>%</b>
<b>Ate beef when eating out</b>	
Less than 20 per cent of the time	37.0
20–40 per cent of the time	27.6
40–60 per cent of the time	18.2
60–80 per cent of the time	10.0
More than 80 per cent of the time	7.4
Total	100.0
Average	30.8
Number of responses	505
<b>Preferred cut when eating out</b>	
	<b>%</b>
Rib	60.3
Loin	15.3
Tenderloin	11.5
Chuck	5.9
Other	7.0
Total	100.0
Number of responses	427

## 39 Willingness to pay for Hanwoo beef, by consumer income and beef grade – Korea

	<b>Beef grade (loin)</b>			
	<b>1st</b>	<b>2nd</b>	<b>3rd</b>	<b>Rib</b>
	won / 600 g	won / 600 g	won / 600 g	won / 600 g
<b>Income level per month</b>				
Less than 1million won	16 323 (3 819)	14 279 (2 750)	12 617 (1 723)	8 867 (2 640)
1–2 million won	16 756 (4 381)	14 665 (3 370)	13 046 (2 577)	8 375 (2 838)
2–2.5 million won	17 883 (4 679)	15 254 (3 283)	13 282 (2 366)	9 741 (3 812)
2.5–3 million won	18 152 (4 529)	15 336 (3 050)	13 504 (2 425)	9 354 (3 059)
3–4 million won	18 125 (4 610)	15 388 (3 498)	13 168 (2 556)	9 881 (3 605)
4–5 million won	18 230 (4 605)	15 230 (3 196)	12 876 (2 190)	9 111 (2 527)
More than 5 million won	18 457 (4 639)	15 178 (3 567)	12 971 (2 327)	9 615 (3 233)
Average	17 863 (4 642)	15 175 (3 330)	13 188 (2 475)	9 272 (3 311)
Actual market price (June 2002)	32 400	27 600	20 400	23 400

Note: Figures in parentheses are standard deviations.

Consumers’ willingness to pay extra for Hanwoo beef over imported beef was tested using an imported loin price of 10 000 won per 600 grams (prime), and an imported rib price of 5000 won per 600 grams.

From table 39, it can be seen that consumers’ willingness to pay for Hanwoo beef was 17 863 won (1.8 times that of imported loin) for first grade Hanwoo loin, 15 175 won (1.5 times) for second grade Hanwoo loin, 13 188 won (1.3 times) for third grade Hanwoo loin, and 9272 won (1.8 times that of imported rib) for Hanwoo rib. In general, consumers’ willingness to pay for Hanwoo beef increases as their income level rises for all classes of beef. However, in the case of second and third grade Hanwoo beef, it appears that this preference to pay more according to income level is not as strong as for first grade loin.

### Consumers’ preference for imported beef

Around 83 per cent of surveyed household consumers had purchased imported beef, and 54 per cent had intentions to continue to purchase imported beef. When asked about their intention to purchase imported beef after taking into account information on BSE incidents in Europe, 33 per cent said that their intention to purchase imported beef would change.

In the light of the above preferences, consumers’ purchase intentions for imported beef and the public relations effect on these for different categories of households were analysed using discrete regression analysis (Jeong et al. 2002). As shown in table 40, intentions to purchase imported beef were found to be positively related to consumer ages and level of education, but were negatively related to incomes and the number of persons in the household. The information effect on behavior appeared greatest with consumers having less education and lower incomes. In the case of consumers with more education, intentions to purchase imported beef were high but information (about safety of imported beef) appeared to have little effect on intentions to purchase imported beef.

## 40 Imported beef purchase intentions and information impacts – Korea

Variable	Imported beef purchase intention		Public relation effect	
	OLS	WLS	OLS	WLS
Constant	-0.8738 (-47.664)	-0.8760 (-68.707)	0.0971 (4.880)	0.0536 (3.940)
Age	0.5758 (158.008)	0.5567 (200.020)	0.3438 (86.961)	0.3399 (124.854)
Education	0.1678 (52.151)	0.1695 (75.805)	-0.0511 (-14.633)	-0.0522 (-21.948)
Income	-0.0488 (-23.843)	-0.0480 (-33.810)	-0.0134 (-6.020)	-0.0135 (-8.909)
Number in household	-0.2263 (-79.972)	-0.2156 (-104.862)	-0.3704 (-120.634)	-0.3541 (-160.337)
R-square	0.98	0.99	0.98	0.99
DW	1.79	1.65	1.78	1.77

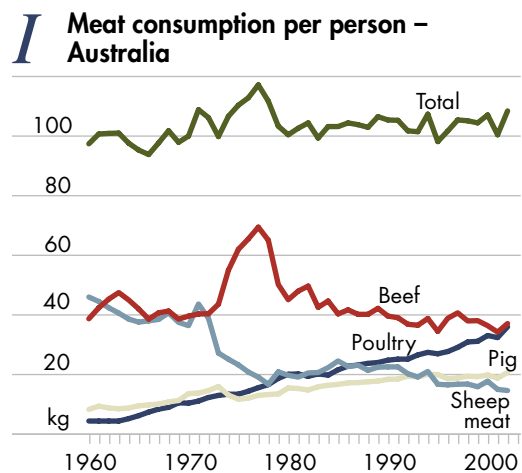
Note: OLS — using ordinary least squares regression method. WLS — using weighted least squares regression method. Figures in parentheses are t-values.

Source: Jeong et al. (2002)



## consumption trends and consumer preferences – Australia

There has been no significant trend in total consumption per person of the main meats (beef, sheep meat, pig and poultry meat) in Australia over the past forty years (figure I). Over this period, total consumption has averaged just over 100 kilograms a year per person on a carcass weight basis. However, the composition of meat consumption has changed as consumers have increased the variety in their diets. In 1960 poultry and pig meat accounted for just 13 per cent of total meat consumption, while in 2002 that proportion had increased to 52 per cent. Conversely, consumption of beef and sheep meat has declined and now makes up less than half of total meat consumption.



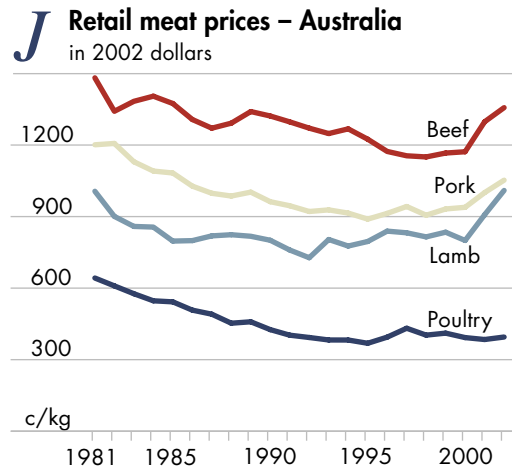
Poultry meat consumption (which is comprised mostly of chicken) has increased from just a few kilograms per person to now rival beef in volume terms. Over the period 1980–2002, Australian consumption of poultry meat per person grew by 2.7 per cent a year (table 41). Pig meat consumption per person also grew steadily over the period, at 1.4 per cent a year. Beef consumption per person in Australia declined by 0.9 per cent a year between 1980 and 2002. Beef consumption per person fell in 2001 to the lowest in over forty years as strong export demand helped drive saleyard beef prices to their highest level since 1985 (in real terms), contributing to increased retail prices. However, increased Australian production with increased turnoff in response to drought, as well as strong consumer demand, in part

### 41 Average rate of change in meat consumption per person – Australia

	Beef	Lamb	Pig meat	Poultry	Meat
	%	%	%	%	%
1970 to 1979	2.7	-6.0	-0.1	6.7	0.4
1980 to 1989	-0.7	1.5	1.5	2.0	0.7
1990 to 1999	-0.4	-3.8	0.5	2.6	-0.1
1980 to 2002	-0.9	-1.2	1.4	2.7	0.2

driven by the increasing popularity of grain fed beef in the domestic market, contributed to beef consumption rising in 2002.

It is sheep meat consumption that has decreased most significantly over time, however, as Australians have increased their consumption of pig and poultry meats. In 1960 sheep meat consumption per person was 46 kilograms, while in 2002 consumption had fallen to just 15 kilograms. Sheep meat consumption, particularly mutton, fell rapidly over the 1970s. This was primarily caused by the rapid increase in beef consumption (to a peak of 69 kilograms per person in 1977) as beef prices slumped in the mid-1970s. Over the past two decades, sheep meat consumption continued to decline, falling by an average of 1.9 per cent a year between 1980 and 2002. Over this period the decline was largely in lamb consumption, which fell from 16 to 11 kilograms per person — an average of 1.2 per cent a year.



In the 1970s, beef consumption increased at 2.7 per cent a year, but then fell slowly over the course of the following two decades. From the 1980s, consumption of pork and chicken has increased (on average) every year.

The meat consumption patterns discussed here are the result of the interaction of a range of factors. Changing retail meat price relativities are usually regarded as the single most important determinant of consumption of the different meats. Over the period 1981–2003 there were considerable changes in the relative retail prices of the different meats (figure J). For instance, real retail prices for poultry (for which consumption per person grew the most over the past four decades) declined at a faster rate than those for the other meats.

Other factors affecting meat consumption in Australia over this period include consumer incomes, changes in tastes and meal preparation techniques, growth of the food service sector and changing population demographics.

The sensitivity of meat consumption in Australia to price and income changes has been the subject of considerable analysis over the years. A number of these are discussed in Griffith et al. (2001). The most recent of these studies is that by Vere, Griffith and Jones (2000) in which per person demand elasticities were estimated as part of a quarterly structural model of the Australian livestock grazing industries. The estimation method was 2-stage least squares regression, data covered the period from 1970 to 1996, and the industries covered were beef, lamb and pork.

The retail demand elasticities estimated by Vere et al. are reported in table 42. When income increased by 1.0 per cent, beef demand is estimated to have increased by 0.33 per cent, lamb by 0.22 per cent, and pork by 0.12 per cent. These results provide an indication that

## 42 Price and income elasticities of demand for meats – Australia

Change in consumption for a 1.0 per cent change in price or consumer income

	Price				
	Beef	Lamb	Pork	Chicken	Income
	%	%	%	%	%
<b>Consumption</b>					
Beef	-1.38	0.64	0.37	–	0.33
Lamb	0.87	-1.54	0.38	0.74	0.22
Pork	0.41	–	-1.59	0.65	0.12

Source: Vere, Griffith and Jones (2000).

if income increases over time, beef consumption can be expected to rise. The results also showed that when beef prices rose by 1.0 per cent, beef consumption fell by an estimated 1.38 per cent, when lamb prices rose by 1.0 per cent, beef consumption increased by 0.64 per cent as consumers substituted beef for lamb, and when pork prices rose by 1.0 per cent, beef consumption increased by 0.37 per cent as consumers substituted beef for pork.

## international trade

Australia exports beef to over 100 countries, with the United States and Japan being the dominant markets. Together, these two countries accounted for three-quarters of Australia's exports (45 per cent and 33 per cent respectively) in 2003. Korea is Australia's third most important market (8 per cent), to which 68 000 tonnes of beef (shipped weight) were exported in calendar 2003 (table 43). Chinese Taipei accounted for 4 per cent and Canada 4 per cent of Australian exports of beef and veal in 2003.

Australian beef and veal exports expanded from the mid-1990s to reach a record 947 000 tonnes in 2001. Exports fell in 2002 to around 920 000 tonnes as the discovery of BSE

### 43 Exports of beef and veal, by destination – Australia <sup>a</sup>

Fresh, chilled or frozen, in shipped weight

	1996	1997	1998	1999	2000	2001	2002	2003
	kt	kt	kt	kt	kt	kt	kt	kt
<b>Americas</b>								
– Canada	28.7	35.0	38.6	43.3	41.5	50.9	82.4	30.1
– United States	179.9	220.9	285.2	291.1	352.3	397.7	387.2	374.7
<b>Asia</b>								
– Chinese Taipei	23.8	35.0	33.7	34.7	28.6	29.1	34.4	31.7
– Hong Kong, China	3.8	3.4	6.2	3.2	3.6	3.1	2.9	2.1
– Indonesia	16.6	24.3	1.7	11.6	13.1	9.6	14.6	13.0
– Japan	280.5	311.7	320.9	313.3	325.7	319.1	238.0	280.1
– Korea, Rep. of	57.6	60.9	33.5	77.9	73.3	56.8	84.9	67.6
– Malaysia–Singapore	11.7	12.7	11.0	10.6	9.4	8.8	11.3	10.2
– Philippines	20.5	26.9	20.2	20.4	14.3	19.7	12.9	8.6
<b>Europe</b>								
– European Union	11.9	10.8	11.0	8.9	5.6	6.5	6.5	5.5
– CIS	3.2	9.6	24.5	8.4	1.4	5.3	1.4	0.3
– Eastern Europe	4.7	8.9	18.7	2.5	2.1	0.4	3.0	1.4
<b>Middle East</b>								
– Kuwait	0.9	0.7	1.4	0.5	0.1	1.1	0.4	2.5
– Saudi Arabia	2.3	1.1	2.6	1.0	0.5	5.0	2.3	1.8
– United Arab Emirates	1.5	0.9	1.6	0.6	0.9	2.0	1.7	1.2
<b>Oceania</b>								
– New Zealand	3.7	1.8	1.8	1.6	3.1	1.4	6.8	3.5
– Pacific Islands	3.1	3.1	3.1	2.1	2.3	2.5	2.7	2.1
– Papua New Guinea	12.8	10.8	7.0	8.2	7.1	4.8	4.3	2.3
<b>Total beef and veal</b>	694.8	801.7	855.3	868.0	901.6	946.6	920.4	840.9

Source: Department of Agriculture, Fisheries and Forestry, *Export Statistics, Livestock Exports*, Canberra.

In Japan resulted in reduced demand for beef in Japan. In 2003 Australia's exports were reduced even further to 841 000 tonnes with the commencement of herd rebuilding after the widespread drought of the previous year that reduced the turnoff of cattle for slaughter and the availability of beef for export. The value of exports in 2003 was around \$3.5 billion, a fall of some 14 per cent on the previous year's figure.

In 1996, 59 per cent of Australia's beef production was exported (exports measured in carcass weight equivalent). In 1999 this rose to 64 per cent and in 2001 exports increased further to around 68 per cent of Australian beef and veal production. In 2003 the export share fell to around 64 per cent.

## Major export markets for Australian beef

### United States

The United States is the largest market in volume terms for Australian beef, with the majority of the trade being in frozen boneless beef for manufacturing. With the downturn in beef demand in Japan, the United States also became the highest value market for Australian beef in 2002. During the year, Australia exported 386 000 tonnes (shipped weight) of beef and veal to the United States (table 43), with these exports valued at around \$1.6 billion.

In 2003, Australian beef exports to the United States fell by 5 per cent to 368 000 tonnes. With Australia recovering from the drought, many producers would have been withholding cows from market to rebuild herds in the latter part of the year, reducing beef supplies for export. The value of Australian beef exported to the United States in 2003 was around \$1.4 billion.

There was some disruption to the trade with the United States in the short term, however, with the discovery of BSE in the US cattle herd in December 2003. With markets all over the world temporarily closed to US beef exports, US demand for Australian beef imports fell as US beef previously destined for export was diverted onto the US domestic market.

The United States has reopened its market to fresh boneless beef from Uruguay following the declaration by the OIE (Office International des Epizooties) at the 71st general session in May 2003 that Uruguay is free of foot and mouth disease (with vaccination). Uruguay has access to a US tariff rate quota of 20 000 tonnes. Uruguay's re-entry to the US market is not expected to affect Australia's exports to the United States given the relative size of Uruguay's quota (Australia's quota is 378 214 tonnes boneless equivalent).

### Japan

Beef demand in Japan has recovered reasonably strongly from the major downturn that occurred in the wake of the discovery of BSE in the Japanese cattle herd in September 2001. The initial incidents of BSE resulted in a slump in domestic Japanese consumption of beef, with consumption falling by around 50 per cent after the first BSE case. However, the more recent detected cases of BSE appear to have had little or no impact on demand. This is because the Japanese Government has gone to considerable lengths to guarantee consumer

---

safety, with all slaughter cattle tested for BSE. With this more stringent inspection regime, additional discoveries had been expected.

The recovery in domestic Japanese demand has also flowed into improved demand for imported beef. Exports of Australian beef to Japan for 2003 were 18 per cent higher than in 2002, but they were still 14 per cent below exports in 2000, the year prior to the first BSE discoveries. Shipments to Japan in 2003 were valued at \$1.4 billion up 12 per cent on the previous year.

This increase in imports led to the Japanese 'safeguard' tariff on imported product being invoked in August 2003, with the result that the beef import tariff rose from 38.5 per cent to the WTO bound rate of 50 per cent. For this to occur, cumulative quarterly imports had to have increased by more than 17 per cent on the same period of a year earlier. The tariff increase applied from 1 August 2003 to the end of the Japanese fiscal year on 31 March 2004. The safeguard measures can be applied separately to chilled and frozen beef and on this occasion only chilled beef imports triggered the safeguard measures, with imports of frozen beef coming in below the trigger level.

## Republic of Korea

Korea is the third largest export market for Australia beef — after Japan and the United States. Australian beef exports to Korea increased from 58 000 tonnes (shipped weight) in 1996 to 80 000 tonnes in 2002.

### 44 Australian beef exports to Korea

Shipped weight

		1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03	% change <sup>a</sup>
Total (A)	tonnes	55 512	43 590	72 893	68 866	56 738	71 141	81 572	15
– chilled (B)	tonnes	20	7	106	390	963	3 310	6 367	92
– frozen	tonnes	55 492	43 583	72 877	68 477	55 774	67 831	72 204	11
Grass fed	tonnes	53 612	41 319	70 706	63 328	51 658	63 609	70 776	11
– chilled	tonnes	19	6	91	314	567	1 309	2 425	85
– frozen	tonnes	53 594	41 313	70 615	63 014	51 091	62 300	68 350	10
Grain fed (C)	tonnes	1 900	2 271	2 277	5 538	5 079	7 532	10 795	43
– chilled	tonnes	2	1	15	76	396	2 001	3 941	97
– frozen	tonnes	1 898	2 270	2 263	5 462	4 683	5 531	6 854	24
Share of chilled beef in total beef exports (B/A)	%	0.04	0.02	0.15	0.56	1.70	4.65	7.81	
Share of grain fed beef in total beef exports (C/A)	%	3.42	5.21	3.12	8.04	8.95	10.59	13.23	

<sup>a</sup> Change from 2001-02 to 2002-03.

Source: Department of Agriculture, Fisheries and Forestry, *Export Statistics, Livestock Exports*, Canberra.

The proportion of grain fed beef in total exports increased from 3 per cent to 13 per cent between 1996-97 and 2002-03 (table 44). The amount of chilled grain fed beef in the trade increased rapidly. Chilled grain fed beef exports to Korea rose by 97 per cent in fiscal 2002-03 to around 3 900 tonnes.

Australian beef exports to Korea fell by 23 per cent to 62 000 tonnes in calendar 2003 (table 44). The value of these exports was some \$272 million, down 20 per cent. With reduced Australian beef production constraining exports to all markets in 2003 and stronger demand from Japan, product was diverted to Japan as well as to the Australian domestic market.

Australia can be expected to experience stronger competition in north Asian markets if South American beef producers such as Uruguay, Argentina and Brazil manage to gain entry to FMD sensitive Pacific rim beef markets such as Japan and Korea.

## Canada

Australian beef exports to Canada were sharply lower in 2003 at around 29 000 tonnes, compared with 83 000 tonnes in 2002. The value of beef shipped to Canada in 2003 also fell, by 64 per cent to around \$115 million. Following the discovery in May 2003 of a single case of BSE in a beef cow, many countries immediately closed their borders to beef imports from Canada. Countries closing off access to Canadian beef included the United States, Canada's largest beef and live cattle customer. With more domestically produced beef staying within Canada, prices fell and the market became less attractive to overseas suppliers such as Australia.

## Chinese Taipei

Chinese Taipei is Australia's fifth largest beef export market and accounted for 4 per cent of beef and veal exports in 2003 valued at \$129 million. Australian exports to this market fell by 10 per cent from the 34 400 tonnes exported in 2002 to around 31 700 tonnes in

### 45 Composition of Australian beef and veal exports, 2003 Shipped weight

	<b>Chilled beef exports</b>	<b>Share of total chilled exports</b>	<b>Frozen beef exports</b>	<b>Share of total frozen exports</b>
	t	%	t	%
Japan	148 698	71.4	130 619	20.6
United States	27 358	13.1	340 652	53.8
Korea, Rep. of	6 465	3.1	55 824	8.8
Canada	5 437	2.6	23 566	3.7
Chinese Taipei	1 151	0.6	2 968	4.7
Total exports	208 178		632 761	

Source: Department of Agriculture, Fisheries and Forestry, *Export Statistics, Livestock Exports*, Canberra.

2003. In April 2003, Australia formed an international beef alliance with the United States, Canada and New Zealand to conduct a campaign aimed at increasing beef consumption in Chinese Taipei.

## Composition of Australian beef exports

Only 25 per cent of Australia's beef exports in 2003 were shipped chilled. Japan is by far Australia's largest market for chilled beef, taking 149 000 tonnes (shipped weight) of chilled beef in 2003 or 71 per cent of Australia's total exports of chilled beef (table 45). The remaining 75 per cent of Australian beef and veal exports were shipped in frozen form, with the United States taking 54 per cent of frozen beef exports in 2003. Japan was second, taking 21 per cent of frozen exports in 2003 and the Republic of Korea was the third largest market for frozen beef, taking 9 per cent.

### Japan

Over 35 per cent of the chilled beef exported to Japan in 2003 was sent as full sets while the remainder was in a variety of cuts (table 46). Frozen shipments to Japan are dominated by

#### 46 Composition of Australian beef and veal exports to Japan, 2003

Shipped weight

Cuts	Chilled beef exports t	Share of total chilled exports
		%
Full sets	52 700	35.4
Blade or clod	12 923	8.7
Chuck	14 589	9.8
Striploin	8 112	5.5
Silverside	7 018	4.7
Brisket	14 197	9.5
Topside	6 415	4.3
Thick flank	4 916	3.3
Rump	6 083	4.1
Other	21 745	14.6

Cuts	Frozen beef exports t	Share of total frozen exports
		%
Trimming	48 716	37.3
Fore and hind quarters	30 362	23.2
Chuck and blade	14 458	11.1
Brisket	20 097	15.4
Other	16 987	13.0

Source: Department of Agriculture, Fisheries and Forestry, *Export Statistics, Livestock Exports*, Canberra.

#### 47 Composition of Australian beef and veal exports to United States, 2003

Shipped weight

Cuts	Share of total chilled beef exports
	%
Tenderloin	27.7
Inside	24.9
Striploin	6.9
Cube roll	5.7
Knuckle	5.0
Flap meat	5.0
Rostbiff	4.4

Cuts	Share of total frozen beef exports
	%
Manufacturing	66.7
Inside	6.0
Shin / shank	5.7
Outside flat	3.0
Knuckle	2.0
Other	16.6

Source: Department of Agriculture, Fisheries and Forestry, *Export Statistics, Livestock Exports*, Canberra.



trimmings and forequarter and hindquarter cuts.

## 48 Composition of Australian beef and veal exports to Korea, 2003

Shipped weight

### United States

Only 7 per cent of exports to the United States in 2003 were in chilled form, but the US market for chilled beef has been expanding over recent years. The most popular chilled product was tenderloin (28 per cent of chilled beef exports to the United States). A range of other cuts is also exported to the United States in chilled form (table 47).

The remaining 93 per cent of exports to the United States in 2003 were in frozen form and, of this, two thirds was manufacturing beef (grinding beef) for the beef patty (hamburger) market.

### Republic of Korea

The two most popular chilled cuts sent from Australia to Korea are tenderloin and chuck, that together accounted for 54 per cent of chilled beef exports to this market in 2003 (table 48). While chilled exports comprised only 10 per cent of total Australian beef exports to Korea in 2003, they are expanding rapidly. In 2001 chilled exports only accounted for 2 per cent of total beef shipped to this market. The remaining 90 per cent of exports to Korea in 2003 were in frozen form. These comprised a wide range of cuts with quarters, trimmings and short ribs being most popular.

### Live cattle trade

The Australian live cattle export trade is the largest in the world. In 2003 Australia exported around 684 000 slaughter cattle (table 49). These cattle were exported by sea from 17 Australian ports to destinations in 22 countries around the world — most of these in south east Asia and the Middle East. Indonesia was by far the major market, accounting for 55 per cent of the total trade.

Growth in the Australian live cattle trade has been variable, with economic conditions in importing countries and exchange rates along with variable consumer demand, overseas competition and political and market access all affecting performance from year to year (Shiell 2003). The Asian economic downturn resulted in live cattle exports falling by 34 per

	Share of total chilled beef exports
	%
Cuts	
Tenderloin	29.3
Chuck	24.3
Cube roll	12.6
Blade or clod	9.7
Japan full sets	5.7
Striploin	4.9
Other	13.5
Eye round	3.6
Bone-in neck meat	2.9
Other	23.0
	Share of total frozen beef exports
	%
Cuts	
Bone-in quarters	17.9
Trimmings	17.3
Short ribs	11.8
Shin / shank	8.2
Chuck roll	6.4
Brisquet	4.6
Blade / clod	4.3

Source: Department of Agriculture, Fisheries and Forestry, *Export Statistics, Livestock Exports*, Canberra.

## 49 Australian exports of live cattle, by destination

	1996	1997	1998	1999	2000	2001	2002	2003
	'000	'000	'000	'000	'000	'000	'000	'000
<b>Slaughter cattle</b>								
Asia								
– Indonesia	386.5	421.7	41.2	159.5	296.7	287.7	425.6	375.8
– Japan	14.9	19.4	17.0	12.4	14.4	17.4	14.0	21.0
– Malaysia	44.0	57.5	42.7	65.2	56.5	77.5	90.9	86.4
– Philippines	200.0	253.8	215.9	266.1	223.8	97.4	113.1	74.5
Middle East								
– Egypt	52.2	37.5	119.6	240.5	207.6	203.2	143.9	7.6
– Israel	1.0	0.0	8.7	8.7	15.8	32.6	47.8	43.2
– Jordan	4.3	2.5	18.1	37.6	40.7	13.2	4.4	23.1
– Libya	10.0	105.3	120.7	23.1	0.0	0.0	0.0	0.0
– Saudi Arabia	0.0	1.1	0.0	0.0	0.0	20.8	54.3	15.7
Total	724.1	910.5	597.0	833.7	887.0	797.9	951.1	683.7
<b>Breeding cattle</b>	17.0	35.2	24.1	10.6	9.0	24.6	16.8	84.9
<b>Total live cattle</b>	741.1	945.7	621.1	844.2	896.0	822.5	967.9	768.6

Source: ABS, *International Trade*, electronic data service, cat. no. 5464.0, Canberra

cent in 1998, with shipments to Indonesia (down 90 per cent) being severely affected. The BSE outbreak in Europe affected consumer confidence in beef in the Philippines in 2001, with exports to that market falling 56 per cent on the previous year.

Despite the inherent fluctuations in the trading environment, strong demand for live animals in preference to carcass meat underpins Australia's live cattle export trade in some markets. In many Asian markets, particularly, the fresh (nonrefrigerated) meat market is the only option available to consumers and Australia is well positioned to provide the live-stock capable of meeting this consumer demand because of its capacity to supply and its geographic position in relation to these markets (Shiell 2003).

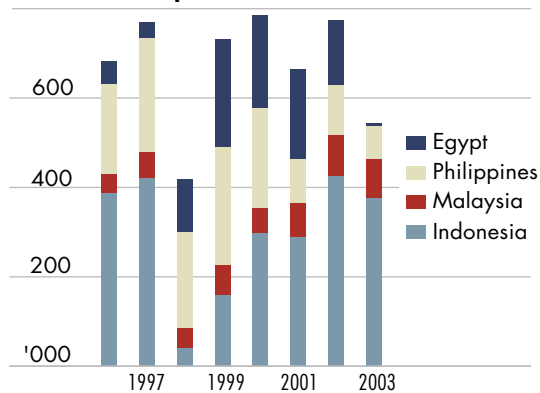
A specialised industry has developed in northern Australia to supply cattle for the live trade. Escalation of south east Asian demand for live feeder cattle in the early to mid-1990s influenced the breeding management systems of many northern Australian properties. Traditional breeding and fattening systems that typically turned off bullocks at around 4–5 years of age were converted to enterprises with a higher proportion of breeders and turning cattle off at a much younger 2–3 years of age.

### Markets for live cattle

Live cattle exports increased rapidly in the mid-1990s, encouraged by a growing Asian feedlot industry. The Australian live cattle export trade has been dominated by south east Asia and north Africa with the largest buyers being Indonesia, Egypt, the Philippines and Malaysia (figure K). Other important markets include Saudi Arabia and Israel, with Brunei, Japan and Mexico also growing in significance.

When the live cattle trade to south east Asia was disrupted by the Asian economic downturn in 1998, the Middle East and north African region grew in importance as a market for Australian live cattle exports. Apart from the strong growth in trade to Egypt, markets that have emerged over the past five years include Israel, Jordan, Palestine and Saudi Arabia.

**K** Principal markets for Australian live cattle exports



### Economics of importing live cattle for fattening in Korea

The Korean cattle breeding herd was greatly reduced after the financial downturn in 1997, and the Korean beef self sufficiency rate was only about 35 per cent in 2003. Because of a continuous rise in calf prices, returns to farmer engaged in fattening enterprises could have been reduced.

With high calf prices in Korea, farmers have been considering importing live cattle for fattening from Australia and the United States. Korea has imported Australian live cattle on several occasions since 2001. Recently, however, Australian saleyard cattle prices have been relatively high as turnoff decreased following the easing of drought conditions in many regions. The stronger Australia dollar and higher prices of feeder cattle in Australia mean the returns from importing feeder cattle for fattening has declined.

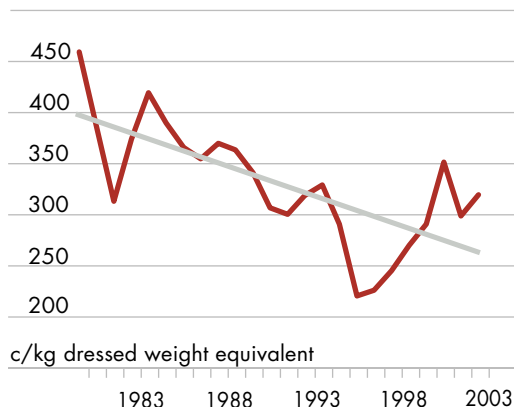
As to the future potential for trade in Australian live cattle to Korea for fattening, several questions arise. Most important are likely to be the cost to Korean farmers of purchasing and transporting these stock from Australia, and the returns that can be expected from the sale of animals once grown out to the required slaughter weight in Korea.

In considering the above questions, assumptions were needed for several factors — including exchange rate fluctuations between Australia and Korea and for variability in Australian domestic cattle prices. In the discussion that follows, the estimated relative returns from Korean native cattle fattening and the fattening of Australian live cattle in Korea are compared.

### Costs of importing live cattle – Korea

Australian saleyard prices of cattle have fluctuated year to year but with a declining trend (in real terms) since 1980 (figure L). Important factors that influence these price

**L** Saleyard prices of yearling cattle – Australia



fluctuations include such things as seasonal and pasture conditions, demand for Australian beef in the export and domestic markets, and exchange rate changes.

For this analysis, average nominal prices in 2002 were used. The Australian saleyard price of yearling cattle averaged \$2.89 a kilogram dressed weight in 2002. Yearling cattle prices averaged \$3.31 a kilogram in 2001 and \$2.62 a kilogram in 2000.

Korean livestock farmers' preferred live weight of cattle for fattening is more than 400 kilograms. Economic returns are regarded as best when such animals are grown to a weight of over 600 kilograms before slaughtering. The shortest fattening period to achieve that weight with imported live cattle is around six months.

The various components used in the cost calculations are listed in table 51. In undertaking the analysis, a live cattle average purchase weight in Australia of 420 kilograms and a price of \$1.59 a kilogram live weight (which is about 55 per cent of the average dressed weight price of \$2.89 a kilogram for yearlings in 2002) was used.

Transport costs per live animal exported from Australia to Korea were assumed to be \$0.40 a kilogram (live weight). The insurance premium was 1.2 per cent of the c&f price. The exchange rate was assumed to be 700 won per Australia dollar.

The beef tariff in 2002 was 40.8 per cent of the landed cost. Health and quarantine inspection costs on arrival of 130 000 won per beast were used for the analysis. An additional cost of 5 per cent of the post inspection cost of the animal was added to cover incidental costs that may arise in the purchase, shipment and import process. An importer's profit margin of 10 per cent of the total cost (arrival price + tariff + inspection cost + incidental expenses) was added to give a final price to the Korean farmer.

All up, Korean farmers purchasing Australia live cattle at 420 kilograms live weight in 2002 would have paid around 1.1 million won per animal (table 50).

### Feed costs in raising native Korean calves

In 2002, feed costs were estimated for a Korean livestock farmer who buys a calf of 141 kilograms and then fattens it for 502 days before selling at 593 kilograms weight.

Feed supplies were 4749 kilograms, with a cost per head of around 930 000 won. In round numbers feed costs were approximately 196 won a kilogram, concentrates 239 won a kilogram, and roughage 99 won a kilogram (table 51).

## 50 Estimated costs of live cattle imports from Australia, 2002 – Korea

		Value
Purchase price (A)	A\$/hd	668
Air transport (B)	A\$/hd	168
C&F landed price (C=A+B)	A\$/hd	836
Insurance (D)	A\$/hd	10
Landed cost (C+D)	A\$/hd	846
Exchange rate	won/A\$	700
Arrival price at port	won/hd	592 081
Tariff (40.8%)	won/hd	241 569
Inspection cost	won/hd	130 000
Incidental expenses	won/hd	29 604
Importer profit margin	won/hd	99 325
Total cost to Korean farmer (at port)	won/hd	1 092 579

## Comparing returns from fattening imported and domestic cattle

In order to analyse the returns from fattening imported live cattle relative to Korean native cattle, the same unit costs of feed used in fattening Korean native cattle were assumed. Details of the estimates are in table 52.

Daily weight gain for imported cattle was assumed to be 1.25 kilograms, compared with a daily gain of 0.9 kilograms for Hanwoo stock. Because imported live cattle weigh over 400 kilograms, daily concentrate requirements for imported live cattle are more than for Korean native cattle. Daily feed requirements for imported cattle were assumed to be 9.0 kilograms of concentrates and 1.5

## 51 Cost of feed in fattening beef cattle 2002 – Korea

	Supplies (A)	Value (B)	Value per kg (B/A)
	kg/hd	won/hd	won/hd
Feed	4 749	929 818	195.8
– concentrates	3 293	785 926	238.7
– roughage	1 456	143 892	98.8

Source: National Agricultural Products Quality Management Service 2003, *Livestock Production Cost 2002*.

## 52 Estimated returns from feeding imported and Korean native cattle, 2002

		Live cattle imported	Korean native cattle
Live weight imported or purchased weight	kg	420	141
Price purchased at farm (A)	won	1 092 579	1 622 620
Daily gained weight	kg	1.25	0.9
Raising days	day	180	502
Market weight			
– live weight	kg	650	593
– carcass weight	kg	402	367
– carcass weight / live weight	%	61.8	61.8
Daily feed supplies			
– concentrates	kg/day	9.0	6.6
– roughage	kg/day	1.5	2.9
Feed cost (B)	won/hd	413 370	934 652
– concentrates	won/hd	386 694	790 819
– roughage	won/hd	26 676	143 833
Other cost (C)	won/hd	74 989	209 135
Operating cost (D=A+B+C)	won/hd	1 580 917	2 766 407
Family labor and capital interest (E)	won/hd	235 910	657 926
Production cost (F=D+E)	won/hd	1 816 827	3 424 333
Market price (G)			
– live weight	won/hd	–	4 659 293
– dressed weight	won/hd	2 614 798	–
Income (G–D)	won/hd	1 033 880	1 892 886
– income a month	won/hd	172 313	113 121
Net income (G–F)	won/hd	797 971	1 234 960
– net income a month	won/hd	132 995	73 802

kilograms of roughage, compared with 6.6 kilograms and 2.9 kilograms respectively for Hanwoo cattle.

If imported cattle are fattened over six months, the meat is classified as domestic beef, although the calf may be from Australia. About 60 per cent of dairy bullocks slaughtered have a grade of B3. Assuming the carcass of imported cattle has a grade of B3, a price of 6500 won a kilogram (dressed weight) was used — the same as for dairy bullocks in 2002.

On the basis of the above assumptions, an analysis of farm incomes would suggest that the returns from imported live cattle are around 170 000 won per month, higher than that from Korean native cattle at around 110 000 won per month (table 52).

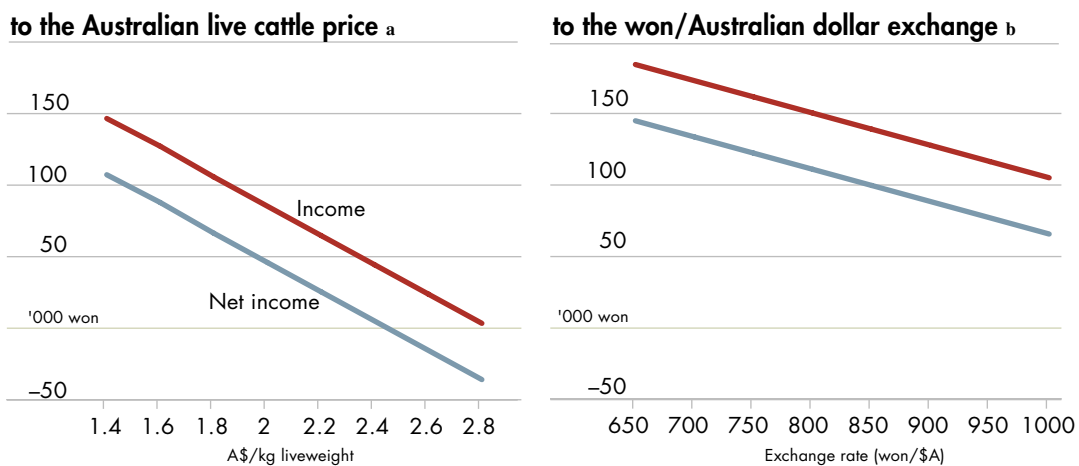
### Sensitivity of farm incomes to prices and exchange rates

Returns to Korean farmers from feeding imported cattle can vary considerably as exchange rates and cattle prices vary. The above analysis was on the basis of an Australian yearling cattle price of \$2.89 a kilogram dressed weight (A\$1.59 a kilogram live weight) and an exchange rate of 700 won per Australian dollar.

The effects on monthly farm incomes of Korean cattle fatteners of changes in the price paid for Australian cattle is illustrated in figure M. For example, with an Australian live cattle price of A\$1.70 a kilogram live weight, Korean native cattle fattening would be more profitable than the fattening of imported live cattle. Returns from the latter are estimated to fall from 170 000 won per month in the original estimation (table 52) to around 110 000 won per month in this scenario (figure M).

The effects on monthly farm incomes of Korean fatteners of imported cattle of changes in the exchange rate is illustrated in figure N. In this scenario, it is assumed that the Australian live cattle price remains at the originally assumed \$1.59 a kilogram live weight. If the

## M Sensitivity of monthly Korean farm incomes from fattening imported cattle



**a** Exchange rate = 700 Korean won per Australian dollar. **b** Live cattle purchase price = \$A1.59/kg dressed weight.

exchange rate faced by Korean importers falls to 950 won per Australian dollar, returns from the fattening of imported live cattle (figure N) fall to around the same as originally estimated for Korean native cattle fattening.

Because of limits to Korean inspection capacity, the number of live cattle that could be imported from Australia is estimated at 10 000 a year. Quarantine capacity is limited at any one time to 381 in Seoul, 290 in Pusan, 182 in Incheon and 176 in Cheju. Allowing for cleaning time, quarantine period, and so on, the turnover of stock through the above facilities would be about ten times a year. In order to overcome the inspection capacity limitation in Korea, development of the trade in live cattle between Korea and Australia could potentially benefit from the positioning of a quarantine officer from Korea in Australia.

## **Prospects for growth in trade between Australia and Korea**

Economic factors important to the future development of the trade in both beef and live cattle from Australia to Korea will include developments in beef supply and demand in each country, exchange rate movements, and trade barriers.

In the case of live cattle, it seems that variability in exchange rates and live cattle prices in Australia have the potential to greatly affect the profitability of Korean fatteners of imported live cattle. Nevertheless, there is probably scope for at least a small trade of this kind to develop.

One possibility for live trade, albeit not explored in this paper is the development of a trade in native Hanwoo cattle from Australia to Korea. This would necessitate the introduction of Hanwoo cattle into Australia to form a breeding base. Experience with the introduction of Japanese Wagyu cattle into Australia suggests this could take a long time because of the need to meet Australian quarantine standards aimed at keeping exotic diseases out of the domestic herd.

Future growth in Australian exports of beef to Korea will be assisted if there are further reductions in the tariff on imports as part of the Doha Development Agenda round of the WTO or some other multilateral trade negotiations, or as part of bilateral negotiations. The trade can also be expected to benefit from Australian producers turning off more beef specifically aimed at meeting the needs of the Korean market. On the latter point, it seems that with a preference for grain fed beef in Korea, and strong competition from imported north American beef, Australian suppliers may need to focus more heavily on the production of this type of product if they are to increase their market share.

One perceived advantage for Australian beef in the Korean market may be its 'clean-green' image. Reflecting this particular attribute, part of any marketing strategy in the Korean market could well beneficially include highlighting this aspect of Australian beef.

# policy – government intervention in beef marketing and trade

## Korea

The Korean beef industry has changed a great deal over the past decade. After the Uruguay Round agricultural negotiation reached a compromise agreement in 1993, some liberalisation of quotas and tariffs occurred in the Korean beef import market. Despite these changes, Korean beef producers still receive a large proportion of their incomes from government programs. For example, the OECD (2003) has estimated that Korean producers received around 73 per cent of their incomes from various government support measures in 2002. This figure is well above the average producer support estimate of 34 per cent for beef and veal producers in the OECD as whole in 2002.

Before the financial downturn in Korea in 1997-98, the main policy thrust for beef was to cut down production costs through large scale production of high quality beef. But because the breeding base was reduced greatly in the wake of the financial downturn, the main policy direction for beef production was toward an expanded herd base. Also, as the Korean beef market was liberalised and consumers' concern about hygiene, safety and freshness in beef rose, the main policy has been concentrated on high quality branded beef production that is differentiated from imported beef, and on the improvement of hygiene and safety in beef marketing.

## Production supports

Korea uses several policy measures to support beef production. These are listed in table 53, along with expenditure in recent years. One measure is the Calf Breeding Stabilisation

### 53 Measures to support beef production – Korea

	1992-99	2000	2001	2002	2003 p
	million won	million won	million won	million won	million won
Calf breeding stabilisation scheme	12 226	62 739	72 920	60 097	57 834
Incentive payment for keeping mature cows	–	6 630	32 300	27 275	20 281
Incentive payment for castration	–	9 586	25 276	20 300	10 400
Incentive payment for good cattle production	7 115	4 104	3 853	–	–

Source: Ministry of Agriculture and Forestry.



---

Scheme. The scheme's purpose is to promote a stable business environment for the breeding of Korean native cattle (Hanwoo). Under this scheme, farmers who have contracted with the local livestock cooperative receive a payment equivalent to the difference between the average price of calves in the market and the stabilisation price. As of 2002, the stabilisation price level was 1.2 million won and the ceiling of the deficiency payment was 250 000 won.

Another policy measure has been the Incentive Payment for Keeping Mature Cows for Additional Calves. As its name suggests, this payment was introduced to ensure an ample supply of calves by discouraging the slaughter of cows. Farmers were eligible to receive 200 000 won for each cow that had given birth three or four times and 300 000 won for each cow that had given birth five times or more. This policy was abolished in 2003.

An Incentive Payment for Castration was intended to improve the quality of beef by promoting the castration of Hanwoo bulls. Farmers received 200 000 won per bull that was castrated. Although this policy was abolished in 2003, from July 2004, farmers can receive an incentive payment when the grade of cattle sent to market is high.

## Quality control

Hazard Analysis Critical Control Points (HACCP) was applied compulsorily to all slaughter houses from July 2003 in order to raise hygiene levels. According to related draft revisions to the law, hygiene standards will be created and their use will be made mandatory for storage and transport as well as for the slaughter and processing of livestock. According to this, latest development, meat shops can also meet HACCP standards on a voluntary basis.

To raise transparency in circulation of domestic beef, a traceability system from production, slaughter and marketing of beef, using barcode or electronic chip, will be introduced in 2004, and will be compulsory by 2005. Traceability is in the process of being enforced compulsorily in Australia and Japan.

According to a livestock law revision in late 2003, a livestock registration system is to be introduced from 2004. Cattle farmers who have a cattle shed with an area that exceeds 300 square metres must be registered. Livestock registrants must meet minimum standards for cattle shed area per herd.

## Trade

Korea's Uruguay Round commitment scheduled a reduction in barriers to beef imports. From 1 January 2001, a tariff only was applied to beef imports and import quotas were abolished. Beginning in January 2001 the *ad valorem* tariff on imported beef and live cattle for fattening was set at 41.4 per cent. Subsequent agreed downward adjustments have brought it to a 'final' bound rate of 40 per cent from the beginning of January 2004. The tariff rate after 2004 will be decided as part of the Doha Development Agenda negotiation.

As part of the changes instituted in January 2001, the Livestock Products Marketing Organisation, which formerly had the sole right to import beef, ceased to have an active role in

---

that area. Since that time, anyone who wants to import beef can do so, subject to the tariff. The import of live cattle for fattening was also permitted from January 2001.

## **Australia**

Australia does not have price support or other major support structures for the beef industry or its main domestic competitors. The OECD (2003) has estimated that Australian beef producers received around 4 per cent of their incomes from government programs. This support was mainly to assist with industry research and development.

The Australian Government facilitates the marketing, promotion, industry coordination and research activities of Meat and Livestock Australia by collecting transactions levies from industry participants. The rationale for government involvement in research is to provide coordination of economically worthwhile activities that would not be carried out by individual small operators and to fund research that has a broader set of beneficiaries than participants in the beef industry.

## references

- ABARE 2003, *Australian Beef Industry 2003*, ABARE Research Report 03.3, Canberra.
- Griffith, G., I'Anson, K., Hill, D., Lubett, R. and Vere, D. 2001, *Previous Demand Elasticity Estimates for Australian Meat Products*, Economic Research Report no. 5, NSW Agriculture, Orange, January.
- Jeong, M.K., Choi, J.S. et al. 2002, *An Analysis on Beef Marketing and Consumption Pattern after the Tariffication in 2001*, Korea Rural Economic Institute, Seoul.
- Lee, K.I. et al. 1999, *Consumer Demand for Meats in Korea*, Korea Rural Economic Institute, Seoul, December.
- OECD (Organisation for Economic Cooperation and Development) 2003, *Agricultural Policies in OECD Countries: Monitoring and Evaluation*, Paris
- Shiell, K. 2003, Future opportunities facing the livestock industry, Paper presented at OUTLOOK 2003, Canberra, 5 March.
- Vere, D., Griffith, G. and Jones, R. 2000, *The Specification, Estimation and Validation of a Quarterly Structural Econometric Model of the Australian Grazing Industries*, Technical Series no. 5, CRC for Weed Management Systems, University of Adelaide, Glen Osmond, South Australia.

---

**Research funding.** ABARE relies on financial support from external organisations to complete its research program. As at the date of this publication, the following organisations had provided financial support for ABARE's research program in 2003-04 and 2004-05. We gratefully acknowledge this assistance.

Asia Pacific Economic Cooperation Secretariat	Grains Research and Development Corporation
AusAid	Grape and Wine Research and Development Corporation
Australian Centre for International Agricultural Research	Horticulture Australia
Australian Gas Association	Institute of National Affairs, PNG
Australian Greenhouse Office	Land and Water Australia
Australian Quarantine and Inspection Service	Meat and Livestock Australia
Australian Wool Innovation Limited	Ministerial Council on Energy
Canegrowers	Natural Heritage Trust
Chevron Texaco	National Land and Water Resources Audit
Commonwealth Secretariat, London	National Landcare Program
CSIRO (Commonwealth Scientific and Industrial Research Organisation)	National Oceans Office
Dairy Australia	New Zealand Ministry of Foreign Affairs and Trade
Department of Agriculture, Fisheries and Forestry	New Zealand Ministry of Prime Minister and Cabinet
Department of Foreign Affairs and Trade	Organisation for Economic Cooperation and Development
Department of Health and Ageing	Office of Resource Development, Northern Territory
Department of Industry, Tourism and Resources	Plant Health Australia
Department of Natural Resources and Mines, Queensland	Pratt Water
Department of Primary Industries, Queensland	Primary Industries, Victoria
Deutsche Bank	Rural Industries Research and Development Corporation
Fisheries Research and Development Corporation	Snowy Mountains Engineering Corporation
Fisheries Resources Research Fund	University of Queensland
Food and Agriculture Organisation of the United Nations	Woodside Energy Ltd
Forest and Wood Products Research and Development Corporation	Woolmark Company Pty Ltd