



The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

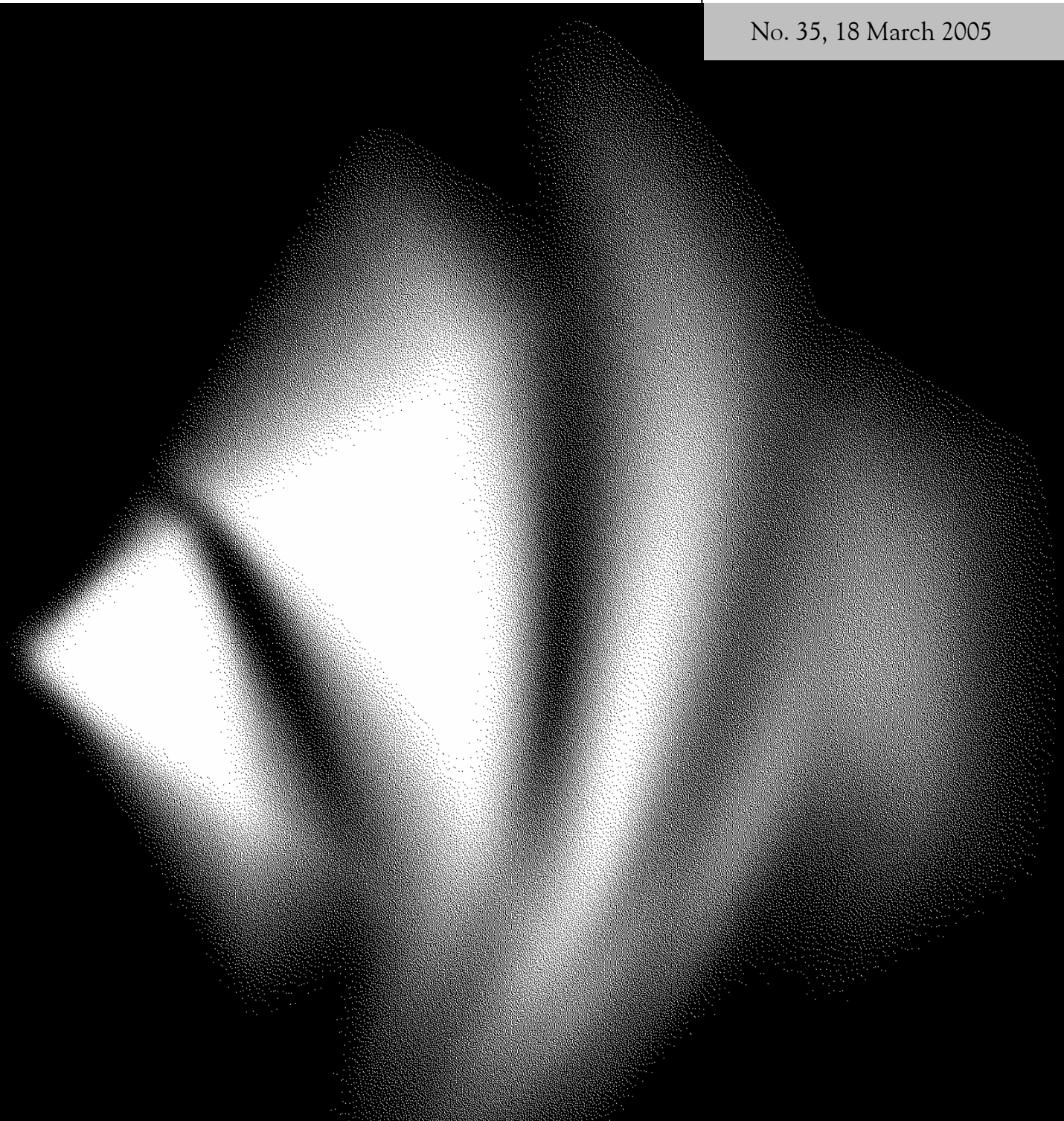


Australian Government
Productivity Commission

Australian Pigmeat Industry

Productivity
Commission
Inquiry Report

No. 35, 18 March 2005



© Commonwealth of Australia 2005

ISSN 1447-1329

ISBN 1 74037 171 2

This work is subject to copyright. Apart from any use as permitted under the *Copyright Act 1968*, the work may be reproduced in whole or in part for study or training purposes, subject to the inclusion of an acknowledgment of the source. Reproduction for commercial use or sale requires prior written permission from the Attorney-General's Department. Requests and inquiries concerning reproduction and rights should be addressed to the Commonwealth Copyright Administration, Attorney-General's Department, Robert Garran Offices, National Circuit, Canberra ACT 2600.

This publication is available in hard copy or PDF format from the Productivity Commission website at www.pc.gov.au. If you require part or all of this publication in a different format, please contact Media and Publications (see below).

Publications inquiries:

Media and Publications
Productivity Commission
Locked Bag 2 Collins Street East
Melbourne VIC 8003

Tel: (03) 9653 2244
Fax: (03) 9653 2303
Email: maps@pc.gov.au

General inquiries:

Tel: (03) 9653 2100 or (02) 6240 3200

An appropriate citation for this paper is:

Productivity Commission 2005, *Australian Pigmeat Industry*, Report no. 35, Melbourne.

The Productivity Commission

The Productivity Commission, an independent agency, is the Australian Government's principal review and advisory body on microeconomic policy and regulation. It conducts public inquiries and research into a broad range of economic and social issues affecting the welfare of Australians.

The Commission's independence is underpinned by an Act of Parliament. Its processes and outputs are open to public scrutiny and are driven by concern for the wellbeing of the community as a whole.

Information on the Productivity Commission, its publications and its current work program can be found on the World Wide Web at www.pc.gov.au or by contacting Media and Publications on (03) 9653 2244.



Australian Government
Productivity Commission

Melbourne Office

Level 28, 35 Collins Street
Melbourne VIC 3000

Locked Bag 2 Collins Street East
Melbourne VIC 8003

Telephone 03 9653 2100

Facsimile 03 9653 2199

Canberra Office

Telephone 02 6240 3200

www.pc.gov.au

18 March 2005

The Honourable Peter Costello MP
Treasurer
Parliament House
CANBERRA ACT 2600

Dear Treasurer

In accordance with Section 11 of the *Productivity Commission Act 1998*, I have pleasure in submitting to you the Commission's final report into the *Australian Pigmeat Industry*.

Yours sincerely

Dr Neil Byron
Presiding Commissioner

Terms of reference

I, Peter Costello, under Parts 2 and 3 of the *Productivity Commission Act 1998*, hereby refer for inquiry and report the competitive situation and outlook for the Australian pigmeat industry, including both production and processing.

1. In undertaking the inquiry, the Commission is to take into account:
 - the structure and regional distribution of the industry;
 - key factors influencing the profitability of the industry, and the extent to which these factors are short or long term influences;
 - trends and factors influencing demand and supply, including imports and exports;
 - the competitiveness of the industry, including competitiveness relative to international competitors, and efforts taken by the domestic industry to enhance competitiveness; and
 - the impact and effectiveness of existing and recent government and industry programs.
2. I further specify that:
 - the Commission report on whether the circumstances are such that government and/or industry measures (including regional measures) are necessary to enhance the competitiveness of the industry; and
 - if so, what measures would be necessary and appropriate.
3. The Commission is to report within 5 months (or earlier) of receipt of this reference and is to hold hearings for the purposes of the inquiry.
4. The Government will consider the Commission's recommendations and the Government's response will be announced following consideration of the Commission's report.

PETER COSTELLO

[Received 31 August 2004]

Contents

Terms of reference	IV
Abbreviations and explanations	XI
Key points	XIV
Overview	XV
Findings	XXXIV
1 Introduction	1
1.1 Background to this inquiry	1
1.2 Conduct of the inquiry	2
1.3 Report structure	3
2 Australian markets for pigs and pigmeat	5
2.1 Pig and pigmeat products	5
2.2 Production of pigmeat	5
2.3 Consumption of pigmeat	17
2.4 Pig and pigmeat prices	19
2.5 Exports and imports	24
2.6 Profitability	32
3 Framework for assessing industry competitiveness	37
3.1 The competitiveness of businesses and industries	37
3.2 Sources of competitive advantage	38
3.3 Potential indicators of competitiveness	42
4 External factors affecting competitiveness	47
4.1 Delivered cost of imported pigmeat	47
4.2 Feed costs	52
4.3 Government assistance	54

5	Internal factors affecting competitiveness	69
5.1	Production technology	69
5.2	Inputs	74
5.3	Risk management	80
6	Government and industry programs in Australia	83
6.1	Framework for establishing the role of government	84
6.2	Government programs to improve competitiveness and economic efficiency in the pigmeat industry	90
6.3	Government programs to facilitate adjustment to economic change in the pigmeat industry	101
6.4	Industry programs	112
7	Potential impediments to improving performance and competitiveness	117
7.1	Imports and overseas assistance	117
7.2	Market access in export markets	119
7.3	Grain prices and availability	123
7.4	Access to genetic material	134
7.5	Labour costs and availability	136
7.6	Labelling laws	137
7.7	Pig size and pigmeat payment systems	140
7.8	Risk management in output and input prices	143
7.9	Access to capital	147
7.10	Animal welfare regulations	148
7.11	Other potential impediments	149
7.12	Conclusion	151
8	Measures to improve industry competitiveness	153
8.1	Industry and business measures to improve competitiveness	153
8.2	Government measures to improve competitiveness	156
8.3	Conclusion	178
9	Outlook for competitiveness	181

A	Conduct of the inquiry	187
B	Supplementary information on Australian markets for pigs and pigmeat	191
B.1	Pigmeat supply chain	191
B.2	Pig and pigmeat prices	196
B.3	Exports and imports	197
B.4	Imported and domestic pigmeat used in secondary processing	200
C	Supplementary information on world markets	205
C.1	World pigmeat production, consumption and trade	205
C.2	Country profiles	207
D	Correspondence	213
E	Producer support estimates	235
E.1	Components of producer support estimates	235
F	Summary program information for Australia	239
F.1	Australian Pork Limited programs	240
F.2	Cooperative Research Centre for an Internationally Competitive Pork Industry	242
F.3	Pork Industry Restructure Strategy programs	243
F.4	Export Market Development Grants	247
F.5	Tax provisions	248
F.6	Agriculture — Advancing Australia programs	252
F.7	Exceptional Circumstances drought assistance	256
	Attachment I: Programs assisting pigmeat producers in Canada, the European Union and the United States	257
I.1	Executive summary	260
I.2	International production	260
I.3	United States	263
I.4	Canada	266
I.5	European Union	268
I.6	Research, inspection, education and extension services	269
I.7	Outlook	270
I.8	Summary of specific programs	271
	References	305

BOXES

2.1	Meat consumption and prices	18
2.2	World pig prices	22
2.3	Quarantine measures in Australia	27
2.4	Danish export prices for pigmeat	29
2.5	International trade data	30
3.1	Air freight cost advantages to Asian markets	40
3.2	Costs of production	43
3.3	Understanding pigmeat imports	45
4.1	International grain prices	53
4.2	Fundamentals of foreign industry assistance	55
4.3	The Canadian Agricultural Income Stabilisation program	58
4.4	The competitive structure of the Danish market for pigmeat	66
5.1	Risk and risk aversion	81
6.1	Estimated benefits of quality assurance and product development projects to boost exports to the Singapore market	93
8.1	Structural adjustment in the pigmeat industry	170
C.1	The Danish pigmeat industry	210

FIGURES

2.1	Pig product supply chain	7
2.2	Pig producers and pigmeat production	9
2.3	Distribution of pig producers and breeding sows, by herd size	10
2.4	Number of pigs, by statistical local area	11
2.5	Pig farm employment, by statistical local area	12
2.6	Pig production and the environment	13
2.7	Location of 20 largest pig abattoirs	15
2.8	Turnover and employment in bacon, ham and smallgoods manufacturing	16
2.9	Annual per person consumption of main meats sold in Australia	18
2.10	Australian retail meat prices	19
2.11	Pig contract and saleyard prices	20
2.12	Seasonal baconer contract prices	21
2.13	Retail prices of pork legs, loin chops and bacon	24
2.14	Pigmeat exports from Australia	25

2.15	Pigmeat imports to Australia	28
2.16	Monthly average export prices for Danish frozen boneless pigmeat	30
2.17	Australian imports of pigmeat from Canada and Denmark	31
2.18	Sales revenue, costs and income of pig producers	33
2.19	Pig-to-feed price ratio	35
4.1	Canadian and Danish pig prices	48
4.2	Value of Australian pigmeat trade (nominal) and exchange rates	50
4.3	Volume of Canadian legs imports to Australia and exchange rates	51
4.4	Volume of total Canadian pigmeat imports to Australia and exchange rates	51
4.5	Volume of Danish middles imports to Australia and exchange rates	52
4.6	Australian grain prices	53
4.7	EU farm gate prices for pigmeat, selected countries	61
4.8	US and Danish cereal prices	64
5.1	Cumulative distribution of pig producer size, Australia and Denmark	72
5.2	Input cost shares in pig production	74
7.1	Domestic and export prices for wheat	129
B.1	Contract, wholesale and retail prices for pigs and pigmeat	197
B.2	Australian pigmeat exports	197
B.3	Australian pigmeat imports	198
C.1	World pigmeat production	205

TABLES

2.1	Distribution of pig herd	10
2.2	Profitability for surveyed pig producers	34
2.3	Estimates of profitability for bacon, ham and smallgoods manufacturers	35
2.4	Estimates of profitability for meat processing sector	36
4.1	Producer support estimates for pigmeat in selected countries	56
4.2	PSE for Australian pigmeat	57
5.1	Pig production efficiency indicators	70
6.1	APL's assessment of benefits of selected R&D programs	92
6.2	Key Australian Government programs affecting the pigmeat industry — competitiveness and economic efficiency	100

6.3	Key Australian Government programs affecting the pigmeat industry — adjustment to economic change	112
7.1	Average applied tariff rates for pigmeat in Australia's key export markets	121
7.2	Current grain marketing restrictions	126
8.1	Possible measures by industry and/or individual businesses	157
A.1	List of submissions	187
A.2	List of visits and meetings	188
A.3	Public hearings	189
B.1	Vertical integration of large pigmeat processors	192
B.2	Pig production	192
B.3	Pig producers and breeding sows, by herd size	193
B.4	Pig production — key statistics	194
B.5	Crop production in Australia	194
B.6	Meat processing — key statistics	195
B.7	Bacon, ham and smallgoods manufacturing — key statistics	196
B.8	Australian pigmeat exports, by destination	198
B.9	Australian pigmeat imports, by tariff code	199
B.10	Australian pigmeat imports, by origin	200
B.11	Proportion of legs used by the Australian secondary processing sector supplied by Canada	202
B.12	Proportion of middles used by the Australian secondary processing sector supplied by Denmark	203
C.1	Pigmeat consumption per person, by selected country	206
C.2	Major importers and exporters of pigmeat	206
E.1	OECD producer support estimates, by commodity	237
E.2	OECD producer support estimates for pigmeat, by selected country	237
I.1	Summary of programs listed in attachment I assisting pig producers in Canada, Denmark and the United States	258

Abbreviations and explanations

Abbreviations

ABARE	Australian Bureau of Agricultural and Resource Economics
ABS	Australian Bureau of Statistics
AIDA	Agriculture Income Disaster Assistance — Canada
APIQ	Australian Pork Industry Quality Program
APL	Australian Pork Limited
AQIS	Australian Quarantine and Inspection Service
BSE	bovine spongiform encephalopathy
CAIS	Canadian Agricultural Income Stabilisation
CAP	Common Agricultural Policy — EU
CFIP	Canadian Farm Income Program
CREP	Conservation Reserve Enhancement Program — US
CRP	Conservation Reserve Program — US
DAFF	Department of Agriculture, Fisheries and Forestry
DFAT	Department of Foreign Affairs and Trade
EC	Exceptional Circumstances
EQIP	Environmental Quality Incentive Program — US
EU	European Union
FCC	Farm Credit Canada Financing
FCIC	Federal Crop Insurance Corporation — US
FIMCLA	Federal Improvement and Marketing Cooperatives Guaranteed Loan Program — Canada
FIPA	Federal Income Protection Act — Canada
IC	Industry Commission
NCPP	National Committee for Pig Production — Denmark

NISA	Net Income Stabilisation Account — Canada
NSW	New South Wales
PSE	producer support estimate
OECD	Organisation for Economic Cooperation and Development
R&D	research and development
TISP	Transitional Industry Support Program — Canada
US	United States
WTO	World Trade Organization

Explanations

Billion	The convention used for a billion is a thousand million (10 ⁹).
Findings	<i>Findings in the body of the report are paragraphs highlighted using italics, as here.</i>

OVERVIEW

Key points

- Australia's pig producing and processing sectors continue to experience significant structural change.
- Over the past six years, Australia has become increasingly integrated into world pigmeat markets, with both exports and imports generally rising strongly.
- From 1999 to 2002 most pig producers were profitable. Between mid-2002 and late 2003, however, many pig producers made financial losses and the market shares for Australian pigmeat products fell.
- Declining competitiveness between mid-2002 and late 2003 was due to lower pig prices in competitor countries, high feed costs due to drought and an appreciating Australian dollar. Profitability improved during 2004, with some pigmeat businesses reporting profits, but imports continued to rise and exports fell.
- Australia's main competitive advantages internationally are its 'clean, green' image, disease free status and closeness to Asian markets. Australia's main disadvantages are high feed costs and low economies of scale.
- In the long run, the international competitiveness of pigmeat businesses will be driven by sustainable cost advantages and/or product differentiation.
- Imports of pigmeat into Australia do not benefit significantly from subsidies. Government assistance provided to pigmeat producers in Denmark and the United States is low. Assistance to Australian pigmeat producers is comparable to these countries. Somewhat more assistance (still low) is provided to pigmeat producers in Canada.
- Governments could reduce some impediments to industry performance and to competitiveness by, for example, seeking reductions in overseas trade barriers and reviewing the impact of single-desk grain exporting arrangements in Australia.
 - Such actions are unlikely, however, to make a large improvement to the competitiveness of pigmeat businesses or insulate the industry from such short term factors as drought and fluctuating exchange rates.
- Any increase in trade restrictions on imported frozen uncooked pigmeat would impose costs on pigmeat consumers, retailers and manufacturers, and may not be in the long term interests of pig producers or primary processors.
- General government assistance is available to help Australian pigmeat businesses to adjust and further assistance is not warranted at this time.

Overview

After experiencing three years of favourable returns, pig producers in Australia (and major competing countries) faced difficult economic circumstances between mid-2002 and the end of 2003. World prices fell and, in some countries (including Australia), feed costs were high. These trends were exacerbated in Australia by an appreciating dollar relative to the currencies of major competing countries. Competition on the domestic market from imported pigmeat has been strong and imports have been steadily rising since quarantine liberalisation in the mid-1990s. Exports also grew strongly after 1997-98, but declined in 2003-04.

Pig prices have been recovering in recent months, and feed prices have returned to the range experienced before the 2002-03 drought. Nevertheless, the industry is concerned about the economic sustainability of many domestic producers and processors and their longer run competitiveness.

The Productivity Commission has been asked to examine the current situation of, and outlook for, the Australian pigmeat industry. It has also been asked to consider whether any government and/or industry measures (including regional measures) are necessary to enhance the competitiveness of the industry. In undertaking the inquiry, the Commission is required to take into account:

- the structure and regional distribution of the industry
- key factors influencing the profitability of the industry, and the extent to which these factors are short or long term influences
- trends and factors influencing demand and supply, including imports and exports
- the competitiveness of the industry, including competitiveness relative to international competitors, and efforts by the domestic industry to enhance competitiveness
- the impact and effectiveness of existing and recent government and industry programs.

The focus of this inquiry differs from the inquiry undertaken by the Commission in 1998 where possible safeguard actions in regard to pigmeat imports into Australia were examined (PC 1998). In that inquiry, the Commission responded to a request from the Australian Government to assess whether safeguard action was warranted against pigmeat imports in accordance with World Trade Organization (WTO) rules. The terms of reference for this inquiry, however, do not request the

Commission to determine whether safeguard (or provisional safeguard) measures are warranted.

Australia's pigmeat industry has seen major changes

Pigmeat production makes a relatively small contribution to the gross value of Australian agricultural production, accounting for around 2 per cent (\$0.9 billion) of the gross value of agricultural production in 2003-04. Australia produces less than 1 per cent of world production of pigmeat, considerably less than its share of world beef and veal, and lamb and mutton production.

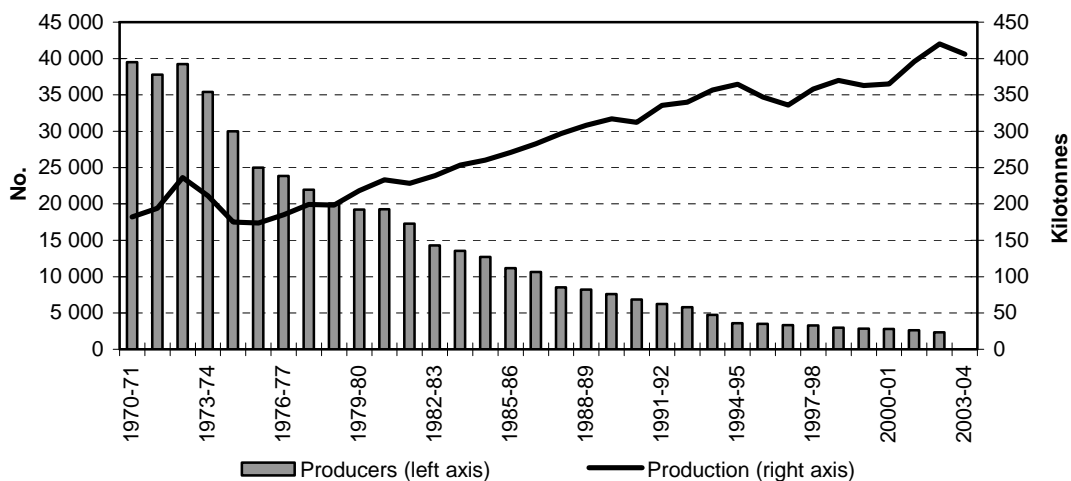
The pigmeat industry consists of three sectors: pig production, primary processing of pigmeat in abattoirs and boning rooms, and secondary processing (manufacturing). Primal cuts of meat — shoulders, middles and legs — are either sold in the fresh pigmeat market (through retail outlets and the food service industry) or used in the manufacture of bacon, ham and smallgoods. Although primal cuts are the main products, almost all of the pig is sold. Anecdotal evidence suggests 40 per cent of pigmeat consumed in Australia is fresh. Information on this share and how it has changed over time is limited.

Canada and Denmark have competed directly with Australian grown pigmeat to supply domestic manufacturers of bacon, ham and smallgoods since 1998. Because of quarantine restrictions, imports do not compete directly with Australian product in the fresh meat market. But other (non-fresh) imports may result in some displacement into the fresh market of local product that would otherwise have been used in manufacturing, thereby reducing prices. Recent changes to quarantine regulations have opened the way to allow imports from other countries. In December 2004, Australia received the first US frozen boneless pigmeat imports since the new quarantine policy was announced in May 2004.

The industry is undergoing structural change

The pigmeat production and processing sectors in Australia continue to experience major structural change, as they do in many other countries. Between 1970-71 and 2002-03, the number of pig producers declined from around 40 000 to just over 2300 (figure 1). Most of this adjustment occurred before quarantine arrangements changed in the 1990s. At the same time, annual pigmeat production increased by over 130 per cent, with steady growth between the mid-1970s and mid-1990s, which continued (albeit variably) until recently. Growth in output since the early 1990s has been due to gains in on-farm productivity from increasing the number of pigs per litter, reducing mortality rates and increasing weight gain rates and average slaughter weights. There has also been a shift towards the production of leaner pigs to meet consumer tastes.

Figure 1 **Producer numbers have fallen, while pigmeat production has grown**



The primary processing sector has also undergone rationalisation. Many abattoirs have increased in size and become more specialised (some in export markets), but many have closed. Some processing plants have increased in size (although they remain small compared with plants in North America and Europe). However, underutilisation of capacity remains a problem in the sector.

A small number of large producers now undertake a substantial proportion of Australian pig production. In 2003, the 3 per cent of producers with 1000 or more sows managed over half the breeding stock. Nevertheless, the majority of producers had small herds (with fewer than 100 sows) (figure 2). Many producers with small herds have other forms of income (such as grain production). In the past, many of these producers have entered and exited the pigmeat industry in response to market conditions. The trend towards more specialised, integrated production units, however, is reducing such opportunistic production in the pigmeat industry.

As the structure of pig production has changed (with an increasing number of larger operations), the nature and the level of risk have changed. Modern piggeries tend to be large and specialised to achieve economies of scale, which can reduce flexibility to adjust production decisions (such as the ability to use resources in other activities) in response to short term exogenous shocks in the prices of inputs and outputs.

Most pigs are located within Australia's grain producing regions, reflecting the relatively low cost of land and the reliance on grain as the major source of feed (figure 3). The concentration of pig production and processing operations varies across these regions. In most regions, however, direct employment in these sectors

is relatively small, but nonetheless is important to some local communities. The pigmeat industry (like other industries) also contributes to employment indirectly by contributing to related industries (such as transport).

Figure 2 The distribution of pig producers and breeding sows is skewed (June 2003)

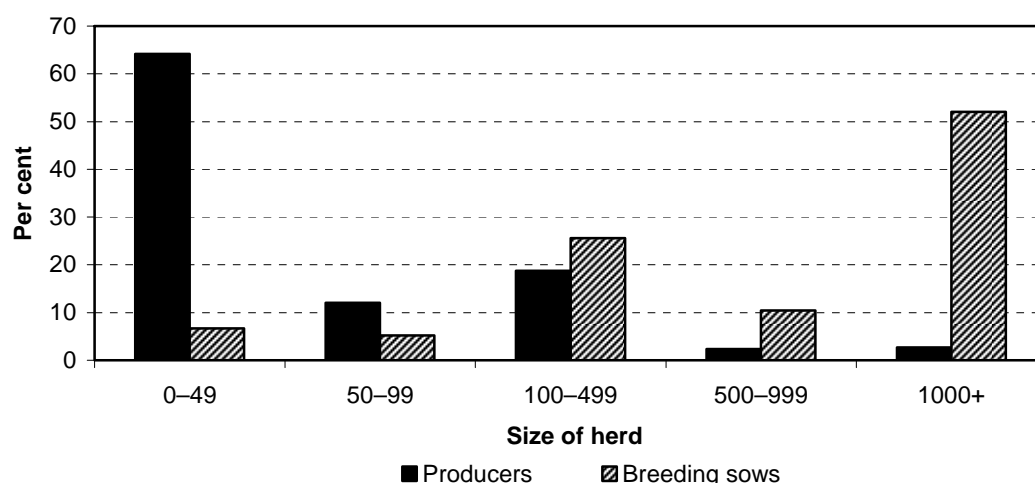
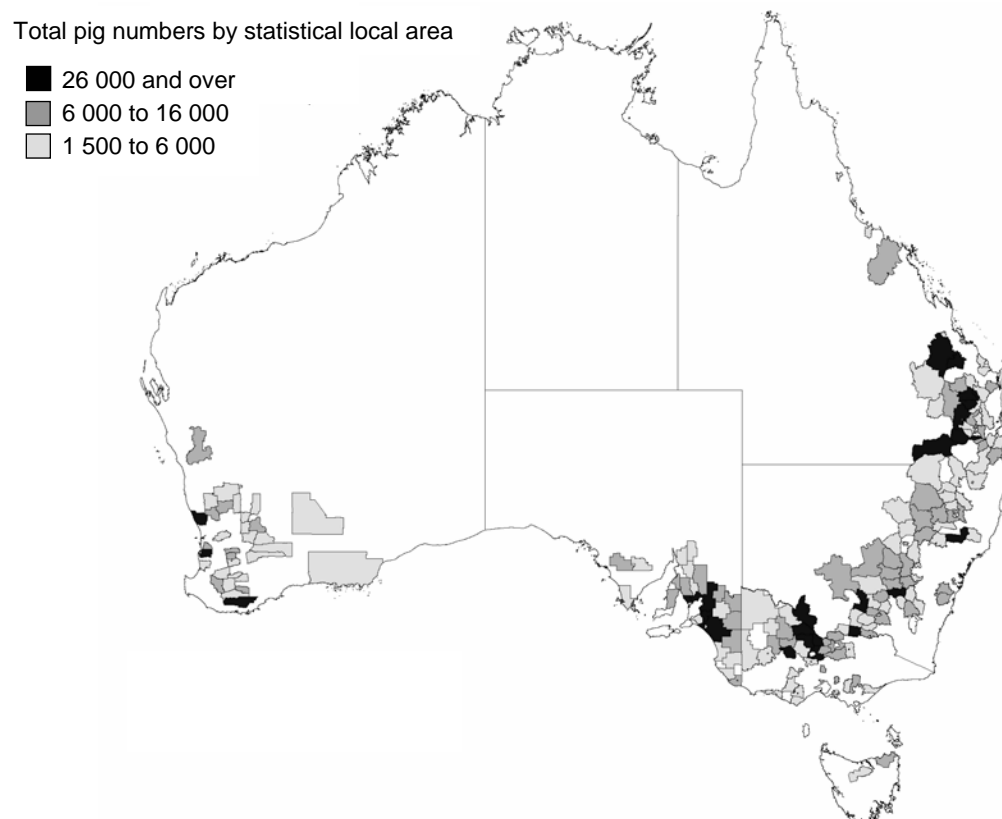


Figure 3 The industry's regional distribution (2001)

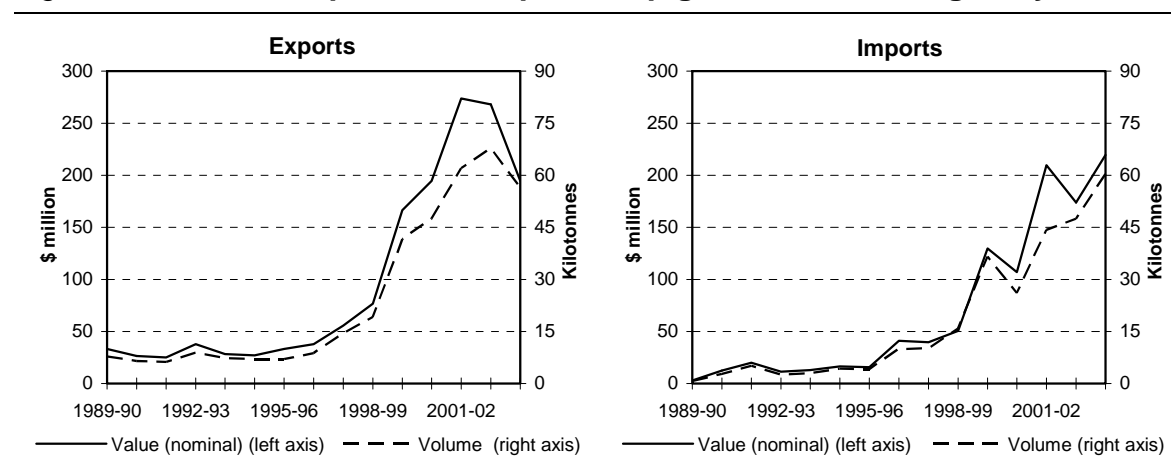


The industry is increasingly integrating into world pigmeat markets

Imports were heavily restricted until July 1990, when quarantine restrictions were revised to permit imports of frozen uncooked pigmeat from Canada (and changed again in 1992 to require imports to be boned before export and processed on arrival in Australia). From November 1997, imports of uncooked pigmeat from Denmark were allowed under a similar protocol. This liberalisation of imports was not associated with a significant change in the downward trend in the number of domestic producers or the upward trend in production (figure 1), but it may well have affected the profitability of the remaining producers.

Trade in pigmeat to and from Australia has increased significantly in the past six years (albeit from a small base). Exports of pigmeat increased substantially from \$56 million in 1997-98 to \$195 million in 2003-04. Imports of pigmeat (although fluctuating more than exports) have also increased substantially over recent years, from \$40 million in 1997-98 to \$219 million in 2003-04 (figure 4).

Figure 4 Both imports and exports of pigmeat have risen greatly



From 1999 to 2001, Australian pigmeat exporters benefited from a favourable exchange rate and disease outbreaks in other exporting countries. The outbreak of Nipah virus in Malaysia (in 1999) and foot and mouth disease in Chinese Taipei (in 1999) and Europe (in 2001), for example, contributed to significant export opportunities in Asian markets such as Singapore and Japan.

Australian exports decreased by 29 per cent in value between 2001-02 and 2003-04, partly due to Europe's recovery from foot and mouth disease and an appreciation of the Australian dollar relative to the currencies of major competitor countries (Canada, Denmark and the United States). Along with domestic pig production increasing by 3 per cent over the same period, the fall in exports meant that product that previously would have been exported was diverted to the domestic market.

The main export markets for Australian pigmeat in 2003-04 were Singapore and Japan, which together accounted for 73 per cent of exports by value and 63 per cent by volume. Exports to Singapore are predominantly chilled carcasses, whereas exports to Japan generally are pre-packed, high value cuts such as from middles (loins and bellies).

The growth in imports has been higher than the growth in domestic consumption, indicating that the market share of imports has increased. The bulk of Australia's imports come from Canada and Denmark (53 per cent and 42 per cent respectively by volume in 2003-04). Australia tends to import legs from Canada for manufacturing into ham, and middles from Denmark for manufacturing into bacon. Canadian legs account for about one third of the legs supplied to the Australian manufacturing sector, and Denmark supplies about one third of middles used by Australian bacon manufacturers.

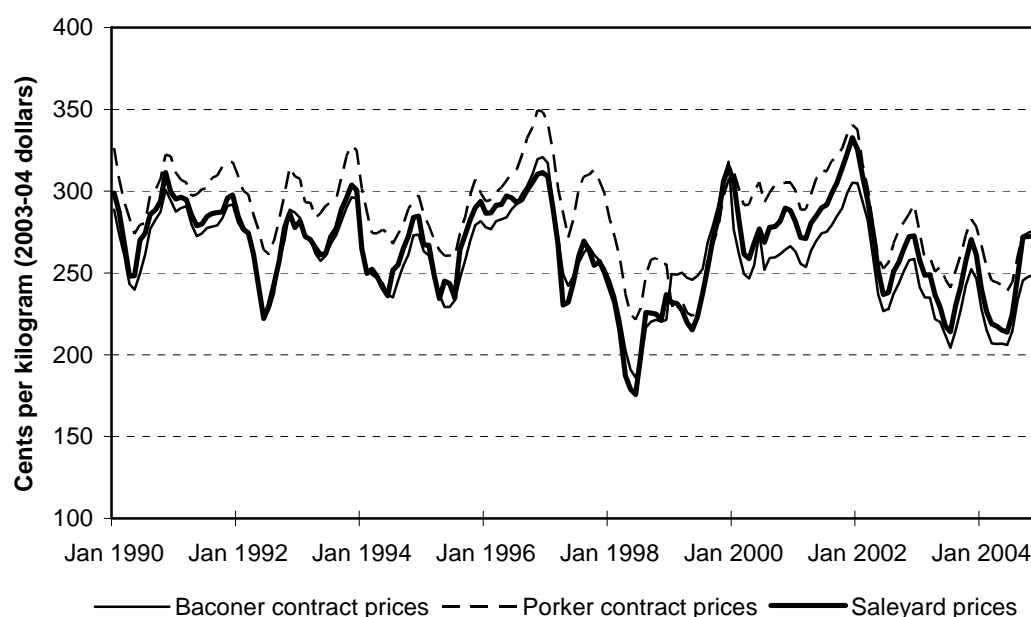
Domestic prices are increasingly related to world prices

Pig prices (saleyard and contract) vary considerably across years (figure 5). As the Australian market has become more accessible to imports, and as exports from Australia have increased, prices in the domestic market are moving more closely with world prices, especially US prices. Nonetheless, Australian domestic prices of pigs are generally higher than prices in major competitor countries such as Canada and Denmark, but the extent of the price differential can vary over time, with implications for profitability. Danish prices (in Australian dollars), for example, fell relatively consistently between January 2002 and January 2004, whereas Australian prices, while trending downwards, rose and fell over the same period.

The integration of the Australian pigmeat market has resulted in imports affecting prices throughout the year. Historically, the price of legs to be made into ham on the Australian market increased in summer with seasonal demand. Australian producers now compete against pigmeat from North America where there are domestic price troughs in the Australian summer. Australian producers are also competing against Danish pigmeat producers that have little, if any, seasonal peaks or troughs. In both cases, the relatively high Australian summer prices make Australia an attractive market. Lower priced imports are effectively limiting the summer price peaks.

Between 2001-02 and 2003-04, the growth in imports and the diversion of product intended for the export market to the domestic market contributed to a decline in domestic prices received by pig producers, and lowered prices paid for pigmeat by manufacturers and consumers.

Figure 5 **Australian pig contract and saleyard real prices**



Profitability was low between mid-2002 and the end of 2003, but is rising again

The profitability of businesses in the Australian pigmeat industry has varied over time. Many producers, after having three years of favourable returns, experienced substantial losses between mid-2002 and the end of 2003. However, profitability improved for many pig producers in 2004.

Trends in competitiveness and their drivers

A business's competitiveness in a market depends on its ability to produce and deliver a product of a given quality for that market at a cost rivalling that of competing businesses, or to use superior marketing and brand image to gain a price premium that more than offsets any cost disadvantage.

Businesses must seek and sustain competitive advantage to remain profitable

Product differentiation and cost advantages are important forms of competitive advantage in pigmeat markets. Inquiry participants considered that the disease free status of Australian pigs is a key factor differentiating Australian pigmeat from its competitors internationally. Australia's proximity to Asian markets provides a potential 'delivered to market' cost advantage to Australian exporters to these markets. Competitive disadvantages include high feed costs relative to some major

competitors — with producers often paying premiums for high quality grain suitable for human consumption (box 1) — and the comparatively small size of most operations. In addition, the relatively large distances between farms, feed supplies, abattoirs and domestic markets in Australia create disadvantages for many smaller pig producers. Factors external to the business — such as domestic and international government policy, disease outbreaks and exchange rate variations — can also affect competitiveness.

There is no single indicator of competitiveness, although profitability and movements in market share can provide insights. The continued survival of pigmeat businesses without significant government assistance can also demonstrate the international competitiveness of businesses.

Box 1 Feed grain is a source of competitive disadvantage

Feed costs are the largest cost item for pig producers in Australia, typically accounting for about 60 per cent of total costs. Grain makes up about 80–85 per cent of feed costs, for a typical cost share of 55 to 60 per cent. Common grains for feed in Australia are wheat, barley and sorghum.

Many of the grains produced by the Australian cropping industry are of high quality and can be used for human consumption (such as wheat for flour production), and generally are not grown for specific feed grain uses such as feed for the pig industry. In contrast, overseas pig producers, such as those in North America, have access to a feed grain industry (corn and soybean).

Unless the relative profitability of growing feed grain increases, Australian grain producers will continue to produce grain for human consumption, and the pigmeat industry will remain at a competitive disadvantage in this area. The Australian Government recently announced funding of \$25.75 million for a Cooperative Research Centre for the pigmeat industry. This centre will focus on reducing feed costs, improving herd feed conversion efficiency and demonstrating the health benefits of consuming nutritionally enhanced pigmeat products.

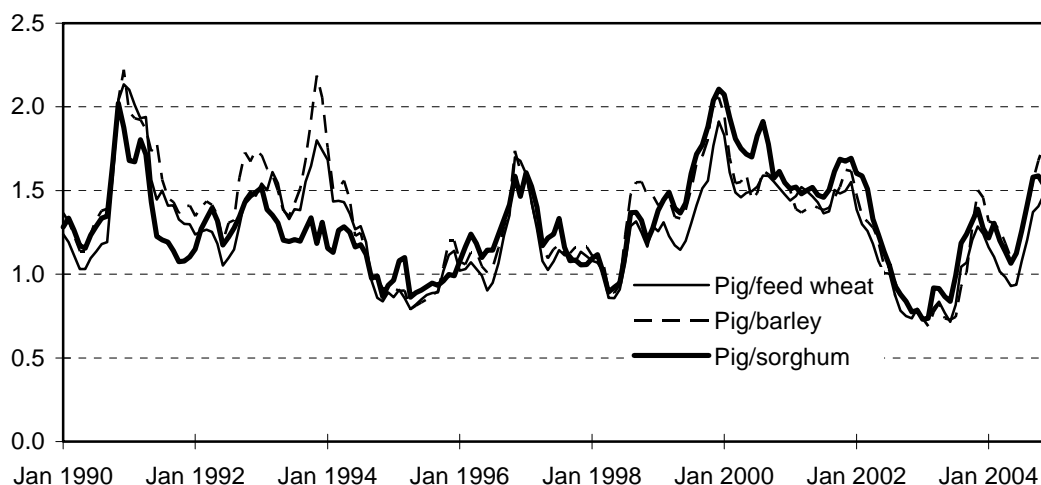
Competitiveness declined in 2002 and 2003, but indicators were mixed in 2004

The competitiveness of many businesses in the pigmeat industry declined between mid-2002 and the end of 2003. There are mixed signals on recovery, with profitability rising but imports continuing to grow and exports declining.

One indicator of profitability in pig production — the ratio of pig prices to feed grain prices — was substantially lower in 2002-03 when grain prices rose as a result of drought in both Australia and major overseas grain producing countries (figure 6). This indicator had improved markedly by late 2004. The share of

Australian pigmeat used in manufacturing declined between mid-2002 and the end of 2003. In addition, during 2004, the volume of imported pigmeat continued to grow, thus suggesting that the share of Australian pigmeat used in manufacturing further declined. Australian exports also continued to decline.

Figure 6 Ratio of pigmeat prices to feed prices



Many external factors influenced the decline in competitiveness in 2003

The competitiveness and profitability of Australian pigmeat producers have been adversely affected by several factors external to pigmeat businesses, such as the lower delivered price of imported pigmeat and substantial rises in the price of feed grain between mid-2002 and the end of 2003. Feed costs are a significant share of total operating costs of pig businesses, so changes in feed prices have a significant effect on individual business competitiveness. As noted, however, feed grain prices have fallen considerably since 2003. The Australian dollar prices of pigmeat in competitor countries fell relative to Australian domestic prices between July 2001 and January 2004 as a result of increased world production (and resultant lower world prices), and an appreciation in the Australian dollar.

Current levels of government assistance are low

Levels of government assistance provided to pigmeat producers in Denmark and the United States are low and generally for programs similar to those available to Australian pigmeat producers. Somewhat more assistance (but still low) is provided to pigmeat producers in Canada — mainly as a result of the Canadian Agricultural Income Stabilisation program and provincial stabilisation schemes (box 2).

Box 2 Assistance to pigmeat producers overseas

Levels of assistance to agricultural producers can be compared internationally and across agricultural industries using producer support estimates (PSEs) calculated by the OECD. The PSE is a measure of the monetary value of gross transfers from consumers and taxpayers to agricultural producers arising from policy measures that support agriculture. It comprises direct payments made to producers and an estimate of market price support. Some forms of assistance to agriculture not incorporated in PSE estimates include research and development and adjustment programs.

The PSE is low for Australia (3.59 per cent in 2003) and the United States (3.56 per cent) and somewhat higher for Canadian pigmeat producers (8.45 per cent). The PSE for pigmeat producers in the European Union (23.93 per cent on average) is much higher. This has been incorrectly interpreted by many inquiry participants as indicating that Danish pigmeat producers receive substantial assistance, thereby advantaging them in the Australian market.

The OECD estimate for the European Union should be interpreted with caution because it is not a measure of assistance within individual member countries. The OECD does not calculate PSEs for individual EU member countries.

After consulting a variety of sources and analysing the characteristics of the Danish market and support arrangements, it becomes clear that assistance to Danish pigmeat producers is relatively low:

- Farm gate prices received by Danish producers are below the EU average and Danish processors receive higher prices, on average, on export markets than on domestic EU markets.
- Budgetary outlays by the EU and Danish governments to the Danish pigmeat industry are low compared to the value of Danish production.
- Assistance provided by the Danish and EU governments to grain growers does not result in lower feed costs for Danish pigmeat producers.

The available evidence indicates that the Danish pigmeat industry comprises highly efficient businesses seeking out export markets that yield the highest returns for individual cuts of pigmeat.

Assistance to pigmeat producers is also relatively low in Australia. Some industry participants questioned the estimate of assistance to Australian producers. The Organisation for Economic Cooperation and Development (OECD) estimates of assistance to Australian pigmeat producers (3.59 per cent of the value of farm gate production in 2003) includes general government programs that were also available to producers in other agricultural enterprises as well as any specific assistance to pigmeat producers.

It would be beneficial for the Australian industry to have a better understanding of the competitive position of major overseas producers that are penetrating the

Australian processed market. In the Commission's view, the reluctance of some producers to accept that overseas imports are entering on a highly competitive basis without significant levels of government assistance is inhibiting them from positively responding by making necessary adjustments at the individual business level. It might also be noted that, as in other industries, even a significant level of overseas assistance would not, in and of itself, justify matching assistance to Australian producers. It is generally not in Australia's best interests to match industry assistance provided by other countries.

The effect of grain support arrangements are also minor

The OECD estimates that the domestic price of grain in Canada was C\$9 (about 8 per cent) more than the export price as a result of wheat marketing arrangements in 2003, imposing a relatively small cost (C\$18 million) on Canadian pig producers. However, the Canadian Government's removal of assistance for grain transport has encouraged the use of grain within Canada, lowering grain prices to the benefit of Canadian pig producers and other grain users.

There are substantial budgetary transfers to grain producers in the European Union including Denmark, but this assistance does not appear to translate into lower grain prices to Danish pigmeat producers — Danish grain prices are similar to world prices for comparable grains.

Long run competitiveness is important

Variability in both feed prices and exchange rates is likely to continue, so the competitiveness of Australian pigmeat businesses will also continue to fluctuate. While Australian pig producers benefited from an increase in Australian pigmeat prices in late 2004, the unpredictability of these two factors means the medium to long term outlook remains unclear.

Since the quarantine changes of the 1990s, imports have risen relatively consistently, and the Commission can see no reason for imports to abate in the near future. The rise in imports is the result of many factors, including product differentiation (such as on the basis of quality) and the cost competitiveness of the imports.

The pigmeat industries in Canada and the United States have some cost advantages over the Australian industry, particularly lower feed and processing costs. Australian pig producers and processors are unlikely to match these relative advantages in the near future. (Nevertheless, in some Australian export markets, the Canadian and US producers are at a competitive disadvantage when pigmeat fat is

yellowed from corn feeding.) The sources of Danish competitive advantage are uniformity of their product (weight, size and exact specifications) and the ability to supply large quantities. Danish businesses also appear to have an advantage in production technologies, although they face relatively more restrictive environmental regulations. Further, many Canadian, Danish and US businesses have been able to achieve economies of scale (in both pig production and meat processing) that will be difficult to match (profitably) in Australia.

Australia's main ongoing competitive advantages in export markets are its 'clean, green' image, disease free status and relative closeness to Asia. Australia is unlikely to achieve cost advantages in feed and processing in the near future, and the size and regional distribution of its industry may make it difficult to achieve significant economies of scale. In the long run, the competitiveness of businesses will be driven more by fundamental comparative advantages and disadvantages inherent to individual businesses in specific locations, which may not change significantly in the short term.

Nevertheless, the resilience of some Australian pigmeat businesses should not be underestimated. Some businesses will struggle in the short to medium term, and the number of domestic producers will continue to decline as marginal businesses leave the industry. On the other hand, businesses that are well managed, efficient and well located with strong supply chains, targeting specific pigmeat markets in which they have competitive advantages, are likely to continue to prosper in the longer term.

Recent government and industry programs

The Australian, State and Territory governments continue to provide general as well as industry-specific assistance to the pigmeat industry (box 3). The industry collected \$13.5 million in 2003-04 for marketing, research and development from its industry levy and received \$4.6 million from the Australian Government for research and development in that year. Government funding for adjustment included \$227 000 for FarmBis in 2003-04 and \$3.4 million in Exceptional Circumstances funding. Eligible pigmeat producers held \$21.7 million in Farm Management Deposits. The industry also received funding of over \$20 million for the Pork Industry Restructure Strategy in 1998–2001.

There do not appear to be any impediments to eligible pigmeat businesses accessing these programs. Reviews of the generally available adjustment programs forming 'Agriculture — Advancing Australia' found the programs to have been broadly effective in facilitating adjustment. However, there appear to be few evaluations of the net benefits generated by other government programs.

Box 3 Various assistance programs are available to the Australian pigmeat industry**Government programs**

Businesses in the pigmeat industry have accessed both generally available programs and pigmeat-specific programs to invest in:

- research and development (including government support through an industry levy, funding, extension services)
- market development (including government support through an industry levy, export market development, funding)
- processing facilities (via the Pigmeat Processing Grants Program).

Pigmeat businesses also have been able to access programs to facilitate adjustment to economic change. These include general agriculture programs such as FarmBis, Farm Help and Farm Management Deposits, and the pigmeat industry-specific Pork Producer Exit Program.

Industry programs

Programs run by industry seek to target different aspects of the pigmeat production and supply chain, for example:

- research and development — Australian Pork Limited's research and innovation program, and research and development undertaken by larger pigmeat producers
- marketing — Australian Pork Limited's domestic and export marketing program, the Confederation of Australian Pork Exporters, and marketing undertaken by larger pigmeat producers
- quality assurance — the Australian Pork Industry Quality Program (administered by Australian Pork Limited)
- environmental management programs — the Environmentally Sustainable Piggeries Program (administered by Australian Pork Limited).

The industry also runs programs that attempt to target aspects of the pigmeat production and supply chain. Little information is available about the effectiveness of these programs. The benefits and costs of Australian Pork Limited's research and development programs (funded by an industry levy and government contributions), for example, do not appear to be routinely evaluated and publicly reported. Such evaluations are essential to assess the effectiveness with which research and development programs are managed.

Potential impediments to performance and competitiveness

Inquiry participants noted potential impediments to improving performance and competitiveness, including:

- imports into Australia and assistance in overseas countries (including the impact on investor confidence)
- limited market access and/or high trade barriers in some overseas markets
- distortions affecting grain prices and availability
- difficulties in recruiting and retaining labour
- ambiguous or potentially misleading country-of-origin labelling practices
- limits on the ability of pig producers to increase returns by producing larger pigs, and issues with the current system that determines the payment for pigs
- a lack of ability to manage risk
- constraints on the access to capital.

Some of these issues are clearly not unique to the pigmeat industry. The availability and cost of labour, for example, are influenced by trends in the wider economy, particularly the strength of employment and wage levels in other industries competing for workers who could be employed in the pigmeat industry. Pigmeat businesses will be able to access capital (through debt or equity finance) if their investment proposals are sufficiently attractive. For another group of issues — such as those relating to pig size, the payment system, supply chain coordination and risk management — industry and individual businesses are best placed to deal with them.

In the case of country-of-origin labelling, existing institutions and regulatory arrangements together seem sufficient to limit misleading labelling of pigmeat products in Australia. A Victorian pilot of the HomeGrown label was launched in January 2005, but it remains unclear whether consumers would pay a premium for Australian produce.

Nonetheless, some areas remain in which governments could act to reduce impediments.

Market access is important for Australian exporters

The Australian pigmeat industry faces trade barriers overseas that can be an impediment to exports. Tariffs, quotas and other trade measures vary across export markets and also differ according to product. For example:

- Japan — a major market for Australian pigmeat exports — has a gate price system that requires importers to pay the difference between the imported value

and the gate price (where the imported value is below the gate price), and also a tariff of 4.3 per cent on fresh, chilled or frozen pigmeat

- Chinese Taipei has tariffs of 55 per cent on fresh, chilled or frozen pork bellies, and 13 per cent on other fresh, chilled or frozen pigmeat

However, there are no tariffs on exports to Singapore (the industry's largest export market), Hong Kong and New Zealand.

It is important that the Government continues to press for reduced overseas barriers to Australian pigmeat exports, as part of its efforts within the current Doha Round and in any prospective negotiations on preferential trade arrangements.

Distortions in the domestic grain market may reduce competitiveness

Governments have been dismantling many elements of statutory marketing arrangements for grain since the mid-1980s. Some restrictions remain for wheat, barley and other feed grain. A key concern for inquiry participants is the single-desk arrangement for wheat exports (although concerns were also raised about exports of barley in South Australia). Single-desk marketing arrangements have the potential to raise domestic prices for grain, particularly during a drought, reducing the competitiveness of all domestic grain-using industries (including the pigmeat industry). Although arbitrage opportunities should limit the scope to raise domestic prices, governments should regularly review such arrangements to ensure the benefits outweigh the costs. The Commission's discussion draft on its review of National Competition Policy reforms proposed that continuing restrictions on competition in export wheat marketing should be re-examined sooner rather than later.

Quarantine restrictions on importing grain into Australia — to manage the pest and disease risks that might affect Australia's broadacre industries and natural flora and fauna — were also a concern of inquiry participants for two reasons:

- First, the quarantine barriers can exacerbate the effects of any domestic market power of single-desk exporters of grain. During droughts, for example, when the single-desk body for wheat is virtually the only supplier of wheat to the domestic feed industry, the import controls reinforce its market power.
- Second, the quarantine arrangements for importing grain could involve high costs (including both costs of treatment and potential increased prices for domestic users), so these arrangements should impose only the minimum requirements needed to satisfy quarantine objectives. The pigmeat industry has a continuing role to explore opportunities to import feed while meeting Australia's quarantine requirements.

Inquiry participants also raised concerns about the likely effects of government support in Australia for ethanol production. Government support to encourage the expansion of the ethanol industry is likely to raise domestic prices for feed grain, adversely affecting the pigmeat and other intensive livestock industries. The impact will depend on the extent to which feed grain is used for ethanol production, and the size of the ethanol industry. Given the potential costs to other industries, governments should regularly review these arrangements to ensure the benefits outweigh the costs.

Actions to address impediments cannot offset key disadvantages

Pig production is a low margin industry and any reduction in costs at the margin is important. Nevertheless, the Commission notes that reducing impediments to competitiveness is unlikely to make such a large improvement to the competitiveness of pigmeat businesses as to offset the fundamental disadvantages of relatively high feed costs and small scale (and often fragmented) industry structure. They would also not insulate the industry from such significant forces affecting short-run competitiveness as drought and fluctuating exchange rates.

Industry and government measures to improve competitiveness

Inquiry participants suggested a number of steps that pigmeat businesses could take to improve their competitiveness. These include greater vertical and horizontal integration across the supply chain; using more long term supply contracts between pig producers and grain suppliers; improving efficiencies in production (including increasing scale); improving carcass measuring systems; value adding more before selling to retailers or exporting; and improving product choice for consumers. A number of such initiatives are already being adopted or developed and are a part of Australian Pork Limited's proposed industry restructure plan.

These measures have some disadvantages as well as advantages, and not all would suit or benefit every business. Pig producers, processors or the industry as a whole therefore need to judge the relative merits of these industry measures, and the timing of any implementation. The Commission sees no major regulatory or market impediments to businesses making informed commercial decisions.

The regulatory environment should reflect good process

The broad regulatory environment within which pigmeat businesses operate can impede the competitiveness of the pigmeat industry, and its ability to grow and adjust. Governments across Australia are continuing to review planning and

development approval laws in response to general concerns over the formation and use of such laws, seeking to improve their efficiency and effectiveness. Changes in environmental, health or animal welfare regulations should be subject to rigorous regulation impact assessments and involve effective consultation with all affected parties to ensure they are designed to generate net benefits to the community and impose the minimum requirements necessary to achieve their objectives.

General assistance programs are available

The Commission has also received no evidence that pigmeat businesses have been unable to access the available general agricultural, business or social security assistance and a number of reviews of assistance programs have found them broadly effective in facilitating adjustment. A possible exception in terms of accessibility has been in relation to drought assistance.

Although restructuring of the pigmeat industry (with many businesses amalgamating and increasing in size) potentially reduces the accessibility or relevance of some general agricultural programs to pigmeat businesses, the need for such programs may also decline. Other generally available programs (such as social security assistance and retraining programs) may become more useful for those employed by larger, corporate businesses.

Governments should, however, regularly conduct independent reviews of generally available assistance programs to ensure they are appropriate, efficient and effective. Moreover, future reviews of drought policy could assess the impact of drought assistance on pigmeat businesses, as well as the general merits of current arrangements.

Additional adjustment assistance for pigmeat businesses?

The pigmeat industry in Australia has been undergoing significant change, like many other sectors of the economy and pigmeat competitors in other countries. In most industries, there are both expanding and contracting businesses. Simultaneous entry and exit of businesses in a single industry is also normal. Most adjustment is autonomous — that is, it is a response of businesses in the industry to changes in their environment, independent of government assistance.

The pigmeat industry is no different: some businesses are seeking more resources to invest in the industry to pursue niche markets while others are considering withdrawing their resources. Several submissions asserted that adverse changes in recent years have been ‘too much’ and that additional industry-specific adjustment assistance is justified to ensure the industry’s ongoing competitiveness and to assist

some businesses to exit the industry. However, feed prices have fallen since mid-2003 and pig prices have increased since mid-2004, improving the financial position of most pigmeat businesses and easing adjustment burdens.

Some inquiry participants suggested that certain characteristics of pigmeat production may restrict structural adjustment, including the low re-sale value of assets, the short growing cycle of pig production and the industry's difficulties in attracting skilled labour and management. The Commission has not found evidence that the characteristics of pigmeat businesses substantially impede adjustment. General assistance programs are thus likely to be appropriate mechanisms for assisting adjustment, without the need for further industry-specific assistance.

Safeguard measures are unlikely to facilitate adjustment

Several inquiry participants argued the Australian Government should take safeguard actions under WTO provisions as a special form of temporary industry adjustment assistance to provide pigmeat businesses with 'breathing space' from import competition and to help facilitate adjustment and structural change. The Commission has not been asked to comment on whether safeguard (or preliminary safeguard) actions are justified under WTO rules, and could not undertake a safeguards inquiry without a formal request from the Australian Government.

As observed in the Commission's 1998 safeguards inquiry, however, regardless of whether WTO provisions would *allow* for safeguard measures, it is far from clear that such actions would be the most appropriate way of assisting the pigmeat industry. Trade restrictions would be a blunt and indirect way of providing assistance — with all pig producers and primary processors assisted regardless of need — and would reduce incentives for pigmeat businesses to adjust. Such restrictions are more likely to discourage change and restructuring. Restricting imports of pigmeat would also adversely affect pigmeat consumers, retailers and manufacturers. It might also detract from Australia's capacity to seek reductions in overseas trade barriers.

Countervailing and anti-dumping duties

Countervailing duties can be imposed on agricultural imports under WTO rules if it can be demonstrated that imported products are being subsidised and that this subsidisation is causing, or threatens to cause, material injury to a domestic industry. Imports of pigmeat to Australia from Denmark and Canada, however, receive relatively low levels of assistance.

Anti-dumping measures can be applied under WTO rules if it can be established that imports are being sold at prices below their ‘normal value’ in the country of origin and that the domestic industry is suffering, or likely to suffer, material injury as a result. Australia is generally regarded as a high price destination for pigmeat exports from Europe and North America.

Industry and government should focus on economic fundamentals

Industry adjustment is an important means by which the pigmeat industry can improve competitiveness. The entry and exit of businesses enables new investment and innovation, as well as managerial improvements.

In the Commission’s view, government measures to facilitate a competitive industry are best directed at providing an economic environment conducive to sustainable economic growth, providing ongoing support for research and development where appropriate, minimising impediments to efficiency and competitiveness, and ensuring the effective and efficient performance of government programs.

The difficulties periodically experienced by pigmeat businesses — including, most recently, between mid-2002 and the end of 2003 — relate to the continuously changing conditions of international pigmeat markets, climate and currency markets. Pigmeat businesses can readily access existing agricultural adjustment programs and general welfare programs.

In the Commission’s view, additional adjustment assistance measures (including exit packages) for pigmeat businesses are not warranted at this time. The Commission can find little justification for governments subsidising the capital expenditures of pigmeat businesses, as suggested by some inquiry participants. Nor is there a need at present for additional regional adjustment assistance.

To be successful in the longer term, Australian pigmeat businesses will need to ensure their production systems are closely linked to the needs of specialised niche markets for pigmeat cuts, and constantly seek productivity gains within those production systems. These businesses will also have to ensure effective communication of market information through the supply chain from the consumer to the pig producer. These changes are best left to individual businesses and the market place.

Findings

Australian markets for pigs and pigmeat

FINDING 2.1

Australia's pig production and primary processing sectors continue to experience significant structural change, as in many other countries. Pigmeat production has increased, while the number of pig producers has declined substantially. The primary processing sector has also become more concentrated, with many abattoirs becoming more specialised.

FINDING 2.2

Australia has become increasingly integrated into the world pigmeat market over the past six years, with pigmeat imports rising from \$40 million to \$219 million, and exports increasing from \$56 million to \$195 million.

Industry competitiveness

FINDING 3.1

The competitiveness of a business can be difficult to measure, although profitability and market share are useful indicators. Many Australian pig producers made substantial losses during 2002-03, following three years of above average profits. Profitability improved for many pig producers in 2004. The share of imported pigmeat used by secondary processors increased between 2002 and 2004. Exports of pigmeat declined during that period.

External factors affecting competitiveness

FINDING 4.1

The competitiveness of Australian pig producers in the domestic market and some international markets declined between mid-2002 and the end of 2003, largely reflecting movements in exogenous factors such as exchange rates and feed prices. There are mixed signals on recovery. Both exchange rates and feed prices moved favourably during 2004, enabling some recovery of profitability, but imports continued to grow while exports declined. Such fluctuations in competitiveness are likely to continue.

FINDING 4.2

Assistance to Canadian and European Union grain producers has not resulted in a significant reduction in prices paid for grain by Canadian and Danish pigmeat producers.

FINDING 4.3

Imports of pigmeat into Australia do not benefit significantly from foreign subsidies. Government assistance provided to pigmeat producers in Denmark and the United States is low. Somewhat more assistance (but still low) is provided to pigmeat producers in Canada.

FINDING 4.4

Government assistance provided to Australian pigmeat producers is also low. The types of assistance are similar to those available to producers in Denmark and the United States.

Internal factors affecting competitiveness

FINDING 5.1

Continuing improvements in practices internal to a pigmeat business are important to maintain long run competitiveness with foreign competitors. In the short run, however, these internal factors are unlikely to offset such influences as large unexpected movements in feed grain prices and exchange rates.

FINDING 5.2

While increased specialisation and capital intensity have allowed some pig producers to achieve economies of size and higher returns, the consequences of large unanticipated variations in prices of outputs and inputs may be greater than for less specialised producers.

Government and industry programs in Australia

FINDING 6.1

The benefits and costs of Australian Pork Limited's research and development programs do not appear to be routinely evaluated and publicly reported. Such assessments are critical to monitor the effectiveness with which research and development programs are managed.

FINDING 6.2

Businesses in the pigmeat industry have accessed generally available programs, and pigmeat-specific programs, to invest in research and development, market development, and processing facilities. There has been little evaluation of the net benefits generated by individual programs.

Potential impediments to improving performance and competitiveness

FINDING 7.1

There is an ongoing role for the Australian Government to press for reduced overseas barriers to Australian pigmeat exports, as part of its efforts within the current Doha Round and in any prospective negotiations on preferential trade arrangements.

FINDING 7.2

Single-desk marketing arrangements for domestic and export sales of Australian grain have the potential to raise domestic prices for grain, particularly during drought, reducing the competitiveness of all domestic grain-using industries (including the pigmeat industry).

FINDING 7.3

Government support to encourage the expansion of the ethanol industry is likely to raise domestic prices for feed grain, adversely affecting the pigmeat and other intensive livestock industries. The impact will depend on the extent to which feed grain is used for ethanol production, and the size of the ethanol industry.

FINDING 7.4

Governments should ensure any regulatory requirements — such as those related to quarantine, planning and development, animal welfare and environmental impacts — are the minimum necessary to achieve their objectives. However, this is unlikely to greatly alter the competitiveness of pigmeat businesses. The benefits are unlikely to be large, and could be slow to emerge. More significant factors affecting short-run competitiveness are forces such as drought and fluctuating exchange rates.

Measures to improve industry competitiveness

FINDING 8.1

The Australian pigmeat industry and pigmeat businesses can pursue a range of measures to improve business competitiveness. The relative merits of any such measures are best judged by individual pig producers or processors, or by the industry as a whole.

FINDING 8.2

Given the potential impacts of single-desk grain export arrangements on domestic grain-using industries, the Australian and relevant State governments should regularly review such arrangements to ensure their benefits outweigh the costs for the community as a whole.

FINDING 8.3

Given the potential costs of government support for the ethanol industry, the Australian Government should regularly review that support to ensure the benefits outweigh the costs for the community as a whole.

FINDING 8.4

While additional restrictions on pigmeat imports into Australia may provide short term benefits to pig producers, they would adversely affect Australian pigmeat consumers, retailers and manufacturers. They could also discourage or delay ongoing restructuring and would fail to target those in greatest need of assistance.

FINDING 8.5

Additional adjustment assistance specific to the pigmeat industry is not warranted, but governments should regularly review generally available agricultural and business assistance programs and existing assistance targeted at the pigmeat industry to ensure their appropriateness, efficiency and effectiveness.

1 Introduction

On 31 August 2004, the Australian Government Treasurer asked the Productivity Commission to undertake an inquiry and report on the competitive situation of, and outlook for, the Australian pigmeat industry, including both production and processing. The Treasurer also asked the Commission to report on whether government or industry measures are necessary to enhance the competitiveness of the industry and, if so, what measures would be necessary and appropriate. This report presents the Commission's analysis and findings.

1.1 Background to this inquiry

The Australian pigmeat industry has undergone significant restructuring for many years, with the number of pig producers falling, many abattoirs closing or becoming more specialised, and processing plants increasing in size. The industry has also become increasingly vertically integrated, with ownership or long term contracts linking the supply chain, especially between pig production and processing. Following significant changes to quarantine arrangements since 1990, the industry has become increasingly integrated with world markets.

After experiencing three years of favourable returns, pig producers in Australia (and major competing countries) faced difficult economic circumstances between mid-2002 and the end of 2003. World prices fell and, in some countries (including Australia), feed costs were high. In Australia, these trends were exacerbated by an appreciating dollar relative to the currencies of major competing countries. Competition in the domestic market from imported pigmeat has been strong and imports have been rising steadily since the mid-1990s. Exports also grew strongly from 1997-98, but declined in value in 2002-03 and 2003-04. Although pig prices have been recovering in recent months, and feed prices are returning to the range experienced before the 2002-03 drought, the difficult economic circumstances have prompted concerns from the industry. Concerns have been raised, for example, about the economic sustainability of some domestic pig producers, and about how all sectors of the industry can continue to adjust and remain competitive.

This inquiry contrasts with an inquiry undertaken by the Commission in 1998 that examined possible safeguard actions in regard to pigmeat imports into Australia

(PC 1998). In that inquiry, the Commission responded to a request from the Australian Government to assess whether safeguard action was warranted against pigmeat imports in accordance with World Trade Organization safeguard investigation procedures. Safeguard actions are emergency actions that are appropriate when increased imports are unexpected and unforeseen, and have caused (or are likely to cause) serious material injury to the domestic industry. The terms of reference for this inquiry, however, do not request the Commission to determine whether safeguard (or provisional safeguard) measures are warranted.

In 1995, the former Industry Commission undertook a research study of the effects of pigmeat imports on the performance of the domestic pig farming, pigmeat and processed pigmeat industries, and on the Australian economy (IC 1995a). The present inquiry examines more broadly the competitive situation of, and outlook for, the pigmeat industry, and whether government or industry measures to improve competitiveness are warranted.

1.2 Conduct of the inquiry

The Commission's approach to this inquiry is guided by the *Productivity Commission Act 1998*, which requires the Commission to conduct inquiries in an open and transparent manner, and to frame its assessments in terms of what will deliver the best outcomes for the Australian community overall. On 14 September 2004, the Commission issued a circular to parties with a potential interest in the inquiry. This circular announced the inquiry and included issues and questions to help interested parties participate in the inquiry and prepare submissions. Advertisements were also placed in several national newspapers and a number of rural papers.

The Commission held discussions with a variety of inquiry participants in early September 2004, including pigmeat industry bodies, pig producers, pigmeat primary processors, secondary processors (manufacturers), retailers and exporters, and key government agencies. It received 45 submissions in response to the issues paper attached to the first circular.

The Commission was due to report to the Australian Government by 31 January 2005. To allow inquiry participants adequate time to prepare further submissions in response to the draft report and to attend public hearings, the Commission requested an extension to the reporting date for the inquiry. The Australian Government granted the request and extended the reporting date to 18 March 2005.

The Commission released its draft report for public comment on 15 December 2004. It received 27 submissions in response to the draft report, and

27 participants made presentations at public hearings held in Melbourne, Perth, Brisbane, Sydney and Adelaide in late January and early February 2005.

The Commission thanks inquiry participants for meeting with the Commissioner and Commission staff, attending public hearings and/or making submissions in response to the issues paper and draft report. Appendix A provides details of these individuals and organisations.

1.3 Report structure

Chapter 2 examines Australian markets for pigs and pigmeat products, including domestic prices, consumption and production patterns, industry trends, imports and exports, and the industry's profitability. A framework for assessing industry competitiveness is presented in chapter 3. External factors affecting pigmeat businesses are considered in chapter 4, while internal factors are discussed in chapter 5. Chapter 6 outlines existing and recent government and industry programs in Australia that are relevant to the pigmeat industry. Impediments to improving competitiveness in the industry are examined in chapter 7, and possible government and industry measures to increase competitiveness are considered in chapter 8. The outlook for the competitiveness of Australian pigmeat businesses is discussed in chapter 9.

2 Australian markets for pigs and pigmeat

The pig and pigmeat industry consists of three sectors: pig production, primary pigmeat processing in abattoirs and boning rooms, and secondary processing (manufacturing) of ham, bacon and smallgoods. The industry produces fresh pigmeat (fresh pork) and processed pigmeat products. This chapter outlines the markets for pigs and pigmeat in Australia. It describes pigmeat products produced and sold on the Australian market, the main trends and characteristics of domestic production and consumption of pigmeat, and pig and pigmeat prices. It also outlines key trends in pigmeat exports and imports, and the profitability of Australian pig producers and processors.

2.1 Pig and pigmeat products

The main products made from pigs in Australia are primal cuts of meat, which are commonly categorised into shoulders, middles and legs. From these, other cuts are taken (such as loins, butts and bellies). Pigmeat cuts are either sold in the fresh pork market (through retail outlets and the food service industry) or used in the manufacture of bacon, ham and smallgoods.

Although primal cuts are the main products, almost all of the pig is sold. Fresh offal (such as pig heart, kidney, tongue and liver) for human consumption is sold domestically through retail outlets and the food service industry, as well as being exported to several Asian markets. Offal is also occasionally used as an ingredient in certain manufactured meat products (ProAnd Associates 1999). Parts of the pig that are not sold for human consumption are sold for pet food, rendering, blood meal, and hide and skin manufacturing. Other potential pig products include biological derivatives for use in pharmaceuticals (ProAnd Associates 1999).

2.2 Production of pigmeat

Pig production is a relatively small sector of agriculture in Australia. In 2003-04, it accounted for about 2 per cent (\$0.9 billion) of the gross value of agricultural

production. The value of pig production was less than beef and veal (\$6.7 billion), lamb and mutton (\$2 billion) and poultry (\$1.3 billion) (ABS 2005c, p. 5). Australia accounts for about 0.4 per cent of world production of pigmeat, lower than its share of world production for beef and veal (3.5 per cent) and lamb and mutton (7.1 per cent) (FAO 2005). Agriculture contributes roughly 3 per cent of Australia's gross domestic product (ABARE 2004a, p. 486).

Businesses in the Australian pigmeat industry supply two domestic markets: the fresh meat market (which is largely shielded from international competition) and the processing market (which is exposed to international trade). It is widely believed that around 40 per cent of domestic pigmeat is sold as fresh pork (see, for example, Spencer 2004, p. 48), but no firm statistics are available. A number of pigmeat businesses supply fresh and processed pigmeat to overseas markets.

Although quarantine restrictions mean imported pigmeat does not compete directly with domestic production in the fresh meat market in Australia, imports nevertheless affect the prices of fresh meat. This occurs because domestic production can flow to either the fresh or processed market, so price variation in one market can lead to domestic supply shifting between markets (with consequential price effects). PIC Australia noted:

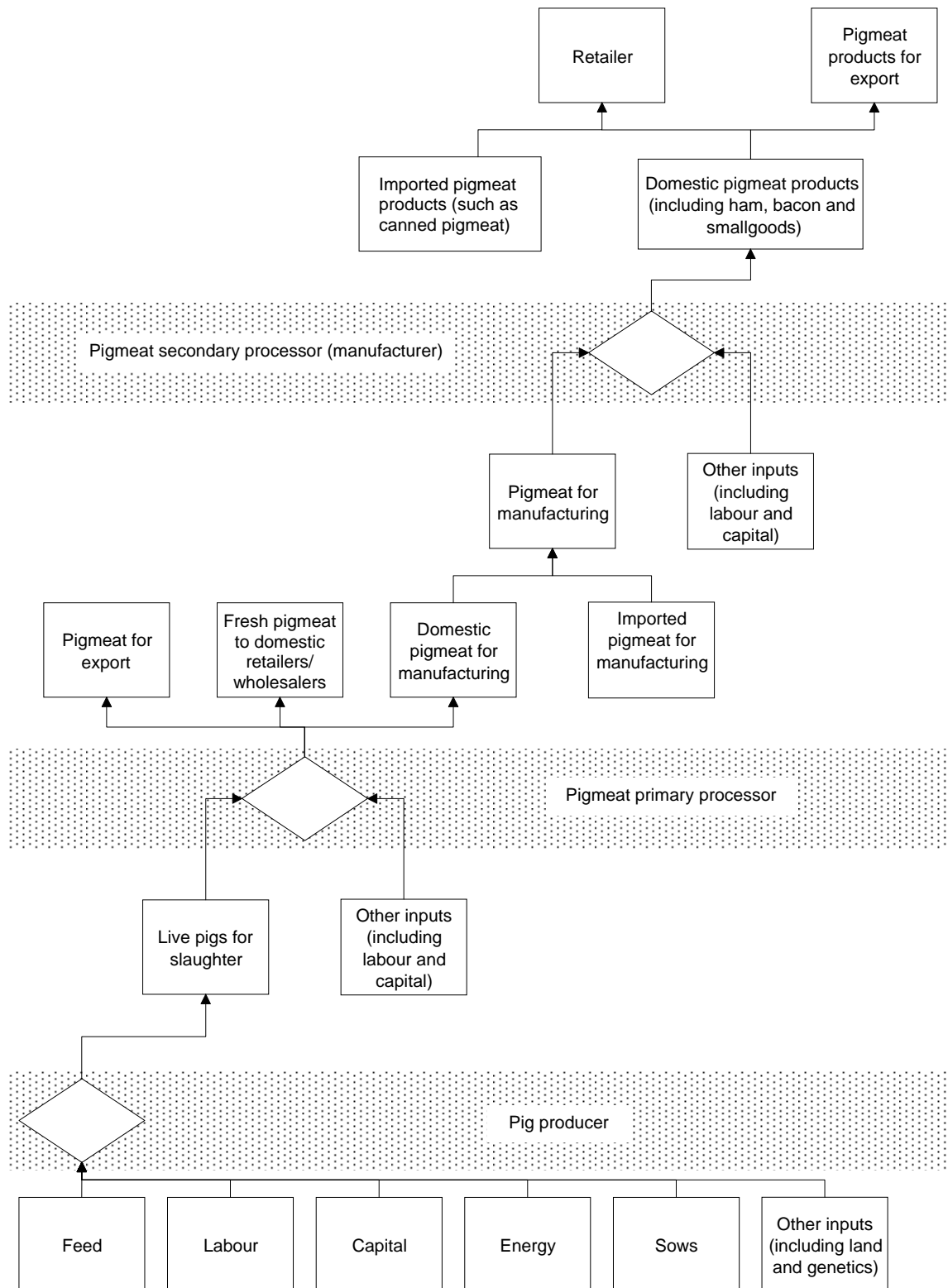
[Because] the processed market and the fresh market are inextricably linked, any artificial downward pressure placed on pork product supplied into the processed sector in turn has a similar price lowering effect on the Australian fresh pork sector. (sub. 15, p. 3)

Figure 2.1 illustrates a stylised pig product supply chain. It is most easily interpreted from the bottom, commencing with the pig producer that uses several inputs to produce pigs for slaughter. These pigs are then an input into primary processing, which produces fresh meat for consumption or export, as well as pigmeat used in secondary processing (manufacturing). The manufacturer can use domestically produced and/or imported pigmeat to produce ham, bacon and smallgoods. These pigmeat products can then be consumed domestically or exported.

Many businesses in the pigmeat industry are vertically and/or horizontally integrated. In some cases, vertical links extend from pig production through to the secondary processing of pigmeat into bacon, ham and smallgoods (appendix B, section B.1). In 2004, four of the five largest abattoirs owned associated pig production operations. Some businesses have also formed horizontal links by merging or entering alliances. The NSW Farmers Association — NSW Pork noted:

Horizontal links exist among producers through the use of co-operatives and alliances especially with small to medium size piggeries in the Far North Coast, Grenfell, Mid West and South East Riverina regions. This strategy is becoming increasingly important in the industry. (sub. 20, p. 8)

Figure 2.1 Pig product supply chain



Some pig producers and processors have links to overseas businesses. Australia's largest pig producer (QAF Meat Industries), for example, is Singaporean owned, while food manufacturer George Weston Foods (a subsidiary of Associated British Foods) controls Australian secondary processors George Chapman's, Don Smallgoods and Watsonia (Watsons Foods).

Pig production

Pig production involves pig breeding and growing, mainly for slaughter. In Australia, most pigs are housed in large sheds where temperature and feed can be controlled. Shed design and production methods vary as new technology and improved animal husbandry are introduced to the industry. The traditional method of production involves housing pigs in concrete floored pens. More recently, pigs are being housed in deep litter systems (where pigs live on straw in more open areas). There are also some smaller specialised 'pasture production' systems (where pigs spend some time in paddocks). Innovation in pig production technology largely reflects an increasing focus on improving product quality, meeting the requirements of specific markets and boosting operational efficiency.

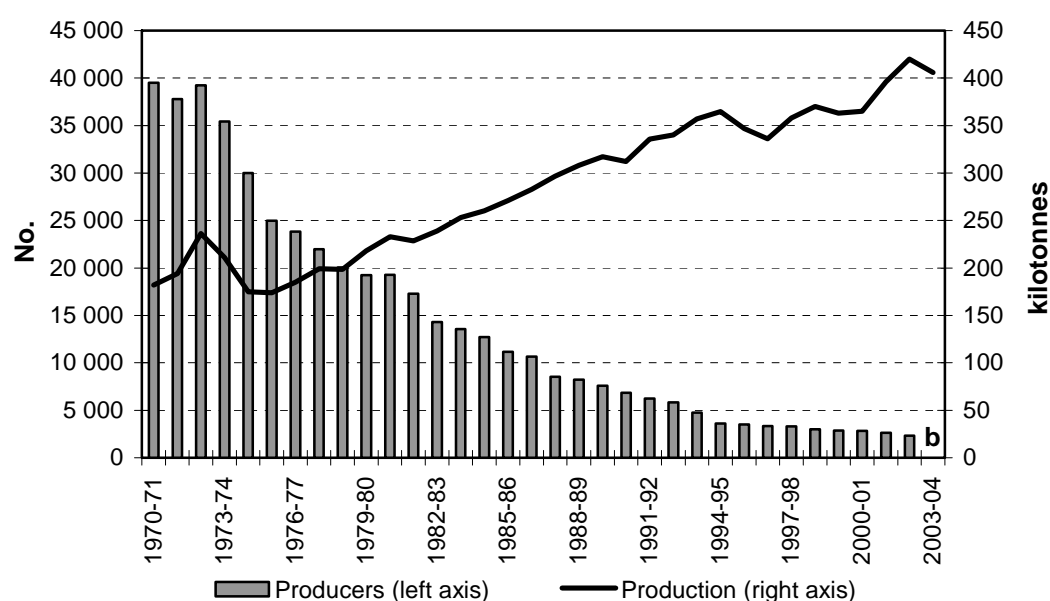
Many pig producers sell a slaughtered product to processors. This means ownership changes hands after slaughter ('over the hooks'), with payment being related to the hot standard weight of the dressed carcass. Apart from pigs produced by a vertically integrated enterprise, most are sold under contractual arrangements. Many pig producers sell a carcass that must be within a tightly specified weight range and fat level, or heavy price discounts are incurred. Pigs grow relatively quickly (with the time from when a sow is mated until her progeny are marketed being commonly about 40 weeks), so the pig producer has a small window in which to sell. This situation has implications for the pig market, particularly for pig prices and the risks faced by pig producers. In some cases, abattoirs kill pigs under contract for producers, manufacturers or wholesalers (without ownership changing hands), and the producers, manufacturers or wholesalers then on-sell the processed pigmeat.

In addition to pig producers that breed and grow out pigs ready for slaughter, some farms specialise in either breeding or growing out pigs (often under contracts). In 2003, Victoria had 153 contract growers, compared with 145 in New South Wales, 116 in Queensland, 80 in South Australia, 34 in Western Australia and seven in Tasmania (APL unpublished).

Pig production has undergone significant structural change over the past 30 years or so (as in other countries and other agricultural industries), and this change appears likely to continue. Between 1970-71 and 2002-03, the number of pig producers

declined by 94 per cent, falling from around 40 000 to just over 2300. Most of this adjustment occurred before Australian quarantine arrangements were revised in the 1990s, allowing imports of uncooked pigmeat initially from Canada and then later from Denmark. From 1970-71 to 2002-03, pigmeat production increased by over 130 per cent (figure 2.2) (appendix B, section B.1). The rise in pigmeat production was due not only to increased capacity (sows) among the remaining pig producers, but also to an increasing number of slaughtered pigs per sow and an increasing yield of meat from each carcass (resulting from improved genetic stock and animal husbandry). The average slaughter weight in Australia (73 kilograms) is lower than that in many of the major producing nations such as Canada (85 kilograms), the United States (88 kilograms), China (78 kilograms), Denmark (78 kilograms) and Poland (87 kilograms) (APL 2004c, p. 37).

Figure 2.2 Pig producers and pigmeat production, Australia^a



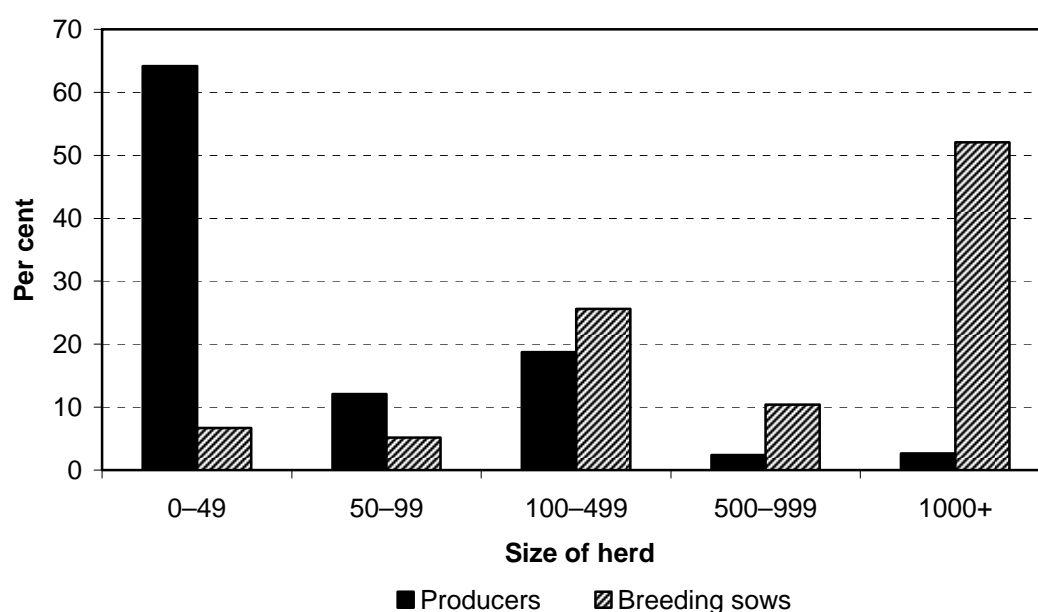
^a Producer numbers are based on the number of establishments with breeding sows or gilts (intended for breeding). ^b Producer numbers are not available for 2003-04.

Sources: ABS, *Livestock Products, Australia*, Cat. no. 7215.0; ABS, *Agricultural Commodities, Australia*, Cat. no. 7121.0; ABS unpublished.

A small number of large producers now undertake a large proportion of Australian pig production. In 2003, the 3 per cent of producers with 1000 or more sows managed over half the breeding stock. Nevertheless, the majority of producers had small herds (with fewer than 100 sows) (figure 2.3). Many producers with small herds have other forms of income such as grain production and, in the past, have entered the market when pig prices are high and exited when pig prices are low.

The average herd size, which was less than 10 breeding sows during the 1960s, had increased to around 152 sows by 2003 (table 2.1). In 2003, Victoria had the largest average herd size (198) followed by Queensland (182), and both States had 15 producers with 1000 or more sows. In contrast, Tasmania's average herd size was 42, and that State had no producers with 500 sows or more.

Figure 2.3 Distribution of pig producers and breeding sows, by herd size, Australia, June 2003



Source: APL unpublished.

Table 2.1 Distribution of pig herd, Australia, June 2003

			<i>Proportion of producers, by herd size</i>					
	<i>Herds</i>	<i>Breeding sows</i>	<i>Average herd size</i>	<i>1-49 sows</i>	<i>50-99 sows</i>	<i>100-499 sows</i>	<i>500-999 sows</i>	<i>1000 sows or more</i>
	no.	no.	no.	%	%	%	%	%
NSW	708	101 436	143.3	68.5	11.4	16.1	2.0	2.0
Vic	401	79 473	198.3	59.4	14.5	18.0	4.2	3.7
Qld	416	75 661	182.1	61.8	6.0	26.0	2.6	3.6
SA	457	52 003	113.7	68.1	14.2	13.3	2.2	2.0
WA	281	41 145	146.7	54.4	16.4	25.3	1.1	2.8
Tas	58	2 448	42.1	77.6	8.6	15.5	0.0	0.0
NT	3	374	124.7	66.7	0.0	33.3	0.0	0.0
Australia	2 323	352 541	151.7	64.2	12.1	18.8	2.4	2.6

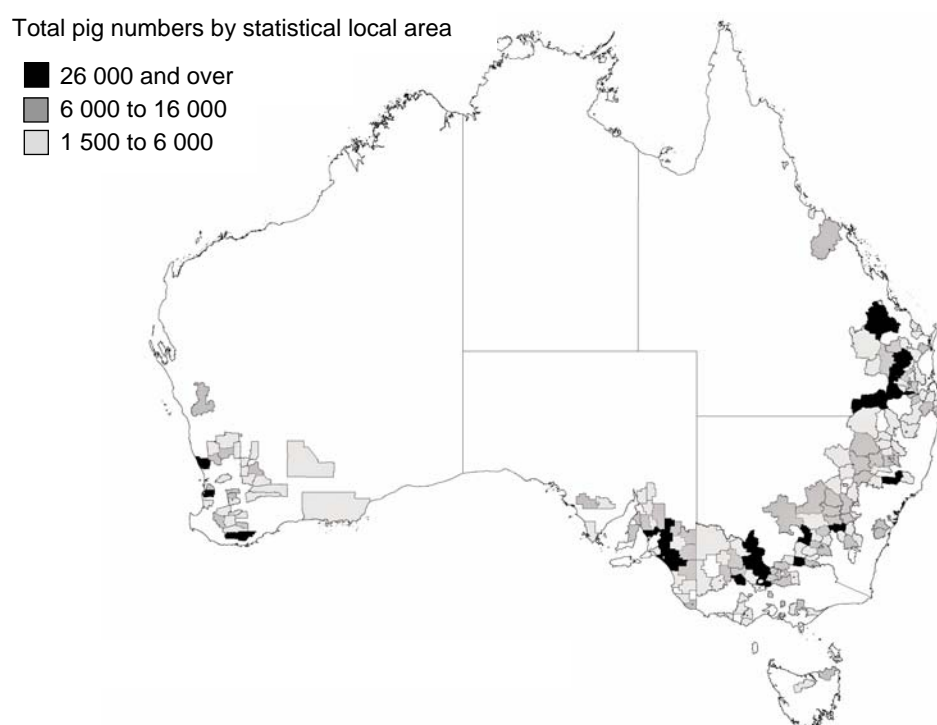
Source: APL unpublished.

Most pigs are located around Australia's grain producing regions, reflecting the relatively cheap cost of land and the reliance on grain as the major source of feed (figure 2.4) (Sheales, Apted and Ashton 2004, p. 13). Australian Pork Limited (APL) noted:

In New South Wales, the industry is heavily concentrated in the south of the State; in Queensland it is concentrated in the Darling Downs; while in Victoria it is more dispersed around the north. (sub. 37, p. 45)

According to the most recent Australian Bureau of Statistics (ABS) Population and Housing Census, approximately 3500 individuals were directly employed in pig farming in 2001 (figure 2.5). In 2001, there were few statistical local areas where pig farming accounted for more than 3 per cent of total employment. The exceptions were Clifton (3.5 per cent) in the Darling Downs (Queensland), Murgon (3.3 per cent) and Wondai (3.2 per cent) in the Wide Bay–Burnett region (Queensland) and Corowa (3.2 per cent) in southern New South Wales.

Figure 2.4 Number of pigs, by statistical local area, 2001

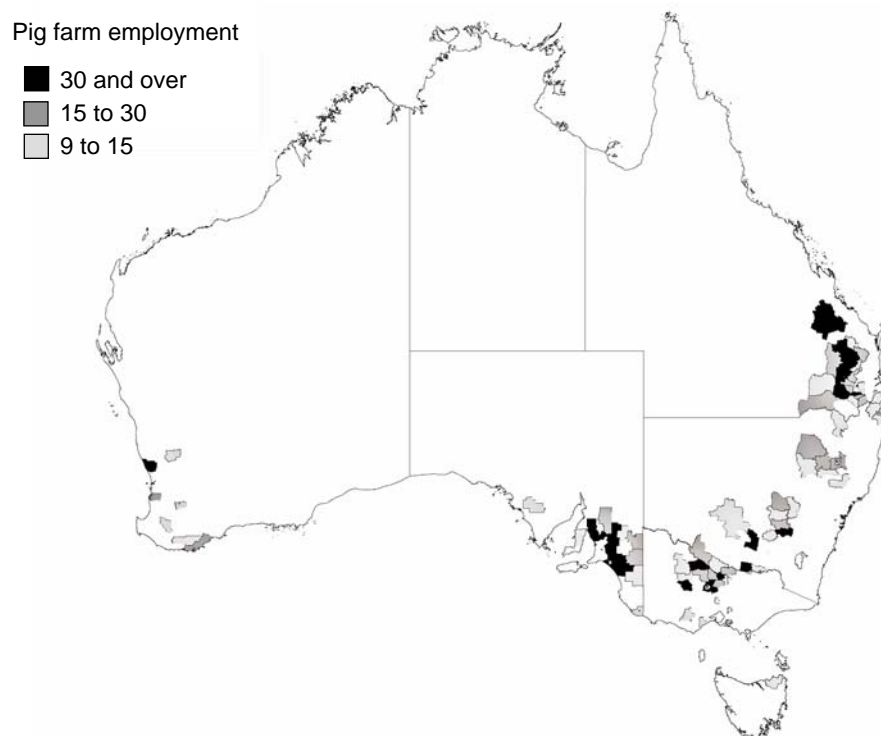


Source: ABS, *Agricultural Census* 2001, unpublished.

Official estimates of employment in primary pigmeat processing for each statistical local area are not available, with employment figures for meat processing not disaggregated according to the different types of meat produced. Sheales, Apted and Ashton (2004) addressed this issue by assuming pig production accounts for a fixed

proportion of meat production and, using national slaughter figures for pigs and other livestock, estimated that pig processing accounted for approximately 0.3 per cent of employment (on average) in eight of Australia's major pig farming areas. This may, however, understate employment in pigmeat processing in areas where the proportion of the pigs slaughtered is higher than the national average. In Corowa, for example — which is home to Australia's largest pigmeat processor QAF Meat Industries (formerly Bunge) — pigmeat processing is likely to account for a greater proportion of meat processing employment than the estimated national average of around 16 per cent. It should also be noted the pigmeat industry (like any other industry) is also likely to contribute to employment indirectly by supporting other related industries (such as transport).

Figure 2.5 Pig farm employment, by statistical local area, 2001



Source: ABS, *Population and Housing Census 2001*, unpublished.

Feed is a major component of pig producers' total costs. Grains used include wheat, barley, sorghum and oats. Other feedstuff such as animal protein meal are also fed to pigs. The Victorian Farmers Federation — Pig Group noted:

During normal seasonal periods feed costs account for between 55–60 per cent of overall production costs. This percentage significantly increased during the last drought where feed costs during winter increased to 70 per cent of overall costs which brought the domestic price of wheat to over \$300 per tonne. (sub. 30, p. 5)

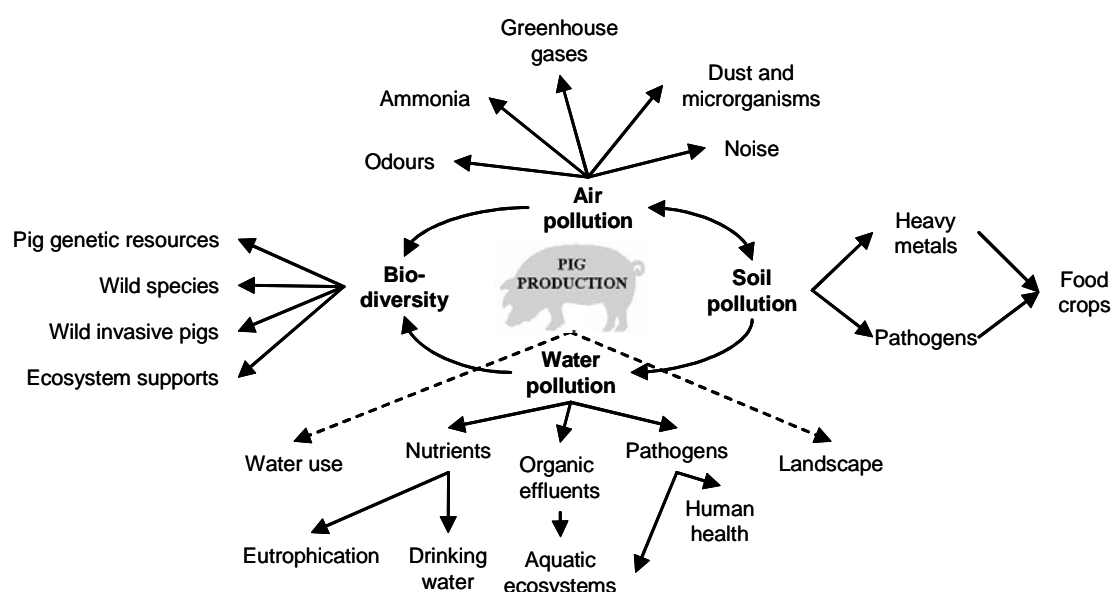
Pig production generates waste products (such as air and water pollution) that need to be managed (figure 2.6). As pig production systems become larger, pig producers need to continually develop more effective environmental management practices. Some inquiry participants noted that they are updating and improving their environmental management activities. The pig industry in South Australia, for example, is taking steps to increase the use of deep litter based systems, which Primary Industries and Resources South Australia expects to lead to ‘improved water use efficiency and environmental benefits’ (sub. 36, p. 4). Further, Windridge Farms noted they are moving the bulk of their pigs to new grower sites and they anticipate this will facilitate better environmental management (sub. 18, p. 2).

Animal welfare issues can also emerge in the pig industry, with different production systems, husbandry, transport and processing having different implications. These issues may grow in importance in the future. Some inquiry participants have noted their concern about the potential costs related to animal welfare requirements. For example, NSW Farmers Association — NSW Pork observed:

New regulations, particularly regarding environmental and animal welfare requirements, may require in the not too distant future, considerable investment with ... no increased return, and potentially increased cost of production in the case of welfare requirements. (trans., p. 281)

Concerns about animal welfare are discussed further in chapter 7, section 7.10.

Figure 2.6 Pig production and the environment



Source: OECD 2003a, p. 29.

Primary processing (abattoirs and boning rooms)

Primary processing involves slaughtering and (in some cases) boning pigs into key pig cuts either for sale on fresh pork markets or for use in secondary processing (manufacturing). Although abattoirs that slaughter pigs vary considerably in size and scope of operation, all undertake similar processes. The end products of these processes are whole carcasses, half carcasses, edible offal and other byproducts.

In the boning room, the carcass is divided into primal cuts. Generally, these processes are labour intensive, with the carcasses being cut up by electric saw, and boned and sliced by knife. Each primal cut undergoes a range of treatments depending on the end use of the product — that is, either sale in the fresh pork market (through the food service industry and retail outlets such as supermarkets, butchers and restaurants), or use in the manufacture of bacon, ham and smallgoods.

Structural changes in the pigmeat processing sector over the past 15 years reflect trends in the wider meat processing industry. Pigmeat processing developed from a base of local processors spread throughout pig production regions. Technical limitations on storing and transporting pigs meant that processors were restricted to areas within easy reach of production and storage facilities. Over time, improved transport and storage facilities have eased this constraint, making rationalisation possible with many abattoirs increasing in size and becoming more specialised, while many have closed.

Between 1992-93 and 2003-04, the five largest abattoirs increased their share of the national pig slaughter from 32 per cent to 53 per cent, while the 20 largest abattoirs increased their share from 75 per cent to 91 per cent (DAFF unpublished; PC 1998, p. D8). In some parts of Australia, the meat processing industry is particularly concentrated — for example, the Perth Pork Centre kills about 95 per cent of all the State's pigs (Western Australian Department of Agriculture, sub. 17, p. 1).

Among the 20 largest pig abattoirs, some of the biggest establishments have become export oriented, and concentrated on slaughtering pigs. Between 1996-97 and 2003-04, the number of export accredited abattoirs that processed pigs increased from six to 14; also during that period, pigmeat exports increased from around 9 kilotonnes to 56 kilotonnes (DAFF unpublished; PC 1998, p. D8). Many processing plants have also increased in size (although they remain small compared with plants in North America and Europe) (chapter 5).

Some abattoir and boning room operators, however, have reported that their facilities are being underused. AusPork Australia noted:

[AusPork's Daylesford abattoir has] capacity to kill 6500 to 7000 pigs in a single shift per week but [is] only killing 3500 to 4000 today due to the consequences of the drought and industry uncertainty.

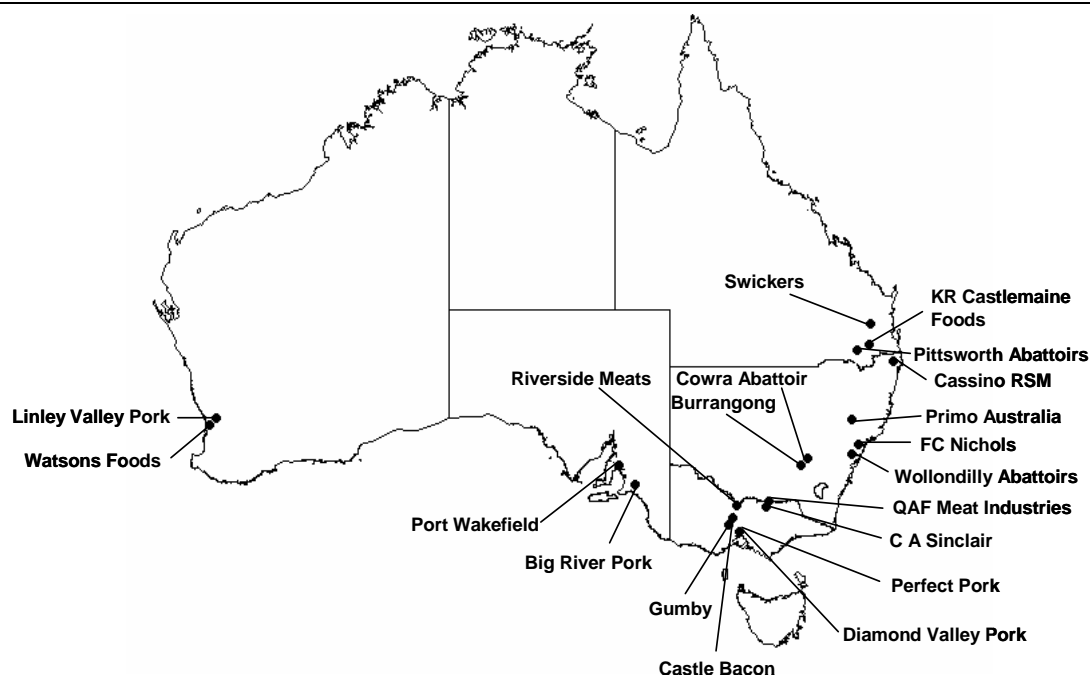
[The Daylesford Pork Products boning room's] capacity is up to 2000 pigs per week but is currently only doing 250 pigs per week. (sub. 32, p. 1)

Subsequently, the Daylesford facility was closed and the stock are now slaughtered and processed at Big River Pork in Murray Bridge (South Australia) (Auspork Australia, trans., p. 394).

Most of the 20 largest pig abattoirs are located near major pig production regions (figure 2.7). Since data on these abattoirs were collected during 2003-04, the Primo Australia (Scone), Gumby (Daylesford), FC Nichols and Watsons Foods abattoirs have either closed or announced their closure.

The production of pigmeat represents only a small part of total meat production. The precise proportion is difficult to determine: as discussed above, meat processing industry statistics available from the ABS include all slaughtering and meat production, so official disaggregated data on businesses producing and processing pigmeat are not available. Previous studies have estimated that primary pigmeat processing accounts for around 11–12 per cent of total meat processing turnover (PC 1998). This estimate suggests pigmeat processing contributed roughly \$180 million to gross domestic product in 2000-01 and directly supported 3100 jobs (appendix B, section B.1).

Figure 2.7 Location of 20 largest pig abattoirs, Australia, June 2004^a



^a The Watsons Foods, Gumby (Daylesford), Primo Australia (Scone) and FC Nichols abattoirs have since either closed or announced their closure. Castle Bacon and Darling Downs Bacon have merged. Processor size is based on levy data collected by the Australian Government Department of Agriculture, Fisheries and Forestry.

Sources: Sheales, Apted and Ashton 2004, p. 44; DAFF unpublished.

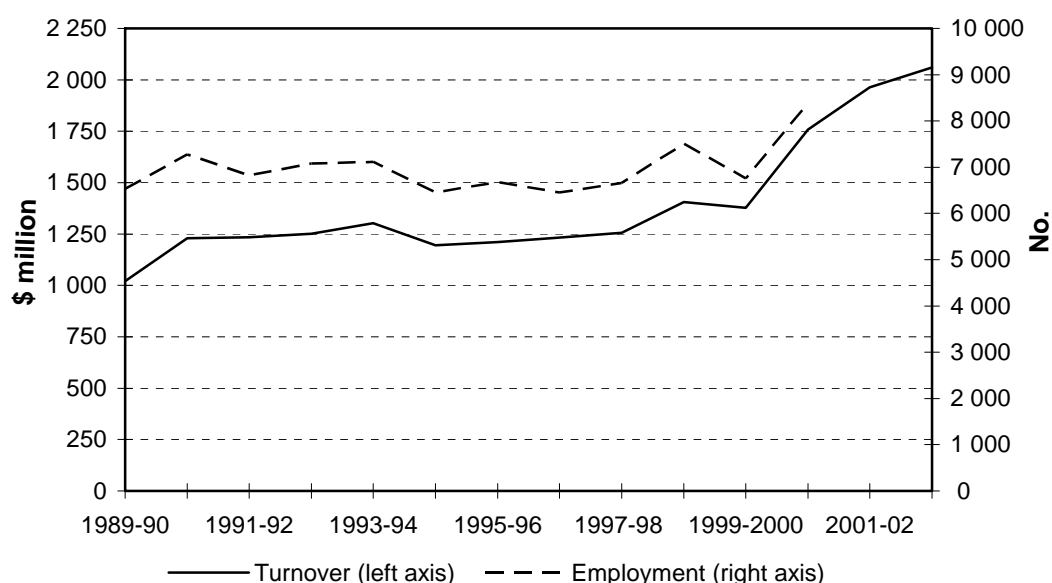
Secondary processing (manufacturing)

Secondary processing involves the further processing of pigmeat cuts into bacon, ham and smallgoods through curing, cooking and smoking. Although smallgoods use all meats, the majority of meat used is pigmeat. The pigmeat used in secondary processing can come from local boning rooms or be imported from other countries.

As for the primary meat processing industry, no official disaggregated data are available for the secondary meat processing industry. While the industry's employment and turnover remained relatively stable during most of the 1990s, turnover appears to have increased during the early 2000s (figure 2.8). In light of significant changes made in 2000-01 and 2001-02 to the way in which manufacturing data were collected, caution is advised when comparing values across years.

Although many manufacturers are small family owned establishments, large companies such as George Weston Foods, KR Castlemaine and Primo Smallgoods dominate total sales. Spencer (2004) estimated that the six major pigmeat manufacturers account for more than 60 per cent of total production.

Figure 2.8 Turnover and employment in bacon, ham and smallgoods manufacturing, Australia^a



^a Given changes in 2000-01 and 2001-02 to the way in which manufacturing data are collected, caution is advised when comparing values to earlier years. Employment numbers for bacon, ham and smallgoods manufacturing are not available for 2001-02 or 2002-03.

Source: ABS, *Manufacturing Industry, Australia*, Cat. no. 8221.0.

Several large manufacturers are located near major metropolitan areas. Major smallgoods factories are located in Perth (Watsons Foods), Melbourne (Don Smallgoods), Brisbane (Hans Continental Smallgoods) and Sydney (Primo Smallgoods). A number of bacon, ham and smallgoods manufacturers are also located in regional areas, particularly near meat producing areas.

FINDING 2.1

Australia's pig production and primary processing sectors continue to experience significant structural change, as in many other countries. Pigmeat production has increased, while the number of pig producers has declined substantially. The primary processing sector has also become more concentrated, with many abattoirs becoming more specialised.

2.3 Consumption of pigmeat

Australian per person consumption of meat is among the highest in the world, although Australian per person consumption of pigmeat is relatively low. In total, ABARE estimated that annual consumption of the main meats (beef, lamb and mutton, pigmeat and poultry) averages around 100–110 kilograms per person (Sheales, Apted and Ashton 2004, p. 18).

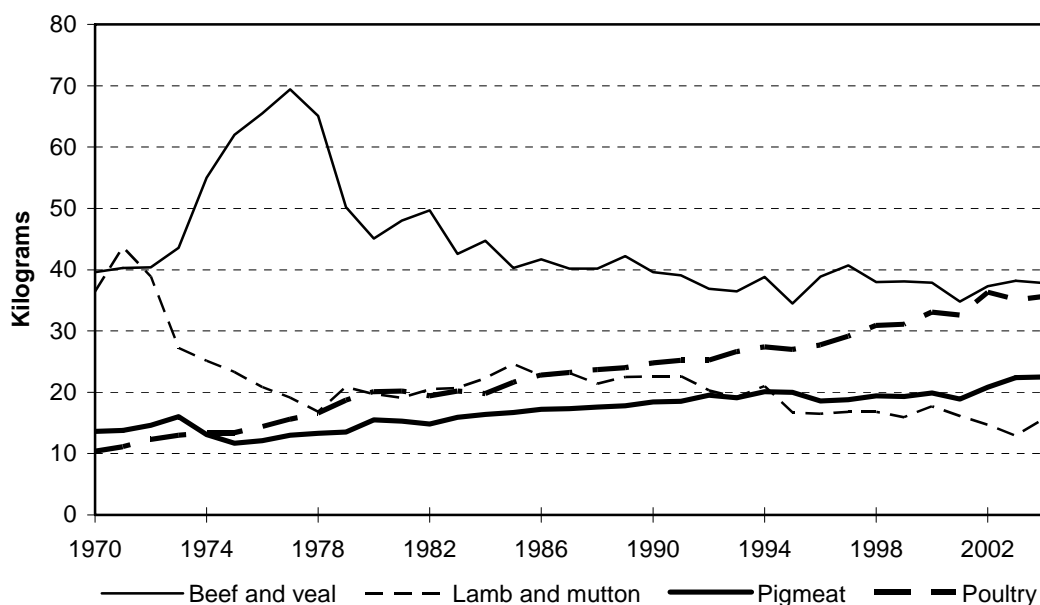
While the level of total meat consumption has remained relatively steady, the composition of meats consumed has changed over time. The major trend in meat consumption in Australia over the past 25 years has been a shift away from red meat towards poultry and pigmeat. Annual per person consumption of pigmeat in Australia increased from around 14 kilograms to 23 kilograms between 1970 and 2004 (figure 2.9). Nevertheless, Australia's annual per person consumption of pigmeat remains low compared with that in the United States (30 kilograms), Canada (34 kilograms) and several European and Asian countries (for example, France 36 kilograms, Spain 66 kilograms, Germany 53 kilograms, China 33 kilograms and Hong Kong 50 kilograms) (APL 2004c, p. 77).

APL's figures suggest that roughly 40 per cent of pigmeat consumed in Australia is fresh (sub. 37, p. 75). The South Australian Farmers Federation noted:

Australian per capita consumption of pig meat is rising and is the fastest growing fresh meat of choice in Australian homes. Sales in the March [quarter of] 2004 rose by 22 per cent on previous March quarter levels. (sub. 5, p. 6)

There is little information, however, about how much fresh pigmeat is sold in Australia, or how fresh pigmeat consumption has changed over time. This restricts analysis of the Australian pigmeat market and, in particular, whether increases in total pork consumption are mainly for fresh or processed meat.

Figure 2.9 Annual per person consumption of main meats sold in Australia



Sources: ABARE 2004b, p. 150; ABARE, pers. comm., 9 March 2005.

Demand for fresh pork is sensitive to changes in the price of pork and in the prices of other types of meat (box 2.1). NSW Farmers Association — NSW Pork noted:

... chicken, beef and lamb ... compete as substitutes for pork on particularly a price basis. (sub. 20, p. 10)

Box 2.1 Meat consumption and prices

Fresh pork consumption varies depending on its price, the prices of other meats and household income. Vere, Griffith and Jones (2000) used quarterly income, price and consumption data for the period 1970–96 to estimate the effects of prices and income on meat consumption. Their results suggest:

- a 1 per cent increase (decrease) in the price of pork would decrease (increase) pork consumption by 1.59 per cent
- a 1 per cent increase (decrease) in the price of beef would increase (decrease) pork consumption by 0.41 per cent
- a 1 per cent increase (decrease) in the price of chicken would increase (decrease) pork consumption by 0.65 per cent
- a 1 per cent increase (decrease) in consumer income would increase (decrease) pork consumption by 0.12 per cent.

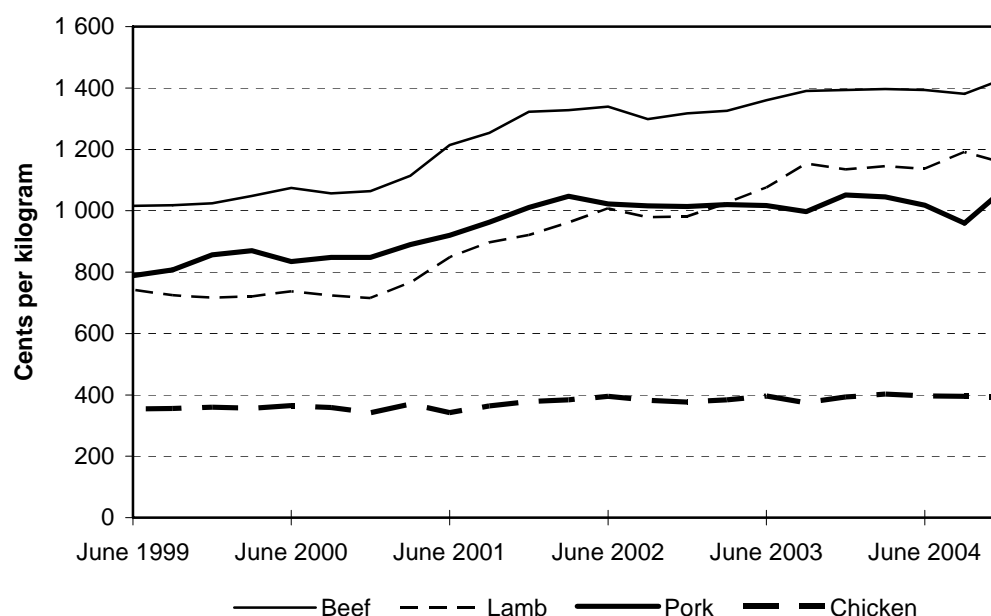
Price and income effects can offset each other, particularly when an external factor such as drought affects several industries' prices.

Source: Vere, Griffith and Jones 2000, cited in Sheales, Apted and Ashton 2004, p. 18.

Movements in retail prices for pork, chicken, lamb and beef are reflected in figure 2.10. Despite an increase in retail pork prices early in the decade, pigmeat consumption increased overall (although it declined slightly in 2001) because consumers also faced higher prices for substitutes such as lamb and beef.

Changes in fresh pork consumption also reflect changes in consumers' tastes. The pigmeat industry has undertaken marketing in an effort to increase pork's share of meat consumption, providing information on how to cook pork and promoting a healthy image for pork. Other meat industries such as lamb and beef have also undertaken promotion campaigns to increase consumption of their products both domestically and in export markets.

Figure 2.10 **Australian retail meat prices (nominal)^a**



^a Prices are based on initial reference prices for each type of meat, which are then adjusted in subsequent periods using ABS price indices. These estimated prices need to be interpreted as indicators of the relative affordability of different meats over time, rather than as estimates of the prices paid for specific products.

Source: ABARE unpublished.

2.4 Pig and pigmeat prices

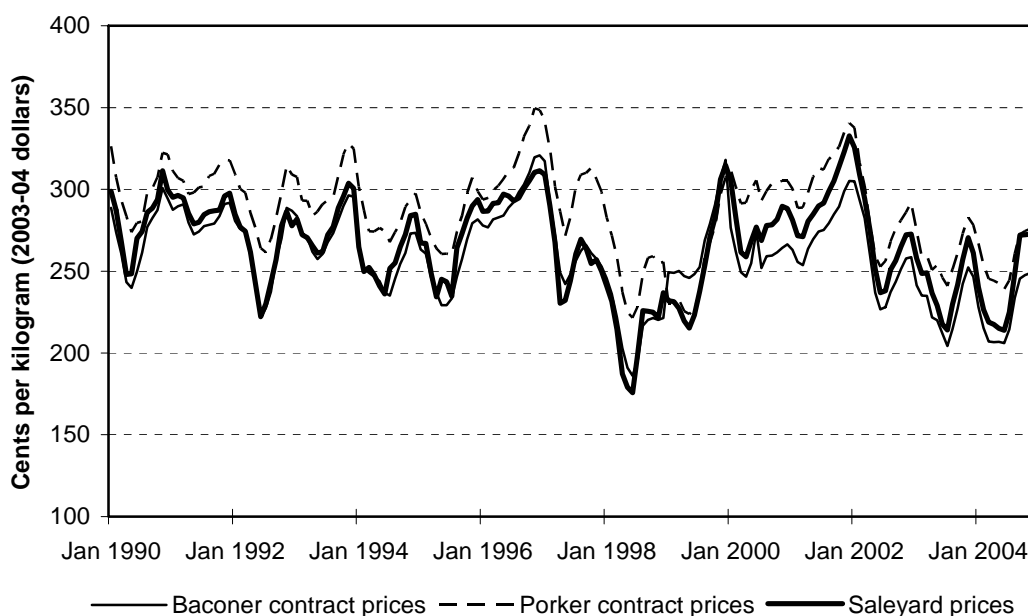
This section describes prices paid in Australia for pigs and pigmeat products. These include the price that the processor pays for the pig; the wholesale price paid by retailers, the food service industry and manufacturers of pigmeat; and the retail price paid by the consumer for fresh pigmeat or manufactured products. The prices paid for the various cuts and other products are important in determining the overall return from each pig.

Pig prices

Most pigs in Australia are sold under contract, with producers and buyers agreeing on price for given carcass specifications. A small proportion of pigs — around 4–5 per cent — are sold through saleyards (Sheales, Apted and Ashton 2004, p. 17). Pig contracts are divided into ‘porker’ contracts and ‘baconer’ contracts. Porkers are lighter pigs generally used for fresh pork, while baconers are typically heavier pigs used for the manufacture of bacon, ham and smallgoods.

Pig prices (saleyard and contract) have varied considerably across years (figure 2.11). Prices were relatively high from the end of 1999 until the end of 2001, partly as a result of expanding export demand. From January 2002, they decreased following an appreciation of the Australian dollar (which encouraged imports) and an increase in domestic pig turnoff (Sheales, Apted and Ashton 2004, p. 17). From June 2004, however, prices rose relatively quickly, and by September 2004 were higher than at the same time in 2002 and 2003. Prices subsequently remained relatively stable until the end of 2004.

Figure 2.11 Pig contract and saleyard prices (real), Australia^a
Hot standard carcass weight



^a Prices are expressed in 2003-04 dollars, using the consumer price index.

Sources: ABARE unpublished; ABS, *Consumer Price Index, Australia*, Cat. no. 6401.0; APL unpublished.

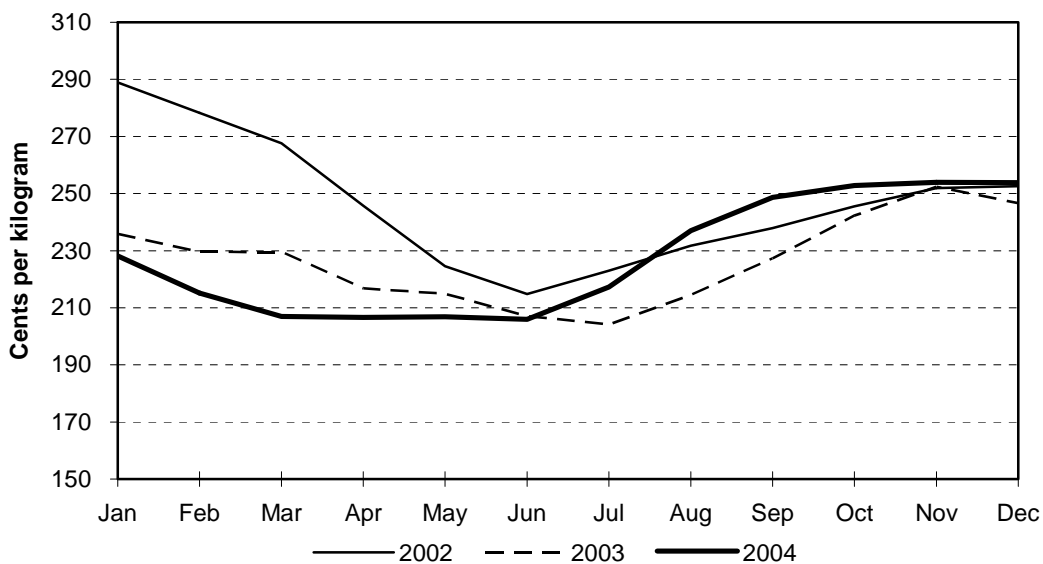
Pig prices also vary within years (figure 2.12). Historically, they have followed a seasonal pattern, falling through the first half of the year, then rising to a peak in November and December as manufacturers increase demand in anticipation of the

Christmas consumption of hams. Several producers noted, however, that the expansion of imported pigmeat has meant domestic prices are no longer rising as much in the lead-up to Christmas.

For years prices have traditionally increased leading up to Christmas however this phenomenon no longer applies now that imports are more readily available. It would seem that the threat of imports is all that is required to keep domestic prices down. (South Australian Farmers Federation, sub. 5, p. 7)

My best sale price prior to Christmas was around about \$2.50 live weight, down a long way from previous years. (A.J. and D.K. Stick, trans., p. 184)

Figure 2.12 Seasonal baconer contract prices (nominal), Australia
Hot standard carcass weight



Source: APL unpublished.

While the example above is commonly used to illustrate the impact of imports on domestic pig prices, imports are likely to affect domestic prices throughout the year. An increase in import volumes during June and July when prices are traditionally low, for example, may deepen a seasonal price trough.

Pig prices in Australia appear to have a close relationship with world pig prices. Movements in Australian pig prices generally follow pig prices in the United States, which is both a major pig producer and heavily involved in world pigmeat trade. US prices are also closely linked to Canadian and Danish prices (Sheales, Apted and Ashton 2004, pp. 22–3) (box 2.2). In general, Australian pig prices are higher than those in the United States, Canada and Denmark, although price differentials vary over time.

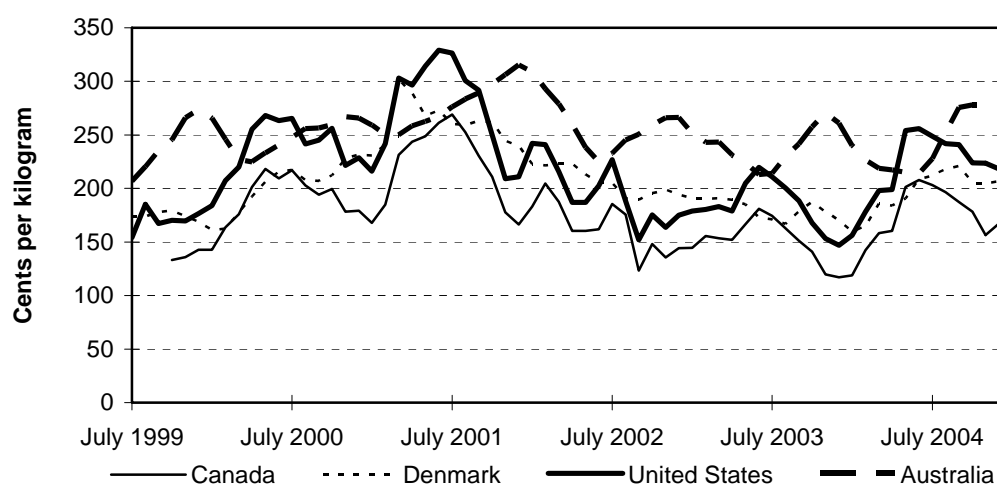
Box 2.2 World pig prices

Pig prices in the United States, Canada and Denmark exhibit a close relationship (see below). This is largely because these countries are major pigmeat exporters (appendix C, table C.2), so their domestic prices are heavily influenced by the prices that their exports receive on international markets.

Pig prices in the United States, Canada and Denmark declined from mid-2001 to the end of 2003, but increased in the first half of 2004. Australian pig prices (saleyard) exhibit a similar trend to pig prices in the United States, Canada and Denmark, albeit with a lag of around six months. One reason for this lag may be seasonal factors. Australian prices tend to be relatively high around Christmas (December), when North American prices tend to be relatively low.

The price differential between the two markets could make it more profitable for some North American businesses to export pigmeat to Australia at such times, rather than supply other markets. Danish pigmeat prices do not display a similar seasonal trend, but relatively high Australian summer prices can still make Australia an attractive market.

US, Canadian, Danish and Australian pig prices (nominal)^a



^a Average pig prices based on dressed carcass weights, expressed in nominal Australian prices. There may be differences across countries in the way in which carcasses are trimmed which may affect the prices paid per kilogram but will not affect relative price movements. There may also be differences in the size and type of deductions from the gross pig prices quoted in each country. Australian pig prices are based on weekly average saleyard prices from the five mainland States, averaged by month and weighted by pigmeat production volume. Canadian pig prices are based on the weekly Ontario auction price (pool and pool plus average), averaged by month. Danish pig prices are based on weekly prices for slaughter pigs, averaged by month. US pig prices are based on monthly prices for barrows and gilts (national base 51–52 per cent lean) converted to dressed weight equivalent using the conversion factor of 1.389.

Sources: ABARE unpublished; APL unpublished; x-rates.com 2004a, 2004b, 2004c.

Apart from the influence of world prices, seasonal demand and variations in import volumes, pig prices in Australia may also be influenced by existing pricing practices for pig contracts. Ludvigsen Family Farms noted:

The price we receive is set on a few hundred pigs sold at Ballarat [Victoria], at Dublin [South Australia] and places like that around Australia — three or four — and they're generally some of the worst pigs from the smallest producers and they're the ones that the abattoirs avoid and only go to when they're short. So we see huge fluctuations and then the response to that — we're pegged against a load of rubbish. Our industry has got to address that. That price is the basis for prices made by abattoirs around the country. This market is very open to manipulation, and often is. (trans., p. 369)

Wholesale pigmeat prices

Wholesale prices are the prices paid at the point at which pigmeat products enter the retail distribution sector, which is when they leave the processor or manufacturer, or are sold by a produce wholesaler (Spencer 2004, p. 15). Imports compete directly with pigmeat sold by domestic processors to supply the manufacturing industry, so changes in the competitiveness of imports are likely to directly influence wholesale prices for fresh pork. These impacts on wholesale prices eventually flow through to other parts of the supply chain, affecting prices for pigs and retail pigmeat products (appendix B, section B.2).

Retail pigmeat prices

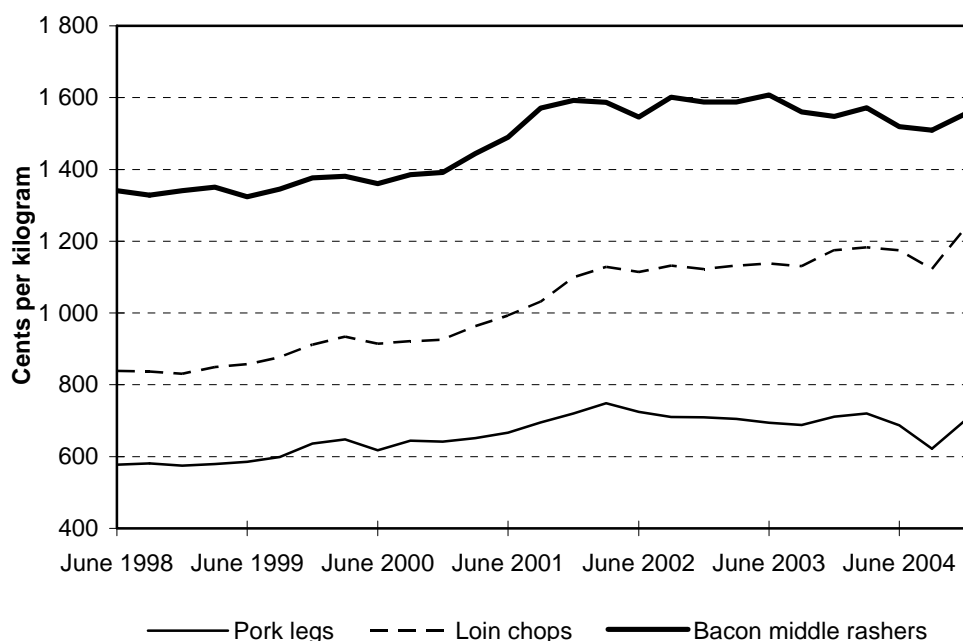
The pigmeat market is composed of many different submarkets for various cuts and specialised products, and there are various prices for different pigmeat products. Pigmeat retail prices, however, generally trend with long term pig prices and domestic wholesale prices (appendix B, section B.2). In 2001, the general level of nominal retail prices rose for pork legs, loin chops and bacon, reflecting an increase in pig prices over the same period (figure 2.13).

Implications of joint production

The overall return from each pig (comprising the returns for the various pig cuts and other products), together with costs, determines the profitability of pig production. To maximise profits, producers and marketers will seek out markets providing the highest net return on each cut. Although international trade can reduce the domestic price for certain products (such as legs), it can increase the price of others. By exporting products to markets in which they have relatively high prices, Australian pig producers/marketers can sometimes obtain a higher net return than by selling products domestically at a relatively low price.

Further, the import of pigmeat gives consumers the opportunity to increase the consumption of products that they highly value. The importance of legs in pigmeat imports, especially from Canada, confirms that legs are a relatively highly valued part of the carcass for Australian consumers. With trade, consumers can buy more legs and at lower prices than if trade did not occur.

Figure 2.13 **Retail prices of pork legs, loin chops and bacon (nominal), Australia**



Source: ABS unpublished.

2.5 Exports and imports

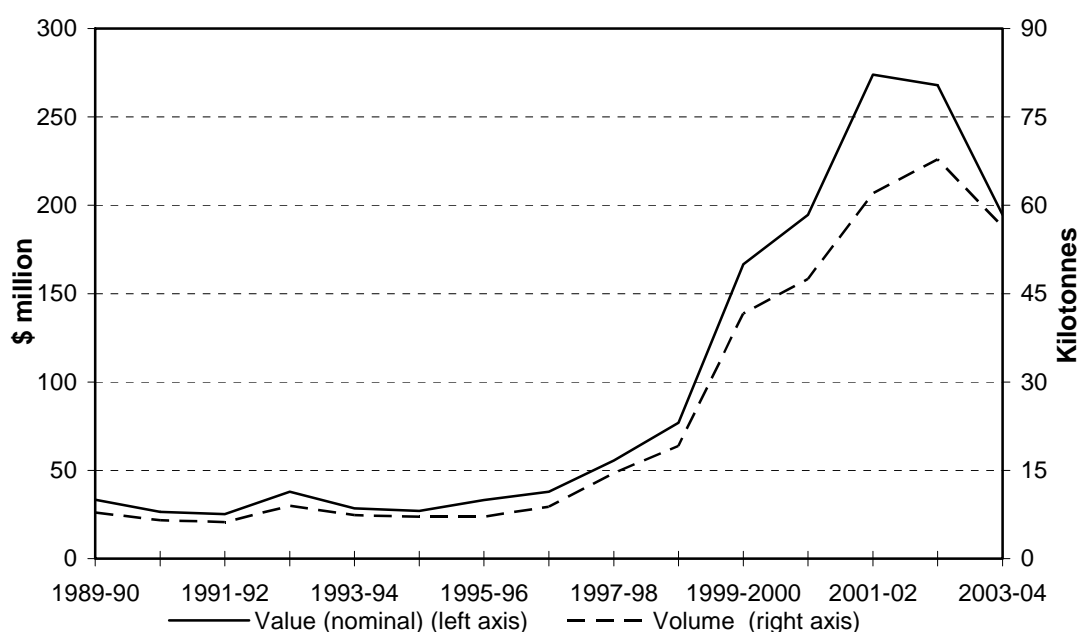
Australia is becoming more integrated into international pigmeat markets, with trade in pigmeat to and from Australia increasing significantly in the past six years (albeit from a small base). According to the US Department of Agriculture (USDA 2005b), Australia was the sixth largest exporter of pigmeat (by volume) and the eleventh largest importer of pigmeat (by volume) in 2004 (where the European Union is treated as one entity) (appendix C, section C.1).

World pigmeat trade is driven by demands for specific types of cut and by producers' abilities to deliver products of a given quality at a given price. Australian producers, like producers in other countries, are displaying an increasing capacity to maximise their return on each specific cut or pigmeat product by identifying niche (or specialised) markets in which demand for certain products is high or their products have price or quality advantages. World markets will continue to be subject to external shocks that can create both opportunities and setbacks for domestic producers and processors. Three important factors influencing the volume and pattern of Australian exports and imports have been disease outbreaks in other countries, reduced quarantine barriers in Australia, and fluctuations in exchange rates.

Exports

Exports of pigmeat have increased substantially, rising from \$56 million in 1997-98 to \$195 million in 2003-04 (figure 2.14). From 1999 to 2001, Australian pigmeat exporters benefited from favourable exchange rates and disease outbreaks in other exporting countries. The outbreak of Nipah virus in Malaysia (in 1999) and foot and mouth disease in Chinese Taipei (in 1999) and Europe (in 2001), for example, created significant export opportunities in Asian markets such as Singapore and Japan. Between 2001-02 and 2003-04, however, the value of Australian exports decreased by 29 per cent, partly as a result of Europe's recovery from foot and mouth disease and an appreciation of the Australian dollar relative to the currencies of other major competitor countries (Canada, Denmark and the United States). This meant product that previously would have been exported was diverted to the domestic market (chapter 4, section 4.1). The value of Australian exports during the latter half of 2004 were also below that of the same period in 2003.

Figure 2.14 Pigmeat exports from Australia



Source: ABS unpublished.

In 2003-04, the main export markets for Australian pigmeat were Singapore and Japan, which together accounted for 73 per cent of exports by value and 63 per cent of exports by volume. The main product sold to Singapore is chilled carcasses, while higher priced cuts such as middles (loins and bellies) are the primary products sold to Japan. Other significant markets include New Zealand, the Philippines and Hong Kong (appendix B, section B.3). In many cases, Australian producers have

tailored their product for these markets and invested in business relationships with overseas buyers:

Western Australia exported 89 tonnes of mainly fresh/chilled pigmeat to Japan in 2001, but this trade was not sustained due to the exacting demands of this market, which requires cuts or products from larger carcass specifications not currently produced in Western Australia. This creates issues which need addressing, including supply and the need for alternative markets for the other unwanted cuts. However, the potential value of the Japanese market for export of product from Western Australia makes the necessary development work worthwhile. (West Australian Pork Producers' Association, sub. 34, p. 20)

Australian exporters (along with exporters in other countries) are required to meet relevant quarantine arrangements in destination countries and, in some cases, non-quarantine requirements such as tariffs and quotas (chapter 7).

Imports

Before July 1990, quarantine regulations prohibited the import of pigs and fresh or processed pigmeat except for canned pigmeat and some imports from New Zealand (box 2.3). From July 1990, imports of frozen uncooked pigmeat from Canada have been allowed into Australia, although Canadian imports arriving after late 1992 have had to be boned before export and processed on arrival in Australia. Since late 1997, uncooked and boned pigmeat imports from Denmark have been allowed under a protocol similar to that for Canadian imports. Recent changes to Australian quarantine regulations have also opened the way for pigmeat from other countries (such as the United States) to enter Australia. Australia has no tariffs or quotas on pigmeat imports and has bound its tariff rate under World Trade Organization rules at zero.

Imports of pigmeat have increased significantly, rising from \$40 million in 1997-98 to \$219 million in 2003-04 (figure 2.15). In 2003-04, Canada and Denmark supplied around 53 per cent and 42 per cent respectively of Australian imports by volume. By value, Canada supplied 43 per cent of imports and Denmark supplied 52 per cent. A large component of imports (around 45 per cent by volume) is classified as 'other boneless frozen imports' and is not specified as being leg, middle or shoulder. Industry sources suggest, however, that Canada supplies mainly legs and Denmark supplies mainly middles. (APL, sub. 37, p. 37; Ludvigsen Family Farms, sub. 3, p. 4; Perfect Pork, sub. 26, p. 3)

Danish and Canadian imports arriving in Australia are boned, so the tonnage cannot be directly compared with Australian pigmeat production, which is calculated on a carcass weight equivalent basis. When imports and domestic production are converted to a comparable basis, imports make up a large share of total supply to

Box 2.3 **Quarantine measures in Australia**

Since May 1990, quarantine regulations have undergone significant changes:

- May 1990 — Imports of uncooked, unfrozen pigmeat are allowed from the south island of New Zealand.
- July 1990 — Imports of uncooked, frozen pigmeat are allowed from Canada.
- Late 1992 — Imports of uncooked, frozen pigmeat from Canada must be boneless before export and processed (cooked) on arrival under quarantine control.
- May 1996 — Imports of unfrozen pigmeat are allowed from Canada, provided the pigmeat is uncooked, boned (bone out) and processed (cooked) on arrival under quarantine control.
- November 1997 — Imports of cooked pigmeat are allowed from Canada, provided the pigmeat is boneless.
- November 1997 — Imports of uncooked, boneless pigmeat are allowed from Denmark, provided the pigmeat is processed (cooked) on arrival under quarantine control.

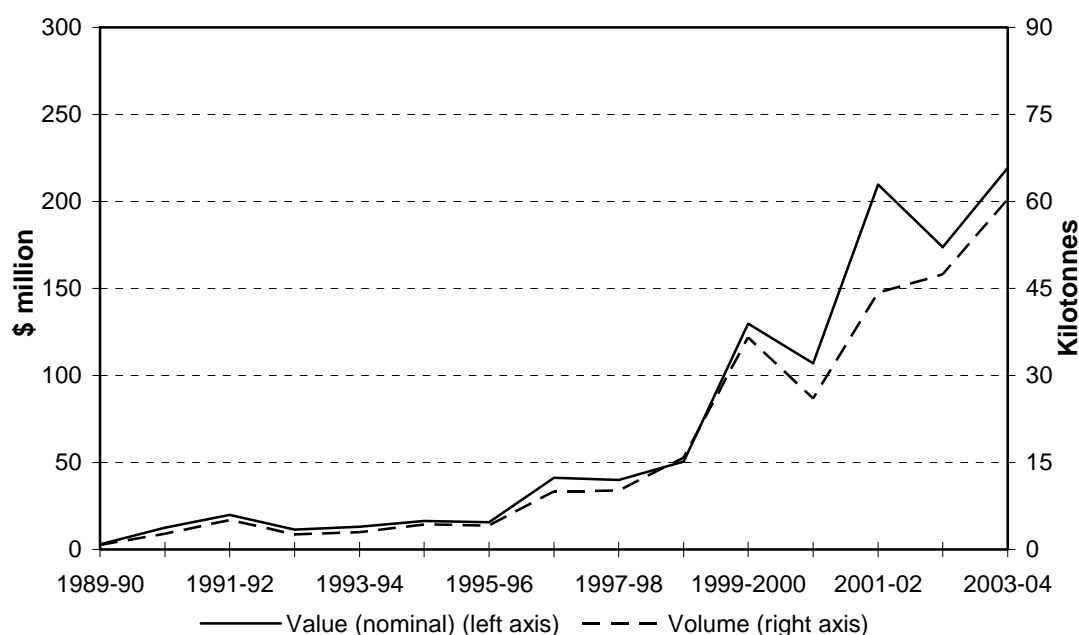
On 10 May 2004, the Director of Animal and Plant Quarantine announced a new quarantine policy for pigmeat imports. Implementation of the new policy followed an import risk analysis by Biosecurity Australia, which recommended that imports of pigmeat be permitted subject to conditions depending on the health status of the exporting country. Australia's new pigmeat quarantine policy recommends risk management measures such as assessing country, zone or herd disease freedom; testing the carcass; cooking, freezing, curing or canning; boning; and removing certain tissue parts of the carcass (such as the head, neck and major peripheral lymph nodes).

Under the previous import policy, uncanned, uncooked pigmeat could be imported from Canada, Denmark and the south island of New Zealand. Pigmeat from Canada and Denmark had to be boned before export and cooked on arrival, to address the quarantine risk associated with porcine reproductive and respiratory syndrome (which does not exist in Australia). Pigmeat cooked in Canada before export and canned pigmeat (from any country) that had been heated to 100°C were also permitted.

Although the new import policy recommendations are more stringent than those previously facing Denmark and Canada, they open the way for more countries to export to Australia (provided they can satisfy the new requirements). Market access requests have been made by several countries, including Brazil, Chile, some EU member states, the Republic of Korea, South Africa, Chinese Taipei and the United States. According to ABARE, only Brazil and the United States have the industry size and proven export performance to be capable of shipping large quantities of pigmeat to Australia. Given the animal disease status of Brazil, however, the United States is the most likely potential large scale supplier in the near future. APL, Australia's peak body representing pigmeat producers, recently challenged the new import policy in the Federal Court.

Sources: Biosecurity Australia, pers. comm., 6 December 2004; DAFF 2004b; PC 1998; Sheales, Apted and Ashton 2004.

Figure 2.15 Pigmeat imports to Australia



Source: ABS unpublished.

the secondary processing sector (appendix B, section B.4). The Productivity Commission estimates that Canada supplied 28–38 per cent of legs used by the Australian secondary processing sector in 2003-04, while Denmark supplied around 32–3 per cent of middles. These shares increased in the latter half of 2004, to 31–41 per cent and 33–4 per cent, respectively.

Several inquiry participants indicated that pigmeat imported from Canada and Denmark is both competitively priced and of a high quality:

[Let] us consider the importation of middles from Denmark. These middles while being very competitive on price are also unquestionably superior in meat quality with significantly more meat in the belly area. i.e. the slicing yields off imported Danish middles are often between 15 per cent and 20 per cent superior to the Australian product. This is in part due to two main factors. The first is the superior genetics leading to improved meat yield in the belly portion and the second is a superior grading system that more accurately represents the quality of the carcass. (Hans Continental Smallgoods, sub. 22, p. 9)

... meat for further processing is readily accessible from Denmark and Canada. These products are consistently high quality and processors are able to purchase to exact specification and quantity. (Tasmanian Island Pork Alliance, sub. 23, p. 4)

It is ... our impression that the reason why the Australian meat processors are buying Danish middles is that they ... can get more uniform products (in weight, size and exact specifications) and in bigger quantities from individual suppliers than they can from Australian suppliers. You get what you order and in the quantity you have ordered. It is

our impression that this is a problem for the Australian pigmeat sector which is more fragmented and diversified (different cut weights and sizes which are not optimal for a processor) in its supplies of pork cuts. (Danske Slagterier, reproduced appendix D)

The average price of all Danish pigmeat products exported to Australia is generally higher than the average price of Danish pigmeat products sold to the rest of the world (box 2.4). This may partly reflect Australian importers' preference for higher value cuts of pigmeat, such as middles, as well as the value added to pigmeat when it is boned to meet Australian quarantine requirements. Even when Danish exports are disaggregated by tariff code to reflect the main product exported to Australia (frozen boneless pigmeat), the average prices received by Danish processors from Australian importers appear relatively high compared with the average prices paid by importers in other countries. The average export price to Australia for Danish frozen boneless pigmeat, for example, has been consistently higher than the product's average export price to EU countries for the past few years and, at times, has been comparable to the price received in the highly priced Japanese market (figure 2.16). Some limitations with international trade data prevent a more detailed price analysis (box 2.5). Further, price data for Canadian exports are not available at the same level of disaggregation.

Box 2.4 Danish export prices for pigmeat

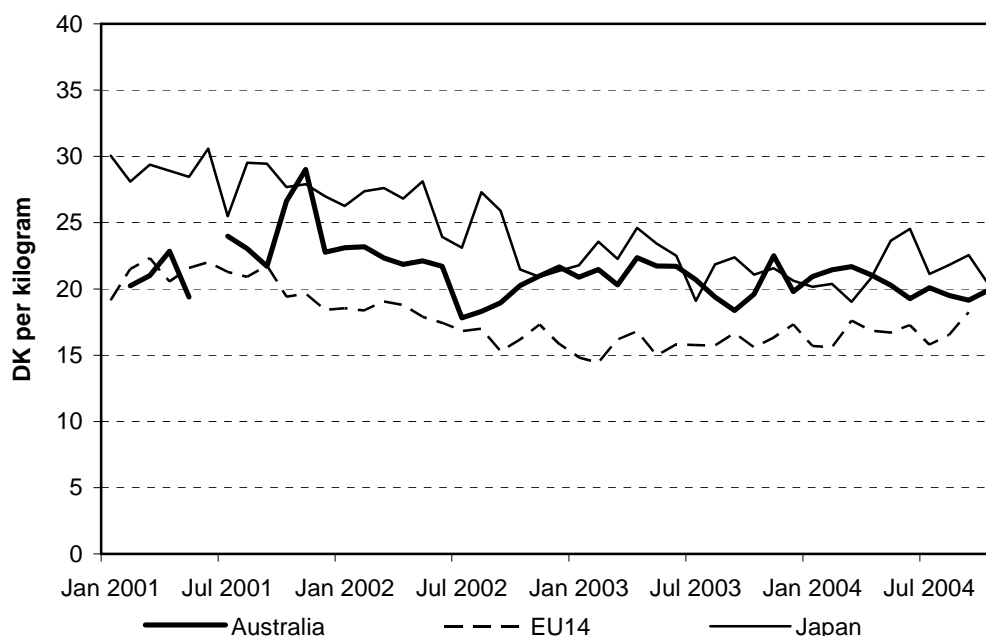
In 2003, Denmark produced about 1.9 million tonnes of pigmeat, imported about 0.1 million tonnes and exported 1.7 million tonnes, making Denmark the largest pigmeat exporter in the world. About two thirds of exports went to other EU countries. Assuming there are no internal barriers to pigmeat trade among EU producers, prices received by Danish producers should be higher within the European Union than outside, given tariffs and quotas. In 2003, however, the Danish industry appeared to receive higher prices for all exports to non-EU countries (DK15.38 per kilogram on average) than for all exports to other EU countries (DK13.57 per kilogram on average).

One explanation for the differential could be differences in the quality of pigmeat supplied to different markets. Prices received for products with similar specifications (such as carcasses and bacon) are higher in non-EU countries than in EU countries. In contrast, prices received for byproducts, canned meat and other processed products are higher in EU countries than in non-EU countries.

Average prices received by Danish pigmeat exporters to Australia (DK20.14 per kilogram, or about A\$4.65 per kilogram) in 2003 were higher than the average for all Danish exports to non-EU countries (DK15.38 per kilogram), but broadly consistent with average price received for exports to the Japanese, US and UK markets (DK21.99, DK20.85 and DK17.50 per kilogram respectively). Some care is required interpreting export value returns as the trade costs (such as insurance and post-port shipping) may not be included in reported free on board prices.

Source: Danske Slagterier 2004.

Figure 2.16 Monthly average export prices for Danish frozen boneless pigmeat (nominal)^a



^a Exports are classified as 0203 29 55 frozen boneless meat of domestic swine (excluding bellies and cuts thereof).

Source: Eurostat Comext database (accessed 20 January 2005).

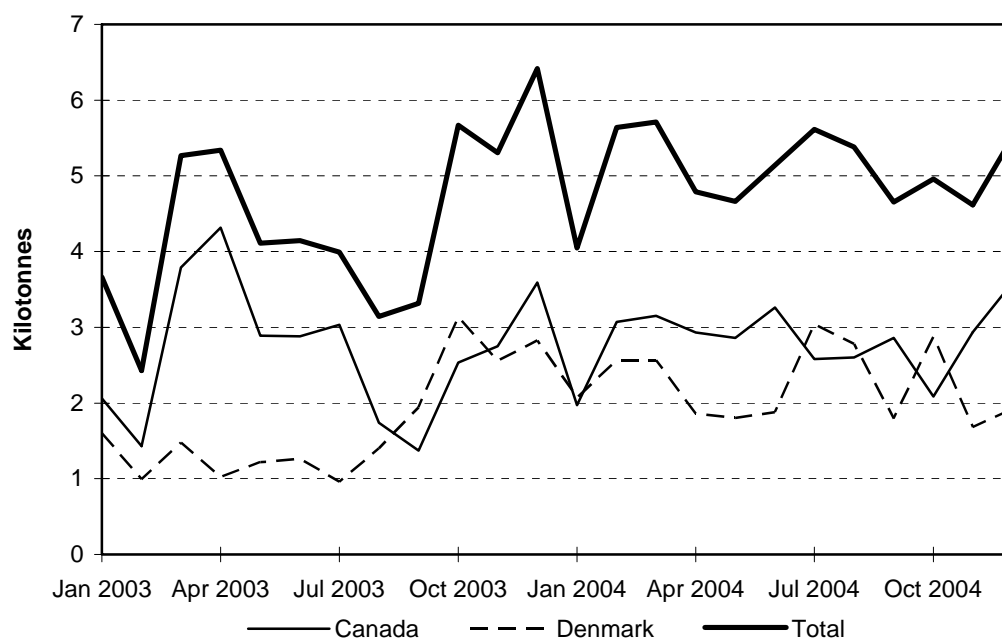
Box 2.5 International trade data

It is often difficult to compare trade statistics for specific commodities. The Harmonised System for the classification of commodities is the internationally agreed nomenclature. The Harmonised System classifies goods to six digit codes — for example, 0203 29 refers to frozen pigmeat. Unfortunately, many different products and specific cuts are covered by this classification. Nevertheless, because it is an international standard, it allows a price comparison.

Beyond this, each country can assign further digits to disaggregate trade data which are not standardised. In its most detailed data, the European Union classifies to eight digit codes (for example, 0203 29 55 refers to frozen boneless meat of domestic swine, excluding bellies and cuts thereof). Pigmeat that leaves the European Union under this code may be assigned a different code when it arrives in the destination country. Australia, which classifies to 10 digits, may assign the same commodity the code 0203 29 00 41 (which refers to meat of swine, frozen, boneless, middle cuts).

While the volume of Australian imports fluctuates substantially from month to month, it generally increases in the latter half of the year — for example, imports peaked in 2003 during October and December. This pattern is partly due to processors importing pigmeat legs for the Christmas peak in ham consumption (figure 2.17).

Figure 2.17 **Australian imports of pigmeat from Canada and Denmark, by month**



Source: ABS unpublished.

Overall, Australia receives a relatively small share of total Danish and Canadian pigmeat exports. In 2003, Australia accounted for just over 1 per cent of pigmeat exports from Denmark and less than 5 per cent of pigmeat exported from Canada (Danske Slagterier 2004; USDA 2004b).

In December 2004, Australia received the first US frozen boneless pigmeat imports since the new quarantine policy was announced in May 2004. The US Department of Agriculture expects US pigmeat exports to Australia to increase in 2005, but notes much of this growth may come at the expense of Canadian exporters.

[Australia's pigmeat] imports are forecast at near record levels in [calendar year] 2005, with the US share expected to increase about 10-fold over the minimal levels achieved upon gaining access in the last quarter of 2004. Longer term, imports from the United States are expected to rise steadily, perhaps following the growth trends established by Canada and Denmark following their entry into the market in the 1990s.

... [The US Embassy in Canberra] expects that US imports will reach 10 000 [metric tonnes] in 2005, nearly seven per cent of total imports. It is expected that most of the growth in imports from the United States will come at the expense of Canadian product. (USDA 2005a, pp. 3, 21)

FINDING 2.2

Australia has become increasingly integrated into the world pigmeat market over the past six years, with pigmeat imports rising from \$40 million to \$219 million, and exports increasing from \$56 million to \$195 million.

2.6 Profitability

Like many industries, the profitability of businesses in the Australian pigmeat industry varies over time, with good years and bad years (figure 2.18). In general, producers appear to have experienced favourable returns from 1999-2000 to 2001-02, reflecting a number of factors, including the depreciation of the Australian dollar and disease outbreaks in competing countries.

Many inquiry participants highlighted that the profitability of their pig production enterprise(s) declined substantially in 2002-03. ABS estimates support these claims, revealing that the Australian pig farming sector recorded a loss of around \$150 million in 2002-03 (ABS 2005b). Inquiry participants have also noted, however, that profitability began to recover in 2004:

During 2003 which was the worst drought in Australia in 100 years ... This caused our farm to go in debt \$400 000 through that bad period. (W. Evans, sub. 9, pp. 1-2)

In the last two years the main factor affecting profitability has been the high price of grain as a result of the 2002 drought. The total feed bill for the piggery rose by \$31 000 in the last eighteen months while in this period pig prices have remained at low levels. (Yirani Farm, sub. 10, p. 1)

On farm profitability:

2001-02 reasonable profit

2002-03 a significant loss

2003-04 small profit. (Blackwood Piggery, sub. 13, p. 1)

I think that most of the growers would agree in the last four or five months that the pig market has improved. (Hans Continental Smallgoods, trans., p. 206)

Information on profitability provided by participants is confirmed by company reports from the parent company of Australia's largest pig producer and primary processor, QAF Meat Industries. QAF reported that its Australian primary production subsidiaries (referred to as 'QAF Meats') lost S\$45 million (earnings before interest and tax) in 2003. The loss was attributed to:

... one of the worst droughts in Australia's history. The drought resulted in poor harvests which led to grain shortages and sharply escalated grain prices. This resulted in extreme high costs of animal feed on an unprecedented scale. Selling prices of pork were also adversely affected by dumping from farmers who were exiting the industry. The operating loss was also worsened by the sharp appreciation of the Australian dollar which exacerbated the operating loss when translated to Singapore dollars. (QAF 2004, p. 15)

More recent evidence suggests that prices received for pigmeat have increased while prices paid for feed have decreased from the high prices experienced during

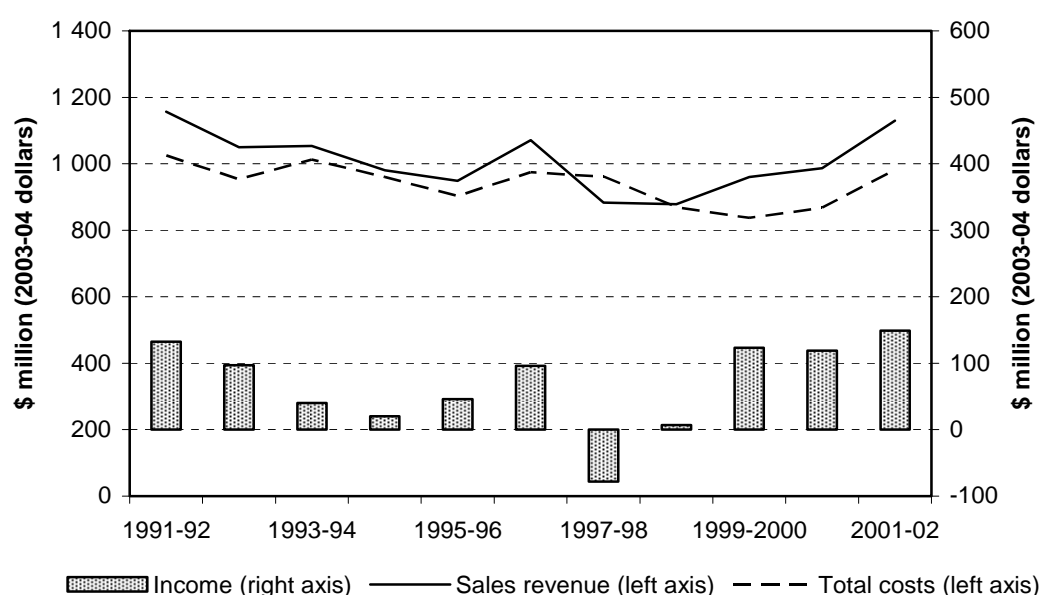
the recent drought. A QAF Ltd report to the Singapore Stock Exchange for the quarter ending December 2004 stated:

The Group's primary production segment comprises mainly QAF Meats, a fully integrated meat production business which is located in Australia. Sales in this segment grew by 9 per cent to \$281.0 million in [financial year] 2004.

Operating profits of \$3.7 million was achieved in [financial year] 2004 and this was a sharp reversal from an operating loss of \$41.3 million in [financial year] 2003. The turnaround in operating performance was the result of QAF Meats achieving higher product selling prices as well as significantly lower raw material and animal feed costs in the second half of [financial year] 2004. This was in contrast to the unprecedented high raw material and feed costs experienced throughout [financial year] 2003 which resulted from a severe drought in Australia.

... The operating performance of QAF Meats will improve [in financial year 2005] due to higher product selling prices, substantially lower production and feed costs as well as higher productivity. These factors will lead to a higher profit contribution from QAF Meats. (QAF 2005, p. 10)

Figure 2.18 Sales revenue, costs and income of pig producers (real), Australia^a



^a Data are based on an APL survey and do not represent all pig producers. Income is defined as sales revenue minus total costs and is measured in 2003-04 dollars. The number of businesses that participated in the survey ranged from 18 to 30.

Source: APL, cited in Sheales, Apted and Ashton 2004, p. 15.

APL indicated that the pig production sector made a profit in eight out of the 11 years from 1993-94 to 2003-04 (table 2.2). The financial data presented in table 2.2 are based on an annual industry survey. Respondents are selected from family run and corporate businesses, but all are considered 'serious, commercial pig

producers' (typically with more than 100 sows) (APL 2003d, p. 128). The sample size varied from seven (in 2002-03) to 30 (in 1997-98).

APL noted that profitability needs to be considered against the capital employed in the industry and that producer returns needed to be sufficient to facilitate further investment in the industry:

... over the last 10 years there have been only three years (2000, 2001 and 2002) where profitability has approached what could be regarded as adequate levels for long-term business sustainability. (sub. DR62, p. 10)

This is a capital intensive industry and having an absolute profit of a nominal amount on a capital intensive industry, as one would be aware, is really not going to mean very much. (trans., p. 443)

Table 2.2 Profitability for surveyed pig producers (nominal), 1993–2003

<i>Year</i>	<i>Profit/loss per sow</i>	<i>Sample size</i>
	\$	No. of farms
1993-94	81	29
1994-95	14	28
1995-96	134	22
1996-97	147	26
1997-98	–216	30
1998-99	47	28
1999-2000	536	27
2000-01	437	24
2001-02	608	18
2002-03	–105	7
2003-04	– 41	13

^a Data are based on APL surveys and do not represent all pig producers.

Sources: APL, sub. 37, p. 48; APL 2003d; APL, pers. comm, 23 February 2005.

Several inquiry participants commented that reduced profits in recent years have resulted in a decline in pig producers' equity in their farms:

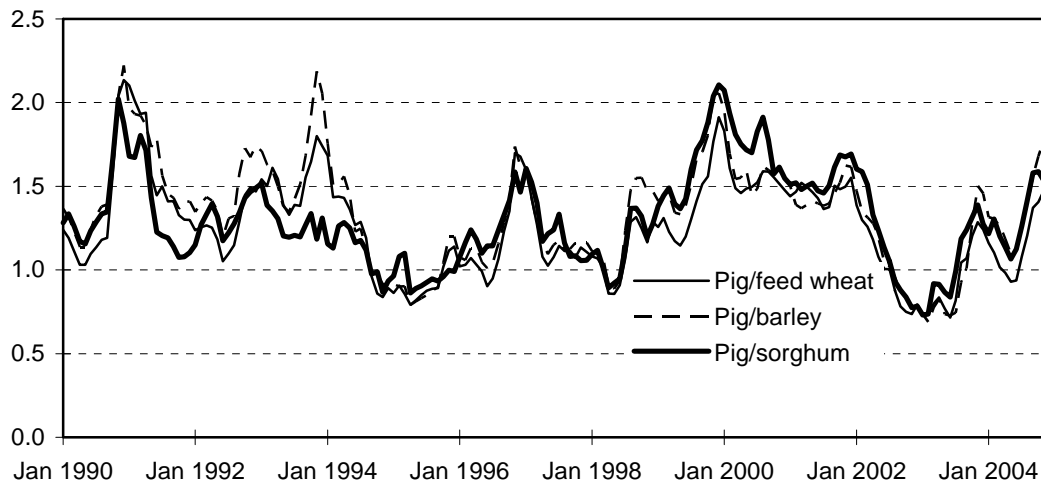
Producers have incurred significant debt in the last few years because of drought, low prices and high feed costs. Finance has been used to maintain the day to day operation of the farming business. (South Australian Farmers Federation, sub. DR63, p. 7)

... the recent Ernst and Young survey of pork producers highlighted how the larger producers have lost equity of approximately 40 per cent over the 2001–2003 period. (APL, sub. DR62, p. 10)

The Commission received little (publicly available) industry data on the returns pig producers receive on capital or changes in their businesses' equity position (the Ernst and Young survey of pigmeat producers is not publicly available).

Another measure of profitability is the pig-to-feed price ratio (figure 2.19). This measure suggests the profitability of pig production was substantially lower in 2002-03. In the second half of 2004 (to November), however, there were substantial increases in this ratio for feed wheat (37 per cent), barley (41 per cent) and sorghum (22 per cent).

Figure 2.19 **Pig-to-feed price ratio**



Source: ABARE unpublished.

The ABS has estimated profitability for the Australian primary and secondary processing sectors for 1999-2000, 2000-01 and 2002-03. These estimates suggest that bacon, ham and smallgoods manufacturers received relatively small profit margins between 1999-2000 and 2002-03 (table 2.3). Profitability for the manufacturing sector appears to have improved between 2000-01 and 2002-03, possibly due to a decline in pig prices and greater access to lower cost pigmeat imports.

Table 2.3 **Estimates of profitability for bacon, ham and smallgoods manufacturers (nominal)^a**

	<i>Operating income</i>	<i>Operating expenses</i>	<i>Profit before tax</i>
	\$m	\$m	\$m
1999-2000	1 553	1 570	- 17
2000-01	1 692	1 689	3
2001-02	na	na	na
2002-03	2 178	2 118	87

^a Given periodic changes to the way in which the ABS calculates these estimates, caution is advised when comparing values across years. Profitability estimates should thus be interpreted as indicative. **na** Not available.

Source: ABS, *Australian Industry*, Cat. no. 8155.0.

The profitability of the Australian meat processing sector as a whole increased from 1999-2000 to 2002-03, but pigmeat processing makes up a small proportion of Australian meat processing so it is difficult to identify from this information how the profitability of primary pigmeat processing has changed over time (table 2.4). Reports of reduced throughput among some pig abattoirs and boning rooms suggests the profitability of the primary processing sector for pigmeat is unlikely to have mirrored the upward trend in profitability that is evident for the Australian meat processing sector as a whole since 1999-2000. The Northern Co-operative Meat Company, an export pigmeat processing and boning room operator, noted:

The trading position over the last three years shows the significant hardship being encountered by our co-operative. Every board meeting this year has devoted time specifically to whether or not the boning room operations should continue. (sub. 45, p. 3)

Table 2.4 Estimates of profitability for meat processing sector (nominal)^a

	<i>Operating income</i>	<i>Operating expenses</i>	<i>Profit before tax</i>
	\$m	\$m	\$m
1999-2000	7 098	6 988	188
2000-01	8 369	8 062	306
2001-02	na	na	na
2002-03	9 637	9 242	372

^a Given periodic changes to the way in which the ABS calculates these estimates, caution is advised when comparing values across years. Profitability estimates should thus be interpreted as indicative. **na** Not available.

Source: ABS, *Australian Industry*, Cat. no. 8155.0.

While several different sources and indicators suggest profitability has improved in recent months, the industry is concerned about the economic sustainability of many domestic producers and processors and their longer run competitiveness. Chapters 3, 4 and 5 discuss these issues.

3 Framework for assessing industry competitiveness

The terms of reference for this inquiry require the Productivity Commission to report on the competitive situation of the domestic pig producing (farming) and pigmeat processing industries. A business' competitiveness in a market depends on its ability to produce a product of a given quality for that market at a cost less than, or equal to, that of competing businesses, or to use a superior marketing and brand image to gain a price premium that more than offsets any cost disadvantage.

This chapter identifies recent changes in indicators of business competitiveness in the pig industry supply chain, and investigates the factors affecting these changes. Section 3.1 introduces the concept of competitiveness and section 3.2 identifies sources of competitiveness. Potential indicators of competitiveness are summarised in section 3.3. Chapter 4 considers influences on competitiveness that are external to businesses, while chapter 5 discusses influences that are internal to businesses and considers how businesses in the pigmeat industry manage risks to their competitiveness.

3.1 The competitiveness of businesses and industries

Individual businesses, rather than industries, compete in markets. Most publicly available data are aggregated to the industry level, so industry data often must be used as an indicator of changes for the 'average' or 'typical' business. As with all aggregate measures, such data can conceal individual businesses achieving very different results from the aggregate or average. The competitiveness of some businesses may be increasing while that of the industry is declining, or vice versa.

It is unusual for only one factor to determine the competitiveness of a business. Competitiveness depends on all of management's choices (inputs, technologies, product mix and markets), as well as factors external to the business. Businesses can make decisions to influence the internal factors that affect their competitive position, but they may have little or no control over external factors. One business may have a cost advantage in one input (such as grain prices) that more than offsets a cost disadvantage in another input (such as transport). Another business may be able to use its management skills to obtain a total cost advantage in mixing inputs where it has no advantage in managing the costs of individual components.

Businesses in the pigmeat industry are linked through the supply chain (chapter 2, figure 2.1). Each business attempts to maximise profits by seeking the highest possible return for its products or services, and the most cost-effective mix of inputs. The competitiveness of a final product — fresh or processed pigmeat — depends on the competitiveness of all the businesses along its supply chain. Inefficiency in any part of the chain is likely to make the final product less competitive.

Businesses in the pigmeat industry compete at a number of levels. On the domestic market, pigmeat produced domestically competes with imported pigmeat as an input to manufactured products. Businesses also compete with:

- other domestic businesses producing similar pigmeat products
- international pigmeat producers in export markets
- businesses producing close substitutes such as beef, chicken, lamb and fish
- businesses in other agricultural industries and export markets, for inputs such as grain
- businesses in other Australian industries, for inputs such as labour, capital, transport, energy and water.

This chapter focuses on the competitiveness of Australian pigmeat businesses in international and domestic pigmeat markets.

3.2 Sources of competitive advantage

To remain profitable in the long run, a business must seek and sustain competitive advantage. Porter (1990) argued that product differentiation and cost advantages are two important forms of competitive advantage. External factors such as domestic and international government policy and disease outbreaks can also affect competitiveness.

Product differentiation

Product differentiation enables producers to distinguish their product from their competitors' products on the basis of certain qualities. Businesses can thus compete on more than just a cost basis (where the lowest priced product is the most desirable) because different prices can reflect the unique characteristics of the differentiated products. The basis for differentiation can be product quality or superior marketing/brand image promoted through advertising or sales relationships.

Many submissions highlighted that the disease free status of Australian pigs is a key factor differentiating Australian pigmeat from its competitors internationally (chapter 2):

The disease free status of Australian pigs [is] acknowledged as the highest in the world. (Perfect Pork, sub. 26, p. 2)

The Australian pork industry is in the enviable position of having a national pig herd with a ‘world’s best’ health status ... (South Australian Farmers Federation, sub. 5, p. 11)

There are also many examples of product differentiation by businesses within the Australian pigmeat industry, including the production of:

- suckling pigs for the restaurant and other specialised markets
- organic pigmeat
- pigmeat from gilts rather than uncastrated males
- specialist processed pigmeat products such as ‘parma’ hams
- ‘case ready’ trimmed and packaged cuts of fresh pork for supermarkets
- pigmeat of varying qualities and specifications targeted at specific domestic and international markets
- pigmeat with different meat colours.

The Department of Agriculture in Western Australia noted:

... the importance of variables such as flavour, tenderness and juiciness in determining the eating quality of pork, and hence the acceptance and demand by consumers in both the export and domestic markets. (sub. 17, p. 3)

Several inquiry participants noted the increasing development of alliances among pigmeat producers along the supply chain, and the potential for such alliances to generate significant benefits, such as improvements to the quality and consistency of supply. Primary Industries and Resources South Australia, for example, observed:

In South Australia these [alliances] are developing rapidly from small groups where a breeder produces weaners to supply neighbouring growers with modern grow out facilities through to large integrated operations where common genetics, health status, management, housing and nutrition work together to provide the processor with pigs of consistent size and quality. (sub. 36, p. 11)

The South Australian Farmers Federation noted that marketing alliances have also led to supply chain benefits:

[Australian pigmeat exporters] have created marketing alliances (horizontal and vertical) that have enabled greater and more reliable supply shipments [to Asian markets]. (sub. 5, p. 7)

Cost advantages

A second major form of competitive advantage arises from cost advantages. A business can derive cost advantages from:

- the cost and quality of inputs
- production technologies that achieve an efficient mix of inputs — that is, using technology to increase productivity and the quality of outputs.

Some cost advantages may be short lived. Examples include an increased supply of lower priced feed grain due to a ‘wet’ grain harvest, and technological innovations that competitors can quickly adopt. Long term cost advantages, however, can provide long term competitive advantages. Examples include superior management skills and technological innovations that the business can limit others from obtaining. Australia’s climate too provides long term cost advantages (relatively mild winters, for example, compared with those of competitors in the northern hemisphere):

[The Australian pigmeat industry] has definite climatic advantages over its competitors ... (Canada Pork International, sub. 2, p. 2)

Location is also an important aspect of some cost advantages to the Australian industry — notably, Australia’s proximity to Asian markets, compared with Europe and North America, provides a potential ‘delivered to market’ cost advantage to Australian exporters to those markets (box 3.1):

[Australian pigmeat producers] have nearness to large markets for fresh, chilled pork emerging in Asia that the Europeans and Americans (North and South) cannot service because of logistics (distance and speed of transport). (Ludvigsen Family Farms, sub. 3, p. 2)

Box 3.1 Air freight cost advantages to Asian markets

Australian producers have an air freight cost advantage over European competitors transporting chilled pig carcasses to Asian markets, mainly Singapore. High demand for inbound air freight space to Australia and comparatively lower demand for outbound freight space has led to strong competition in outbound air freight prices from Australian ports.

The transport cost for chilled carcasses to Singapore from Melbourne is around A\$0.70 per kilogram, whereas the cost from a European port is around A\$3.00 per kilogram. Air freight costs from the United States to Singapore are in the range of US\$3–5 per kilogram. In addition, fresh product from Australia is more likely to arrive in better condition given the shorter in-flight time.

Sources: Singapore Airlines Cargo, pers. comm., 2 December 2004; Ludvigsen Family Farms, sub. DR64, p. 16.

Both climate and distance to markets are also likely to be important in Australia. The relatively large distances between farms and feed supplies, abattoirs and domestic markets create disadvantages for many of Australia's smaller pig producers. Pig producers located in cooler parts of southern Australia, near large abattoirs and close to key port and airport infrastructure, are likely to have some cost advantages over producers located in hotter climates and/or further from other parts of the supply chain.

In 1998, FarmStats Australia benchmarked Australian pigmeat businesses against international competitors. APL summarises the findings of the study on its website, observing that the competitive advantages of other countries over Australia include:

- abundant and inexpensive feed (in Canada and the United States)
- good genetics and housing systems (in Canada and the United States)
- the capacity of the Danish industry to produce high quality, market-specific products (APL 2005b).

Feed issues are considered below and in chapters 4 and 5. Genetics and housing are considered in chapter 5 and the product differentiation of Danish producers is discussed in chapter 4.

Competitive disadvantages include high feed costs relative to some major competitors — with producers often paying premiums for high quality grain suitable for human consumption. Sheales, Apted and Ashton (2004) reported that Australia's feed costs, on average, are higher than those of Canada and the United States, but similar to those of Denmark. Part of the North American cost advantage is derived from feeding corn, which is less expensive than wheat used in Australia. Corn, however, can result in some yellowing of pork fat, and pigmeat with yellow fat may be discounted in some markets.

Domestic competitiveness is important for the industry's longer term plans for increasing exports. Only if the production of a *given* product is cost competitive with imports in the domestic market (where it has an advantage in convenience and transport costs) can the pigmeat industry hope to be competitive in selling that product in export markets (where it has to incur additional transport costs) (PC 1998). Alternatively, businesses in the Australian pigmeat industry must seek to differentiate their products.

In response to the draft report of this inquiry, Australian Pork Limited compared Australian costs of production (which it estimated to be A\$2.15 per kilogram) to Danish production costs (estimated by Rasmussen to be around A\$2.40 per kilogram) (APL 2004j). ProAnd Associates (2000) found Australia to have total production, process and fabrication costs of A\$2.60 per kilogram on average

(A\$1.85 per kilogram best practice), compared with the Canadian average of A\$1.75 per kilogram (A\$1.40 per kilogram best practice).

Care must be taken when using ‘cost of production’ statistics to compare the competitiveness of producers. These statistics depend on the underlying estimation assumptions, which can vary considerably across studies (box 3.2). Further, it is important to consider the entire supply chain of competing goods. The cost of production for a pig at the farm gate, for example, is not a basis for comparing the Danish and Australian production of pigmeat middles, or the Canadian and Australian production of pigmeat, because it does not account for the processing cost of transforming a carcass into a specific cut of pigmeat or the opportunity costs of the other cuts resulting from the pig. Free-on-board prices are thus a better indicator of competitiveness because they include handling, slaughtering and boning costs.

There are considerable differences at the margin between studies comparing cost of production between Australia and major competitors. These studies typically compare a representative or average enterprise, and can mask considerable variations in cost of production data. Even relatively small variations in cost of production can dramatically affect the estimates of profitability, especially considering the pigmeat industry is a ‘low margin’ industry (Australian Pork Limited, sub. DR62, pp. 4, 8, 30, 54; Agripork Australia, trans., p. 86).

3.3 Potential indicators of competitiveness

The competitiveness of a business is difficult to measure — there is no single indicator of competitiveness. Insights into the competitiveness of businesses can be gained, however, by considering a variety of indicators, including profitability and market share. The continued survival of businesses without significant government assistance can also demonstrate the international competitiveness of businesses.

Profitability

Businesses with a competitive advantage are likely to be more profitable than their peers because they can receive a higher price for their products (differentiation) and/or they can have a lower cost structure (cost competitiveness). Such businesses can be better placed to withstand any price pressures.

Like many industries, the profitability of businesses in the Australian pigmeat industry varies over time. Little detailed data are available on the profitability of pig producers and processors. Nonetheless, evidence presented to the Commission

Box 3.2 Costs of production

Estimates of farm pig production costs depend on the data and methods used. The table below presents six different estimates for the Danish industry in 2002.

<i>Farm cost of production estimate in 2002</i>	<i>Estimated cost</i>	
	original currency/kg	A\$/kg ^a
Rasmussen	DK10.26	2.40
Gaus and Haxsen	€1.1886	2.06
Gaus and Haxsen (mainly piglets)	€1.5976	2.77
Finn	€1.33	2.31
BPEX	£0.9282	2.56

^a Using average 2002 exchange rates.

Caution must be used when making conclusions about all businesses based on industry average figures. Averages cannot account for specialised production factors or the natural variations of cost structure between producers.

The type of data used may also affect estimates. Rasmussen, for example, compared pig producers from different countries using average estimates for each nation (which are then used to construct an average cost structure for each nation). Gaus and Haxsen use individual piggery data to make conclusions about national industries. Use of national data to understand the workings of individual piggeries will mask varying cost structures between piggeries.

A potentially significant difference in these studies is the treatment of capital. One study can assume that all plant and buildings are new, so have higher depreciation and interest costs, while other studies may assume that plant and buildings are an 'average' age, so have lower depreciation and interest costs. Capital costs can be a significant proportion of total production costs — for example, Danish Agriculture reported that 'in 2002, nearly 17 per cent of the gross proceeds of Danish fulltime holdings were used to pay commercial interest' (2004, p. 49).

Average cost of production estimates can be used to examine the average profitability of pig producers by comparing the price received and the cost of producing each animal. Danske Slagterier statistics show that both of the major Danish cooperatives paid their pig producers an average of DK9.46 per kilogram in 2002 (and Danish producers receive very little in the way of direct subsidies). Using Rasmussen's estimate of DK10.26 per kilogram, the 'average' Danish producer was making a loss in 2002. In contrast, using the Gaus and Haxsen estimate, which converts to DK8.83 per kilogram, the producers made a small profit, while using their higher estimate, which converts to DK11.87 per kilogram, the producer made a larger loss than that estimated by Rasmussen.

The Danish National Committee for Pig Production noted that '2002 was a year with losses on the bottom line, both in connection with new establishments and for the average of all producers' (2004, p. 7).

Sources: Danish Agriculture 2004; Finn 2003; Gaus and Haxsen 2004; National Committee for Pig Production 2004; Rasmussen 2004; x-rates.com 2004b, 2004d, 2004e.

suggests that many producers, following at least three years of favourable returns, experienced losses between mid-2002 and the end of 2003. Profitability improved during 2004 with some firms reporting profits (chapter 2).

Some inquiry participants have argued that low profitability, by reducing investment in the industry, will lead to a reduction in competitiveness. Australian Pork Limited observed:

Inadequate returns and continuing import penetration are leading to investment being withheld. The longer term competitiveness of the industry is thus being undermined. (sub. 44, p. 17)

It is normal for businesses to restrict investment if profitability is low. When many businesses restrict investment as a response to low profitability, supply of the relevant product is reduced and prices will increase. If prices rise sufficiently, existing and new businesses will commence new investment.

Falling investment in times of low profitability is an essential feature of competitive markets. The provision of assistance to increase investment at times of low profitability is likely to lead to increased supply of output and further depress prices. Such assistance could thus harm, rather than help, industry. Decisions about when, where and how much to invest are best left to individual businesses.

Market share

Market share information can also provide insights into the competitive position of businesses. Some studies (such as Weiss 2004) define a loss of market share as a loss of competitiveness, while others consider market share as an intermediate measure of competitiveness (such as Porter and Ketels 2003). Markets and market share can be considered at a number of different levels, from a pig producer's share of a primary processor's pig inputs, to the share of Australian pigmeat production in the domestic market. Pigmeat export and import trends reflect changes in the market share of Australian pigmeat.

From 2002 to 2003, import volumes of pigmeat rose by approximately 21 per cent (ABS unpublished) while pigmeat consumption rose by only 8 per cent (ABARE 2004b). From 2003 to 2004, import volumes increased by a further 14 per cent, while consumption rose by only 0.5 per cent (ABARE unpublished). Given that the majority of imported pigmeat is processed on arrival in Australia and then used by domestic manufacturers (chapter 2), imports increased their share of the domestic processed pigmeat market, and the market share held by the Australian pigmeat industry thus declined. This trend suggested declining competitiveness for

many businesses in the Australian pigmeat industry competing to supply pigmeat to the domestic secondary processing market.

Increased imports could be expected to directly reduce prices received for pigmeat used as an input for the secondary processing sector, and indirectly reduce prices for fresh pigmeat. They could be expected, therefore, to have a negative impact on producers and primary processors, but a positive impact on secondary processors and consumers.

Import competition is strongest in the supply of pigmeat to domestic secondary processors (manufacturers): unlike primary processors, they can choose to use Australian or imported pigmeat (box 3.3). Low import prices can lower their input costs, so the competitiveness of secondary processors might have increased over the period. Hans Continental Smallgoods noted:

Imports make up a considerable part of our raw material supply for our business and are necessary to maintain a competitive position in the market. Over the last few years imports have been cheaper than domestic meat. (sub. 22, p. 4)

Box 3.3 Understanding pigmeat imports

Cuts of frozen and chilled pigmeat are internationally traded commodities. Many inquiry participants argued that such imports to Australia have been an important cause of the decline in pigmeat prices since 2002 (Australian PRISM, sub. 4; W. Evans, sub. 9; Australian Pork Limited, sub. 37). There is little doubt that the relatively cheaper prices (for a given quality) of imported pigmeat have contributed to lower prices for Australian pigmeat. To some extent, however, Australian pigmeat is sheltered from world prices, given the transport costs and extra handling requirements for imported pigmeat.

Pigmeat is imported into Australia when manufacturers believe it is cheaper than the Australian equivalent, or if it is a better (or more consistent) quality for a similar price. Danske Slagterier argued that a feature of the Danish middles entering Australia is that manufacturers can order large volumes of a very consistent quality:

It is also our impression that the reason why the Australian [pigmeat] processors are buying Danish middles is that they ... can get more uniform products (in weight, size and exact specifications) and in bigger quantities from individual suppliers than they can from Australian suppliers. (reproduced in appendix D)

If the Australian product is cheaper and/or better quality, then manufacturers maximise profits by using the Australian product. Imports of pigmeat are thus a *symptom* of:

- the displaced Australian pigmeat being either more expensive or of lower quality than the imported pigmeat and/or
- Australian processors being unable to supply large volumes of consistent quality rather than the *cause* of its lack of competitiveness.

Relatively small exports of processed pigmeats suggest, however, that the secondary processing sector is either focused solely on meeting domestic demand or not internationally competitive. In addition, quarantine restrictions on the import of some forms of processed pigmeat might have provided some protection from world markets, although the outcome of the import risk analysis process may affect future imports.

Data limitations mean it is not possible to calculate export market share. From 2002 to 2003, however, the volume of Australian pigmeat exports declined by 3.6 per cent and the value of exports declined by 17 per cent. From 2003 to 2004, the volume of Australian pigmeat exports further declined by 18 per cent — falling from 63 400 tonnes in 2003 to 51 700 tonnes in 2004. The value of exports declined by 22 per cent over the same period, from \$229 million to \$180 million. Other factors being equal, these falls suggest that Australia's share in world export markets declined between 2002 and 2004.

FINDING 3.1

The competitiveness of a business can be difficult to measure, although profitability and market share are useful indicators. Many Australian pig producers made substantial losses during 2002-03, following three years of above average profits. Profitability improved for many pig producers in 2004. The share of imported pigmeat used by secondary processors increased between 2002 and 2004. Exports of pigmeat declined during that period.

4 External factors affecting competitiveness

The competitiveness of businesses in the Australian pigmeat industry is influenced by the complex interaction of many factors, and it is difficult to quantify their contribution to recent changes in competitiveness. This chapter investigates the external factors that have affected the competitiveness of the Australian pigmeat industry and considers why fluctuations in competitiveness are likely to continue. Section 4.1 investigates the effects of changing exchange rates, while section 4.2 considers rises in feed costs. Section 4.3 considers government assistance to pig producers.

Although changing perceptions of product quality, developing supplier relationships and varying levels of industry support can be important reasons why competitiveness may alter over time, the competitiveness of many Australian pigmeat producers supplying the domestic secondary processing market and the export market between mid-2002 and the end of 2003 was adversely affected by:

- the lower delivered cost of imported pigmeat due to (1) low foreign prices of pigmeat and (2) the appreciation of the Australian exchange rate relative to the currencies used by competing overseas businesses
- substantial rises in the prices of feed grain, as a result of falling grain production due to (1) widespread drought throughout major grain producing regions in Australia and overseas and (2) increased demand for feed grain from other primary industries suffering from drought.

There are mixed signals on recovery, with profitability rising, but imports continuing to grow and exports declining.

4.1 Delivered cost of imported pigmeat

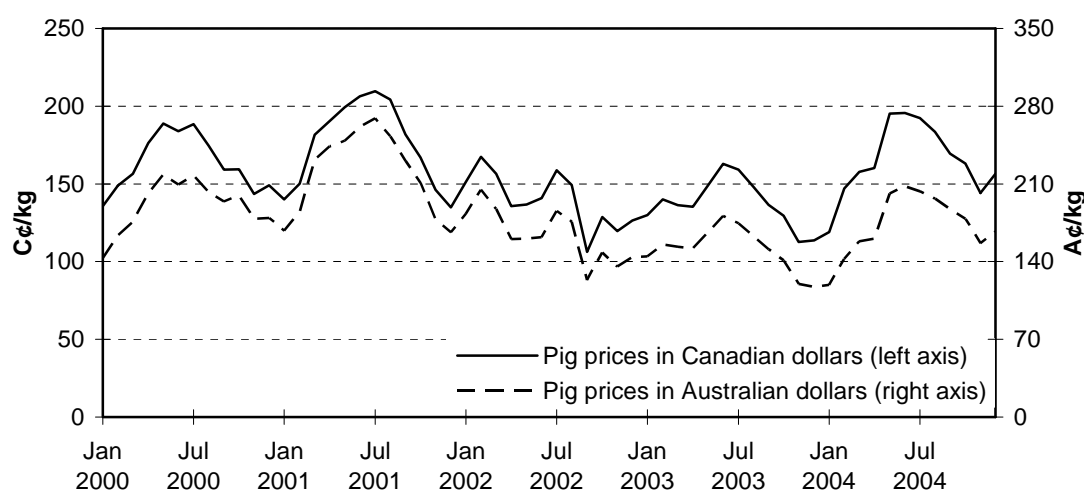
The difference between overseas prices for pigs (at farm gate) and Australian prices varies over time (chapter 2, box 2.2). Such variations in the price difference can affect the competitiveness of businesses in the Australian pigmeat industry. In a given market, all competitors (both domestic and international businesses) compete in the local currency, but the majority of their costs are in their own currency. As a result, currency movements can have a large impact on competitiveness.

Australian prices for pigs (at the farm gate) have been generally higher than Danish and Canadian prices, but price variations have led to the widening and narrowing of this price differential over time (box 2.2). Danish prices (in Australian dollars), for example, fell relatively consistently between January 2002 and January 2004, whereas Australian prices, while trending downwards, fluctuated more widely over the same period.

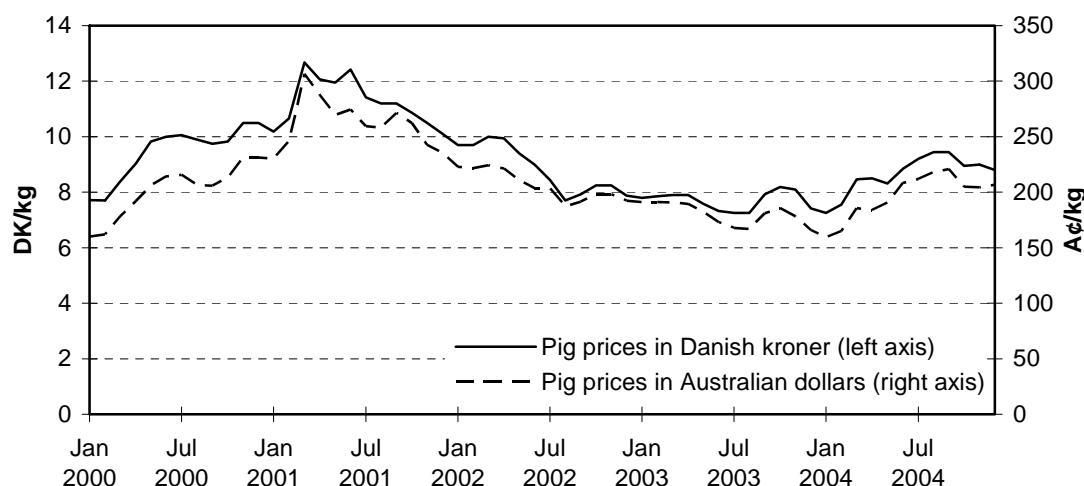
Between July 2001 and January 2004, as a result of depressed conditions on world pigmeat markets and the appreciation of the Australian dollar, the prices received for pigs in competitor countries (expressed in Australian dollars) fell (figure 4.1). Relatively higher domestic prices and falling world prices made imported pigmeat attractive to Australian pigmeat manufacturers.

Figure 4.1 Canadian and Danish pig prices^a

Canadian pig prices



Danish pig prices^b



^a Nominal; price definitions used are the same as those in box 2.2. ^b Denmark is a member of the European Union. The Danish currency is the Danish krone (DK) (and not the euro).

Sources: ABARE unpublished; ABS unpublished; APL unpublished; x-rates.com 2004a, 2004b.

The exchange rate appreciation accounted for some but not all of the relative fall in overseas pig prices when expressed in Australian dollars. Its effect varied depending on the time period of analysis. Between July 2001 and January 2004, for example, the Canadian dollar export price of Canadian pigs fell by 43 per cent and the Australian dollar appreciated against the Canadian dollar by 28 per cent, resulting in the price of Canadian pigs in Australian dollars falling by 56 per cent. Over the same period, with falling Danish pig prices and an appreciation of the Australian dollar against the Danish krone, the price of Danish pigs in Australian dollars fell by 39 per cent.

Exchange rates have fluctuated since the floating of the Australian dollar in 1983. These fluctuations, and the increasing integration of Australian pig businesses into international markets, indicate that exchange rate movements are an important influence on business competitiveness and profitability in the short to medium term.

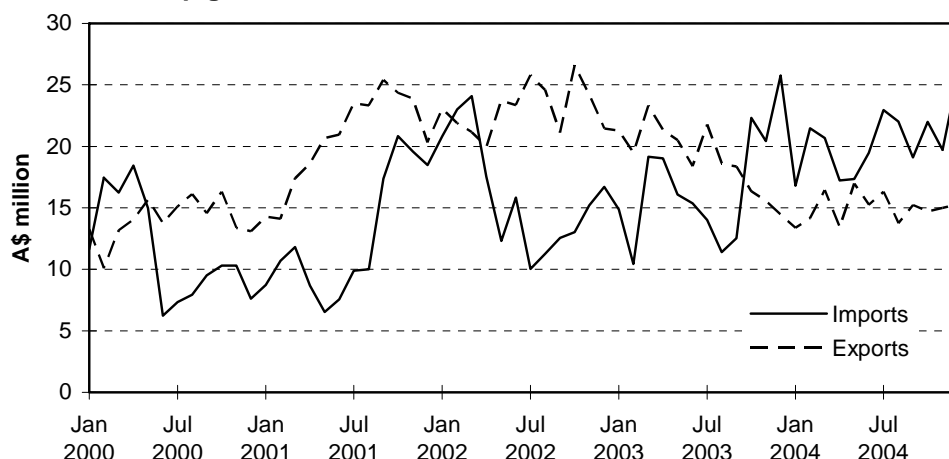
When Australia exports to a country and the Australian dollar appreciates relative to that country's currency, Australian pigmeat products tend to lose market share (and so export less) at the prevailing world price. Similarly, an exchange rate appreciation makes imports to Australia relatively more competitive. A factor contributing to the decline in competitiveness between mid-2002 and the end of 2003 was the appreciation of the Australian currency relative to the currencies of Canada, Denmark and the United States. Between July 2001 and February 2004, the Australian dollar appreciated by 33 per cent against the Canadian dollar (figure 4.2); between January 2003 and April 2004, it appreciated by 13 per cent against the Danish krone.

There is considerable variability in the value of imports (top panel of figure 4.2). Nevertheless, there was an upward trend in the value of imports between mid-2002 and the end of 2003, accompanied by a downward trend in export values. These trends halted at the beginning of 2004, when the trend in exchange rates also changed. The diversion of pigmeat intended for export to the domestic market contributed to the reduction in prices received in 2003.

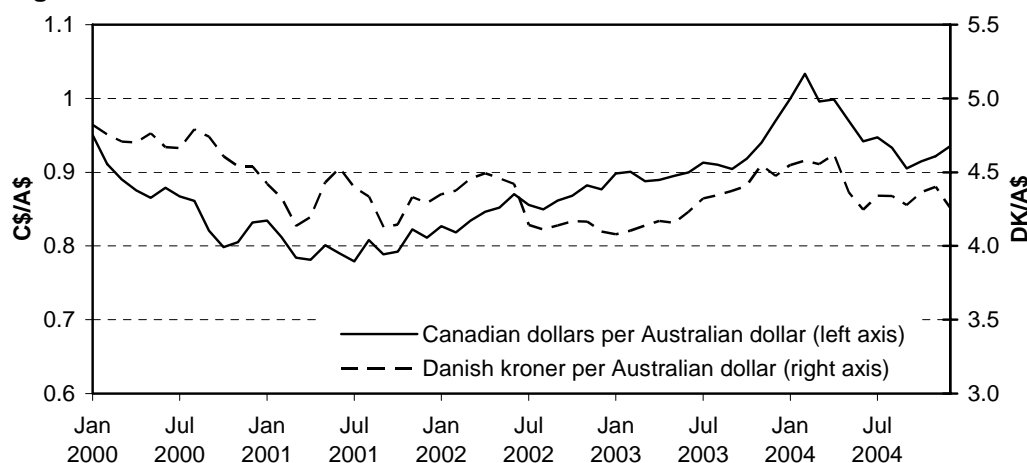
An exchange rate appreciation, and the resulting change in relative prices, would be expected to trigger a greater demand for imported pigmeat. Given the relatively long transport time (with most pigmeat imported to Australia being transported by container ship) between Australia and the countries that supply Australia's imported pigmeat, the delivery to Australian shores would lag the exchange rate movements. This lag is observed for the importation of Canadian pigmeat legs (figure 4.3).

Figure 4.2 Value of Australian pigmeat trade (nominal) and exchange rates
Quarterly data

Value of Australian pigmeat trade



Exchange rates



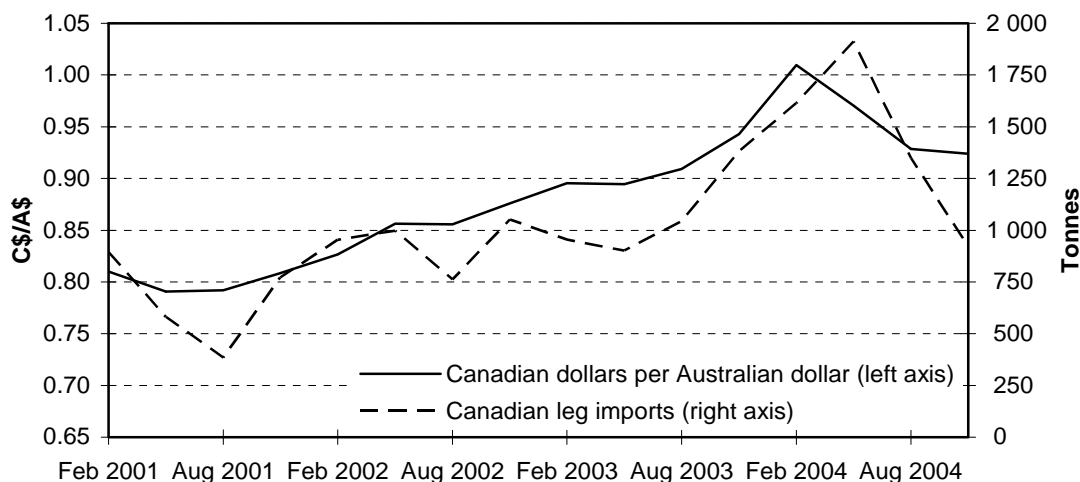
Sources: ABS unpublished; x-rates.com 2004a, 2004b.

Various industry consultations and submissions to this inquiry indicated that most Canadian pigmeat imports are boneless legs. Import data, however, do not distinguish all imported Canadian pigmeat legs from other Canadian pigmeat imports. Unlike boneless legs, total Canadian import volumes do not appear to react to exchange rate fluctuations in a clear pattern (figure 4.4). While total import volumes appear to be linked to exchange rate movements at times, there are also periods when they are not linked, suggesting that other significant factors have an effect.

Danish import data identify types of pigmeat cuts more clearly than do Canadian data, with Danish middles accounting for 78 per cent of total Danish import volumes in 2004 and 'other' accounting for only 20 per cent (ABS unpublished). Exchange rates explain only some of the rise in imports of Danish pigmeat middles (figure 4.5).

Figure 4.3 Volume of Canadian legs imports to Australia and exchange rates

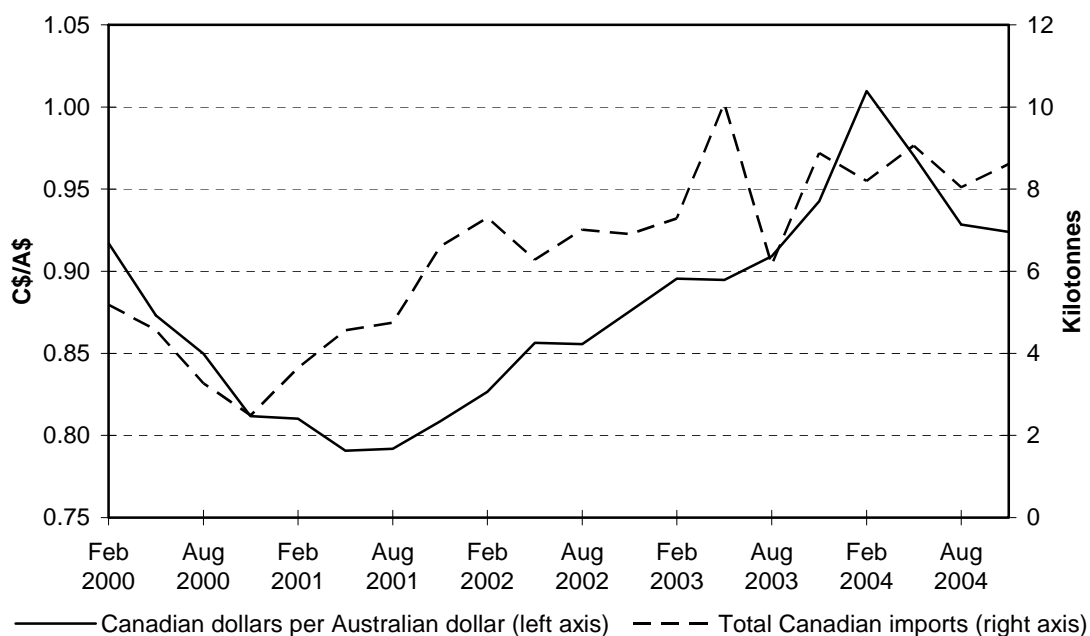
Quarterly data



Sources: ABS unpublished; x-rates.com 2004a.

Figure 4.4 Volume of total Canadian pigmeat imports to Australia and exchange rates

Quarterly data

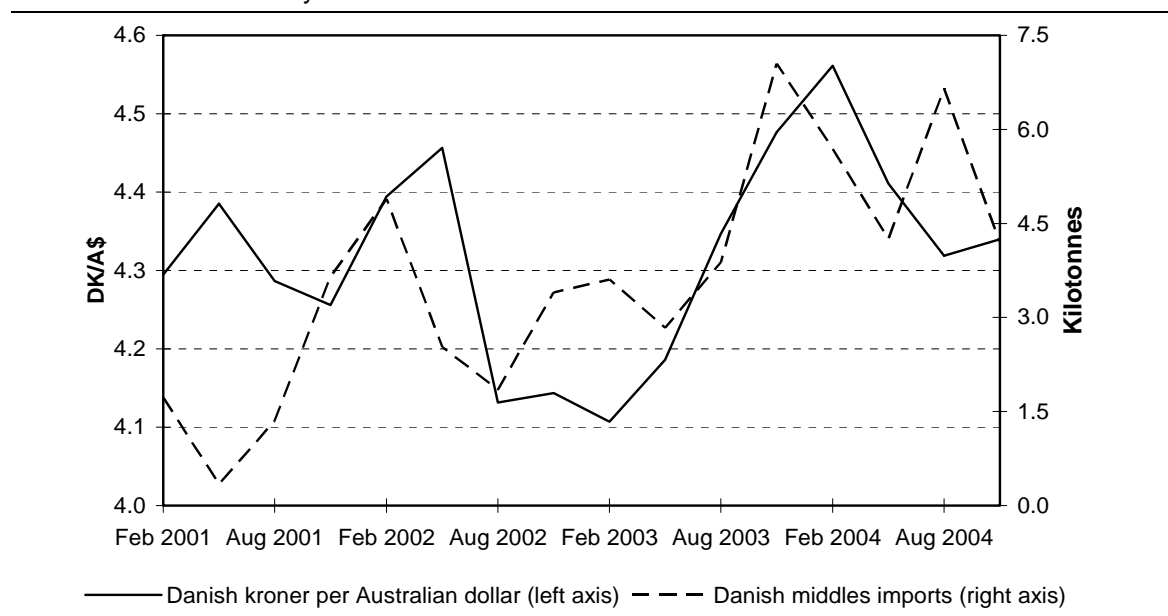


Sources: ABS unpublished; x-rates.com 2004a.

Despite widespread Australian perceptions of 'low' delivered costs of imported pigmeat from Denmark and Canada, exporters in these countries generally regard the Australian market as a relatively high priced market (chapter 2, figure 2.16).

Figure 4.5 Volume of Danish middles imports to Australia and exchange rates

Quarterly data



Sources: ABS unpublished; x-rates.com 2004b.

4.2 Feed costs

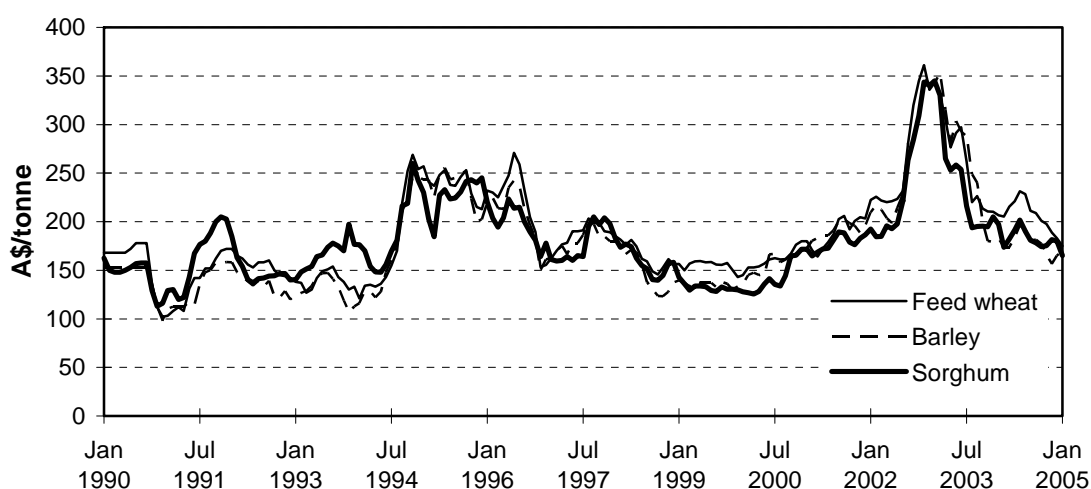
Feed costs are a significant share of the total operating costs of pig farms, so changes in feed prices have a significant impact on individual business competitiveness (section 5.2).

... feed prices appear to be driven by a world market which takes no consideration on the cost for producing pigs. (Mount Compass Bacon Company, sub. 14, p. 3)

The prices of feed grain faced by Australian pig producers rose substantially between mid-2002 and mid-2003 (figure 4.6); but have since fallen considerably, returning to levels similar to those experienced in early 2000s prior to the 2002-03 drought.

Exchange rate appreciations that reduce the competitiveness of Australian pigmeat also provide some automatic hedging of internationally traded inputs used by the pigmeat producers (PC 1998). An appreciating Australian dollar lowers domestic grain prices, as well as making any grain imports cheaper. While this exchange rate effect occurred in 2002-03, its favourable effect on pig producers' grain costs was overwhelmed by a sharp rise in grain prices due to drought conditions in Australia and North America in particular (box 4.1). Drought conditions reduced the production of grain and increased the demand for grain from other primary industries. Prices paid for grain generally declined in the latter half of 2003 and during 2004.

Figure 4.6 Australian grain prices^a



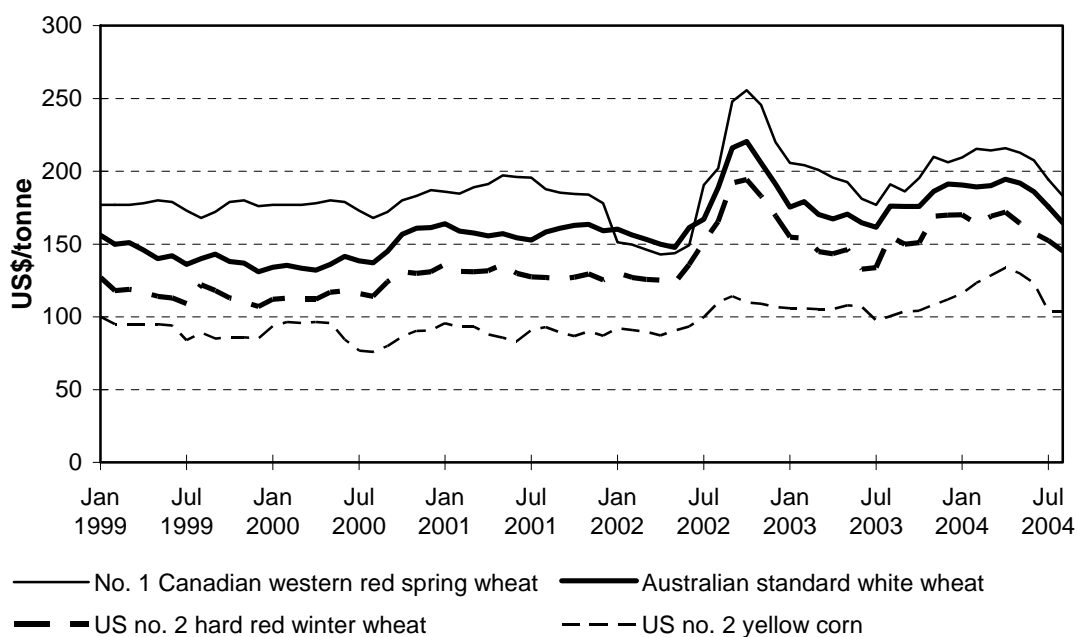
^a Nominal; prices for bulk contracts in cash market, delivered Sydney.

Source: ABARE unpublished.

Box 4.1 International grain prices

The rising price of wheat in mid-2002 was a worldwide phenomenon, reflecting poor seasons in Australia and North America in particular. Prices for corn — the primary feed grain of US pig producers and a possible feed substitute for Canadian producers, but not available to Australian producers — were much lower per tonne than wheat prices and did not rise as much as wheat prices.

Grain prices (nominal)



Sources: ABARE 2000, 2001, 2003a, 2003b, 2004b.

Changes in feed prices affect the viability of pig producers by reducing profitability per pig. Sheales, Apted and Ashton (2004) examined the ratio of pig prices to feed prices (figure 2.19): a feed price spike in 2002-03, coupled with a simultaneous decline in prices received for pigmeat, drove this ratio to its lowest level in the past decade. In late 2004, grain prices trended downwards (ABARE 2004c). Combined with a recent increase in prices received for pigmeat, this trend resulted in a marked improvement in the pig-to-grain price ratio.

FINDING 4.1

The competitiveness of Australian pig producers in the domestic market and some international markets declined between mid-2002 and the end of 2003, largely reflecting movements in exogenous factors such as exchange rates and feed prices. There are mixed signals on recovery. Both exchange rates and feed prices moved favourably during 2004, enabling some recovery of profitability, but imports continued to grow while exports declined. Such fluctuations in competitiveness are likely to continue.

4.3 Government assistance

The competitiveness of Australian pig producers can be affected by government assistance arrangements both domestically and overseas. A number of inquiry participants argued that assistance provided by overseas governments has a major effect on the competitiveness of Australia's pigmeat industry, claiming that overseas assistance has led to a decline in prices received by Australian pig farmers (Amitie, sub. 8, p. 1; Windridge Farms, sub. 18, p. 5). In particular:

... having the means to lower prices through the availability of subsidies will lead to a further increase in low priced, subsidised Danish exports to Australia causing irreparable injury to the Australian pork industry. (Australian Pork Limited, sub. 44, p. 133)

While there is uncertainty over the long term impact of heavily subsidised imports, in the short term it is almost certain that unless something is done in the near future, there will be a sharp increase in bankruptcies, foreclosures and exits within the industry. (NSW Farmers Association — NSW Pork, sub. 20, p. 2)

It might also be noted that, as in other industries, even significant levels of overseas assistance would not, in and of itself, justify matching assistance to Australian producers. It is generally not in Australia's best interests to match industry assistance provided by other countries (box 4.2).

Box 4.2 Fundamentals of foreign industry assistance

1. Assistance provided to overseas industries generally reduces the world price for the industry's output, resulting in costs to producers in the corresponding Australian industry and benefits to Australian consumers.
2. Foreign assistance that reduces the world price for an industry's output generally results in a net economic loss for Australia if the Australian industry is a net exporter, and a net gain for Australia if it is a net importer.
3. A fall in the world price for an Australian industry as a result of assistance to the industry by foreigners, has in common with a fall due to any other development — such as a drop in world demand for the industry's output, or a rise in productivity in the foreign industry — that it reduces the economic value of resources used in the Australian industry.
4. Any policy response by Australia with the aim of reducing the costs experienced by its producers as a result of assistance provided to an industry by a foreign country or bloc would usually impose costs on Australian consumers and/or taxpayers in excess of the benefits to the assisted producers.

The effects of assistance depend on the type, as well as the level, of assistance provided. Assistance can be provided to:

- increase pigmeat prices
- reduce input costs
- increase or stabilise incomes (appendix E).

In general, support that aims to increase pigmeat prices is likely to increase supply (output) within the country providing the support. To the extent that the increased supply affects world markets, such assistance may also decrease prices received by producers in other countries.

Comparative levels of industry assistance

Levels of assistance to agricultural industries can be compared internationally and across agricultural industries, using producer support estimates (PSE) (appendix E). The PSE is a measure of the 'monetary value of gross transfers from consumers and taxpayers to agricultural producers, measured at the farm gate level, arising from policy measures that support agriculture, regardless of their nature, objectives or impacts on farm production or income' (OECD 2002).

In general, estimates of assistance to pigmeat producers in the Organisation for Economic Cooperation and Development (OECD) member countries (which

include the pig markets relevant to Australian producers) are lower than estimates of assistance provided to producers of other major agricultural commodities (OECD 2004). Levels of government assistance provided to pig producers also differ considerably across OECD countries (table 4.1 and appendix E, table E.2).

The OECD estimate of assistance to pigmeat producers in Australia is relatively low (3.59 per cent in 2003). Some industry participants questioned the estimate of assistance to Australian pigmeat producers. The OECD estimates of assistance include general government programs that are also available to producers in other agricultural enterprises as well as any specific assistance to pigmeat producers. The components of the Australian PSE for 2003 are presented in table 4.2.

Table 4.1 Producer support estimates^a for pigmeat in selected countries, 2003

Value of assistance as a percentage of the gross value of output at farm gate

<i>Method of assistance</i>	<i>Australia</i>	<i>Canada</i>	<i>European Union</i>	<i>United States</i>
	%	%	%	%
Assistance that may increase prices				
Market support		-0.44	20.33 ^b	
Payments based on output		2.48 ^c		
Payments based on animal numbers			0.68 ^d	
Assistance that may reduce input costs				
Payments based on input use	3.04 ^e	1.41 ^f	2.41 ^{d, g}	2.57 ^g
Payments based on input constraints			0.42 ^d	0.05
Assistance that may increase incomes				
Payments based on historical entitlements		1.23 ^h	0.23 ^d	
Payments based on overall farming income	0.55 ⁱ	3.05 ^j		0.93 ^k
Unclassified assistance				
Miscellaneous payments		0.71 ^l	-0.14	
Overall producer support estimate	3.59	8.45	23.93	3.56

^a Producer support estimates for pigmeat producers are net levels of support and account for the effect of support provided to other industries such as grain producers. Totals may not add as a result of rounding.

^b Some direct support from national governments but mainly transfers from EU consumers to EU producers.

^c Provincial stabilisation schemes. ^d Mainly national programs. ^e Includes diesel fuel rebates, training services such as FarmBis, and Australian Government tax concessions. ^f Includes fuel tax refunds and exemptions, and property tax exemptions. ^g Includes fuel rebates and government extension programs.

^h Agricultural policy framework transition payments. ⁱ Includes tax averaging, Farm Management Deposits and Exceptional Circumstances payments. ^j Canadian Agricultural Income Stabilisation scheme. ^k Income tax concessions. ^l Provincial payments.

Source: OECD 2004.

Table 4.2 PSE for Australian pigmeat, 2003^a

<i>Producer support policy</i>	<i>Unit</i>	<i>Support</i>
Fuel rebates	\$m	13
Government extension services and FarmBis	\$m	12
Tax provisions for water and Landcare	\$m	1
Income tax averaging and Farm Management Deposits	\$m	5
Total (rounded)	\$m	30
Farm gate value of production	\$m	818
PSE	%	3.59

^a Calculated by the OECD based on data and classifications provided by the Australian Government.

Source: OECD 2004.

Assistance to pigmeat producers in the United States was also relatively low (a PSE of 3.56 per cent in 2003) and generally for programs similar to those available to Australian pigmeat producers. Somewhat more assistance (but still low), is provided to producers in Canada (8.45 per cent), mainly as a result of the Canadian Agricultural Income Stabilisation program (attachment I) and provincial stabilisation schemes.

The Commission invited Professor Clair Nixon to provide details of budgetary outlays to pigmeat producers in the United States, Canada and Denmark (attachment I). Professor Nixon's report details a large number of programs and shows that the aggregate level of direct support to pigmeat producers in each country is relatively low compared to the value of production (attachment I, table I.1).

Assistance to Canadian pigmeat producers

As in other countries, governments in Canada assist pigmeat producers by providing support for extension, and reductions in fuel and land taxes. They also provide two additional forms of support:

- Some provincial governments provide commodity price stabilisation schemes. The OECD estimated that these provincial schemes provided 2.48 percentage points of the 8.45 per cent PSE for Canadian pigmeat producers in 2003 (table 4.1).
- The Canadian and provincial governments also provide the Canadian Agricultural Income Stabilisation (CAIS) program, which is available for all farming activities (box 4.3). The OECD estimated that this program provided 3.05 percentage points of total assistance to pigmeat producers in 2003.

Box 4.3 The Canadian Agricultural Income Stabilisation program

The purpose of the CAIS program is to protect 'farming operation[s] from both small and large drops in income' whatever the risk or cause of income fluctuation. To participate in the CAIS program, producers make payments to the program. The Canadian Government funds up to C\$4 for every C\$1 that the producer contributes. Payments are made from the scheme to farmers when actual margins for a year (allowable income less allowable expenses) fall below a reference margin. The scheme may not directly distort production decisions because payments are based on historical production.

Source: AAFC 2004.

Some inquiry participants expressed concern that the CAIS program can alter the outcomes of production under risk. QAF Meat Industries observed:

The Canadian Agricultural Income Stabilisation Program gives some certainty to producers which allows them to invest in technology, thus improving their competitiveness, and it's certainly a luxury that we as Australian producers currently do not have. (trans., p. 26)

The CAIS program provides payments to farmers when their 'margins' decline. Past production and prices received are key elements in calculating eligibility for assistance under CAIS. ABARE examined the likely economic impact of US programs based on past production, and argued:

Just stipulating that farmers do not need to produce to receive payments does not mean that those payments will not encourage additional production. If payments are related to prices ... they are likely to influence production. (Roberts 2005, p. 10)

Essentially, farmers are responding to distorted incentives rather than directly to market forces. (Roberts 2005, p. 13)

Further, by reducing risks faced by businesses, the CAIS program is likely to increase the supply of pigmeat and lead to some decline in prices in both the Canadian and world markets. Because the CAIS program is applicable to all Canadian agricultural activities, the impact on the supply of Canadian pigmeat is likely to be less than if the program only applied to pigmeat. Nonetheless, the program is likely to lead to an expansion of the Canadian agriculture sector, and may alter the mix of those agricultural activities. If pigmeat production is more risky than other agricultural activities, and the program favours risky activities, then pigmeat production may account for a larger share of agricultural production than otherwise.

Assistance to Canadian grain farmers

The OECD (2004) estimates that in 2003 the domestic price of grain in Canada was C\$9 (about 8 per cent) more than the export price as a result of wheat marketing arrangements, imposing a relatively small cost (C\$18 million) on Canadian pig producers.

The Canadian Government's removal of assistance for grain transport has encouraged the use of grain within Canada, lowering grain prices to the benefit of Canadian pig producers and other grain users (attachment I).

Assistance to pigmeat producers in the European Union

The PSE for pigmeat producers in the European Union (24 per cent on average in 2003) is much higher than estimates of assistance to Australian, Canadian and US pigmeat producers. The estimate for the European Union has been incorrectly interpreted by many inquiry participants as indicating that Danish pigmeat producers receive substantial assistance, and thereby helping them to compete in the Australian pigmeat market. The NSW Farmers Association — NSW Pork noted:

My belief is in fact the pig industry of Denmark's producer subsidy estimates was 28 per cent and then they passed legislation that allowed another 14 per cent for aiding and abetting exports to other countries. I know our Minister for Agriculture made a statement that he had spoken to the Danish ambassador about that subsidy, and that it wasn't going to apply to Australia. But if this 14 per cent subsidy to enable the Danes to export pig bellies or pig heads or pig legs to Eastern bloc countries and the like, that gives them a very great leg-up in exporting the middles that we get sent to Australia. (trans., p. 276)

The most distinctive feature of current EU assistance to pigmeat producers is the dominance of the 'market support' component. In the EU pigmeat market, the primary form of market support is import tariff quotas. As well, some export subsidies and private storage aid are provided, but these are comparatively small.

The OECD estimated that market support to EU pig producers (as a whole) in 2003 was around 20 per cent (average) of the farm gate value of production for the (then) 15 member countries. In other words, farm gate prices for pigmeat in the European Union (averaged over 15 countries) were estimated to be 20 per cent higher than those in world markets. As observed by Professor Nixon (attachment I), the *objective* of EU market support measures is to create a 'two tier' structure of prices, whereby prices within the European Union are artificially raised above 'world' prices.

As discussed below, however, these market support arrangements *do not* have this effect for Danish producers. The available evidence indicates that the Danish pigmeat industry comprises highly efficient businesses seeking out export markets that yield the highest returns for individual cuts of pigmeat. The following sections investigate why Danish assistance is low by considering; relative prices, import tariffs, export subsidies, other budgetary outlays, assistance to the grain producers and competition policy.

Understanding why Danish assistance is low

The OECD estimate of the PSE for the European Union should be interpreted with caution because it is not a measure of assistance within individual member countries. The OECD does not calculate producer support estimates for individual EU member countries (OECD, pers. comm., 16 December 2004).

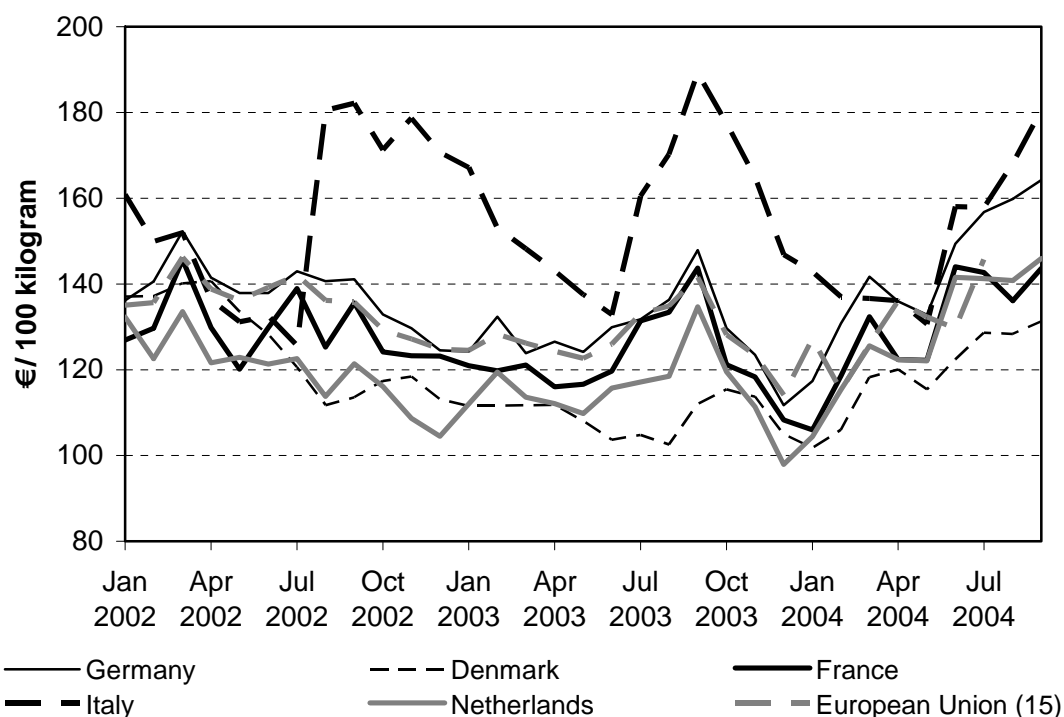
After consulting a variety of sources and analysing the characteristics of Danish pigmeat markets and market support arrangements, the evidence is that assistance to Danish pigmeat producers is relatively low:

1. 'Market support' measures provide little assistance to Danish pigmeat producers.
2. Budgetary outlays by the EU and Danish governments to support prices received for Danish pigmeat are low compared to the value of Danish production (WTO 2003, Danish Agriculture 2004).
3. Assistance provided by the Danish and EU governments to grain growers does not result in lower feed costs for Danish pigmeat producers.

Relative prices

Relatively higher export prices for Danish pigmeat compared to EU domestic pigmeat prices are evidence that EU market support arrangements provide little assistance to Danish producers. Assuming comparable products, farm gate prices received by Danish producers are below the EU average (figure 4.7 and appendix D) and Danish processors receive higher prices, on average, on export markets than on domestic EU markets (chapter 2, box 2.4 and figure 2.16, and appendix D).

Figure 4.7 EU farm gate prices for pigmeat, selected countries^a



^a Nominal.

Source: European Commission 2004.

Import tariff quotas

As noted above, the purpose of tariff quotas within the European Union is to increase prices for agricultural commodities within the European Union compared to world prices. A positive 'market support' PSE component is calculated under the OECD method when such a price relationship is observed. However, in the case of Danish pigmeat, the average export price to non-EU countries (an indicator of the 'world' price) is higher than the average EU (or domestic) price, and the 'market support' component would be zero under the OECD method.

Pigmeat producers in Denmark indirectly receive some assistance from market support measures applied in other EU countries. Approximately two thirds of Danish production is sold in EU countries. To the extent that tariff quotas increase the domestic price of pigmeat in EU countries, and Danish producers can sell into those markets, the average price received for sales of Danish pigmeat should also increase. However, the OECD method of calculating PSE estimates does not enable an estimate to be made of such assistance.

The Commission notes that any assistance provided by pigmeat import tariff quotas does not provide direct support for exports to countries outside the European Union (such as Australia) because they have little impact on prices received for exports outside the European Union. They mainly affect prices received within the European Union.

Nevertheless, tariff quotas put downward pressure on world prices for pigmeat, reducing prices received by Danish producers for their exports to non-EU countries and benefit consumers in non-EU countries, including Australia. Tariff quotas also reduce the volume of Danish exports.

Export subsidies

Denmark provides some assistance for the export of agricultural products. In aggregate, DK2.2 billion of export subsidies were provided in aggregate to Danish agricultural exports in 2002 (Danish Agriculture 2004, pp. 89–90). Export subsidies for milk products, sugar and beef exports accounted for DK1.8 billion. The remaining DK0.4 billion (about A\$94 million) was allocated to all other agricultural commodities, including grains, fur, eggs, poultry and pigmeat.

The Danish Bacon and Meat Council statistics record zero export refunds for fresh, chilled and frozen cuts in 2003, although assistance ranging from DK1.04 to DK2.27 (A\$0.24 to A\$0.53) per kilogram was provided to the export of processed pigmeat such as sausages and hams (Danske Slagterier 2004, p. 31). Danske Slagterier noted:

Regarding export subsidies we shall confirm that there have — except for a short period (6 weeks) in the beginning of 2004 — been no export subsidies on fresh/frozen pork since July 2000. In this connection it should also be stressed that our main export product item for Australia — that is, middles — have never been eligible for export subsidies. (reproduced in appendix D)

Other budgetary outlays

In the absence of market support, government support for the Danish pigmeat producers is restricted to other budgetary outlays. The OECD (2003b, p. 40) observed that Danish pigmeat producers receive little direct assistance in addition to Common Agricultural Policy provisions (see also appendix D and attachment I). There are no ‘premiums’ (assistance) paid for pigs, for example, even though Danish Agriculture lists large ‘premiums’ paid to cattle and sheep producers in Denmark (Danish Agriculture 2004, p. 70). ABARE also observed:

... there are no apparent production subsidies to Danish pigmeat producers or export subsidies on products exported to Australia. (appendix D)

All available evidence indicates that the Danish pigmeat industry is comprised of highly efficient businesses seeking out export markets that yield the highest returns for individual cuts.

Assistance to grain producers in the European Union

Grain is an important input to pigmeat production. Inquiry participants raised concerns that assistance to overseas grain producers reduced the input costs for overseas pigmeat producers.

An indirect subsidy of the EU pork industry are the lower grain prices that result from the high degree of subsidisation to the grain industry. (Australian Pork Limited, sub. 44, p. 134)

There are substantial budgetary transfers to grain producers in the European Union (including Denmark), but this assistance does not appear to translate into lower grain prices within the European Union. In 2003, the estimated value of EU grain support programs to EU pig producers, for example, was €67 million (compared with the total estimate of EU pig producer support of €5.3 billion) (OECD 2004). The OECD estimates that while EU pig producers received a benefit from lower grain prices of €98 million in 2001, they received no benefit in 2002. The OECD estimated that the price of grain within the European Union (as a whole) was not significantly different from world prices (OECD 2004).

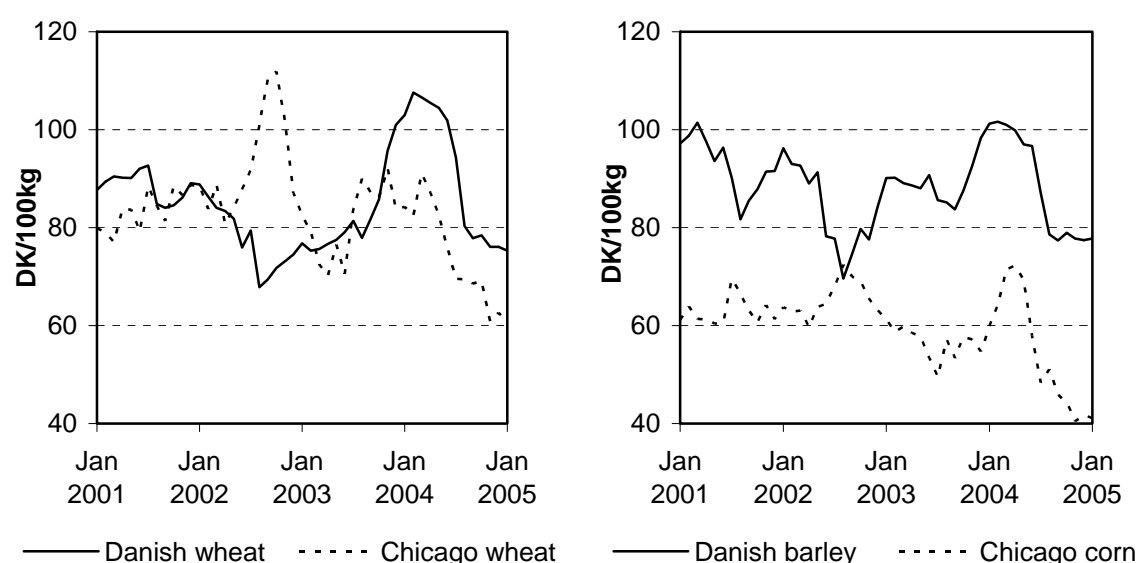
The Danish grain industry produces about 9 million tonnes of cereals a year, of which about 51 per cent is wheat and 41 per cent is barley (Danish Agriculture 2004, p. 57). Danish Agriculture (2004, p. 119) stated that the quality of wheat sold on the Chicago grain exchange ‘is a little higher’ than that of Danish feed wheat. Denmark is a net exporter of cereals, exporting about 12 per cent of production.

Grain production is assisted in Denmark. Danish Agriculture (2004, p. 70) stated that the area ‘premium’ for growing most crops (including cereals) was DK2372 per hectare (about A\$554 per hectare) in 2002. While such assistance increases the revenue of eligible Danish farmers, depending on the nature of assistance, it may have little impact on grain prices received for grain both in Denmark and world markets. If, for example, assistance is based on area planted, a farmer will have an incentive to plant as much land as possible to eligible crops. The supply of such crops is likely to increase. Other matters being equal, an increase in supply of a product leads to a decrease in prices received. The resultant increase in the supply from Denmark (a small producer of grains) is likely to result, however, in only a small decrease in world prices.

The average price received by Danish grain growers in 2002-03 was DK751 per tonne (about A\$175 per tonne) for wheat, and DK782 per tonne (about A\$183 per tonne) for barley. In the same year, the average price paid for inputs to other Danish agricultural businesses was DK814 per tonne (about A\$190 per tonne) for wheat, and DK831 per tonne (about A\$194 per tonne) for barley (Danish Agriculture 2004, pp. 65, 69). The differential could be explained by marketing and transportation costs.

It is difficult to determine whether prices paid for grain by Danish pigmeat producers are more or less than prices paid by Australian pigmeat producers for grain of similar quality. There is evidence that prices paid for grain in Denmark may be higher than the 'world price'. Danish Agriculture (2004, pp. 118–20) suggested that Danish wheat prices are normally a little higher than prices paid on the Chicago Grain Exchange. Prices paid for barley in Denmark are normally significantly more than prices paid for corn in Chicago (figure 4.8). Similarly, ABARE observed that 'there is evidence that the price of barley is higher in Denmark than in most EU countries' (appendix D).

Figure 4.8 US and Danish cereal prices^a



^a Nominal; the Chicago Grain Exchange prices are carriage paid to buyer's address, whereas the prices in Denmark are ex farmer.

Sources: EconStats 2005; Statistics Denmark 2005; x-rates.com 2005.

In 2002-03, prices paid for grain in Denmark dropped sharply (while prices paid in Australia and North America increased sharply):

Together with the fine EU harvest of 2002-03, the European market was flooded by cheap cereals, especially from the former Soviet Union. This resulted in record-low cereal prices [in Denmark]. (Danish Agriculture 2004, p. 120)

In summary, it appears that prices paid for grain by Danish pigmeat producers are similar to world prices.

Competition policy

In addition to government assistance, Australian Pork Limited claimed that anti-competitive behaviour by the Danish industry can enable higher levels of exports than otherwise would be the case.

If the Danish government allows anti-competitive market conduct by Danish pork producers exporting to Australia then the Australian industry could be subject to unfair competition. ... the main source of un-competitive pricing would be if product prices from Denmark were depressed below market levels in order to achieve market penetration. (sub. DR70, p. 22)

Australian Pork Limited did not substantiate these claims, and available evidence indicates these concerns may not be valid (box 4.4).

First, the Danish Competition Authority observed that while Danish Crown may gain premiums in the Danish domestic market for some products, there is little evidence that wholesale prices in Denmark are higher than prices in equivalent markets for equivalent products.

For some identical products, it must, however, be concluded that the Danish slaughterhouses have obtained higher prices on the Danish market than by selling to other markets. It is not possible, though, to make the further conclusion that Danish wholesale prices are, on the whole, higher than those of other countries. (Danish Competition Authority 2002, p. 6)

Second, the relative size of the Danish domestic market for pigmeat compared to its total production means premiums in the domestic market will not translate into a significantly higher farm gate price. Denmark produces about 1.9 million tonnes and consumes about 320 000 tonnes of pigmeat annually. Even if a 10 per cent (about DK1 per kg) premium was gained at the farm gate, this would increase the average price of all pigmeat by about DK0.16 per kg (about A\$0.04 per kg).

Third, average prices received for Danish exports to Australia are higher than the average price received for all Danish exports (box 2.4). Danske Slagterier (appendix D) argue that an appropriate international comparison would be prices received for Danish exports to the United Kingdom. In 2003, Denmark received a weighted average price of DK20.14 per kg (about A\$4.65 per kg) for all exports to Australia compared to a weighted average of DK17.50 per kg (about A\$4.09 per kg) for all exports to the United Kingdom (box 2.4).

Box 4.4 The competitive structure of the Danish market for pigmeat

The Danish pigmeat industry has been undergoing a process of rapid structural adjustment, particularly over the past 20 years. In 1990, there were five cooperative slaughterhouses, whereas today there are only two. These are Danish Crown and TiCan. Danish Crown is by far the larger business, accounting for over 80 per cent of slaughterings, and one of the largest meat exporters in Europe. Danish Crown is cooperatively owned by producers, and has interests in all parts of the supply chain.

Over the past ten years, Danish Crown has merged with, and acquired a number of other smaller companies involved in the slaughter and processing of pigs and cattle in Denmark. These mergers have been largely due to the financial position of the smaller entity. More recently, Danish Crown has acquired companies in other EU member states and third countries through share purchases. Each acquisition has been scrutinised by the Danish Competition Authority and the European Competition Authority.

Each merger has had a different impact on competition due to the different definitions of relevant geographic and product markets. Generally, the European Competition Authority has considered impacts to be limited due to the capacity of companies to price discriminate between member states. It has generally taken the view that there are a large number of markets for pigmeat and pigmeat products. The authority has also ruled that there is not complete substitutability on the part of consumers — that consumers clearly distinguish between meat products on the grounds of diet preferences, food safety concerns as well as religious beliefs. These decisions effectively limit the geographic area and product markets to be considered when assessing the impact of an acquisition.

The competition authorities have also concluded that the Danish market for fresh pork was affected by several factors with the potential to reduce competition, including:

- a strong Danish preference for locally-produced pork (there is a large differentiation between Danish consumer preferences — particularly for specialty cuts and products — and those outside of Denmark)
- unique sanitary barriers (salmonella testing of fresh pork)
- the Danish Crown product distribution network

The competition authorities agreed to the mergers subject to pro-competitive conditions, such as third-party access to distribution systems. In their market investigation into the Danish fresh meat market, the European Competition Authority found that foreign slaughterhouses would supply the Danish market if it were possible to achieve an economic share of the Danish market and gain access to the Danish Crown distribution systems.

Sources: Danish Competition Authority 2002; Danish Crown 2004; European Competition Authority 1999, 2002, 2004a, 2004b.

It would be beneficial for the Australian industry to have a better understanding of the competitive position of major overseas producers that are penetrating the Australian processed market. In the Commission's view, the reluctance of some producers to accept that overseas imports are entering on a highly competitive basis without significant levels of government assistance is inhibiting them from positively responding by making necessary adjustments at the individual business level.

FINDING 4.2

Assistance to Canadian and European Union grain producers has not resulted in a significant reduction in prices paid for grain by Canadian and Danish pigmeat producers.

FINDING 4.3

Imports of pigmeat into Australia do not benefit significantly from foreign subsidies. Government assistance provided to pigmeat producers in Denmark and the United States is low. Somewhat more assistance (but still low) is provided to pigmeat producers in Canada.

FINDING 4.4

Government assistance provided to Australian pigmeat producers is also low. The types of assistance are similar to those available to producers in Denmark and the United States.

5 Internal factors affecting competitiveness

Although movements in exchange rates are a key influence on the competitiveness and profitability of pig production in the short and medium term, other factors will be more important in the longer term. This chapter discusses the influences on competitiveness that are internal to the business and critical to competitiveness in the long term. Sections 5.1 and 5.2 examine the production technology and inputs used in pigmeat production, respectively. Section 5.3 examines risk management in businesses in the pigmeat industry.

5.1 Production technology

A production technology is the manner in which inputs are combined to form an output. Technology affects the efficiency of production — that is, how much product is made from a given amount of inputs.

Productivity-enhancing technology

As noted in chapter 2, Australian pig farmers have increased physical productivity significantly over the last decade. For example, while sow numbers have been relatively stable, pigmeat production rose substantially (chapter 2, appendix B). On-farm management improvements and genetic improvements have been critical to these gains.

Some indicators of the relative productivity of Australian, Canadian, Danish and US pig producers are shown in table 5.1. Denmark appears to produce more pigs per sow than do the other three countries, while Australia has the lowest average carcass weight. Caution needs to be used in interpreting these results. The data are taken from relatively small samples and may not be representative of national industries as a whole, and an industry average masks the variation occurring across businesses. Finally, the indicators chosen are physical, not financial, so there may be tradeoffs between physical production and profitability.

Table 5.1 Pig production efficiency indicators, 2002

<i>Indicator</i>	<i>Unit</i>	<i>Denmark</i>	<i>Canada</i>	<i>United States</i>	<i>Australia</i>
Weaned pigs per sow per year	no.	23.7	20.2	19.5	19.7
Live born per litter	no.	12.2	10.5	10.1	10.5
Weaner mortality	%	3.8	3.0	4.0	2.9
Finisher mortality	%	3.8	3.0	4.0	2.2
Finishers per sow (by calculation)	no.	22.8	19.6	18.7	19.3
Average carcass weight	kg	77.0	86.3	86.0	73.2

Sources: Rasmussen 2002, 2004; Sheales, Apted and Ashton 2004.

The tendency for Australia to produce smaller pigs can adversely affect the competitiveness of Australian producers, because the cost per kilogram of pigmeat is higher for smaller pigs. The Victorian Farmers Federation — Pig Group noted:

One of the principle objectives of Victorian producers to remain competitive within the industry is to increase the weight and quality of their pigs. Carcass weight is one of the key determinants of the cost of pork production from the farm to the consumer. (sub. 30, p. 4)

The West Australian Pork Producers' Association similarly argued that carcass weight is a key determinant of the cost of pigmeat production, and that the cost of pigmeat per kilogram is higher for smaller pigs:

On farm an extra kilogram of pork produced does not carry any of the fixed costs of the business ... At the abattoir the costs of slaughtering an 85 kilogram carcass are essentially the same as slaughtering a 70 kilogram carcass. In the boning room costs of boning an 85 kilogram carcass are similar to when boning a 70 kilogram carcass. (sub. 34, p. 27)

However, pig producers will not receive satisfactory prices for producing an animal that purchasers do not want to buy — if the specifications of Australian buyers are best met with smaller pigs, then increasing carcass size will not aid competitiveness.

Economies of scale

Capital investment in the infrastructure used in both the pig producing and pig processing industries can lead to improved productivity. Much of this improvement relates to the benefits of increasing the scale of production. The Australian industry has been characterised by the increasing number of larger operations and by smaller producers leaving the industry (chapter 2, appendix B). Larger operations tend to have production cost advantages over smaller operations, from their ability to achieve higher outputs per unit of fixed costs. This was highlighted in a number of submissions — for example, Ludvigsen Family Farms noted:

The factors that affect our competitiveness at all stages of the Australian pigmeat industry are economies of scale, economies of scale and economies of scale. (sub. 3, p. 8)

The advantages of larger scale are contested by M.H. West & Sons:

Larger operations do not have production cost advantages over smaller producers. During these tough times, smaller producers could pull the pin easier because they probably own their asset or can write it off. Whereas the large producers have nowhere to go, except borrow more money. (sub. DR48, p. 2)

Primary Industries and Resources South Australia observed that economies of scale are not the only important factor in pig production:

The farms that have survived are not necessarily the biggest. They are most likely to be farms that have been able to drive down unit costs of production through economies of scale while maintaining equity as a cushion against price downturns, drought and smaller margins (Dial, Roker and McWilliams 2004). (sub. 36, p. 13)

Specialist producers do not have the same flexibility as mixed farm businesses to adjust the intensity of their pig operations within a broader farm context. Because intensive piggeries are purpose-built operations that cannot be used for other activities, and substantial investment is involved, large producers are less able to enter and exit the industry as markets fluctuate.

In contrast, smaller opportunistic producers (often diversified farmers) respond to price trends by entering and exiting the industry or altering production levels. The emergence of imports has a similar effect — for example, Ludvigsen Family Farms observed that ‘one of the great benefits of imports is to level out price fluctuations in the domestic markets’ (sub. 3, p. 5). Other inquiry participants were less positive about these price smoothing effects:

The rate of the decline [of domestic production] will be dependent on import prices from Canada and Denmark, volumes imported and grain prices. The price of pigs will continue to be set by the import price. (QAF Meat Industries, sub. 29, p. 11)

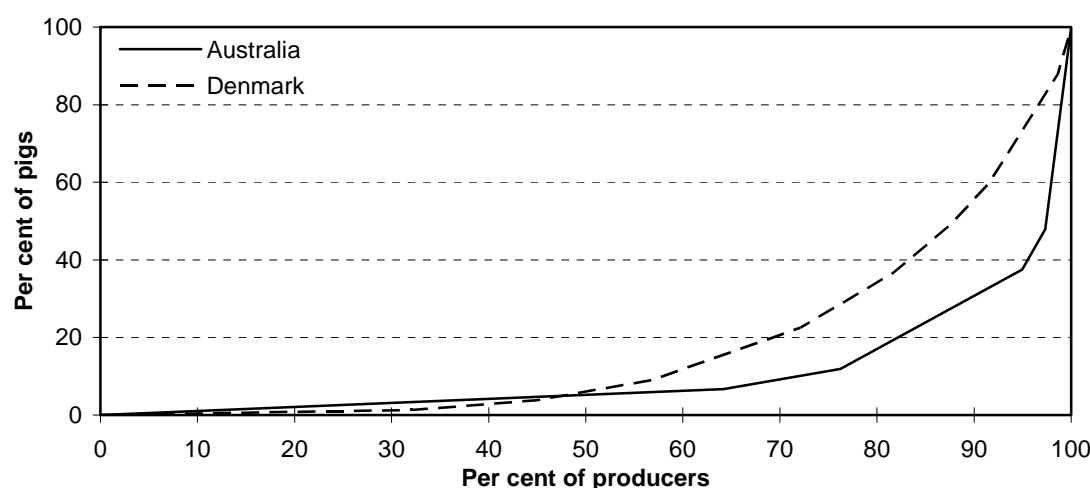
Despite restructuring and achieving greater economies of scale, some inquiry participants considered that the Australian pigmeat industry is still not best placed to compete on bulk production:

Australia cannot compete with the Americans and Europeans in frozen pork and on price. Their numbers and carcass size allow huge economies of scale across the chain that produce prices far lower than Australia could achieve in the future ... Their lower costs come from greater economies of scale in production and processing ... (Ludvigsen Family Farms, sub. 3, p. 3)

The Danish pig industry, for example, produces nearly four times as many pigs as the Australian industry, and is characterised by a concentrated processing sector. (The largest processor cooperative in Denmark slaughters more than three times the

entire Australian output — appendix C, box C.1.) There is greater diversity in the size of Australian pig producers, however, compared with Danish pig producers (figure 5.1).

Figure 5.1 Cumulative distribution of pig producer size^a, Australia and Denmark, 2003



^a The degree to which each distribution is different from a completely homogeneous producer size (with all pig producers having equal numbers of pigs) can be measured using a Gini coefficient, where a Gini coefficient of 0 indicates all producers having an equal number of pigs. The Australian industry has a Gini coefficient of 0.78, whereas the Danish industry has a Gini coefficient of 0.65. This can be compared to the Gini coefficient of the Canadian and US industries which were, in 2000, 0.67 and 0.89, respectively.

Sources: APL unpublished; Danske Slagterier 2004; Commission estimates.

In 1998, processing costs in Australia were higher than those in the United States (PC 1998). In part, this resulted from the tradeoff between (1) economies of scale and (2) pig transport and the finished product. The relatively small size of the Australian pigmeat industry, combined with its geographic distribution, make it unlikely that Australian processors will achieve the economies of scale some competing businesses overseas.

A study of economies of scale in pigmeat processing in the United States found:

The [US] industry's largest plants can deliver pork products to buyers at costs per pound that are 2–3 per cent lower than plants half their size, and 10 per cent lower than plants one-tenth their size, because their costs of slaughter are much lower than the smaller plants. (MacDonald and Ollinger 2000, p. 344)

Smithfield Foods' largest processing site has a capacity in excess of 10 million pigs per year. Danish Crown has recently commissioned a plant with an annual throughput of about 4 million pigs a year, and has four other plants with annual capacities of around 2 million pigs. Australian pigmeat processors will be unable to achieve the same economies of scale.

Economies of scale in administration may also be important. AusPork Australia submitted:

Fewer, larger, better facilities will be critical — especially with the ongoing and increasing burden of compliance and labour costs that government and others seem intent on pushing with no regard for its business survival consequences (Work Cover; EPA; AQIS; OH & S; food safety; taxes; insurance). (sub. 32, p. 3)

Economies in marketing and administration provided most of the benefits from the merger of the Danish Crown and Steff-Houlberg cooperatives in 2002.

For the slaughterhouses, the most essential aspect is that they achieve economies of scale or synergy effects in going ahead with the merger, and they have calculated this advantage to be worth in excess of DK200 million a year. The reason is, on the one hand, that they can avoid overlapping sales and marketing functions both in Denmark and abroad, and, on the other, that administration costs can be reduced overall. The economies of scale in the production are less important ... (Danish Competition Authority 2002, p. 1)

Despite rationalisation of the primary processing sector, with a trend towards fewer, larger and specialised abattoirs, the sector is still characterised by excess capacity. Industry visits undertaken for this inquiry found that some abattoirs are not operating at full capacity — a finding also noted by inquiry participants. Some inquiry participants noted excess capacity in some of the processing sector (Australian Meat Industry Council, sub. 16, p. 5; NSW Farmers Association — NSW Pork, sub. 20, p. 18). In the short run, excess capacity may have the effect of increasing per unit costs in the processing sector, making the industry less competitive.

Quality

Many submissions noted that the relatively disease free status of Australian pigs contributes to the quality of Australian pigmeat products. Ludvigsen Family Farms observed:

[Australia has] high health pigs that do not require the antibiotics etc. to control the multitude of diseases that the rest of the world has. This will increasingly become a focus for Asia, especially the people with money who are conscious of the risks to health. (sub. 3, p. 2)

Several submissions noted the increasing relationships between pig producers and processors. Closer relationships can enable pig producers and processors to rapidly identify quality attributes required by consumers. Blackwood Piggery noted:

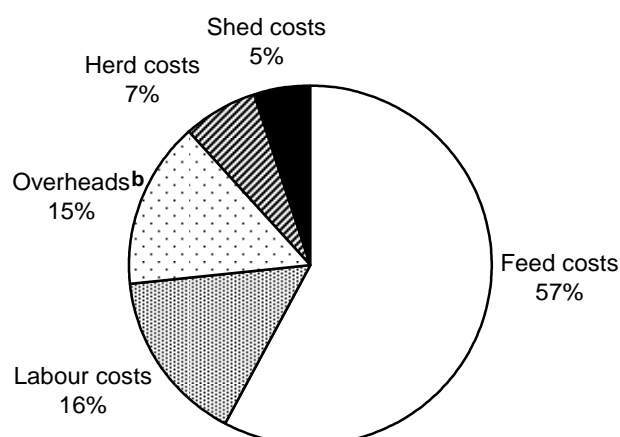
We have a close relationship with the abattoirs whom we have supplied [for] 10 years. We discuss their requirements and change our production to meet these changes. They have also built a close relationship with the fresh pork sector. (sub. 13, p. 2)

There are opportunities for Australian pigmeat businesses to attract higher premiums and gain better market access by differentiating quality aspects of their products. Product branding and labelling are likely to be important methods of achieving such outcomes.

5.2 Inputs

Even if the production practices of Australian businesses are near world best practice, they will not be internationally competitive unless their input costs align with those facing overseas competitors (PC 1998, p. 87). Input costs can be significant, and the quality of inputs can influence how much is required and the quality of the output. The location of production may mean that significant transport costs must also be incurred to source inputs and deliver the output to market. Cost shares of inputs for Australian pig production are shown in figure 5.2.

Figure 5.2 **Input cost shares in pig production, Australia^a**



^a Cost shares are an estimated industry average for 1991-92 to 2002-03 and are likely to vary across farms and over years. ^b Overheads include depreciation costs, add-back inventory increases and financial costs.

Source: APL 2004c (and previous years).

In this section, some important factors relevant to production inputs are considered, including; feed, labour, herd health status, genetics, transport and processing costs.

Feed

Feed's large cost share (normally 55–60 per cent) of total inputs means a change in the price of feed has a larger impact on the profitability of pig producers than has a similar percentage change in the price of other inputs. The New South Wales Department of Primary Industries submitted that 'grain constitutes 80 to 85 per cent of the feed with the remaining 15 to 20 per cent coming from protein meals' (sub. 40, p. 3).

The Australian cropping industry produces a variety of grains that pig producers can purchase for feed. ABARE (2004b, pp. 18–19) estimated that approximately 2.2 million tonnes of wheat, 2.1 million tonnes of barley, 1.3 million tonnes of sorghum and 1.1 million tonnes of oats were consumed as feed grain in Australia in 2003–04. For the same period, Hafi and Connell (2003, p. 24) estimated the pig industry accounted for approximately 17 per cent of Australian feed grain consumption, with cattle on feed (26 per cent), dairy (23 per cent) and broilers (23 per cent) being the other major consumers.

Many of the grains produced by the Australian cropping industry are high quality and can be used for human consumption (such as wheat for flour production); they are generally not grown for specific feed grain uses. Little wheat is specifically produced as a feed grain. Rather, ‘feed wheat’ tends to be wheat produced for human consumption that has not met the appropriate standards. Rain and humid weather during harvest may cause some wheat to germinate before harvest (‘shot and sprung’ wheat), while dry conditions before harvest may result in ‘pinched’ grain. Such wheat may then be classified as ‘feed wheat’ rather than wheat for human consumption. In contrast, overseas pig producers, such as those in Canada, have access to a dedicated feed grain industry that does not attract the premiums of grain for human consumption.

The energy per kilogram of grain that pigs can digest differs across grains. Wheat has more digestible energy than has either sorghum or barley, and sorghum has more than barley. Yellow corn (grown in North America but not available to Australian producers on a cost-effective basis) has slightly more digestible energy per kilogram than has wheat (Sheales, Apted and Ashton 2004, p. 35). The choice of feed grain is complex, however, as discussed by Ridley AgriProducts:

While corn and soy can be considered feed grains, they are very high-energy ingredients, and when pigs in Australia are fed US diets the pigs are very fat and would not meet the profitable grades; hence the call for lean meat payment schedules and value adding of pork products. Furthermore, pigs fed corn-based diets have soft, yellow fat which is undesirable for Australian consumers ... the real value of a grain on animal performance is a combination of feed-conversion ratio, rate of gain and final carcass composition, and on that basis many of the Australian grains would be superior to corn. (trans., pp. 57–8)

The limited availability of specialist feed grain means pig producers often use grain that is not ideal for pig feed. The common Australian feed bases (wheat, barley and sorghum) are deficient in lysine, for example, which is an essential amino acid that assists pigs to convert food energy into protein rather than fat. Australian pig producers have to add supplementary lysine to their pigs’ diets, either as a manufactured additive or via products with a high lysine content (such as soybean meal, which is usually imported).

Some inquiry participants considered that a feed grain industry is needed to support the pigmeat industry:

Over the five years 1999–2003, feed costs have accounted on average for 55 per cent of total pig farm expenses. The two key components of feed costs are feed grain prices and protein prices. Protein prices have been relatively stable over the period. However, feed grain prices have been highly volatile, due to such factors as the drought effects, the Australian Government quarantine regulations for grain imports, lack of a dedicated feed grain market and limitations on using alternative feedstuffs. (Australian Pork Limited, sub. 37, p. 60)

Production of feed grain tends to be less profitable for grain growers than is the production of grain for export or human consumption. The New South Wales Department of Primary Industries' gross margin budgets for the Central Zone — East in 2003–04, for example, estimated a gross margin per hectare of \$213 from growing wheat (short fallow), \$308 from canola, \$337 from lupins, but only \$156 from feed barley. While some caution needs to be exercised in using gross margins to measure future net economic benefits from different farming activities (Douglas, Dwyer and Peterson 2004), the four crops have sufficiently similar production systems and capital requirements for comparison.

Other matters being equal, grain growers will choose to plant a mix of crops that is anticipated to maximise their long run profits. For many grain growers, the planting of crops to produce feed grain will not maximise long run profits (at current relativities). These growers may choose, therefore, to produce feed grain only when factors such as soil fertility, weed and pest control, risk management through diversification, and/or the timing of the 'autumn break' are important.

If the production of feed grain became more profitable than the production of grains for human consumption, grain growers would respond by planting more feed grain. The profitability of feed grain production can be increased (relative to that of alternative crops) in three main ways: a price increase, a yield increase and/or a cost decrease.

Pig producers will have difficulty in paying *higher prices* for grain in the short run without achieving associated productivity gains from using the grain. *Increasing yields* can be achieved by improved plant breeding or production technologies, but this is a long run strategy (with the payoff period measured in years, if not decades). Further, the benefits of any yield improvement in feed grain are likely to spill over to other grain, eroding any relative advantage gained. Similarly, producers of other grains are likely to adopt any innovation that leads to *reduced costs* in producing feed grain. Nevertheless, such research may provide benefits to the pigmeat and other intensive livestock industries.

Unless the relative profitability of growing feed grain increases, Australian grain producers will continue to produce grain for human consumption, and the pigmeat industry will remain at a competitive disadvantage in this area:

The challenge Australia faces in the international pig market is being competitive from a feed cost standpoint. It is basically a geographical issue for Australia. The key ingredients in North American pig feed are corn and soybeans. The corn belt of the United States and significant portions of Brazil have the climate and soils that are conducive to producing massive quantities of feed grain at relatively low costs. The European Union has instituted government policies that provide for lower cereal grain costs to the pig producer within the member countries. There is not enough reliable rainfall in Australia to embark on large scale corn and soybean production. In addition to these natural restrictions on the production of corn and soybeans in Australia, there are significant quarantine restrictions on the importation of feed grain into Australia which are intended to prevent the entry of plant diseases and weeds. This policy has left pig producers in a difficult position because it drives up the cost of feed grain. If Australia wants to be a big pig exporter, it needs to look closely at its grain program — it is all about low cost feed. (Professor Clair Nixon, attachment I, pp. 4)

To address supply shortages of feed grain, Australian Pork Limited, the Australian Egg Industry Association, the Australian Lot Feeders Association, the Australian Chicken Meat Federation and Australian Dairy Farmers recently formed the Livestock Feed Grain Users Group.

Labour

Labour inputs represent around 10–15 per cent of the cost of growing pigs. Many inquiry participants observed that smaller pig farms often rely on the labour contributions of family members, whereas larger farms employ off farm labour. In contrast, labour costs are a substantially higher share of production costs in the processing sector: QAF Meat Industries estimated that ‘80 per cent of slaughter costs is a variable cost of labour’ (trans., p. 32).

Some inquiry participants suggested that sectors of the industry may face difficulties in recruiting and retaining staff (chapter 7). Possible reasons for these difficulties include the relative isolation of some farms, the working environment and relative wages. In addition, staff turnover appears to be relatively high, which results in increased training costs.

Health status

Its disease free status provides Australia with an advantage over most foreign competitors in veterinary costs. Further reductions in disease may provide added advantages in productivity. In addition, the absence of many substances used to

treat diseases adds to consumers' perceptions of product quality. Inquiry participants also noted an industry trend to reduce the use of antibiotics.

Several inquiry participants noted that keeping disease incidence low within their herds was critical to their profitability. Windridge Farms noted:

... health status is very important as it minimises our production cost, minimises the use of antibiotics and allows us to market our pork as 'clean and green'. (sub. 18, p. 4)

Low incidence of disease reduces production costs, increases productivity and helps with product differentiation internationally.

Genetics

An important determinant of the cost competitiveness of a pig producer is the quality of herd genetics. Improved genetics can result in efficiencies in growing rates, feed conversion, meat quality, disease resistance and reproductive performance. The importation of pig genetics has been banned (except for one importation from Norway) since the mid-1980s because genetic material can contain diseases. Australia is one of only three pig producing countries to be free of porcine respiratory and reproductive syndrome, a disease that has appeared only in the past decade and can be carried in genetic material (PC 1998).

Consequently, Australian pig producers have relied on the domestic genetics industry to source genetics for their herds. The South Australian Farmers Federation argued:

[The South Australian Artificial Breeding Centre is] a world class facility for the collection, processing and marketing of fresh boar semen throughout Australia and overseas. (sub. 5, p. 9)

PIC Australia noted:

The information we have at this early stage is that the Australian genes are competitive and equal, and better in some areas, than the North American nucleus herd genes. That nucleus herd also imports genes from Europe, and benchmarks the European genes against its own genes. So we are right up to date in terms of benchmarking our gene pool in Australia with international genes, even though our country is closed to imports of genetic material. (trans., pp. 329–30)

PIC Australia also observed:

[In North America] I witnessed some live animals that were converting feed at 1.72 to one and growing over life at over 1000 grams a day, and they were spectacular animals. The benefit to our industry if we could tap some of those genes into it would be in the millions of dollars. (trans., p. 332)

This suggests that selective importation of genetic material might benefit Australian pig producers, provided quarantine can be maintained. However, as discussed in chapter 7, quarantine risks need to be considered.

Transport

The relatively large distances between farms, feed supplies, abattoirs and markets in Australia create a disadvantage for many pig producers. The distances between processing plants and domestic markets and international ports can also add to transport costs — for example, some export produce from the Big River Pork centre at Murray Bridge in South Australia is exported from Tullamarine in Victoria. Further, adjustment in one sector of the industry can significantly affect the viability of another — for example, the shutdown of the pig line at the Primo plant in Scone means pig growers in the Tamworth region face high transport costs to deliver animals to slaughter.

On the other hand, international transport costs increase the cost of imported pigmeat, providing some competitive advantage to domestic pig production and primary processing sectors, but increasing the cost of imported pigmeat to secondary processors and consumers:

[The] domestic fresh market is protected by distance and the cost of transport as well as our strict quarantine laws and hygiene advantages. ... Australia imports frozen pigmeat (primarily Danish middles and Canadian legs) ... [that] is not suitable for the fresh pork market and does not compete there. (Ludvigsen Family Farms, sub. 3, p. 4)

... competitors [to the Australian pigmeat industry] have to incur high transportation costs to reach its market. (Canada Pork International, sub. 2, p. 2)

Continual productivity growth is an aspect of most industries, including the Australian pigmeat industry. To maintain its competitiveness, a business or industry has to keep up with the improvements of competitors. The internal factors of competitiveness are the elements that the Australian pigmeat industry can address to maintain competitiveness with foreign producers in the long run.

FINDING 5.1

Continuing improvements in practices internal to a pigmeat business are important to maintain long run competitiveness with foreign competitors. In the short run, however, these internal factors are unlikely to offset such influences as large unexpected movements in feed grain prices and exchange rates.

Processing costs

Australian Pork Limited observed:

A significant issue that has emerged from APL's initial overview of the supply chain is the need to improve the competitiveness of abattoirs, boning rooms and smallgoods manufacturers independently of any action undertaken by other sectors of the industry to improve competitiveness and efficiency. (sub. 37, p. 11)

There is little publicly available data on processing costs. Some submissions pointed to an international benchmarking survey by Hassall and Associates (1994) that found killing costs per pig were about 40 per cent higher in Australia than in the United States, mainly as a result of labour, inspection and utility charges. The Western Australian Department of Agriculture observed:

Based on data collected by Hassall and Associates (1994) Australia lags behind the rest of the world in the efficiency and effectiveness of the pig processing sector. There is little reason to expect that productivity of the Australian processing sector has improved markedly since this data was generated. (sub. 17, p. 7)

The Commission (PC 1998, p. 104) noted, however, that ProAnd Associates (1998) suggested the cost differential may be less than estimated by Hassall and Associates.

Danske Slagterier expressed the view:

... it is our impression that the Australian [pigmeat] processing industry is just as efficient as the Danish one. It is also our impression that the reason why the Australian [pigmeat] processors are buying Danish middles is that they ... can get more uniform products ... and bigger quantities ... different cut weights and sizes are not optimal for a processor. (reproduced in appendix D)

In general, less information is available regarding Australian pigmeat processing costs than pig production costs.

5.3 Risk management

Another factor affecting the long term competitiveness of businesses is how they manage risk (box 5.1). Attempting to reduce risk may have advantages, but possibly at the cost of lower expected returns. In addition, transaction costs are incurred in reducing risk. An important issue for businesses is whether the benefits of reducing risk are greater than the costs.

Three major forms of risk are business, financial and sovereign risk. *Business risk* arises from the marketplace, where future output and input prices are uncertain; this is because the unpredictable nature of the physical environment (such as extreme weather events) leads to unexpected variation in production, and because other

natural events (such as disease outbreaks) lead to reduced production or the opening of new markets. *Financial risk* is related to the financial structure of the business, such as the level of equity to debt and other fixed financial obligations; it increases with increased financial leverage. *Sovereign risk* is the risk that governments will change policy settings, which can have far-reaching implications for the profitability and survival of the business. Businesses have little control over sovereign risk. The implications may be negative — such as if a local government planning decision were to adversely affect an existing piggery — or positive — such as if the European Union reduced agricultural assistance, which would enhance the relative competitiveness of Australian products. Government policies affect producers' responses to the market through their impact on risk. If, for example, producers view government schemes as providing an effective safety net in the event of financial difficulties, they may have an incentive to increase other forms of risk (such as financial leverage) to increase returns (Peterson et al. 1991).

Box 5.1 Risk and risk aversion

Risky events are those with outcomes that are uncertain and that affect the decision maker's wellbeing. If outcomes are considered irrelevant by the decision maker, or the decision maker is indifferent to the outcomes, then the event is not considered risky. Risky events may have positive outcomes (sometimes called upside risk), negative outcomes (sometimes called downside risk) or both. There is risk associated with the price of pigs next year — for example, the price may be higher or lower than the current price.

Most people are risk averse when faced with significantly risky income or wealth outcomes. Risk aversion does not mean that individuals are unwilling to take risks; rather, it means that individuals are willing to forgo some expected return for a reduction in risk. If one investment or enterprise is riskier than another, it must offer a higher expected return to be preferred by risk averse decision makers. The acceptable tradeoff between risk and expected return depends on how risk averse the individual is: the more risk averse an individual, the higher must be the expected return on the riskier investment for that investment to be preferred to one that is less risky.

Sources: Hardaker, Huirne and Anderson 1997; Robinson and Barry 1987.

Pigs were traditionally a co-product of a diversified farming enterprise, with pig farms often located on dairy and grain farms. Diversification of enterprises, while discouraging the managerial and scale advantages of specialisation, can lower the risk for businesses, particularly where there is negative or low correlation between prices received for different products. Many diversified farms had little capital investment in pig production, so could quickly respond to market conditions. If prices dropped, it was relatively easy to reduce the size of the pig enterprise and devote more resources to other enterprises; conversely, if prices rose, pig production could be quickly expanded.

In contrast, a modern pig farm is capital intensive. Piggery infrastructure is designed for continuous production, with cohorts of sows, piglets, maturing porkers and baconers at different stages of the production cycle. Pig producers carefully sequence activities throughout the enterprise to maintain throughput and avoid production bottlenecks. Delays in one activity (such as farrowing) have consequences for other parts of the enterprise (such as contracted deliveries to an abattoir).

Modern pig producers have to tradeoff some production flexibility to achieve economies of scale. Maintaining high levels of constant throughput means pig producers have limited flexibility in timing their sourcing of inputs such as feed grain. Similarly, tight product specifications of slaughter contracts and infrastructure capacity designed for continuous production mean that the time of slaughter is relatively inflexible. In contrast, producers in broadacre grazing industries (beef cattle and sheep) can often hold on to saleable stock for extended periods.

The capital intensity of pig farms normally means producers must generate cash to service debt and pay employees. If employees are retrenched when prices are relatively low, it may be difficult to attract replacement labour when prices are relatively high. This lack of flexibility makes modern pig farms vulnerable to variability in the prices of inputs and outputs:

Producers have a very limited capacity to respond to price fluctuations. Given the production line nature of pig farming, maturing pigs must be sold in a short time period with few alternative buying options. As such, producers are captive suppliers and have to accept whatever market prices exist during that time. (NSW Farmers Association — NSW Pork, sub. 20, p. 8)

Nevertheless, in contrast to large pigmeat businesses, smaller producers may lack the necessary financial resources, time or skills to undertake more sophisticated risk management activities.

As the structure of pig production has changed, the level of risk has increased. High input – high output businesses (such as specialised piggeries with large amounts of sunk capital) are often more risky than low input – low output businesses. A more detailed analysis of risk management issues in pig farming is presented in chapter 7.

FINDING 5.2

While increased specialisation and capital intensity have allowed some pig producers to achieve economies of size and higher returns, the consequences of large unanticipated variations in prices of outputs and inputs may be greater than for less specialised producers.

6 Government and industry programs in Australia

The inquiry terms of reference require the Productivity Commission to take into account the impact and effectiveness of existing and recent government and industry programs that may affect the competitive situation of, and outlook for, the Australian pigmeat industry. This chapter addresses this task by discussing the operation of key government and industry programs relevant to the pigmeat industry.

Australian, State and Territory government programs that directly and indirectly affect the pigmeat industry include:

- agricultural programs that provide assistance to the agricultural sector, such as ‘Agriculture — Advancing Australia’
- pigmeat industry-specific programs that are available only to pigmeat producers or processors, such as the Pork Global Market Initiative and the Pork Industry Restructure Strategy (which ended in 2002).

Generic government programs that provide a social safety net (such as social security and labour market assistance programs) are also likely to affect the pigmeat industry, as are education programs and economy-wide policies that influence inflation, interest rates and exchange rates. Taxation programs, such as generic agriculture tax provisions that assist the pigmeat industry (and other rural businesses), will also have an impact. (Selected programs are summarised in appendix F.)

This chapter discusses a number of Australian Government programs (some of which are jointly funded and administered by State and Territory governments). Evaluating the impact and effectiveness of each program available to the pigmeat industry is beyond the scope of this inquiry (further, as some of these programs are available to businesses more widely than pigmeat businesses, it would be inappropriate for the Commission to evaluate such programs in a pigmeat inquiry). However, the Commission has drawn on existing reviews, where available. The Commission has received limited information on the operation of individual State and Territory government programs relevant to the pigmeat industry.

In addition to government programs, programs initiated and administered by industry (industry programs, of which some are jointly funded by government) also directly and indirectly affect the pigmeat industry. Australian Pork Limited (APL) and various sectors within the industry, for example, have programs that address research and development, marketing, quality assurance, animal welfare and natural resource management. These are also discussed in this chapter.

6.1 Framework for establishing the role of government

Participants in fully competitive markets interact and trade on the basis of complete price signals to reconcile their needs with the scarce resources available. Markets are often imperfect or incomplete, however, resulting in market failures such as the market failure for public goods (for example, defence), externalities (for example, environment and health), market power/imperfect competition (resulting in anti-competitive behaviour) and information failures.

Where markets are perceived to fail, governments may intervene to correct for possible adverse effects. The existence of public benefits is a necessary, but not sufficient, condition for the government undertaking the activity. To the extent that the private sector can obtain sufficient returns from any private benefits (together with generating public benefits), there may be no need for government intervention. Moreover, government actions might ‘crowd out’ private sector actions that might achieve the same objectives more efficiently.

Governments should only intervene providing that the benefits of government action are likely to exceed the costs on a community-wide basis. Where governments decide to intervene, programs need to be designed to address the relevant problem and produce the greatest possible net benefits (that is, be the best option available) (PC 2002). In addition to market failure, governments might also act to address distortions created by previous government intervention (government failure); again, for economic efficiency, the benefits of such action need to outweigh the costs.

Government programs for the pigmeat industry (and other industries) can be broadly grouped according to program objectives:

- those that aim to improve competitiveness and economic efficiency
- those that aim to facilitate adjustment to economic change.

Competitiveness and economic efficiency

There may be a role for government to intervene on efficiency grounds to correct for possible adverse effects from market failure. Research and development (R&D), market development, and education, training and extension are areas in which governments have sought to address potential market failures affecting competitiveness and economic efficiency in the pigmeat industry (and other rural and non-rural industries).

Research and development

Governments have developed a range of programs to facilitate and encourage R&D activity. Programs include tax concessions, patent protection systems and R&D levies on beneficiaries of the research (such as the R&D component of the pig slaughter levy). Governments also provide extension services to help ensure the potential benefits of R&D are realised.

R&D activities can generate a range of benefits, including productivity improvements (through the development of new technology, for example) and improved living standards (IC 1995b). Where individual businesses undertake R&D, they are seeking to create benefits for their own business. Their R&D activities may, however, also create ‘spillovers’ that benefit other businesses within the same industry, businesses in other industries, and also the broader community (IC 1995b). The potential for spillovers can limit the incentive for individual businesses to fund and undertake R&D activities — because other competing businesses may be able to enjoy R&D benefits without contributing to their cost — and result in underinvestment.

Governments thus typically develop policies and programs to encourage more R&D activity. Any decision by government to become involved in R&D activities needs to account for the extent of potential spillovers and for the costs of designing and implementing particular programs.

Market development

Governments assist market development through a number of programs and services, including negotiating market access through trade agreements, providing financial support and services to exporting businesses, and facilitating industry based levies (such as the marketing component of the pig slaughter levy) to fund market development activities. They are typically involved in negotiating market access with other governments through trade treaties and agreements. They may have potential advantages in such negotiations from being generally more familiar with approval processes and having access to established networks.

Domestic businesses participating in export markets generate benefits that they capture, but that other exporters too may capture, such as reputational benefits, knowledge transfers and knowledge about new markets (Lattimore et al. 1998). Private businesses have limited incentives, however, to ensure such spillover benefits are realised. Consequently, governments have developed policies and programs that seek to develop an export culture within domestic industries to generate broad benefits for the domestic economy.

Governments facilitate compulsory industry based marketing levies in some agricultural industries because there might be underinvestment in such promotion. At the farm gate, many agricultural products cannot be readily differentiated across producers and are produced by a large number of businesses. Individual producers might not promote their own product — even though such promotion activity would be likely to generate benefits for other producers — because it would not generate net benefits for themselves. Governments sometimes attempt to address this issue by providing statutory power for industry marketing levies (IC 1993, p. 159).

Education, training and extension

Governments provide generally available education and training programs, including primary and secondary schooling, and tertiary and vocational training. These programs create a range of benefits, including improved competitiveness and economic efficiency. Possible market failures that may warrant government involvement in education and training are (1) the potential unwillingness of businesses to invest in generic skills (given the non-excludability of benefits generated by such investment), and (2) the inability of some workers to fund the necessary investment (Clare and Johnston 1993). Governments also provide services through extension for R&D, and as part of facilitating adjustment to economic change, including retraining and job placement (see below).

In all types of R&D, market development activity and extension programs, governments must consider whether the broader benefits of such programs outweigh the costs. Governments should ensure such programs are still relevant as the nature and characteristics of businesses in particular industries change.

Adjustment to economic change

Structural change is a feature of all sectors of the economy. Businesses adjust in response to constant changes in market conditions (such as changing input costs, output prices and consumer tastes) and government policies. Such adjustment is vital for the community to capitalise fully on its resource base and improve its living standards.

Adjustment is continuous. In most industries, there are both expanding and contracting businesses. Simultaneous entry and exit of businesses in a single industry is also normal. Most adjustment is autonomous — that is, it is a response of businesses in the industry to changes in their environment, independent of government assistance. Primary Industries and Resources South Australia noted:

Adjustment [in the pigmeat industry] is a daily mixture of diverse activity with some farmers continuing to invest, others endeavouring to recover and some forced to leave the industry. (sub. 36, p. 13)

Generally this is true in all industries. The process of change (whether government or market related) can result in adjustment pressures within the economy. The World Trade Organization observed:

Adjustment is at the core of a market system, and adjustment is not without cost. While economic policies may aim to improve the conditions for investment and growth — through infrastructural improvement, tax and tariff reform and prudent macroeconomic management — they cannot reasonably guarantee prosperity without pain. (WTO 1997, p. 4, cited in PC 2001b, p. 6)

In considering adjustment issues, it is important to distinguish between short term and persistent income problems. Short term fluctuations are a normal part of Australia's risky, volatile agricultural industries, and periods of low (and high) income are to be expected. A pig producer who receives poor returns in a bad year might do well in a good year. Movements in incomes in individual years can thus be a misleading indicator of financial viability (Musgrave 1990).

An issue raised in the context of agriculture is that the rate of adjustment might be too slow and impose greater transitional costs. For example, Musgrave (1990, p. 249) noted that among the costs of adjustment, there were costs '... springing from inefficient resource use due to lags in the adjustment process.' Harris (1970) noted that slow rates of adjustment in agriculture and the concentration of unprofitable producers in farming might be due to the option of subsistence farming; postponed maintenance; attachment to farming as a way of life; potential capital gains from increases in land prices; and immobility caused by lack of knowledge of, or training for, other job opportunities.

The Australian Government provides a range of universally available measures to facilitate adjustment and ease transitional pressures, on the grounds of equity and efficiency. Universally available measures are provided through the social security and tax systems, and other generally available measures include job search, placement and training (PC 2002). Such measures have the advantage of:

- treating individuals in similar circumstances equally
- targeting assistance to those in genuine need, whatever the cause

-
- addressing the net effects of varying influences
 - supporting individuals and families rather than a particular industry or activity (PC 2001b).

Government support for agriculture in recent years has seen ‘increasing emphasis ... placed on encouraging farmers to become more self reliant and to adopt their own risk management strategies’ (IC 1996, p. 17). The 1997 review of the Rural Adjustment Scheme acknowledged the role for government in providing a suitable safety net for farm families (as for other Australians). Nonetheless, it noted that governments should not attempt to address farm welfare issues through instruments to assist businesses because this approach confuses the objectives of the intervention, does not necessarily target the welfare problem effectively and can distort market signals to the farm business receiving assistance, with possible adverse effects on the sector’s efficiency (McColl, Donald and Shearer 1997, p. 46). The review concluded that the appropriate support is provided through the welfare system, under which eligibility is uniform regardless of the occupation of the recipient. This approach provides support for owners or employees of any business regardless of industry, size or business structure (such as family farms or corporate businesses).

Universally available measures are not designed to handle all circumstances, however, and additional measures might be necessary to help those affected by change, on the grounds of equity and fairness. The case for such measures is likely to be strongest where changes in the economic environment (whether policy related, market related or both):

- impose a clear and sizeable burden on a specific group in the community (particularly if the affected group is relatively disadvantaged)
- deliver benefits mainly to relatively advantaged groups in the community
- are largely unanticipated and involve material changes to a well defined and defensible ‘property right’ (PC 2001b, pp. 62–5).

Additional assistance may also be warranted on the basis of efficiency if additional measures could improve the efficiency of the adjustment process by reducing the ‘adjustment costs arising from market based impediments (and the costs of intervention are less than the benefits)’ (PC 2001b, p. 65).

A range of factors are relevant to assessing the merits or otherwise of industry-specific adjustment assistance (PC 1999, 2001b, 2002). These factors include:

- the extent to which adjustment pressures exist (and whether they are short term or persistent)

-
- whether any unusual characteristics of businesses in that industry give rise to market failures that impede adjustment for which government measures may be appropriate
 - whether an equity case can be made for assistance
 - the accessibility and relevance of existing government programs, including agricultural restructuring, research and development, and social security programs.

An important question when farmers remain in farming with poor returns is whether this situation is due to a market failure (which government might have a role in addressing) or decisions by well informed people in the absence of market failure. The answer has implications for whether there is a case for adjustment assistance.

The role of government is not to try to ensure every farm (or non-farm) business provides adequate income for its farm family (Mauldon and Schapper 1974, p. 170), partners or shareholders. Generally, people invest after accounting for risks and possible returns. Low incomes do not necessarily suggest there is an adjustment problem: in most industries, some businesses have low income as a result of miscalculation, bad management, bad luck, risk taking or lifestyle choice.

Lack of capital was once identified as a major impediment to agricultural adjustment, but there is little evidence that farmers broadly have had difficulty accessing finance following the deregulation of Australian capital markets in the 1980s. Some farmers' inability to access finance is more likely to indicate their lack of financial viability, rather than a market failure (IC 1996, p. xi). A factor that may naturally limit the borrowing capacity of pigmeat businesses is that financial institutions may charge higher interest rates on borrowing for the purchase of piggery infrastructure, given the lending risks.

Regional adjustment assistance might be warranted where a concentrated adjustment shock occurs rapidly, is large relative to the size of the community and where opportunities for alternative employment are limited. Governments would need to weigh up the costs and benefits of tailoring such assistance rather than relying on general measures (PC 1999, p. 383). Where governments decide that specific adjustment assistance is warranted to address any large, regionally concentrated costs, the Commission considers that such assistance needs to:

- facilitate, rather than hinder, the necessary change
- be targeted to those groups that most acutely feel adjustment pressures or needs
- be transparent, simple to administer and of limited duration
- be compatible with general 'safety net' arrangements (PC 1999, p. 395).

6.2 Government programs to improve competitiveness and economic efficiency in the pigmeat industry

This section discusses key government policies and programs available to the pigmeat industry to enhance competitiveness and economic efficiency. Key Australian Government programs include levies and matching funding for R&D, levies for marketing, export market assistance, and the recently completed Pork Industry Restructure Strategy programs. State and Territory governments also have programs, such as those for R&D.

Research and development

Australian, State and Territory governments directly support R&D in the pigmeat industry by:

- providing a legislative requirement that all pigmeat producers contribute to an industry R&D fund through a pig slaughter levy
- contributing matching funds to R&D on an ongoing basis
- providing a 125 per cent tax concession for R&D in certain circumstances (for example, processors must spend more than \$20 000 in a financial year to be eligible)
- providing one-off R&D funding on an intermittent basis
- providing extension services.

APL is the national representative body for Australian pig producers and administers both R&D and marketing funds. This producer owned, not-for-profit company is responsible for providing three primary roles to the industry:

1. identifying and facilitating R&D projects
2. providing and facilitating marketing services
3. representation and communication.

APL's main source of funds for R&D (and marketing) is a statutory pig slaughter levy (at 19 May 2004, \$2.435 per head slaughtered), levied under the *Primary Industry (Excise) Levies Act 1999* (Cwlth). APL receives \$2.35 of the levy, consisting of \$1.65 for marketing activities (see below) and 70 cents for R&D. The remaining 8.5 cents is for the Pig Monitoring Residue Program administered and managed by the Australian Government Department of Agriculture, Fisheries and Forestry (APL 2004a). The Australian Government matches R&D funding provided by the industry levy, up to 0.5 per cent of the industry's gross value of production (as it does for other rural industries). In 2003-04, the R&D component of the pig

slaughter levy raised \$4 million, with the government providing additional funding of \$4.6 million (table 6.2).

APL uses the producer levy and matching Australian Government funds for research that benefits specific pigmeat sectors or the industry as a whole where this research might not otherwise be funded. Its research is directed at assisting innovation and the adoption of new technology in the industry, for example. APL does not fund research where the benefits are restricted to a few individual businesses (APL 2003a).

APL also receives other government funding for R&D beyond funds raised by the levy and matching funding arrangements. In April 2003, for example, it received \$150 000 in Australian Government funding to investigate the technical and economic feasibility of converting pig effluent to electricity through the capture of methane emissions (APL 2003b). In July 2004, with funding from the Australian Government, it commenced the Environmentally Sustainable Piggeries program, to assist piggeries to implement environmental management systems to an agreed national standard. The Australian Government is to provide funding of \$645 000 under the 'Pathways to Industry' Environmental Management Systems program (Troeth 2004).

There is little information on the impact and effectiveness of APL's R&D activities. In 2002-03, the organisation had over 120 existing and new research and innovation projects but provided only overview information regarding performance (APL 2003a). As part of its 2003-04 annual report, APL introduced a system whereby key project areas are assessed according to performance indicators and targets (APL 2004b). This is a significant improvement on previous performance reporting, but project groupings (for reporting purposes) are still broad and need further disaggregation so individual project expenditures and outcomes are more transparent.

APL, as an industry owned company, is accountable to industry (its shareholders) through the Corporations Law and to government through a formal contract. This contract specifies accountability standards, including providing strategic and annual operating plans and an annual report (DAFF 2001, p. 62). The contract also specifies that its R&D outcomes must align with Australian Government R&D directions, priorities and policy intentions, such as those outlined in DAFF (2004c).

As an input to this inquiry, APL contracted a consultant to evaluate 10 completed research projects (sub. DR46, pp. 25–40) (summarised in table 6.1). While the estimated benefits for the selected projects appear to be significant, the estimates should be viewed with caution, as some appear to be underpinned by optimistic assumptions (for example, chilled pork quality assurance and product development

projects to increase penetration in the Singapore market — box 6.1). By comparison, the Centre for International Economics noted that benefit–cost analyses typically indicate average returns for rural research and development corporations projects in the order of 8:1. It further noted considerable caution needs to be taken in interpreting such estimates, as they can be very sensitive to assumptions (CIE 2003, p. 65).

Table 6.1 APL’s assessment of benefits of selected R&D programs^a

<i>Project</i>	<i>Benefits</i>	<i>Net present value</i>	<i>Cost</i>	<i>Benefit– cost ratio^b</i>
		\$m	\$m	
Singapore market	Local producers captured \$1.52 for each additional tonne of product sold in Singapore.	60.0	0.516	70:1
FeedCheque	Benefit of \$113 per sow per year. Adoption is restricted to the proportion of industry that home mixes.	3.0	0.074	33:1
ProHand	Average economic benefit of \$49 per sow. High participation rates in industry workshops and large forecast benefits from adoption.	39.6	0.950	20:1
Disease eradication	Decreased prevalence of mange, swine dysentery and mycoplasma. Adoption currently limited to 30 000 pigs, although increased future adoption is expected.	7.5	0.355	14:1
Pig meat hygiene	Program changed industry inspection practices, reduced labour costs in abattoirs and increased meat yields. Probability of food safety issues affecting the industry was also reduced.	33.0	1.85	9:1
Weaner performance	\$1.2 million per year. Adoption likely to be limited to large corporate piggeries.	2.6	0.205	8:1
Canola meal	Saving of \$70 per tonne for canola meal. Moderate adoption of higher canola inclusion rates limits project impacts.	2.0	0.208	7:1
Deep litter for cropping	Identified \$7 per tonne could be charged for litter. Positive additional environment benefits from improving soil structure and reducing problems associated with litter storage and the resultant odour have been achieved.	3.9	0.394	7:1
Ergot-sorghum	Average economic benefit of \$33 per sow. Farmers in northern New South Wales and Queensland who use sorghum are potential beneficiaries.	0.9	0.191	4:1
Housing systems	Adoption of best management practices leading to increased growth rate of pigs. Improved deep litter management practices have been adopted.	2.5	0.264	4:1

^a These programs were selected as they were believed to have generated benefits and because quantitative data were available. ^b Assuming a discount rate of 6 per cent.

Source: Summarised from APL, sub. DR46, table 4, p. 27.

Box 6.1 Estimated benefits of quality assurance and product development projects to boost exports to the Singapore market

APL's estimated benefits of chilled pork quality assurance and product development projects to increase penetration in the Singapore market appear to be underpinned by optimistic assumptions. The projects were estimated to have net benefits of \$60 million. Project costs were about \$516 000, funded by levies paid to the Pig Research and Development Corporation, and additional funding from the Victoria Institute of Animal Sciences, Supermarket to Asia Limited and the Confederation of Australian Pork Exporters.

The attributed net benefits appear high for a number of reasons. First, local producers were estimated to have captured \$1.52 for each additional kilogram of product exported to Singapore. It is not clear why there is such a high a net benefit per kilogram. The prices received for exports to Singapore and the Sydney (domestic) wholesale price for porkers were about \$3.50 and \$3.32 per kilogram respectively in 2003. Although domestic prices would be expected to fall if product destined for export markets was diverted onto the domestic market (the alternative if the Singapore market had not been developed), a fall of \$1.52 (over 50 per cent of domestic wholesale prices at the time) seems large. Second, the evaluation attributes 25 per cent of the growth in exports between 1999 and 2003 to this program. This percentage seems high, given other factors contributing to the increase in exports (including the outbreak of the Nipah virus, and marketing programs and activities undertaken by individual exporters).

Source: APL, sub. DR46, pp. 31–4.

The benefits illustrated in table 6.1 are not representative of all of the R&D programs undertaken by APL. As APL acknowledged in its submission, it selected these programs because:

... they were believed to have generated benefits and because some quantitative data was available to estimate likely industry impact since completion. (sub. DR46, p. 25)

APL also noted:

Due to the limited time frame entailed in the pig meat inquiry, APL was unable to conduct a more extensive analysis of the numerous R&D projects that have been undertaken in recent years. (sub. DR46, p. 25)

The Industry Commission's 1995 review of R&D noted the importance of evaluating and reporting research outcomes for rural R&D corporations:

The evaluation of research outcomes is essential for determining whether funds have been spent on worthwhile research. In addition, valuable lessons can be learnt from project and program evaluations about whether priority setting procedures are effective,

or need to be changed. The assessment of research outcomes also enables [research and development corporations] to report back to their levy payers, and levy payers to make a judgment about the effectiveness of the [research and development corporation] concerned. (IC 1995b, p. 746)

The Commission is concerned that the benefits and costs of APL's R&D programs do not appear to be routinely evaluated and publicly reported. Since funds are contributed by both government and pigmeat businesses (through levy payments), it is important that both government and industry monitor the effectiveness with which R&D programs are managed.

FINDING 6.1

The benefits and costs of Australian Pork Limited's research and development programs do not appear to be routinely evaluated and publicly reported. Such assessments are critical to monitor the effectiveness with which research and development programs are managed.

Some inquiry participants noted that the pigmeat industry, as represented by APL, may have insufficient funds for R&D. Windridge Farms noted:

APL's research and development is often useful to us. We would like more research and development carried out, however, this is difficult in a small industry with limited funds. (sub. 18, p. 7)

The Australian Government recently announced funding of \$25.75 million for a Cooperative Research Centre for an Internationally Competitive Pork Industry (Nelson 2004). The proposal was submitted by a consortium of Australian pigmeat businesses, APL, the New Zealand Pork Industry Board, the South Australian Research and Development Institute, the Australasian Pig Science Association and universities. This cooperative research centre will focus on reducing feed costs, improving herd feed conversion efficiency and demonstrating the health benefits of consuming nutritionally enhanced pigmeat products (DEST 2004). Several inquiry participants supported the proposal. Australian Pork Farms Group, for example, commented:

The CRC [Cooperative Research Centre] has huge support within industry — both financial and involvement by all segments — and must be supported by government. (sub. 31, p. 4)

A number of State government bodies also fund and undertake pigmeat industry R&D activities. The South Australian Research and Development Institute, for example, has a broad ranging pig industry research program, including projects on nutrition, animal health and quality assurance. Funding for these projects is provided by the South Australian Government and APL, which provides funding

through its ‘research and innovation’ program. The primary source of State government funding for pigmeat industry programs in South Australia is the pigmeat ‘industry fund’ levy, which the South Australian Government administers under the Primary Industry Funding Schemes (Pig Industry Fund) Regulations 2001. This levy raises 20 cents for every pig sold for \$20 or more by the producer. In New South Wales, the Department of Primary Industries has a wide ranging program for production research for the pigmeat industry, including projects for improving ‘production profitability, pork eating quality, health, welfare and environmental issues’ (sub. 40, p. 4). The Queensland Government also provides support in key areas of industry development, market development and biosecurity through the Department of Primary Industries and Fisheries and the Department of State Development and Innovation. Over the past four years, the Department of State Development and Innovation ‘provided more than \$3 million in direct grants to the pork industry assisting the industry to improve production processes, value add and improve supply management’ (Queensland Department of Primary Industries and Fisheries, sub. DR47, p. 13).

Several State governments also have extension programs that assist the pigmeat industry (and other agricultural industries) to realise the benefits generated by R&D programs. The South Australian Farmers Federation noted that the industry fund (see above) ‘provides funding for extension programs undertaken for the industry which include the transfer of technology to the industry’ (sub. 5, p. 9).

Market development

Market development includes marketing, information provision and market access. As noted, APL directs a significant component of the pig slaughter levy to marketing activities. Further, governments provide direct funds for marketing activities, and offer services for export promotion, for example.

Marketing

In addition to its R&D program, APL has responsibility for managing marketing funds raised through the pig slaughter levy. In 2003-04, the marketing levy raised \$9.5 million (APL 2004b, p. 60). APL uses these funds for a number of purposes, including:

... marketing, promotion, strategic policy development or other activities for the benefit of the Australian pig industry. (division 2, s. 9-2a, *Pig Industry Act 2001* (Cwlth))

In 2003-04, APL spent \$6.9 million on domestic marketing and \$1.1 million on export marketing (APL 2004b, p. 46). There is, however, limited information on the

impact and effectiveness of this marketing expenditure. In response to the draft report, APL noted that it:

... undertakes ongoing market research on the changing levels of fresh pork consumption per capita. Whilst arguments can be put forward as to how to accurately determine the relative contributions of marketing versus price as key determinants of consumer decision to purchase pork, the difficulties in apportioning these factors is not unique to the pork industry. (sub. DR62, p. 32)

The Commission notes that gains to pork producers from industry promotion on the domestic market generally occur by displacing sales of Australian lamb, beef, chicken and fish. Thus, although effective pork promotion will boost returns to pork producers, it will also reduce both returns to producers of pork substitutes and consumer surplus from these substitutes. Thus, the net national return to pork promotion would be less than the return to the pigmeat industry.

Although APL recently introduced a system of targets and performance indicators for project groupings, it provides only broad expenditure information for key project areas.

The pigmeat industry has received Australian Government funding for marketing activities through pigmeat-specific (one-off) programs. In May 2004, for example, the Australian Government provided \$2 million funding to the industry under the Pork Global Market Initiative. The initiative was to assist the industry to undertake supply chain reforms to improve product quality, and create new domestic and export market opportunities. It was also meant for APL to improve the domestic marketing of pigmeat and pigmeat products (APL 2004k). The pigmeat industry will benefit from further Australian Government assistance under the recently announced HomeGrown program — a \$4 million fund that will provide matching funding to agricultural industries to use the ‘HomeGrown’ label on their products (Truss 2004b). The government provided initial funding of \$500 000 for a Victorian pilot, launched in January 2005 (Truss 2005).

The Australian Meat Industry Council noted:

The smallgoods sector and independent butchers are the majority users of Australian produced pork. The opportunity to expand the use of Australian pork therefore rests with these users. Both sectors remain critical of the lack of market development funding directed to expand their markets. (sub. DR55, p. 3)

Export assistance programs

The Australian Trade Commission (Austrade) has several export assistance programs designed to assist Australian companies with their export activities. Two

key programs are Export Market Development Grants and the New Exporter Development Program.

Export Market Development Grants are designed to encourage small and medium sized Australian businesses to develop export markets. These grants reimburse up to 50 per cent of expenses incurred on eligible export promotional activities, less the first \$15 000. In 2003-04, 3699 grants (\$143.8 million) were paid to businesses under this scheme (Austrade, pers. comm., 28 September 2004). Data were obtained from Austrade for Export Market Development Grant funding for the pigmeat industry for 'pig farming' and 'bacon, ham and smallgoods manufacturing' from 1997-98 to 2002-03. Total funding from 1997-98 to 2002-03 for pig farming was \$290 000 (five recipients) and for manufacturing was \$1.2 million (21 recipients) (Austrade, pers. comm., 28 September 2004).

The New Exporter Development Program is a package of free export services designed to assist small and medium sized Australian companies to develop their businesses overseas and make their first export sale. Since the program's commencement in mid-2002, 30 pigmeat industry participants have accessed the program (Austrade, pers. comm., 4 October 2004).

Pork Industry Restructure Strategy

In 1998 and 1999, the Australian Government, in partnership with industry, developed the Pork Industry Restructure Strategy. The strategy included four major programs: the National Pork Industry Development Program; the Pigmeat Processing Grants Program; PorkBiz; and the Pork Producer Exit Program. The first two programs targeted competitiveness, efficiency and productivity, and are discussed below. PorkBiz and the Pork Producer Exit Program targeted adjustment in the pigmeat industry and are discussed in section 6.3.

National Pork Industry Development Program

This \$11.6 million program was designed to improve the pigmeat industry's international competitiveness, identify market opportunities, enhance industry skills and boost export market development (DAFF 2003a). It ran for three years (1999–2001) and was available to all pigmeat producers. Over the program period, 61 applications were received and 32 applications were approved. A total of \$8.6 million (75 per cent of total program funding) was granted for five projects undertaken or administered by the Australian Pork Corporation (a predecessor organisation of APL).

APL considered:

The implementation of the National Pork Industry Development Program (NPIDP) prompted a turnaround in the industry at a difficult time. It was particularly successful in securing new export markets and quality assurance. Other projects highlighted the barriers to efficiency and the need for further reform.

... The approved projects had different focuses and varying degrees of success. The successful NPIDP projects focused on boosting the industry's international competitiveness by making improvements in risk management, quality assurance, training, and market developments. Of these, the market development programs produced the largest measurable benefit to the industry... Another significant area of success was quality assurance ... Training programs were successful in enhancing employee skills, but highlighted that a lack of skilled staff was impacting animal welfare, [occupational health and safety] and quality assurance. The feed grains projects aimed to establish a formal coordinated approach to reduce feed costs. However, producer training sessions were poorly attended and a feed buying group unable to secure lower costs. (sub. 44, pp. 91–2)

There is limited information on the impact and effectiveness of the National Pork Industry Development Program. In a review of the program outcomes, Ernst and Young (2001, p. 4) noted that 'with a small number of exceptions, results were reported in very general terms'. Given the scale of funding for several of the program's projects, this level of reporting was not adequate to facilitate performance review.

Pigmeat Processing Grants Program

This \$7.14 million program was designed to stimulate investment in the processing sector and help address efficiency and productivity problems by offering grants to processors to invest in new plant and equipment. Individual project grants funded up to 10 per cent of new investment for each project. Seventeen applications were made, with 11 producers receiving payments (DAFF 2003b).

The South Australian Farmers Federation noted that Big River Pork, a recipient of \$1.5 million from the Pigmeat Processing Grants Program (Truss 2002a), has significantly increased the pig processing capacity in South Australia:

Previously the South Australian industry was at capacity killing rates and now has the potential to increase production by 50 per cent. (sub. 5, p. 4)

Generally limited information is available on the impact and effectiveness of the program. One issue is the extent to which funding to support capital investment crowds out private investment, as noted by APL, in a more general discussion (sub. 44, p. 39).

The Pigmeat Processing Grants Program partly funded projects involving total capital works of \$96.6 million and significantly increased slaughtering and boning capacity (DAFF 2003b). It is unclear from the program review and summary, however, whether some capital works would have been undertaken regardless of government funding, and what gains in efficiency and productivity were made. Some operators have noted that their abattoirs and boning rooms, including those who have received these funds, have recently been operating well below capacity (chapter 2).

Summary

Government programs and policies support the pigmeat industry through R&D, market development and the Pork Industry Restructure Strategy (table 6.2). Government support is provided to address the possibility of underinvestment in R&D through a legislative requirement that all pigmeat producers contribute to the costs of research and also provide funding for research. Government support is provided to address the potential for underinvestment in market development through a legislative requirement that all pigmeat producers contribute to the costs of market development and also provide direct funding for marketing activities. Government support through the Pork Industry Restructure Strategy was designed to improve competitiveness, develop market opportunities, enhance skills, encourage investment in processing, and target adjustment.

There has been little evaluation and public reporting of the benefits or costs to the community generated by government programs in these areas. Although APL conducted economic evaluations of 10 selected research projects for the inquiry (sub. DR46, pp. 25–40), ongoing evaluation and reporting of the benefits generated by such projects does not appear widespread. The industry (through its payment of levies) and the government are contributing \$4 million and \$4.6 million respectively to R&D programs. It is important that such spending is targeted appropriately, and evaluations help inform such assessments.

NSW Farmers Association — NSW Pork noted:

... we agree with the Commission's findings that there has been limited evaluation of government programs to assist the pork industry, to gauge whether there has been a net gain to the industry. New South Wales Pork intends to take that issue up with the government. (trans., p. 273)

Evaluating policies and programs, particularly those that receive government funding, is a necessary discipline. Evaluations can facilitate improved program management, accountability, decision making and resource allocation.

Table 6.2 Key Australian Government programs affecting the pigmeat industry — competitiveness and economic efficiency

Program	Status	Pigmeat industry		Total program	
		Funding	Users	Funding	Users
		\$'000	no.	\$'000	no.
Research and development					
Industry levy ^a	Ongoing	4 000 ^b	..	..	..
Australian Government funds	Ongoing	4 600 ^b	..	..	..
Environmentally Sustainable Piggeries Program	One-off	645 ^c	..	..	..
Cooperative Research Centre for an Internationally Competitive Pork Industry	2005-06 to 2011-12	25 750	..	..	..
Market development					
Industry levy ^a	Ongoing	9 491 ^b	..	..	..
Export Market Development Grants	Ongoing	96 ^c	2	143 800	3 699
New Exporter Development Program	Ongoing	..	30 ^d	..	..
Pork Global Market Initiative	One-off	2 000 ^e	..	..	..
HomeGrown	One-off	na	na	4 000	..
Pork Industry Restructure Strategy					
National Pork Industry Development Program	One-off	11 600 ^f	32	..	..
Pigmeat Processing Grants Program	One-off	7 140 ^f	11	..	..

^a Compulsory. ^b In 2003-04. ^c In 2002-03. ^d From mid-2002 until December 2003. ^e In 2004-05. ^f Funding for 1998 to 2001. **na** Not available. **..** Not applicable.

Sources: APL 2003b, 2004b; Austrade, pers. comm., 28 September 2004; DAFF 2003a, 2003b; Nelson 2004; Troeth 2004; Truss 2004b.

While inquiry participants were generally supportive of the programs, they did not provide evidence to indicate that these programs were achieving their objectives. There is no evidence to suggest impediments exist to access these broadly available programs.

More generally, however, as the structure of the industry continues to change, with a growing share of production undertaken by a smaller number of corporate entities, producing differentiated and/or branded products, the industry and government should consider the appropriateness of the current statutory levy arrangements for funding generic marketing and R&D.

FINDING 6.2

Businesses in the pigmeat industry have accessed generally available programs, and pigmeat-specific programs, to invest in research and development, market development, and processing facilities. There has been little evaluation of the net benefits generated by individual programs.

6.3 Government programs to facilitate adjustment to economic change in the pigmeat industry

This section discusses several key programs affecting the pigmeat industry but available to other industries, including the Australian Government's 'Agriculture — Advancing Australia' package of programs, drought assistance and the Regional Partnership Program. Pigmeat industry-specific programs such as the Pork Producer Exit Program are also discussed. Some of these programs are provided jointly with State and Territory governments. In addition, State and Territory governments have their own adjustment programs.

General adjustment assistance, such as social security, is not discussed in this section, but is likely to play an important adjustment role in the pigmeat industry, particularly within the corporatised sector of the industry, which has a high proportion of Pay As You Earn employees and is ineligible for some assistance programs (those designed to directly assist primary producers and their families).

Agriculture — Advancing Australia

Agriculture — Advancing Australia was established in 1997 to replace the Rural Adjustment Scheme. It is a package of Australian Government programs designed to help primary producers in agriculture (including the pigmeat industry), fishing, forestry and processed food industries become 'more competitive, sustainable and profitable' (DAFF 2004a, p. 1).

A review of the Agriculture — Advancing Australia package was undertaken in 2002-03, drawing on findings of independent evaluations of individual programs and submissions. The review found the package has helped the farm sector to grow and respond to change, boosting farmer skills in decision making, strategic planning and risk management. At the same time, it provided a 'welfare safety net' for farm families in financial difficulty:

... the package had promoted a significant improvement in strategic planning, information gathering and analysis by Australian farmers — together with the adoption of a more 'business oriented' attitude to farming, and, where necessary, provided effective welfare support for families in financial hardship. It had been less successful in relation to the performance areas of natural resource management and market competitiveness, and a significant proportion of producers did not prepare adequately for drought and price downturn. (DAFF 2004d, p. 6)

In 2003, the Australian National Audit Office reviewed the administration of the Agriculture — Advancing Australia programs (ANAO 2003). It concluded:

Many aspects of administration of the [Agriculture — Advancing Australia] programs examined are well managed. The programs have been well promoted. There is a performance management framework, although better use could be made of targets and data collected to assist in assessing performance. There are some weaknesses in administration, most notably relating to strategic management and compliance arrangements, which require strengthening for more effective outcomes. (ANAO 2003, p. 23)

In 2004, the Australian Government agreed to renew and extend the package to 2007-08 with funding of \$236 million (Australian Government 2004b, p. 78). Agriculture — Advancing Australia currently includes seven programs, of which five can be broadly described as facilitating adjustment: FarmBis, Farm Help, Farm Management Deposits, the Rural Financial Counselling Service, and Industry Partnerships.

FarmBis (phase 2)

The extension of the FarmBis program, phase 2 (from 2004-05), is designed to assist primary producers to participate in business and natural resource management training to improve the viability and profitability of their business enterprises. Assistance is provided through direct financial contributions towards the cost of training activities undertaken by eligible participants.

FarmBis is delivered in cooperation with the States, which provide matching funding. The program is delivered through State government departments, with oversight by a State Planning Group made up of Australian Government, State government and industry delegates (ANAO 2003).

A significant number of pigmeat producers used the previous FarmBis program. In 2003-04, for example, 251 pigmeat producers received \$227 258 of assistance (DAFF, pers. comm., 4 October 2004).

Inquiry participants were generally supportive of the FarmBis program. APL noted:

FarmBis has been a valuable means through which producers have been able to acquire relevant training towards becoming [Australian Pork Industry Quality program] accredited, including a number of programs that aimed to improve the business skills of pork producers throughout Australia. (sub. 44, p. 93)

AusPork noted that FarmBis is excellent for inexperienced operators, but less useful for established industry participants (trans., p. 386). The South Australian Farmers

Federation noted, however, that changes to the FarmBis guidelines have made it less relevant to the pigmeat industry because:

FarmBis [phase 2] grants target training related to improving business management skills. However the pork industry has identified there is a lack of skilled labour and that it requires more training at the production level. (sub. 5, p. 8)

Windridge Farms also noted:

... [while] some training used in the industry has fitted within FarmBis guidelines, other training does not. As the pig industry is highly specialised, specialised training is required. (sub. 18, p. 6)

Farm Help

The Farm Help program is designed to provide short term income support to low income farm families that are experiencing financial hardship and cannot borrow further against their assets. Income support is provided on the condition that farm families act to improve their long term financial situation by improving the financial performance of their farm enterprise, finding alternative sources of income or re-establishing outside farming. Centrelink administers this program.

The Farm Help program has several components, including income support for up to 12 months, an advice and training grant, and a re-establishment grant. (The maximum re-establishment grant is \$50 000, subject to an assets test and the farm being sold within 12 months of the applicant joining the program.) These measures combined may provide assistance of up to \$55 500 per farm family (DAFF 2004a).

Centrelink information on pigmeat producers' access to Farm Help is limited. From the information that is available, 34 applications were received from pig producers in the 18 months to June 2004 (DAFF, pers. comm., 8 September 2004). Through its annual Trade and Assistance Review, the Commission has estimated that Farm Help payments to 'other livestock farming' (which includes pig farming) were \$1.1 million in 2002-03 (PC 2004d, p. A.5).

The 2002-03 review of Agriculture — Advancing Australia noted that Farm Help was successful in providing welfare support, but acknowledged that supplementing the government measures with industry and/or community activities to provide peer and/or professional support through adjustment may increase its effectiveness:

External evaluation of the Farm Help program found it was successful in providing welfare support in the sector (although target group awareness needs to increase). However, formal review and stakeholder consultations indicate that the effectiveness of the program in supporting positive change in farm families' business circumstances could be improved. In particular, programs such as Farm Help should increase their focus on the social and emotional barriers to change and exit, and government

measures may be more effective if they are supplemented by industry and/or community activities to provide peer and/or professional support for families through the adjustment process. (DAFF 2004d, p. 8)

Farm Management Deposits

Another component of the Agriculture — Advancing Australia package is the Farm Management Deposits scheme, which aims to provide primary producers with a risk management tool to deal with the inherent variability of agricultural incomes. A secondary purpose is to provide farmers with a voluntary mechanism for smoothing the amount of tax payable on fluctuating incomes. The scheme allows farmers to save pre-tax dollars, rather than post-tax dollars.

Eligibility for the scheme is restricted to primary producers. Primary producers can make Farm Management Deposits of up to \$300 000, with deposits earning market interest rates offered by financial institutions. Other taxpayers, including primary and secondary processors, do not have access to the scheme. The Australian National Audit Office reported that 14 per cent of eligible agricultural businesses had accessed the program by June 2002 (ANAO 2003).

AusPork Australia noted that the scheme is not available to companies.

... I've made the mistake as a family farm of operating as a company structure, and I'm automatically ineligible for all those processes. I look with envy at the ability to include in my risk management strategy the ability to put some deposit funds away and save my tax for the following years. (trans., p. 386)

The choice of business structure is a complex issue involving consideration of a number of issues, including financial risk and taxation. In choosing to use a company structure, the business has chosen a business structure that reduces financial risk through the benefit of limited liability. This can be contrasted with the personal financial liability of sole traders and partnerships. A proportional (or 'flat') rate of tax is imposed on companies. Consequently, they do not suffer 'period inequity' (the additional tax burden that may be associated with fluctuating incomes under a progressive tax rate scale).

The Commission notes that the Department of Agriculture, Fisheries and Forestry reviews the operation of the Farm Management Deposits scheme regularly. Any suggestions for changes to the scheme could be considered on their merits as part of the next review.

At June 2003, Farm Management Deposits held by 444 pig industry participants totalled \$21.7 million, at an average of \$48 800 per farmer (APL 2004f).

Rural Financial Counselling Service

The Rural Financial Counselling Service provides financial advice to primary producers and small businesses experiencing financial hardship in rural areas. This advice can include financial assessments, help with loan applications and information on, and referral to, other government programs.

In 2002-03, 25 548 agricultural businesses accessed the service. Of this total, 323 businesses were involved in the pigmeat industry (DAFF, pers. comm., 31 September 2004). The Australian Government will provide \$23.3 million to the program over the next four years (Australian Government 2004b).

Industry Partnerships

The Australian Government has allocated \$4.7 million in 2004-05 for an Industry Partnerships program to assist agricultural industries that are subject to import competition or adjustment and regulatory pressures (Australian Government 2004b). This funding is to develop training products and provide support for trade missions and industry workshops.

Drought assistance

Drought is a natural phenomenon and a feature of Australia's variable climate; it has financial, economic, environmental, social and political impacts. Australian, State and Territory governments provide drought assistance through drought assistance programs for agriculture.

The most severely drought affected primary producers are usually in broadacre farming, where the capacity of agricultural land to support farming activities is highly sensitive to drought. The effect of drought on pigmeat producers (and other intensive livestock producers) depends on their production systems and decisions. A significant effect on all pigmeat producers is the increase in grain prices caused by reduced supply. Drought assistance policies that subsidise the cost of grain to broadacre primary producers (see below) may exacerbate these price rises.

Australian Government exceptional circumstances assistance

The Exceptional Circumstances (EC) program is the primary Australian Government program providing assistance to farmers affected by drought. The program provides income support and interest rate subsidies to producers experiencing a 'severe and prolonged' decline in income due to a 'rare and severe'

event (DAFF 2005). The Australian Government has budgeted to provide \$880.9 million in EC assistance over the period 2002-03 to 2005-06 (Australian Government 2004b).

State and Territory governments are responsible for lodging applications for EC assistance with the Australian Government Minister for Agriculture, Fisheries and Forestry. EC applications must demonstrate that the event (whether a drought or other occurrence):

- is rare (a one-in-20–25 year event)
- results in a severe downturn in farm incomes over a prolonged period
- affects a significant number of farmers in a region or industry
- was not predictable or part of a process of structural adjustment.

Once an area has received an EC declaration, assistance is available to eligible producers in the area for up to two years and may be provided as:

- family income support (EC relief payments administered by Centrelink, for up to two years)
- farm business support (up to \$100 000 in interest rate subsidies per year over two years, to a maximum of 50 per cent of interest payments).

Eligible farmers may also receive a Health Care Card and concessions under the Youth Allowance means test, and have access to their Farm Management Deposit within the 12-month waiting period (DAFF 2004a).

The pigmeat industry has received EC assistance in several EC declared areas — for example, around 190 dairy and pigmeat producers in the Atherton Tablelands (northern Queensland) received interim assistance in August 2003 (Truss 2003), and the area received full EC assistance in October 2003. Data from the Australian Government Department of Agriculture, Fisheries and Forestry on EC interest rate subsidies (business support) paid to pig producers show 44 pig producers received \$700 000 in 2002-03 and, 90 pig producers received \$1.58 million in 2003-04 (DAFF, pers. comm., 8 October 2004). Centrelink does not have information available on EC relief payments (income support) to pig producers.

Despite the pigmeat industry's uptake of EC assistance, some concerns have been raised about the eligibility requirements for some producers. Queensland Pork Producers Inc. stated:

In terms of EC, there has been a reasonable uptake of assistance (income support payments and interest rate subsidies on existing loans). However the eligibility requirements have excluded larger producers and contract growers, mainly because of their business structure. (sub. 25, pp. 4–5)

The NSW Farmers Association — NSW Pork stated that pigmeat producers had difficulty in accessing EC assistance, particularly for the purchase of feed grain and water for stock:

The Federal Government has argued that because pork producers regularly purchase feed grain, drought conditions should be budgeted. However, no pork producer could have realistically expected the drastic feed grain prices experienced during the recent drought and therefore this should be considered as 'exceptional'. (sub. 20, p. 19)

The Commission notes that other factors might have also interacted with the drought to increase feed grain prices. Some drought assistance policies, for example, might have unintentionally increased feed grain prices to intensive livestock producers (see below). Further, feed grain prices might have been affected by grain marketing and quarantine regulations (section 7.3). A recent review, *Consultations on National Drought Policy* (Drought Review Panel 2004), highlighted limitations of the current approach to drought assistance and recommended areas for further review.

State and Territory government drought relief programs

State and Territory governments have a range of programs to help drought affected farming communities, and pigmeat producers may access some of these programs. The Queensland Government, for example, has arrangements in place for the intensive livestock industry, including subsidies for the transport of drinking water (for stock), electricity price relief, the deferment of interest payments on loans from the Queensland Rural Assistance Authority, and assistance for financial counselling (DPI 2004). In Western Australia, eligible pigmeat producers may access several assistance measures, including water and water transport rebates, and professional advice and counselling (APL 2004e).

Queensland Pork Producers Inc. noted that some Queensland drought assistance programs are not available to the pigmeat industry:

Queensland Government drought programs such as the Drought Relief Assistance Scheme are virtually irrelevant because they exclude pork producers and provide preferential treatment to other industries. (sub. 25, p. 5)

This situation raises issues with drought assistance, including whether drought assistance is being provided equitably and whether the level of assistance is, as far as possible, commensurate with the level of drought impact for different types of producers in different areas.

Transport subsidies for fodder that apply to drought affected broadacre farmers may unintentionally increase feed grain prices for pigmeat producers (and other producers that use grain as an input to production). New South Wales and

Queensland, for example, have a 50 per cent subsidy on the transport of fodder to feed drought affected core breeding stock. Primary Industries and Resources South Australia noted that in the market for feed grain:

Some imbalance in the market over and above normal supply and demand issues is caused by some State Governments providing transport subsidies for purchase of grains for extensive grazing operations during drought ... (sub. 36, p. 10)

Similarly, the South Australian Farmers Federation noted:

... most of the eastern seaboard States all receive drought relief at the expense of South Australia. We didn't receive drought relief and our grain prices actually did spiral as soon as the drought relief was offered in the eastern States, because the grain actually in most parts came from the grain-growing areas of South Australia, where they incurred the extra cost that was imposed once the freight subsidies and those were put in place. (trans., p. 423)

As far as possible, policy development and review should consider and account for such effects.

Regional assistance programs

Australian, State and Territory governments may provide regional programs or assistance that target adjustment and regional development. The Australian Government, for example, funds programs under the Regional Partnerships Program and provides funding for the Tasmanian Wheat Freight Scheme and the Tasmanian Freight Equalisation Scheme.

Regional Partnerships Program

The Regional Partnerships Program is an umbrella program that was implemented in July 2003 to integrate existing regional programs, including Regional Solutions, Regional Assistance and Dairy Regional Assistance (DOTARS 2004b). The pigmeat industry has received assistance through these programs. In May 2004, for example, a new export pigmeat boning room — built with a \$825 000 Dairy Regional Assistance program grant — was opened at Booyong, near Casino in New South Wales (Truss 2004a). In 2002, the Dairy Regional Assistance program also provided \$1.1 million in funding for an abattoir in Scone (in New South Wales) to invest in new infrastructure and systems to improve slaughtering capacity and the production of value added beef, pigmeat and lamb products (Truss 2002b). In May 2004, the Scone abattoir ceased pigmeat operations.

Tasmanian freight assistance schemes

The Australian Government provides funding for two Tasmanian freight assistance schemes that affect pigmeat producers:

- The Tasmanian Wheat Freight Scheme was established in 1989 to allow adjustment by Tasmanian cereal processors, end users (including pigmeat producers) and consumers following deregulation of the domestic wheat marketing and pricing arrangements. The Department of Agriculture, Fisheries and Forestry administers the program, which had funding of \$1.2 million in 2003-04 (DAFF 2002b).
- The Tasmanian Freight Equalisation Scheme was established in 1976 to alleviate the 'comparative interstate freight cost disadvantage' and provide Tasmanian industries with equal opportunities to compete in mainland markets, given the lack of interstate road or rail transport. The Department of Transport and Regional Services administers the program, which had funding of \$80.1 million in 2003-04, with about 1450 shippers expected to access the program (DOTARS 2004c).

Some inquiry participants expressed their support for these programs. The Tasmanian Government, for example, noted:

... effective schemes for Tasmanian producers to offset the cost disadvantage they incur from having to import grain into the State via Bass Strait are important to ensure that the small Tasmanian industry can be an efficient producer of pigmeat. Therefore, these schemes need to be maintained and where necessary enhanced. (sub. 41, p. 1)

The Tasmanian Island Pork Alliance noted:

Although local grain production is increasing, the industry is heavily reliant on efficient and quality supplies of grain from the mainland. This trade is dependent upon continuation of the Tasmanian Wheat Freight Subsidy and the Tasmanian Freight Equalisation Scheme. The dependence on mainland supplies means that the industry is unable to get access to opportunistic supplies of cheaper grain. (sub. 23, p. 1)

The Centre for International Economics reviewed the operation of the Tasmanian Wheat Freight Scheme in 2001, recommending that the scheme be replaced with an amalgamated scheme to deliver assistance to all grains, determined on the basis of the cost disadvantage incurred by Tasmanian industries in having to import grain by sea across the Bass Strait. This proposal would also require 'other grains' to be removed from the Tasmanian Freight Equalisation Scheme (CIE 2001). The review recommendations have not yet been implemented. There has been no recent review of the Tasmanian Freight Equalisation Scheme.

Pork Industry Restructure Strategy

As noted in section 6.2, the Pork Industry Restructure Strategy had two programs — PorkBiz and the Pork Producer Exit Program — that targeted adjustment in the pigmeat industry.

PorkBiz

The \$1 million PorkBiz program was an Australian Government national business skills training initiative, funded under the Farm Business Improvement Program (FarmBis phase 1). PorkBiz specifically targeted pigmeat producers and aimed to improve the competitiveness of the pigmeat industry through producer participation in a nation-wide training program to improve on-farm business management skills.

Between 1999 and 2002, PorkBiz workshops were conducted regionally on a range of business management issues, including the cost of production, benchmarking, strategic planning, and financial and human resource management. A total of 348 businesses from 40 regional areas across Australia attended the three-day workshops, while 194 attended the follow-up workshops, and 105 participated in on-farm consultations. Reviews of the PorkBiz program indicated that producers learnt new skills and applied tools from the program to enhance their business practices and planning (Rendell McGuckian 2001, 2002).

Pork Producer Exit Program

The Pork Producer Exit Program was a \$3.1 million Australian Government program designed to assist ‘severely affected’ pigmeat producers to voluntarily exit the industry. The program ran for three years (1999–2001) and was available to pigmeat producers who met a number of eligibility criteria (appendix F), which included an agreement not to engage in pigmeat production for five years after the payment of financial assistance.

Over the program period, 90 applications were received and 74 applications were approved at an average of almost \$42 000 per recipient (producers were entitled to receive a maximum payment of \$45 000) (DAFF 2002a). Overall, 351 pigmeat producers left the industry between June 1999 and June 2002 (appendix B). Thus most pig producers left the industry voluntarily during this period, without applying for or receiving exit payments.

Little information is available on the impact and effectiveness of this program. As noted in section 6.1, clear criteria should be followed when specific adjustment assistance is to be paid (section 8.2), and all programs should be subject to review

and evaluation. Further, the required five year exclusion from pigmeat production (following payment of financial assistance) does not appear to be monitored or enforced.

Summary

The Commission has not attempted comprehensive evaluations of these programs. Nevertheless, overall, pigmeat producers have been able to access a variety of government programs to facilitate adjustment to economic change (table 6.3). These programs are aimed at addressing problems similar to those faced by the agriculture sector more broadly. In particular, the programs:

- support producers to participate in training to improve the viability and profitability of their businesses (FarmBis, PorkBiz)
- provide short term income support and assistance to exit agriculture where businesses are not viable, before their farm assets are severely depleted, and give owners greater control over their future (Farm Help, the Pork Producer Exit Program)
- provide a risk management tool to deal with the variability of farm income and a mechanism to help producers deal with the consequent tax implications (the Farm Management Deposit scheme).

Broadly, reviews of generally available adjustment assistance programs in ‘Agriculture — Advancing Australia’ found that these programs have been effective in facilitating adjustment, by helping the farm sector respond to change and boosting farmer skills, while providing a ‘welfare safety net’ for farm families in financial difficulty.

In the draft report, the Commission sought information on whether pigmeat producers who meet the relevant eligibility criteria face any impediments to gaining access to adjustment programs. In the absence of such evidence the Commission concludes that there are no impediments to eligible pigmeat producers accessing the ‘Agriculture — Advancing Australia’ and regional assistance programs. If evidence of such a problem were to be established, then governments would need to examine the level and type of funding provided to these programs.

Perhaps the industry’s greatest concern with the accessibility of government programs is in regard to drought assistance, with several inquiry participants arguing that the pigmeat industry has been unfairly denied drought assistance. A recent review of drought assistance highlighted limitations in existing arrangements (including differences across States and Territories, and confusion regarding eligibility), and recommended further consideration of aspects of Australia’s

drought policy (Drought Review Panel 2004). Such consideration could include an assessment of the impact of drought assistance on pigmeat businesses. More broadly, governments should regularly conduct independent reviews of generally available adjustment assistance programs to ensure they are appropriate, efficient and effective.

Table 6.3 Key Australian Government programs affecting the pigmeat industry — adjustment to economic change

<i>Program</i>	<i>Status</i>	<i>Pigmeat industry</i>		<i>Total program</i>	
		<i>Funding</i>	<i>Users</i>	<i>Funding</i>	<i>Users</i>
		\$'000	no.	\$'000	no.
Agriculture — Advancing Australia					
FarmBis ^{a, b}	Ongoing	227	251	23 700	na
Farm Help	Ongoing	na	34 ^c	28 200 ^d	na
Farm Management Deposits ^d	Ongoing	21 671 ^e	444	2 480 197 ^e	na
Rural Financial Counselling Service ^{a, d}	Ongoing	na	323	na	25 548
Industry Partnerships	One-off	na	na	4 700	na
Drought assistance					
Exceptional Circumstances program	Ongoing	1 580 ^{d, f}	90 ^f	880 900 ^g	
Other					
PorkBiz	One-off	1 000 ^h	348	..	..
Pork Producer Exit Program	One-off	3 100 ^h	74	..	..
Regional Partnerships Program (Dairy Regional Assistance)	One-off	1 930 ^{b, i}	..	na	na
Tasmanian Wheat Freight Subsidy Scheme	Ongoing	na	na	1 200 ^b	na
Tasmanian Freight Equalisation Scheme	Ongoing	na	na	80 100 ^b	1 450

^a Funded jointly by Australian, State and Territory governments. ^b In 2003-04. ^c Applications received between January 2003 and June 2004. ^d In 2002-03. ^e Farm management deposits held. Tax revenue forgone in respect of these deposits is not available. ^f Data are for interest rate subsidies only. Data for EC relief payments are not available. ^g Funding for 2002-03 to 2005-06. ^h Funding for 1999 to 2001. ⁱ Includes \$1.1 million for an abattoir in Scone to improve slaughtering capacity and the production of value added beef, pigmeat and lamb products. **na** Not available. **..** Not applicable.

Sources: APL 2004f; Australian Government 2004b; DAFF, pers. comm., various; DAFF 2002a, 2002b; DOTARS 2004a, 2004c; Truss 2002b, 2004a.

6.4 Industry programs

This section discusses selected industry programs that attempt to target different aspects of the pigmeat production and supply chain. APL is responsible for undertaking or administering many of these programs, with funding provided by producers (through the pig slaughter levy) and government (section 6.2). As noted, however, little information is available on most programs administered by the

organisation. APL has not provided the Commission with sufficient information and evidence to make an assessment of the effectiveness of these programs.

Research and development

APL both facilitates and undertakes a range of R&D projects through its 'research and innovation' program. It has set priorities for new R&D, commencing in 2004-05. These include projects for investigating:

- disease (such as Glasser's disease) including diagnosis, vaccines, therapeutic regimes, management and the development of disease models
- the development or adaptation of an electronic, continuous method for measuring viable bacteria and possible individual pathogens in the air in pig production facilities
- the management of antibiotic resistance
- nutritional and management innovations to increase herd feed conversion efficiency
- the relationship between daily water intake and productivity in pregnant sows
- reductions in the variability in pigmeat carcass composition and/or eating quality (APL 2003f).

APL has also developed extension and training manuals for different parts of the pigmeat industry.

Several larger pig producers have their own R&D programs. QAF Meat Industries, for example, has a pig genetics program to continually improve herd selection and breeding outcomes (New South Wales Agriculture 2003).

Marketing and market development

APL has a range of marketing programs targeting both domestic and overseas markets:

- The Product Development Program assists companies wishing to develop and/or market innovative cuts or value added pigmeat products (fresh or processed) for the domestic and export markets. The objective of the program is to increase the consumption of Australian pigmeat by accelerating the rate of development of new products, responding to consumer market requirements, increasing the commercial success rate of new products, and assisting the industry to diversify product development and marketing (APL 2003c).

-
- The ‘Hello — Life’s Juicier with Pork’ marketing campaign was launched in July 2004 to build on fresh pork’s sales growth by attracting further consumer awareness and interest via television advertisements, and nutrition and cooking information leaflets. The program aims to assist APL to achieve its strategic goal of increasing domestic pork consumption (APL 2004g). The industry’s draft restructure plan sets the ambitious target of increasing per capita domestic consumption by 75 per cent by 2008 (from 8 to 14 kilograms per capita) (APL, sub. DR62, p. 38).
 - The Confederation of Australian Pork Exporters is a management committee of APL with its own charter and membership. Led by the APL chair, it is responsible for industry export development and marketing programs. It is also responsible for administering government funded grants to achieve its objectives (APL 2002b).

Mounter, Griffith and Piggott (2004) used an equilibrium displacement model of the Australian pigmeat industry to investigate the returns to producers from different APL advertising scenarios. They found that domestic bacon/ham advertising generated the largest returns and export pigmeat advertising generated the lowest. APL noted it has reservations about the accuracy of this conclusion:

... [because] many of the bacon/ham products sold are branded items and consequently individual processors also conduct their own marketing. APL’s primary marketing spend is on fresh product, which is overwhelmingly not a branded product; and importantly where all the ingredients are identifiable as entirely Australian origin. (Unbranded processed product can not be distinguished as 100 per cent Australian origin since it contains large amounts of imported product.) (sub. DR62, p. 32)

Several larger pigmeat producers have their own programs for marketing and market development. AusPork Australia, for example, handles the purchasing, processing and marketing of fresh quality assured pigmeat cuts and carcasses, and has invested in a distribution and boning facility in Singapore (Murraylands 2004).

Quality assurance

Since 1997, the Australian Pork Industry Quality Program (APIQ) has been Australia’s main quality assurance program for pigmeat producers. A voluntary program, APIQ is administered by APL.

The Western Australian Department of Agriculture noted that the uptake of APIQ by Western Australian producers has been ‘excellent’, but that both the benefits and further uptake of the program face significant challenges:

... there is little or no differentiation at the market place on the basis of whether a herd is quality assured or not. Given the relatively high costs of implementing and

maintaining the scheme by small producers, the lack of any price differentiation is one common reason given by producers not to embrace the scheme. (sub. 17, p. 3)

In January 2003, APL introduced key changes to APIQ following an 18 month review, with the majority of changes to be implemented from 1 January 2005. The revised APIQ includes a biosecurity component, strengthened animal welfare coverage (requiring producers to meet standards prescribed by the Model Code of Practice for the Welfare of Pigs), and streamlined hazard analysis and critical control point food safety implementation procedures (APL 2003e).

APL noted:

Of concern to APL is the fact that the number of producers who are certified under the APIQ program has fallen significantly over the last 12 to 18 months, with approximately 410 producers currently certified out of a total of around 2323 producers. The drop off in producer certification has occurred largely as a consequence of the difficulty and cost of implementing and maintaining piggery [quality assurance] systems in an increasingly competitive marketplace. Greater attention and resources need to be given to APIQ issues, and quality systems issues generally, to ensure the program does not fail. Key targets that APL has set for the APIQ program include: 50 per cent of all pig producers, including all of APL's 50 largest members, to gain APIQ certification by 30 June 2005 with a 90 per cent re-certification rate; and major buyers of pigs to give preferred supplier status to APIQ-certified herds by June 2005. (sub. 44, p. 93)

It is up to individual producers to decide whether or not to participate in quality assurance programs, such as the APIQ, after considering the benefits and costs of such participation.

Natural resource and environmental management

APL has facilitated and undertaken several projects for natural resource and environmental management since 2002. In June 2002, for example, it released a draft national environmental strategy for the pigmeat industry. The strategy outlines environmental challenges facing the industry and possible solutions (APL 2002a). In 2003, APL, in partnership with the New South Wales Environment Protection Authority and Meat and Livestock Australia, completed a project on developing indicators for the sustainable re-use of piggery effluent (Debus 2003). One potential outcome of the project is to enable licensed piggeries in New South Wales and the New South Wales Environmental Protection Agency to collaboratively determine appropriate sets of indicators, rather than monitoring a generic list of parameters that may not be relevant to all circumstances.

Summary

The industry has identified various areas requiring action — including R&D, marketing and market development, quality assurance and natural resources and environmental management — and accordingly set up programs in these areas. Some of these are identified in APL's 2002–05 strategic plan (APL 2002b) and its draft industry restructure plan. The pigmeat industry is best placed to identify the strengths, weaknesses, opportunities and threats and to implement new and/or improved programs to address the results of this analysis. In most cases participation in individual programs by businesses is voluntary, and it is up to individual businesses to decide the extent to which they become involved in such activities (after considering the benefits and costs).

As a general principle, it is important that such programs are reviewed regularly to ensure they are appropriate, effective and efficient. In circumstances where programs are run in conjunction with governments (such as through compulsory levies or direct funding), it is particularly important for public accountability that these programs are reviewed, to ensure they generate net benefits.

7 Potential impediments to improving performance and competitiveness

Inquiry participants identified issues affecting performance and competitiveness of the pigmeat industry, including:

- imports into Australia and assistance in overseas countries
- limited market access and/or high trade barriers in some overseas markets
- distortions affecting grain prices and availability
- limited access to genetic material
- difficulties in recruiting and retaining labour
- ambiguous or potentially misleading labelling practices
- limits on the ability of pig producers to increase returns by producing larger pigs, and issues with the current system that determines the payments for pigs
- a lack of ability to manage risk
- constraints on the access to capital
- animal welfare requirements
- other issues, such as planning problems and environmental requirements.

This chapter examines each of these issues to assess whether potential impediments or barriers to the competitiveness of pigmeat businesses are due to regulatory factors or market failures, which may suggest a role for government action. These potential impediments or barriers vary in their significance and in the extent to which they reflect regulatory or market failures. Possible government measures to address any identified impediments to the pigmeat industry's competitiveness are discussed in section 8.2 (chapter 8).

7.1 Imports and overseas assistance

A number of inquiry participants believe that there is government assistance in overseas countries that benefits pigmeat producers and processors in those countries, and that this is a major impediment to the competitiveness of Australia's

pigmeat industry. In particular, they argued that support for the pigmeat and grain industries in Canada, the United States and the European Union has led to a decline in prices received by Australian pig producers and primary processors. Moreover, participants considered that this has reduced confidence to invest or re-invest in the industry, which may reduce future competitiveness.

Several inquiry participants called for a ‘level playing field’ on which to compete:

Australian pork producers do not mind competing with other industries, but the playing field needs to be level. This includes the various ‘overt’ subsidies that occur both in Europe and North America — usually not directly to pig farms but to their input (grain) and/or marketing costs and/or compliance costs. (Australian Pork Farms Group, sub. 31, p. 4)

As a [pork boning] company we have thrived on a competitive environment and our time in business is testament to this. What we cannot do is continue to compete against cheap imported and subsidised product. Put simply we are being asked to compete on a level playing field but the playing field is not level because the landed value of pork is so much lower than we can access from Australian pigmeat production. (Deluxe Meat Supply, sub. 12, p. 1)

In contrast, Ludvigsen Family Farms suggested this was not an issue that the government should address:

... it matters not whether our competitors are subsidised or not. We cannot control their governments. (sub. 3, p. 8)

The NSW Farmers Association — NSW Pork (while still seeking to alleviate the impact of imports and encourage a level playing field) noted that the industry had generally been responding well to increased imports:

Hard hit by significant importation of subsidised pork meat from Europe in the 1990s, the pork industry has restructured effectively and dramatically to re-emerge as a vibrant, progressive and export focussed producer of quality meat. (sub. 20, p. 4)

As discussed in chapter 4, however, imports of pigmeat to Australia do not benefit significantly from subsidies (either directly, or indirectly through support to grain producers), despite the industry’s widespread and strongly held opinion to the contrary. Nevertheless, even if overseas pigmeat businesses receive assistance and this reduces pig prices in Australia, the question arises whether this would impose substantial and ongoing adverse impacts on the Australian community as a whole. Australian pig producers and primary processors would probably be adversely affected because they would receive lower prices for their products (given the availability of imported pigmeat into Australia). Pigmeat consumers, however, would benefit from such price effects, as would pigmeat retailers to the extent that they could capture some of the cost reductions. Pigmeat manufacturers would also benefit from lower pigmeat prices, which would lower their input costs (although

any exported products would have to compete on overseas markets with other ‘cheaper’ pigmeat products). Assistance to overseas pigmeat businesses can also impede the growth of Australian exports (as discussed in section 7.2). Where Australia is a net importer, the net benefit to Australia of such assistance for the pigmeat industry overseas is likely to be positive. Where Australia is a net exporter, the net effect is likely to be negative.

In response to the draft report, Australian Pork Limited expressed concern that any lower prices as a result of imports might be transitory:

APL is particularly concerned by comments ... seeming to indicate that the [Productivity Commission] considers trade distorting behaviour of international competitors is acceptable, if it leads to lower prices for consumers, even if that behaviour has adverse effects on Australian pork producers and by implication the rural and regional communities that depend on them. It could equally be argued that the lower prices for processed product currently enjoyed by Australian consumers is to a large extent artificial and short term, achieved via overseas assistance schemes. Once removed, market forces would operate to potentially increase these prices. (sub. DR62, p. 28)

The Productivity Commission’s view is that there is sufficient competition on world markets to limit any such price rise, and thus abuse of market power by any one exporting country is very unlikely. Hence, to the extent that Australia is a net importer, the net effect of imports is likely to be a gain to Australia as a whole.

7.2 Market access in export markets

The Australian pigmeat industry is becoming increasingly integrated with international pigmeat markets (chapter 2). Some inquiry participants pointed to trade barriers overseas, and to assistance provided to pigmeat producers in other countries, as impediments to the growth of Australian exports.

The South Australian Farmers Federation noted:

Given the recent success of Australian pigmeat exports, further export growth is predicted; however, this growth may be tempered by bilateral alliances and regional trading blocs limiting export market access and increasing import competition. (sub. 5, p. 7)

B.E. Campbell suggested that free trade agreements with key Australian export markets, such as Japan and the Republic of Korea, need to be considered to improve the global competitiveness of the pigmeat industry (sub. 19, p. 3). Amitie noted:

... the uneven playing field gives overseas producers a competitive edge in the export market. (sub. 8, p. 2)

Windridge Farms also noted:

Reducing barriers to new markets could also have highly significant impacts on the industry and should be strongly recommended as action to be undertaken by government. Increasing the number of export markets available provides diversification, which is sorely needed as a risk management strategy for the industry as a whole. Individual producers and processors, or even the industry as a whole, do not have the resources to negotiate alone with other countries' governments to reduce barriers such as tariffs and gate prices. In addition, occasional rapid changes in supply and demand as a result of disease outbreaks can mean a small market can become a highly significant one very quickly — if access is possible. Singapore is an obvious example of this. (sub. DR65, p. 2)

Improved market access for exports is one of the strategies in the pigmeat industry's draft five year industry restructure plan (sub. DR62, p. 37).

A timetable for the easing of agricultural trade barriers was established during the World Trade Organization's Uruguay Round of Multilateral Trade Negotiations (largely completed in 1994). In this round, World Trade Organization members also reached agreement on the use of quarantine restrictions in agricultural trade. This Agreement on the Application of Sanitary and Phytosanitary Measures acknowledges that member countries may legitimately use such measures to protect against the risk to human, animal or plant life or health, but not as unjustified trade barriers to protect domestic agricultural industries from competitive imports (DAFF 2004b, 2004e). The agreement allows countries to set their own standards, but also states that regulations must be based on science and applied only to the extent necessary to protect human, animal or plant life or health (WTO 2004).

The pigmeat industry is served by the Australian Government Department of Foreign Affairs and Trade and the Australian Government Department of Agriculture, Fisheries and Forestry in international discussions on both tariff and sanitary (non-tariff) trade barriers. Within the latter department, the Australian Quarantine and Inspection Service (AQIS) is responsible for technical discussions on non-tariff barriers to meat trade, whereas Biosecurity Australia is responsible for technical discussions in relation to live animals (such as breeding pigs) and genetic material (such as pig semen and embryos). In September 2004, the Australian Government announced its intention to establish Biosecurity Australia as a prescribed agency, with financial independence from Australian Government departments (Australian Government 2004a, p. 5). The Market Access area of the Department of Agriculture, Fisheries and Forestry works with the Department of Foreign Affairs and Trade to negotiate new and improved market access and trade opportunities for agricultural products at bilateral, regional and multilateral levels.

Tariff barriers

Foreign tariffs on pigmeat provide assistance to pigmeat producers in the countries concerned. Some of the tariff barriers faced by Australian exporters in overseas markets are identified in table 7.1. In the short run, such tariff barriers reduce the competitiveness of Australian producers against domestic producers in those markets. But in the long run, this reduces the competitiveness of the assisted producers.

Table 7.1 Average applied tariff rates for pigmeat in Australia's key export markets^a

<i>Country</i>	<i>Year</i>	<i>Unit</i>	<i>Pigmeat, fresh, chilled or frozen</i>	<i>Edible offal</i>	<i>Pigmeat and edible offal, salted, in brine, dried or smoked</i>
Singapore	2004	%	0	0	0
Japan ^{b, c, d, e, f}	2004	%	4.3	8.5 / 4.3 ^g	8.5
New Zealand	2004	%	0	0	0
Korea, Republic of	2003	%	23 / 26 ^h	19	30 / 26 ⁱ
Hong Kong	2004	%	0	0	0
Philippines	2003	%	30 / 40 ^j	5–10	40
Chinese Taipei (Taiwan)	2003	%	55 / 13 ⁱ	35 / 288 / 20 ^k	20 / 15 ⁱ
European Union ^l	2004	€/100 kg	23–43 / 47–87 ^m	0	47–151
Papua New Guinea	1999	%	40	11 / 40 ^h	40

^a Average applied rates are the tariff rates published by national customs authorities. ^b Data from US Department of Agriculture (2004b). ^c Rates apply to farmed pigmeat. Imports of meat from wild boars have zero tariffs. ^d Imports are subject to a tariff as well as a differential duty mechanism known as the 'gate price', which requires importers to pay the difference between the imported value and the established gate price (where the imported value is below the gate price). ^e A safeguard gate price is effective from 1 August 2004 to 31 March 2005, increasing gate prices during this period to 653 yen per kilogram. ^f The non-safeguard gate price is 393–524 yen per kilogram for fresh, chilled or frozen pigmeat and 524 yen per kilogram for other pigmeat. ^g Two tariff rates: internal organs and liver / other. ^h Two tariff rates: fresh or chilled / frozen. ⁱ Two tariff rates: bellies / other. ^j Two tariff rates: in quota / out quota. ^k Three tariff rates: offal with bone / feet and skirts / other. ^l Germany and the Netherlands are among Australia's top 10 destinations for pigmeat exports. ^m Two tariff rates: in quota / out quota. Quota is 15 000 tonnes for carcasses and half carcasses, 5000 tonnes for tenderloins, 34 000 tonnes for boneless loins and hams and 5500 tonnes for other (European Union 2003).

Sources: Department of Foreign Affairs and Trade, pers. comm., 10 November 2004; European Union 2003; USDA 2004c.

Inspection and certification of exports

Prior to being exported, Australian pigmeat products must be inspected and certified by AQIS. Certification is a declaration that the exporter has met conditions for accessing foreign markets. In most countries, this is a prerequisite for the entry of animal and plant products. Some inquiry participants raised concerns about the

requirements and also about the charges for AQIS's inspection and certification services, particularly for smaller export volumes.

Broadly, these concerns reflect the need for potential exporters of pigmeat to meet two requirements. First, exporters must satisfy requirements for the registration of their premises for export operations. This might require capital expenditure to improve facilities (for example, abattoir facilities for fresh or frozen pigmeat, or processing facilities for processed pigmeat such as salami). Second, AQIS must inspect exports of pigmeat and pigmeat products, as it does for most prescribed agricultural products (such as other meat, dairy produce and fresh fruit and vegetables).

The registration requirements of export premises and the inspection of exports are prescribed by requirements of overseas markets. The AQIS veterinary and meat inspection presence thus varies, depending on the importing country's requirements (Animal Health Australia 2004, p. 57):

The purpose of the inspection service is to ensure export foods are safe, wholesome and accurately described, thereby protecting Australia's trading reputation. Inspection also ensures that overseas market requirements and international obligations, treaties and conditions are met. (AQIS 2004, p. 3)

Most importing country authorities insist on government-to-government certification before goods are permitted entry (AQIS 2004, p. 4). Given that registration and inspection are required to access export markets, Australia seems unable to single handedly reduce such requirements without losing access to these markets. Nonetheless, international discussions have an ongoing role to reduce requirements that are unjustified for an importing country to meet its acceptable level of quarantine risk.

Some inquiry participants also raised concerns regarding the charges applied for AQIS services. Under Australian Government policy, AQIS is required to recover the cost of its inspection and certification services. The Commission examined the cost recovery arrangements of Commonwealth regulatory, administrative and information agencies in 2001. It identified several operating principles for these arrangements: using a 'fee-for-service' approach where possible; applying cost recovery to activities, not agencies; not using targets; not using cost recovery to finance other unrelated government objectives; and not using cost recovery to finance policy development, ministerial or parliamentary services, or to meet certain international obligations (PC 2001a, p. xxix).

Government policy on the extent to which AQIS is required to recover costs has varied over the past two decades. AQIS was required to operate at 50 per cent cost recovery from 1979, 60 per cent from 1 July 1988 and 100 per cent from 1 January

1991 (ANAO 2000, p. 14). In August 2001, the Australian Government decided to subsidise 40 per cent of AQIS inspection and certification services, and accordingly reduced AQIS's export charges by 40 per cent. The Australian Government, through the Federal Budget, provides the revenue not recovered from industry (AQIS 2002, p. 3).

AQIS cost recovery arrangements appear to be consistent with the principles that the Commission identified in its cost recovery inquiry. Given that exporters of pigmeat and pigmeat products require AQIS certification to access overseas markets, the imposition of charges for this certification service (on a part user pays basis) is appropriate, because the exporter benefits from the service. Without certification, Australia's pigmeat and pigmeat producers and exporters could not access overseas markets. Nevertheless, the costs incurred by AQIS (and then partly recovered from industry) need to be as low as practicable, and their recovery should be appropriately structured. A high fixed charge for accreditation makes it difficult for new exporters to start with small shipments and then grow the market incrementally.

Tariff barriers, other support to overseas producers and non-tariff barriers (such as quarantine requirements) can impede the growth of Australia's exports. The Commission considers that the Australian Government needs to continue to use the current multilateral trade negotiations of the World Trade Organization (the Doha Round) and prospective negotiations on preferential trade agreements to seek reductions in the overseas trade barriers faced by pigmeat producers.

FINDING 7.1

There is an ongoing role for the Australian Government to press for reduced overseas barriers to Australian pigmeat exports, as part of its efforts within the current Doha Round and in any prospective negotiations on preferential trade arrangements.

7.3 Grain prices and availability

Inquiry participants identified issues related to grain prices and availability. As noted in chapter 5, feed costs are the single largest cost item for pig producers in Australia, typically accounting for about 55–60 per cent of total costs. Grain makes up about 80–85 per cent of feed costs, for a typical cost share for grain of around 50 per cent of total costs to pig producers (chapter 5).

Issues raised include the potential distortions of the domestic grain market from single-desk marketing arrangements, government support for ethanol production,

quarantine barriers to grain imports, and issues related to genetically modified grain. Ludvigsen Family Farms noted:

Our most serious competitive constraint is the lack of competition in our primary input, grain (feed is between 60–70 per cent of our total costs). Australia's feed grain industries are subject to the impacts of a lack of competition in the grains area resulting from both the single desk and the quarantine restrictions on importing grain ...

When we see high domestic feed prices and low prices on the world market we are placed in a catastrophic position. Our competitors on the world market are buying at or below the world price and we are buying at well above the world price. (sub. 3, p. 7)

The Cameron Pastoral Company considered:

The single desk and its negative effects on domestic end users must be reviewed. Legislation to ensure sufficient grain is held in storage at export parity pricing geographically proximate to end users at all times needs to be duly considered. (sub. 24, p. 4)

The Australian Pork Farms Group reported:

Although not unique to our business, a fundamental issue is feed grain pricing. The issues that arose through the 2003 drought highlight how the Australian pig farmer is on the one hand asked to compete in a global marketplace for pork, but our major input (feed grain) is influenced and biased by the pricing monopolies in Australia's grain industry. When the same grain is sold for \$300 plus/tonne domestically, but offered for less than \$200/tonne for export, there is an obvious flaw in the process! (sub. 31, p. 3)

The NSW Farmers Association — NSW Pork noted:

During the recent drought, pig farmers feed costs increased by 50–70 per cent pushing many of them out of business. ProFarmer (10/41) reported that domestic prices for wheat exceeded export parities by up to \$40 tonne in October 2002. (sub. DR54, p. 8)

Further, it considered that a lack of transparency of stock levels exacerbated market power. Particularly, it observed that in 1996 and 1998 AWB made statements:

... about grain shortage which made it impossible to estimate the real level of available stocks. In effect, the same occurred in 2002 with the wheat board charging monopoly prices for wheat and, unfortunately, importation of grain past the eastern seaboard is difficult. The grain that did come onto the eastern seaboard in 2002 ultimately brought some relief and the wheat board dropped their prices quite considerably overnight. (trans., p. 278)

Australian Pork Limited observed that during times of grain shortage:

... primarily influenced in Australia by drought conditions, Australian domestic grain prices have risen significantly above the world price average. In these situations, the AWB is able to use its buying power to seek out additional supplies from stocks that would otherwise be sold on the domestic market and place those stocks into higher priced sectors of the world grain markets. This is clearly favourable to Australian grain

growers by helping to mitigate decreased yields with higher prices, but exposes the intensive livestock industries to additional cost imposts. With quarantine restrictions that limit grain imports, along with transport and storage costs, this effectively creates a mechanism causing imported grain prices to be higher than the export price. (sub. 44, p. 48)

In contrast, M.H. West & Sons noted:

Intensive industries need to realise that grain growers need to try and cover their costs in a drought, otherwise you can forget about grain being available. (sub. DR48, p. 2)

PIC Australia argued:

The single desk market for grain has a virtual monopoly on grain sales. Although larger producers have the buying power to negotiate for large parcels of grain from growers, the majority of smaller producers are faced with operating in an anticompetitive system. The industry is a small identity, compared with the AWB and would appear to have little or no political power to increase the competitiveness in the grain industry. (sub. DR61, pp. 6–7)

The Pastoralists and Graziers Association of Western Australia noted that AWB's long term supply contracts in export markets has led it to place a priority on these markets:

... export markets will always come first, and the domestic customers will always come a poor second, and like I mentioned in times of shortages, they won't be given the first priority. It will be through their long-term contracts which they hold overseas (trans., p. 160).

Callum Downs Commodity News noted that during the 2002 drought, advice that no grain was available increased grain prices (trans. p. 337). It further noted that the lack of competition and the provision of marketing services stifle innovation and stifles the delivery of products that are needed (trans., p. 347).

Price comparisons need to be interpreted with caution. At any one time, grain can sell for different prices: spot prices can differ from contract prices, which also can vary. Different qualities of grain also sell for different prices — for example, pig producers are likely to be willing to pay higher prices for wheat with higher protein levels than for wheat with lower protein levels. Spot prices also tend to have wider fluctuations than contract prices.

Distortions in domestic marketing arrangements

For many years, the Australian Government and most State and Territory governments maintained statutory grain marketing authorities with an exclusive right within their jurisdiction to acquire prescribed grains and to sell in domestic

and/or export markets (single-desk marketing). Since the mid-1980s, many elements of statutory marketing arrangements have been dismantled and agricultural assistance levels have been reduced (PC 2000a, p. 1). More recently, the National Competition Policy reviews of domestic legislative arrangements that restrict competition have also resulted in some restrictions being removed. Victoria, Queensland and the Northern Territory, for example, have removed all their restrictions on grain marketing (National Competition Council 2003, p. 1.5).

Restrictions remain on national exports of wheat; domestic and export sales of feed barley, malting barley, sorghum and canola from New South Wales; bulk exports of barley, canola and lupins from Western Australia; and exports of barley from South Australia (table 7.2). Of these, the single-desk arrangements for wheat are potentially most significant for participants in this inquiry, because wheat constitutes a significant proportion of the feed grain for pigs. (Nonetheless, Callum Downs Commodity News raised concerns with single-desk arrangements for the export of barley from South Australia — trans., p. 335.)

Table 7.2 Current grain marketing restrictions

<i>Jurisdiction</i>	<i>Legislation</i>	<i>Key restrictions</i>
Australian Government	<i>Wheat Marketing Act 1989</i>	<i>Export</i> — prohibits the export of wheat except with consent of the Wheat Export Authority or AWB (International).
New South Wales	<i>Grain Marketing Act 1991</i>	<i>Domestic and export</i> — gives monopoly to the NSW Grains Board (through sole agent Grainco Australia Limited) over domestic sales of malting barley, and over all export sales of feed barley, malting barley, sorghum and canola. These restrictions are due to expire on 30 September 2005.
Western Australia	<i>Grain Marketing Act 1975</i>	<i>Export</i> — prohibits bulk export of barley, canola and lupins unless under licence. Main export licence is held by the Grain Pool of Western Australia. Under certain conditions, the Grain Licensing Authority can grant special export licenses. The bulk grain export marketing monopoly is to be removed once the Australian Government removes the bulk wheat export marketing monopoly.
South Australia	<i>Barley Marketing Act 1993</i>	<i>Export</i> — gives monopoly to ABB Grain Limited over the export of barley. Government agreed in principle in 2003 to 'controlled deregulation' via a licensing authority (yet to be implemented).

Source: National Competition Council 2003, pp. 1.4–1.22.

A key justification for single-desk exporting arrangements is that monopoly selling ensures higher export returns than would be obtained by competitive exporting (PC 2000a, p. xii). Single-desk marketing can impose costs, however, on domestic user industries and consumers. In the past, common features of statutory marketing

were effectively taxation of the domestic market and subsidisation of exports (PC 2000a, p. xxii).

Even with domestic market deregulation, single-desk exporters might have some domestic market power. To the extent that single-desk traders can offer a better price to local grain producers as a result of their export monopoly, they might continue to dominate domestic sales. Driving the domestic price too high, however, will encourage producers to switch sales from export markets to the higher priced domestic market. These arbitrage opportunities are likely to reduce, but not eliminate, the domestic market power of the single-desk exporter (PC 2000a, p. 39). To the extent that a single-desk exporter's market power results in grain producers receiving a higher export price, the price paid by domestic grain users is also likely to be higher than in the absence of a single-desk exporter (given the link between export and domestic prices). Any increase in the export price would result in a net economic gain to Australia, even if it caused an increase in domestic grain prices.

In its submission to the review of the *Wheat Marketing Act 1989* (Cwlth), the Commission noted that the export monopoly might result in higher domestic prices because the single-desk exporter can spread the costs of managing risk over export and domestic markets. Higher domestic prices might also result if the structure of wheat pool payments provides incentives for growers to continue to sell to the single-desk exporter (PC 2000b, p. 10).

The 2000 review of the Wheat Marketing Act concluded that it was not presented with, and could not find, 'clear, credible and unambiguous evidence that the current arrangements for the marketing of export wheat are of net benefit to the Australian community' (Irving, Arney and Lindner 2000, p. 6). It concluded that the impact of the single-desk arrangements on domestic consumers depends on the impact on export prices:

... the main impact of the 'single desk' on domestic consumers depends on the impact it has on net returns to growers. If the desk raises net returns, domestic prices would rise by an equivalent amount, and vice versa. While domestic wheat consumers might be disadvantaged by the presence of a single dominant wheat marketer, if this market dominance resulted from superior levels of service offered by the marketer, then removal of the legislation should have little effect on the marketer's dominant position. (Irving, Arney and Lindner 2000, p. 124)

The committee considered that it would be premature to repeal the Act without a further, relatively short evaluation period. It recommended that the single desk be retained until the scheduled review in 2004, and that the 2004 review incorporate National Competition Policy principles and be the final opportunity to show a net community benefit from the arrangements. A review of the single-desk arrangements for wheat was subsequently completed in October 2004 (Wheat

Marketing Review Panel 2004). However, it was *not* a review of the existence of the single desk or a National Competition Policy review.

The National Competition Council (2004) recently commissioned a review by ACIL Tasman of the effects of reform in the States of grain marketing for malting barley, feed barley and canola. The review concluded that there is no evidence of any general or sustained effect of deregulation on prices for grain at port, suggesting that the price setting power derived by the marketing boards from compulsory acquisition cannot have been great. A recent review of the impact of the Western Australian Grain Licensing Authority (which can grant special export licenses for barley, canola and lupins — table 7.2), considered that the introduction of special export licences had not reduced prices available to the Grain Pool of Western Australia, and had increased prices to growers who took cash contracts with grain traders (RSM Bird Cameron 2005).

Some inquiry participants reported that domestic grain prices during 2003 were above world prices (for example, Ludvigsen Family Farms, sub. 3, p. 6). Available data support this claim, with the domestic price for feed wheat rising above the export price for wheat for around seven months of 2003, in contrast to prices in previous years (although the domestic price has been below the export price since August 2003 — figure 7.1).

Single-desk arrangements might not be the sole reason for domestic prices being higher than export prices during the drought. AWB (International) might have incurred costs in diverting grain destined for export contracts to domestic markets, or additional transport charges.

The Grains Council of Australia, in a submission to the Productivity Commission's review of National Competition Policy arrangements, acknowledged that domestic prices during the recent drought were higher than the equivalent export prices:

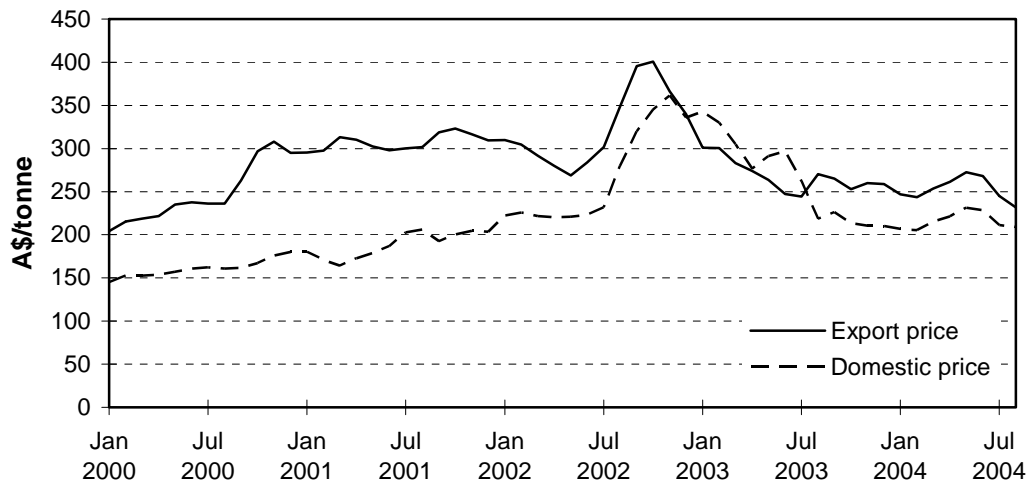
During the drought in 2002, AWB International continued to deliver benefits to the Australian community in managing wheat export marketing arrangements and maximising returns to growers who delivered to the national pool, through the diversion of wheat stocks to the domestic markets experiencing shortened supply and unmet demand.

The prices being paid on the domestic market in the years impacted by drought were higher than the equivalent export prices. (Grains Council of Australia 2004, p. 9)

The Commission considers that the existence of quarantine barriers on importing grain (discussed in the following section) can exacerbate the effects of any domestic market power of single-desk exporters of grain (particularly wheat and in some States, barley). If pig producers were easily able to import grain during drought

when domestic supply was reduced, this would restrict the scope for domestic prices to increase above export- or import-parity prices.

Figure 7.1 Domestic and export prices for wheat (nominal)^{a, b}



^a The export price is the export price quotation for Australian standard white, free on board in the eastern States, multiplied by the average monthly US\$/A\$ exchange rate. Compared with feed wheat, such wheat is generally higher quality and can have a higher feed conversion ratio. ^b The domestic price is the average bulk quote for feed wheat, Sydney cash market.

Sources: ABARE 2000, 2001, 2003a, 2003b, 2004b; x-rates.com 2004c.

In summary, the Commission considers that monopoly statutory marketing powers in domestic markets and, to a lesser extent, export markets have the potential to raise domestic prices for feed grain, particularly during drought. Single-desk marketing of grain is further discussed in chapter 8.

FINDING 7.2

Single-desk marketing arrangements for domestic and export sales of Australian grain have the potential to raise domestic prices for grain, particularly during drought, reducing the competitiveness of all domestic grain-using industries (including the pigmeat industry).

Quarantine barriers to imports

There are quarantine restrictions on importing grain into Australia. Under current arrangements, processed or devitalised feed grain can be imported for use in metropolitan and inland areas. Unprocessed grain can also be imported, but only under strict conditions, and it must be treated (processed) in metropolitan areas according to AQIS protocols (Macarthur Agribusiness 2003).

Inquiry participants raised concerns about these quarantine requirements, which are particularly important when there is limited domestic supply of grain, such as during the recent drought. Amitie noted:

Feed costs play a major part in determining viability and Australian producers are forced to pay excessively high prices for grain, particularly during times of drought, which can carry an impost of \$50–100 a tonne over export parity pricing, thus affecting our potential to export pigmeat at competitive prices. The ability to import grain during times of drought would assist in keeping costs contained. (sub. 8, p. 2)

Hans Continental Smallgoods considered that an investigation is required into the latest methods of safely importing feedstuffs (sub. 22, p. 8).

Australia's quarantine requirements are intended to manage to an acceptable level the pest and disease risks that might affect Australia's broadacre industries, such as the germination of spilled grain, the release of weeds and the release of insects (Macarthur Agribusiness 2003, p. 72). At a more general level, Biosecurity Australia observed:

Australia has unique and diverse flora and fauna, has valuable agricultural industries and is relatively free from serious pests and diseases. Therefore, successive Commonwealth Governments have maintained a conservative but not a zero-risk approach to the management of biosecurity risks. (Biosecurity Australia 2003, p. 5)

As noted in chapter 2, quarantine requirements apply to pigmeat imports into Australia. A number of inquiry participants highlighted the importance of these quarantine requirements in protecting the health status of Australia's pigmeat industry. Similar arguments apply for Australia's grain industries. Nonetheless, given the potential costs of quarantine arrangements for importing grain (such as increased prices for domestic users of grain), these arrangements should impose only the minimum requirements needed to satisfy quarantine objectives. The Commission has not been presented with any evidence to suggest the current quarantine requirements for grain imports are unnecessarily high. As new options to manage quarantine risks emerge, however, quarantine arrangements need to be reviewed to take them into account.

The pigmeat industry, along with other feed grain users, is acting to improve the availability of feed grain — for example, Australian Pork Limited (in conjunction with other feed grain users associations) recently commissioned a study of options to reduce feedstuff supply variability (Macarthur Agribusiness 2003). The Commission considers the industry has a continuing role to explore opportunities to import feed while meeting Australia's quarantine requirements.

Support for ethanol production

Some inquiry participants raised concerns about the likely impact of Australian Government support for ethanol production. (Ethanol is most commonly produced from grain or sugarcane.) Government support for the ethanol industry includes a production subsidy of 38.143 cents per litre for ethanol produced domestically (this subsidy commenced in September 2002 and has been extended until 30 June 2011) and capital subsidies, with \$37.6 million for projects that provide new or expanded biofuels capacity, including ethanol. Companies receiving capital grants for ethanol plants include CSR Distilleries (Sarina, Queensland), Rocky Point Sugar Mill and Distillery (Woongoolba, Queensland) and Lemon Tree Ethanol (Millmerran, Queensland) (DITR 2005).

Inquiry participants argued that support for ethanol production will increase its production, which might increase demand for grain. This increased demand would increase prices and reduce the local availability of feed grain, particularly during drought.

Queensland Pork Producers Inc. considered that competition for feed grain will increase if a grain based ethanol industry develops in southern Queensland, and noted:

The provision by the Federal Government of an excise subsidy of 38 cents per litre to the developing ethanol industry equates in real terms to an indirect subsidy on the industry's grain inputs of \$152 per tonne [Macarthur Agribusiness 2003, *Development of Regional Fuel Ethanol Industries Based on Grain Feedstock and Possible Effects on the Lot Feeding and Pork Industries*]. [Queensland Pork Producers Inc.] is concerned this subsidy will adversely affect the pork industry because it will provide a distinct advantage to the ethanol plants as they compete directly for grain. (sub. 25, p. 3)

Similarly, Australian Pork Limited stated it:

... is particularly concerned by analysis showing that the [Australian] Government's ethanol policy will further distort the feed grain market and bring about increased pressure on scarce feed resources both from price and supply bases. The ethanol subsidies will adversely affect intensive livestock producers as the proposed ethanol plants would compete directly with the intensive livestock industries for grain. The excise subsidy of 38 cents per litre equates in real terms to an indirect subsidy on the industry's grain inputs of \$152 per tonne. The effect of these subsidies will be to create an artificial shortage, which will be accentuated in drought years. (sub. 37, pp. 10–11)

Covacs Agvet and Milling also considered that the subsidy will impact on pig producers, particularly those in Queensland:

I see the [ethanol] excise subsidy of 50 per cent which the government is proposing to have in operation in about five to eight years time as being a subsidy for alcohol production, and it's going to impact on pig producers. It's going to impact severely on

pig producers here in Queensland, because the proposal here in Queensland is to use grain sorghum for alcohol production. Eight years out of 10, we have a deficit of grains here in Queensland for the feed industry, and we have to either import grain from other States or the grain is imported from overseas, but predominantly it comes from other States. So commercially it doesn't make sense to me to convert grain into ethanol when we already have feed industries that can't get enough grain when they need it.

... I don't think the grain-to-ethanol industry should be subsidised. If it's going to be beneficial to Australia, it will become commercially viable, and it should operate in a commercially viable situation. (trans., pp. 200, 203–4)

The possible impact of increased ethanol production in Australia will depend on the level of the ethanol industry's demand for feed grain. This level will be influenced by the size of the ethanol industry and the demand for feed grain as an input for ethanol. The size of the ethanol industry is likely to be influenced by the duration of high oil prices.

Macarthur Agribusiness noted that some proposed ethanol projects will be located in grain belt areas and will provide direct competition for feed grain:

Some proposed projects for the newly emerging ethanol industry will be located in the grain belt and will provide direct competition for feed grain that would be otherwise used by the intensive livestock feeding industries at those sites. Some players in this industry see that feed grain could be a feedstock for ethanol production especially when a subsidy for industry establishment exists. (Macarthur Agribusiness 2003, p. 53)

Australia's pig producers purchase some grain (such as wheat) that was intended for human consumption but did not meet the appropriate standard (chapter 5). Consequently, such feed grain tends to sell at a discount to grain for human consumption. The price of feed grain is likely to increase, however, if ethanol producers use feed grain (such as feed wheat) to produce ethanol (although in the case of feed wheat, the price should be capped at the export price for wheat).¹ The price impact will also depend on the size of the ethanol industry.

Australian Pork Limited expressed concern about recently announced ethanol plants proposing to use feed grain:

APL is extremely concerned that the recently announced Government subsidised ethanol plants being built in Queensland and Victoria will further drive up the price of grain, the industry's key feed ingredient.

In late 2004 the Government announced capital grants programs for plants that produce ethanol from grain. A grant recipient in Millmerran, Queensland, plans to use 150 000 tonnes of sorghum, whilst another plant at Dalby plans to use 250 000 tonnes

¹ If export wheat or alternative inputs (such as sugar) were used for ethanol production, there might be little impact on the price of feed grain.

of sorghum. That equals 400 000 tonnes of sorghum in a market that produces only 1 million tonnes. (sub. DR70, pp. 15–16)

The Commission considers that government support for the ethanol industry encourages the expansion of that industry, which is likely to raise domestic prices for feed grain, adversely affecting the pigmeat and other intensive livestock industries. There have also been recent suggestions that the Australian Government should mandate the blending of ethanol with petrol by oil companies (Taylor 2005). Such a policy would exacerbate the consequences of the existing government support.

FINDING 7.3

Government support to encourage the expansion of the ethanol industry is likely to raise domestic prices for feed grain, adversely affecting the pigmeat and other intensive livestock industries. The impact will depend on the extent to which feed grain is used for ethanol production, and the size of the ethanol industry.

Genetically modified grain

Australian Pork Limited considered that the potential impact of genetically modified grain on the industry could be negative:

Genetically modified organisms ... are an emerging issue that could greatly affect the Australian pork industry through the introduction of and increased use of biotechnology in feed crops that are used in pigs' diets. Current market demands indicate that this impact could be negative, at least in the medium term. Being '[genetically modified organism] free' is considered by pork exporters a marketing advantage for the Australian pork industry, particularly to Japan where APL has set strong growth targets. This market is currently protected through commercial vendor declarations by the supplier declaring supplied pigs have not been fed [genetically modified] feed stuffs. (sub. 44, p. 63)

Other inquiry participants noted potential benefits. Covacs Agvet and Milling observed that genetic modification of grain producing plants has the potential to overcome problems in plant breeding programs to increase amino acid levels, which can reduce the costs of feed:

It is obvious that this technology will be developed and applied in the US and Canada at the appropriate time. This will result in decreased cost of stockfeed. The use of [genetically modified] technology in agriculture in Australia is presently restricted by government policy. In the case of [genetically modified] sorghum this will further reduce the competitiveness of Australian pig producers who will not have access to stockfeed manufactured from [genetically modified] sorghum with increased essential amino acids.

The use of [genetically modified] technology in agriculture in Australia is something which should be embraced with enthusiasm. The benefits of the use of this technology are so high and the technology is so precise, that to restrict its application in agriculture is a decision which does not fit with the advanced state of Australian science and culture. (sub. DR50, pp. 1–2)

The West Australian Pork Producers' Association noted:

There's for and against for everything, but with our genetics and with our production on anything, be it agriculture, be it wool, be it any agricultural product, we can only actually do so much with the genetic pool ...

There are products out there and there's companies out there that were willing to put millions and millions of dollars into research into Australia to help us find maybe not 'the' answer but better ways of growing grains for, say, the feed industry. They were virtually told to pack up and leave by the Australian government or the Australian public, whoever you want to point the finger at about referendums or moratoriums on issues of [genetically modified organisms].

... We can only keep increasing — the growth can only go so far with what we've got, and if our hands are tied as an industry against something where they can go over to America or Canada, let it rip over there and they can get things, we are seriously disadvantaged by a government decision created by votes. (trans., pp. 149–50)

Australian Pork Limited supported regulation covering transparent product use (including labelling), but considered that the cost of such a system should not be borne solely by livestock producers (sub. 44, p. 64). It stated:

APL believes that Australia should be more cautious and withhold support of the endorsement of [genetically modified] crops as animal feeds until the issues of consumer resistance, market concerns, segregation, costs, farmers rights, co-existence have been addressed. At the very least infrastructure issues should be fully resolved. (sub. 44, p. 64)

Governments in considering policy on genetically modified organisms need to consider all the benefits and costs, including those for export industries where domestic regulations can affect export markets. It is important to ensure regulations impose the minimum requirements to achieve their objectives and do not impose unnecessary costs.

7.4 Access to genetic material

Australia does not allow imports of pig semen, pig embryos or live pigs from any country. Live pigs were last imported into Australia from Canada and the United Kingdom in the 1980s; the last importation of pig semen was from Norway in 1995 (AQIS 1999).

Perfect Pork noted:

Australia has had a longstanding ban on the importation of pig semen, embryos or live pigs, for quarantine reasons. Although this enables the Australian industry to maintain its high health status, it has resulted in a lack of genetic diversity in the Australian pig herd. This means that improvements in feed efficiency, growth rates and lean meat yield may be more difficult to achieve compared with our overseas competitors. (sub. 26, p. 4)

Hans Continental Smallgoods considered:

It is generally accepted that some overseas genetics is superior to Australian, particularly in meat and fat characteristics.

It is recommended that the importation of genetic material be investigated taking into account the latest advances in testing techniques for transmissible disease detection.

It is also recommended that superior domestic genetics be investigated. (sub. 22, p. 9)

PIC Australia noted the ban on imports is a constraint:

The New Zealand PIC operation imports genes from the US regularly, frozen semen, has been doing so since 1995, and we now have a complete North American genotype in the New Zealand market, and PIC's market share in New Zealand is somewhere between 55 and 60 per cent. They have more variation in their gene pool in New Zealand, and they have access to different lines with different traits, in terms of economic benefit, than we do have in Australia because of our closed borders. (trans., p. 330)

... it is a source of frustration for me personally, because I've just been to North America and seen the variation in gene pool that exists in North America. Why North America, is because that has tended to be the centre of genetic improvement and expertise in the last 10 years within the breeding organisations.

I witnessed some live animals that were converting feed at 1.72 to one and growing over life at over 1000 grams a day, and they were spectacular animals. The benefit to our industry if we could tap some of those genes into it would be in the millions of dollars. (trans., p. 332)

Improved genetics can result in efficiencies in growing rates, feed conversion, meat quality, disease resistance and reproductive performance. The import of genetic material is not allowed, however, because genetic material can contain certain diseases. As noted by inquiry participants, the disease free status of Australian pigs can provide quality, marketing and cost advantages (through reduced mortality and lower veterinary costs) for Australian producers (chapter 3).

Biosecurity Australia is undertaking an import risk analysis of pig semen. (A draft import risk analysis paper (AQIS 2000) was released in 2000.) As with grain imports, the potential costs of quarantine arrangements mean such arrangements should be only the minimum needed to satisfy quarantine objectives. The

Commission has not been presented with any evidence to suggest the current quarantine requirements for genetic material imports are unnecessarily high. It considers the pigmeat industry has a continuing role to explore opportunities for importing genetic material while meeting Australia's quarantine objectives.

7.5 Labour costs and availability

Some inquiry participants raised concerns about the difficulties in recruiting and retaining labour for work on pig farms and processing plants, and in attracting highly skilled graduates and managers with export experience. This issue may reflect the rural and regional locations of many businesses, which can have a limited pool of labour. In addition, attracting people from urban areas can prove challenging. Labour costs represent about 10–15 per cent of the cost of producing pigs (chapter 5). The Western Australian Department of Agriculture noted:

The limitation of available skilled labour is a major impediment to growth and sustainability. Although labour is a major component of the cost of production reducing the total cost of labour is not an option for most piggeries. A better strategy may be to increase the reward for labour, with a view to attracting a better skilled workforce, thus increasing productivity per unit. (sub. 17, p. 7)

The West Australian Pork Producers' Association (sub. 34, p. 15) raised similar concerns. The NSW Farmers Association — NSW Pork noted in the context of drought:

Consideration has also been given during this drought to ways of retaining farm workers in a community when producers can no longer employ them because of drought. Employees who are out of work often move in search of employment. Once they leave for larger regional centres or Sydney there is little incentive for employees to return. This loss is felt by rural employers and communities alike.

In December 2002 the Federal Government introduced a Work for the Dole — Drought Force program in response to the concerns about retaining rural workers. While the pig industry was pleased the Federal Government recognised this issue, it believes this scheme is mis-targeted because the only way for a farm worker to access assistance under these work for the dole arrangements is for their employment to be terminated.

... It is recommended that where experienced workers face retrenchment, the government pay the employee the equivalent of unemployment benefits, with the pork producer responsible for contributing the balance of the wages, superannuation and entitlements. (sub. DR54, p. 9)

The Commission considers such a policy response is inappropriate. It would involve considerable issues, including moral hazard (what is to stop all pig producers *claiming* their workers face retrenchment to receive government support to pay wages?), and it would also have economy-wide costs. Moreover, these

challenges are not uncommon among agricultural businesses and are not specific to the pigmeat industry.

The availability and cost of labour are influenced by trends in the wider economy, such as the strength of employment and wage levels in other industries competing for workers that could be employed in the pigmeat industry. The Western Australian Department of Agriculture acknowledged:

A key issue is that the pig industry is not considered by young people as a long term career prospect, and rates of pay are significantly less than what they may achieve in, for example, the mining industry.

The major reason some producers experience a high turnover rate of staff is because of the relatively poor working conditions. Educating owners and senior management about the basic working conditions required to maintain staff is an area of priority, although this to a large extent depends on the industry being profitable. (sub. 17, p. 7)

The West Australian Pork Producers' Association noted:

Ideally the industry needs to pay good money to attract quality staff who have an affinity with pig farming, and then train and develop them for the long term benefit of individual businesses and the industry as a whole. (sub. 34, p. 17)

It also noted that the industry in Western Australia has been proactive with training to employ and retain labour, and that the Australian Government's existing Traineeship/New Apprenticeship Scheme is helpful and indeed, 'is critical to the industry's future sustainability and prosperity' (sub. DR56, p. 13).

Where economy-wide factors are influencing the availability and cost of labour, pigmeat producers have little choice but to adapt, and there is little role for industry-specific actions by government.

7.6 Labelling laws

Pigmeat producers, processors, manufacturers, wholesalers and retailers can use labels to convey important information about their products. Sometimes, labelling information is required by law or industry-specific regulation such as the Australia New Zealand Food Standards Code. Businesses can also use labels voluntarily to promote special features of the goods (ACCC 2004b).

Inquiry participants raised concerns about country-of-origin labelling of manufactured pigmeat products (bacon, ham and smallgoods). Queensland Pork Producers Inc. noted:

Under current food labelling regulations, consumers are faced with significant challenges when trying to identify products either 100 per cent Australian grown or

processed foods that are made with 100 per cent Australian grown produce because consumers are unable to make country-of-origin distinctions at the point of sale. For example, the label 'Made in Australia' allows for large amounts of imported raw materials to be sold in processed pork products under the guise of being of Australian origin, therefore significant reform is required to country-of-origin labelling. (sub. 25, p. 3)

Perfect Pork observed:

No smallgood products are labelled in Australian supermarket delicatessens according to country-of-origin of pork used in their manufacture. Similarly, processed pork products presented for retail sale in the meat display case as bulk, overwrapped items are not labelled according [to] details of country of origin.

... Australian consumers generally remain unaware that the smallgood products on offer are manufactured from imported pork and they would rarely see the outside packaging of hams, bacon, frankfurts and sausages.

This issue is therefore one that needs to be rectified to allow Australian consumers the choice between pork products that are manufactured from local (if any exist) or imported pork. (sub. 26, pp. 3–4)

The Western Australian Department of Agriculture (sub. 17, p. 2), the Australian Food Group (sub. 33, p. 2) and the Victorian Farmers Federation — Pig Group (sub. 30, p. 4) raised similar concerns. Further, Australian Pork Limited noted:

Existing legislation regarding country of origin labelling has not enabled consumers to adequately identify the country of origin of produce they are purchasing. This has restrained Australian producers from being able to legitimately promote their Australian origin status. APL continues to pursue regulatory changes with respect to country of origin labelling, and at the very least is seeking labelling that identifies imported ingredients. APL has also responded commercially to this problem by initiating the Australian HomeGrown campaign which identifies all food products sold in Australia that are, or made with, 100 per cent Australian home grown produce. (sub. 44, p. 14)

Claims on labels about processed pigmeat products are subject to government regulation and legislation, and market responses. These constraints on misleading behaviour include provisions in the Australia New Zealand Food Standards Code, the *Trade Practices Act 1974* (Cwlth) and similar State and Territory legislation.

The Australia New Zealand Food Standards Code includes a transitional standard (1.1A.3) on country-of-origin labelling of food. This standard requires the label on packaged food that is produced in, or imported into, Australia to identify the country in which the food was made or produced (clause 2). Where the name and address of a manufacturer are stated on the label, and the address contains the name of the country in which the food was made or produced, the name and address satisfy the requirements (clause 2(4)). This transitional standard is under review and

a draft assessment report is expected to be released by mid-2005 (Food Standards Australia New Zealand, pers. comm., 4 November 2004). This review recognises Australia's obligations under World Trade Organization agreements, including the obligations to not make technical regulations more trade restrictive than necessary or favour domestic products over imported products.

The Trade Practices Act does not require goods to be labelled with their country of origin. Any claims must be accurate, however, and not misleading or deceptive, or likely to mislead or deceive (ACCC 2004a, p. 16). In particular, the terms 'made in' and 'product of' have specific meanings. Claims that goods are 'made in Australia' can be made if (1) the goods are substantially transformed in Australia and (2) 50 per cent or more of the cost of production or manufacture is incurred for processes that occurred in Australia (ACCC 2004a, p. 8). The Australian Competition and Consumer Commission noted that treating meat with curing salts resulting in preservation and colour and flavour changes when cooked (such as ham and salami production) changes the essential nature of the product. For this reason, such products would likely be considered to meet the 'substantial transformation' criterion (ACCC 2002, p. 13). Claims that goods are a 'product of Australia' may be made if (1) Australia was the country of origin of each significant ingredient and (2) all or virtually all of the processes involved in the production or manufacture occurred in Australia (ACCC 2004a, p. 13).

Businesses might choose to use country-of-origin labelling voluntarily if they consider the benefits (say, a marketing edge) outweigh the costs. The Australian Government recently announced its intention to support an Australian HomeGrown initiative, which would provide \$4 million (on a matching dollar-for-dollar basis with industry) to identify food products (such as fruit, vegetables, seafood, delicatessen lines and canned products) that are 100 per cent Australian (Truss 2004b). A number of inquiry participants (Victorian Farmers Federation — Pig Group, sub. 30; Queensland Pork Producers Inc., sub. 25) support this initiative. Also a supporter, Australian Pork Limited was an initial advocate of the campaign (APL 2004i). A Victorian pilot of the campaign was launched in January 2005 (Truss 2005).

It remains unclear whether Australian consumers are willing to pay a premium for Australian products. As the HomeGrown campaign involves government funding, it is important for government as well as industry to ensure that the effectiveness of the campaign is assessed.

Existing institutions and regulatory arrangements together seem sufficient to limit misleading labelling of pigmeat products in Australia.

7.7 Pig size and pigmeat payment systems

Inquiry participants raised concerns that the competitiveness of Australia's pigmeat businesses is being hampered by the production of pigs that are too small, and by payment systems that are inadequate and fail to provide sufficient feedback to producers to improve yield and quality.

Australia produces (on average) pigs smaller than many of those produced by its competitors. This tendency can adversely affect the competitiveness of Australian producers, because the cost per kilogram of pigmeat is higher for smaller pigs (chapter 5). Why, then, do Australian pig producers produce smaller pigs? According to some pig producers, size is driven by domestic purchasers — that is, the retailers and processors of bacon, ham and smallgoods. Amitie noted:

It has been suggested that increasing carcass weight would improve profitability. Unfortunately, Australian processors do not want heavier carcasses (as required by overseas markets) and consequently penalise carcasses outside their specifications for being overweight and over fat. (sub. 8, p. 2)

Processors' demand for smaller pigs appears to reflect Australian consumer preferences for:

- 'rind-on' bacon with little fat. This encourages demand for smaller pigs, given that the fat between the rind and the meat increases as pig size increases
- pigmeat without boar taint. Lighter (younger) pigs reduce the possibility of boar taint because Australian producers generally do not castrate male pigs as often as done overseas (Sheales, Apted and Ashton 2004, p. 38).

As noted by the US Meat Export Federation (2003, p. 7):

Australia's light carcass weights reflect the structure of domestic demand for bacon, one of the most important profitability drivers of the hog industry. Australian bacon is rind-on 'rasher' bacon, which includes the loin muscle. Processors are naturally resistant to over-sized cuts, thus, pork carcasses have remained small.

W. Evans considered that the increase in the size of pigs needs more research, given that it does more harm than good in some cases:

I spoke with an old processor who specialised in bacon, ham and smallgoods, he liked pigs around 75 kilograms. Those days, I asked why he liked pigs around that weight, his reply was you have got to have pigs around that size as the meat is too soft if any younger for curing. But it is just the opposite for fresh pork, when a pig gets to around 60 kilograms plus, the meat starts to get too strong, dry and tough for fresh pork. A pork roast and a pork chop cut out of a 50 kilogram pig is much more succulent than what they would be if they were cut from 80 kilogram pigs. (sub. DR53, p. 2)

Many retailers in Australia also appear to want smaller cuts of fresh pigmeat, again encouraging producers to produce smaller pigs. The Australian Meat Industry Council noted:

The Commission has correctly identified that consumers determine the preferred size of pork products. The fresh meat trade through independent butchers is smaller pigs (for which a premium is paid) and the smallgoods sector is larger pigs ('baconers'). Any move to significantly increase the weight of pigs requires consideration of factors such as fat depth and the consumer market to which the end product is directed (for example, Christmas bone in legs). (sub. DR55, p. 3)

Another reason for pig size in Australia remaining relatively small is that increasing pig size can require significant investment to expand facilities (and sometimes also require more land). Windridge Farms noted that increasing pig size can require significant capital expenditure on new housing, working capital and land (sub. 18, p. 3).

Australian Pork Limited aims to increase average pig size from 73 kilograms to 85 kilograms as part of its draft industry restructure plan (sub. DR62, p. 36). A number of inquiry participants supported these moves, including Windridge Farms:

We cannot increase our weight further without changes to market specifications from domestic retailers (or a drop in the [Australian dollar] so we can export a larger proportion of our weekly kill viably). We strongly support APL's restructure plan as it will help overcome this hurdle which our supply chain has not been able to overcome on our own. (sub. 18, p. 3)

Plans to expand the practice of physical or chemical castration are also being considered, and pig producers have the option of adopting these practices. Producers may thus have more opportunities to grow larger pigs (without the risk of boar taint). Such developments may also address the issue of boar taint more generally, which some inquiry participants raised as having a negative impact on sales domestically and internationally (for example, Ludvigsen Family Farms, sub. 3, p. 6).

Overall, the Commission does not consider there are regulatory impediments, that restrict businesses' response to domestic and international market signals regarding pig size, that governments need to address.

Australia's payment system for pigmeat (based on weight and fat levels, as measured by 'P2' measurements) also came under criticism during this inquiry:

It is generally agreed that the current P2 measuring system for pig carcass assessment is inaccurate and does not reflect the needs of the ham, bacon and smallgoods market. (Hans Continental Smallgoods, sub. 22, p. 11)

Windridge Farms argued for ‘improved measurement of meat yield and quality with corresponding feedback so that we can improve yield and quality’ (sub. 18, p. 4). Inquiry participants considered that the main problems with the current system are that it measures weight and fat rather than lean meat (which is what buyers seek), and that it is not a precise measure of overall quality. These problems limit both incentives for better quality meat and product consistency, and the information available to producers to make improvements. The Victorian Farmers Federation — Pig Group noted:

This form [P2] of measurement does not predict the quality of the lean meat and the local pig producers want the measurement based on depth of loin rather than the fat measurement scale ... the increased accuracy of carcass valuation will reward those producers supplying quality pig carcasses. (sub. 30, p. 4)

Ridley AgriProducts noted:

Until Australian producers are paid on a lean meat yield basis, as is the case in other countries, the current payment system of weight and P2 will be a major inhibitor of many of the nutrition and genetic advantages available to pig producers. (trans., p. 56–7)

PIC Australia also considered that the P2 system restricts the breeding objectives for pigs (trans., p. 333). It noted that under the current system:

You eventually get to a situation where, biologically, the amount of lean in that animal or amount of fat in that animal for its reproductive life is less than ideal. Eventually, you are going to have an animal which is more difficult to manage: it has less robustness and it has less ability to react to its environmental stresses. It’s making a super lean athlete that needs to withstand enormous environmental variation. That’s great for pig production — the pigmeat itself is very lean, the loins are big and there’s no fat around the loin and the streak in the belly is very minor — but that animal, to produce, is more costly. (trans., p. 334)

W. Evans noted:

My comment on the payment system: the grid that some processors use makes it easy for the processor to take advantage of the producer, the P2 system seems to be the fairer of the two systems. (sub. DR53, p. 2)

Australian Pork Limited, as part of its draft industry restructure plan, aims to create a new measurement and payment system. It acknowledges that the new system is unlikely to change the average price per carcass, but considers it ‘will reward suppliers with more commercially valuable carcasses’ (sub. DR62, p. 43). While the uptake of newer measurement systems in Australia appears slow compared with what is occurring overseas, there are costs with implementing new systems. The Commission has been given little evidence to suggest government or industry activities are impeding reforms in this area, and therefore little role for government intervention.

As businesses move more towards the specialist supply of niche markets for pigmeat cuts and products, there will be greater pressures and need for more effective communication of reward through the supply chain to the pig producer. Measurement and pricing systems will need to be able to provide the appropriate signals and incentives for producers to effectively respond to the needs of niche markets. A ‘one glove fits all’ pricing system is unlikely to be appropriate in the longer term.

7.8 Risk management in output and input prices

The ability of businesses to manage risk can be important for their long term competitiveness (chapter 5). Some inquiry participants raised concerns about impediments to managing risks related to output and input prices, particularly in the use of long term contracts. Queensland Pork Producers Inc. considered:

Risk management will become a major focus for pork producers with many of them entering into contracts, particularly in terms of outputs. However, the coordination and facilitation of risk management activities on both the input and output side of pig production will present significant challenges which must be overcome. There are several different forms of pig price contracts, however most operate between an upper and lower bound (that is, cap and collar) or with a guaranteed minimum price. Contracts are also used for inputs to the production enterprise, in a specific attempt to manage the risk associated with feed grain prices. (sub. 25, p. 2)

The NSW Farmers Association — NSW Pork considered ‘there are very few arrangements for producers to manage risks associated with volatility in production and prices’ (sub. 20, p. 7). Some producers use contracts and alliances to manage risk for both input and output prices:

The use of alliances and cooperatives ... helps assist in the management of input price risks such as through the bulk purchase of feed grain, medication, feed premixes, nutritional advice and some equipment costs.

... the increasing use of contracts allows producers to alleviate the fluctuations associated with some input costs such as grain prices. (NSW Farmers Association — NSW Pork, sub. 20, p. 8)

D.A. Hall and Co. claimed, however, that contracts with abattoirs are generally available only for periods of less than 12 months (sub. 21, p. 2).

Australian Pork Limited noted:

As part of the National Pork Industry Development Program ... in 1999, a handbook on ‘Managing Business Risks in the Pig Industry’ was produced and distributed by Pork Council of Australia to assist producers develop risk management strategies. This handbook covered production risk, marketing risk, financial risk, human risk and legal risk. (sub. 44, p. 54)

A survey of rural producers in Australia found that about 29 per cent engaged in forward selling arrangements for farm produce in 2002, with cotton growers being the most significant users (98 per cent) (Solutions Marketing and Research 2003, p. 88). Futures or options markets are another method of managing price risk. Agricultural futures and options markets are used in the European Union and the United States, for example. In Europe, policy changes that have increased exposure to world market prices appear to have also increased demand for such price risk management tools. Nonetheless, trading activity on most European agricultural futures markets is significantly less than trading activity on US commodity exchanges (USDA 2004f, p. 29). Generally, Australian primary producers have not favoured futures and options markets (McColl, Donald and Shearer 1997, p. 185). Nonetheless, a recent review of the State reforms of grain marketing for malting barley, feed barley and canola noted that since their release in June 2003, grain futures contracts in milling wheat, feed wheat and feed barley are proving popular and volumes traded are climbing steadily, and observed:

Currently there are 6418 January 2005 open feed barley contracts, which is 128 000 tonnes of grain or 6.1 per cent of domestic consumption and 1.3 per cent of internationally traded feed barley.

Feed barley is the most traded contract on the exchange and is providing a useful risk management tool for traders and producers. (National Competition Council 2004, p. 53)

Futures or options markets can involve significant transaction costs. Gaining an understanding of potential futures markets and how they might be used, for example, could involve large initial costs. There are also ongoing costs in monitoring future markets to choose the appropriate time and price at which to enter a contract. Finally, futures and options contracts can be expensive, particularly if prices in the underlying market are relatively high and a long term hedge is required. Transaction costs will increase too if businesses hedging commodities in foreign futures markets also hedge against exchange rate movements. The complexity and costs of using futures and options markets suggest that only larger businesses in the pigmeat industry might use this tool to reduce risk.

Managing risk in pig prices

Producers can use contracts to manage risks in output prices, although some do not enter into contracts when prices are high because they cannot find another party to the contract. Long term contracts entered when prices are relatively high are likely to be at a discount to the spot price:

A long term contract makes the best of a bad situation, in that producers are forced sellers (not able to choose the time of sale) and price takers for both output and input

costs. A pig price contract provides some certainty in a situation where the producer bears a large risk. (Windridge Farms, sub. 18, p. 5)

PIC Australia observed that many producers have entered long term contracts with processors, although there are still difficulties:

After the recent period of reduced profitability, many producers have sought and achieved long term supply agreements with processors. Larger units have achieved this more frequently whilst some of the medium to small producers have formed alliances enabling them to market a larger number of pigs. However, difficulties occur due to the natural variation of pigs under this system, through factors such as environment, animal health, feed and management practices resulting in an increased distribution curve. Although this helps the processor with throughput, it does not help with the marketing of the processed pork. Help is required for these producer groups to establish a good supply chain network so every party in the chain makes an acceptable return and the risk is minimised. (sub. DR61, p. 7)

Contractual arrangements within an industry may change who bears the risk within the industry, but may not change the level of risk within the industry. If, for example, a producer enters a fixed price contract to supply pigs to a processor for a period, the risk of price variation is transferred to the processor and remains within the pigmeat chain.

In some other agricultural industries, futures markets are available to manage risk associated with severe and unexpected fluctuations in output prices — for example, futures markets are available for grain, wool and cattle. In contrast, there are no Australian futures or options markets for pigmeat products. Businesses could use overseas futures markets (for example, Chicago), but the costs of such an approach might outweigh the benefits, given the potential for differences between Australian prices and futures markets prices, and the added risks of exchange rate fluctuations. Further, the relatively small size of the Australian pigmeat industry makes it unlikely that a futures market could be developed for pigmeat products in Australia. As a result, Australian pig producers have limited access to futures or options markets to manage the risk of severe and unexpected fluctuations in pigmeat prices.

Managing risk in feed prices

Pig producers have options for managing the risks associated with feed prices. They can enter into contracts with various parties (for example, directly with grain farmers or companies that produce ready-mixed pig feeds), they can choose to buy feed when it is relatively cheap and store it, and they can use futures and options markets for grain (including feed grain).

Grain producers might be reluctant, however, to enter long term contracts when they are subject to production risks against which they cannot insure (such as reduced production due to drought). Windridge Farms stated:

Unfortunately we have found it has not been possible to obtain ... contracts from grain producers. Grain growers will sign contracts a few months before harvest but not more than six months prior. This stems from their significant production risk — unpredictable weather determining if they will have any product to sell at all. (sub. 18, p. 5)

Purchasing and storing grain might be an option for some producers, but financial and storage costs would reduce the attractiveness of this option for most producers. NSW Farmers Association — NSW Pork noted:

Producers are able to purchase grain on the futures markets and can alternatively purchase and store grain in times of low prices. However, the cost of purchasing silos and grain normally leaves this option unavailable to most producers. (sub. 20, p. 8)

In many years, grain prices are relatively low during and immediately after harvest. To take advantage of periods of relatively low prices, a pig producer would have to purchase and store a large quantity of grain, and also have the capacity to mill grain into pig feed. A piggery might have to outlay up to half of a year's turnover to purchase a year's grain supply. Further costs would include the cost of storing the grain, exposure to the risk of grain deterioration, and interest on the purchase cost. Once storage and milling costs are included, the average price of grain for the year would have to rise substantially for the pre-purchase/storage option to be attractive, and few piggeries would have the resources to undertake such expenditure.

As a result, although Australian pig producers seeking to manage risks with feed inputs can enter long term contracts, purchase and store grain, and use futures and options markets for grain, these measures have significant costs as well as benefits. Many inquiry participants acknowledged the importance of risk management and highlighted their strategies, but the key decision for businesses is whether the benefits of each risk management tool outweigh its costs. If a business does not adopt a particular risk management strategy, it has probably decided that the likely costs outweigh the potential benefits, rather than it being unaware of the risk or facing regulatory impediments or other market failures.

Overall, the Commission does not consider there are significant regulatory impediments that governments need to address in this area. Some businesses, however, might have information deficiencies or insufficient business skills that limit their use of some risk management strategies. Industry or government services may have a role in these cases.

7.9 Access to capital

A number of inquiry participants argued that gaining access to capital for expansion and new investment is a major hurdle in the task of adjusting and seeking improvements in competitiveness. Windrush Pastoral noted that lending institutions often perceive piggeries as a high risk:

Along with other increases in our cost of production we also face the dilemma of replacing outdated equipment and the upgrading of facilities to help us better our production output in line with [occupational health and safety] and animal welfare standards which will take up large amounts of capital yet the banks see us as a high risk and will not lend us the capital that we need as a lot of the facilities are specialised for one use only, pig production. (sub DR52, p. 1)

Australian Pork Limited considered that inability to source capital will limit the ability of the industry to implement its industry restructure plan:

My concern is that if farmers cannot access the capital to make those changes then the ability to actually implement [the industry restructure plan] will be severely curtailed. (APL, trans., p. 464)

Businesses in the pigmeat industry may find capital more expensive than businesses in other industries because some financiers and investors categorise pigmeat businesses as a 'specialised security'. Such investors will require higher returns on borrowings or equity because piggery infrastructure may have a low (and sometimes negative) salvage value.

Australian capital markets are internationally competitive, with vigorous markets for debt and equity finance. In these markets, commercial businesses make commercial decisions about the likely returns and risks from particular investments. Any difficulties in attracting investment are likely to reflect the relative attractiveness of any such investment based on expected risk and return, rather than any failure of capital markets that might justify government action.

Some major businesses within the pigmeat industry are subsidiaries of international businesses (such as QAF Meat Industries and George Weston Foods). Such businesses will also be able to access the reserves of their parent companies, expanding their sources of capital. Some pigmeat businesses have also been sourcing funding other than from banks to assist in this regard, such as developing syndicates and partnerships and attracting direct equity investments (Gunpork Joint Venture, sub. 39; AusPork Australia, sub. 32).

7.10 Animal welfare regulations

Some inquiry participants raised government responses to animal welfare issues as a potential impediment to competitiveness and profitability. Producers' concerns have focused on the prospect of new animal welfare regulations, rather than on existing requirements. Australian Pork Limited considered increasing opposition to using close confinement systems for intensive animal production, for example, has resulted in restrictions being imposed on the future use of stalls to house pregnant sows in some western countries (sub. 44, p. 13).

Individual stalls are common for housing pregnant (dry) sows in Australia. A current review of Australia's Model Code of Practice for the Welfare of Animals — Pigs will examine sow housing and other animal welfare issues (APL 2005a). Australian Pork Limited considered in relation to the review of the code:

... the use of dry sow stalls is consistent with sow welfare and that any changes to the code in this area would need to be supported by sound science as well as practical and affordable for producers to implement.

APL advocates that dry sow stalls should be permitted to be used for up to 10 weeks of any one gestation period, after sufficient lead time, as well as for occasional housing of individual animals for animal health reasons and/or restorative feeding, or for confining animals at feeding time. Furthermore, based upon financial analysis, long lead times for adjustment are a priority for industry, with indications at this stage suggesting a lead time of at least 14 years as necessary. (sub. 44, p. 13)

It also raised concerns about the cost advantages for imports that do not meet Australia's new welfare standards, and it advocated that welfare standards for imports should match the requirements placed on domestic producers, or that imported products that do not comply with these standards should be labelled (sub. 44, p. 13).

The South Australian Farmers Federation argued:

One factor which has the potential to significantly impede the operation of the pigmeat industry is the current development of the new national welfare code of practice for piggeries. If this code calls for significant changes to current practices or infrastructure within the industry it will result in substantial costs to the industry. (sub. 5, p. 4)

The West Australian Pork Producers' Association considered:

Hastening adoption of group sow housing systems by using legislation, without due consideration to sow welfare, may be counterproductive and detrimental to the industry. It is important everyone understands that housing sows in groups does not address, by association, the welfare requirements of the animals. There are still significant deficiencies with this system, which require further research (being undertaken by APL to ensure the welfare of the animal is not compromised). (sub. DR56, p. 3)

The New South Wales Department of Primary Industries acknowledged the need for systems to cater for welfare concerns, but noted ‘consideration needs to be given to the additional costs that may be imposed on the Australian pork industry’ (sub. 40, pp. 11–12).

In response to emerging animal welfare issues, the industry can establish some form of appropriate self regulation (such as through codes of practice and accreditation programs). Where such arrangements are found to be inadequate by the broader community, there can be a role for governments to establish and enforce appropriate farm management standards. Nevertheless, unwarranted or poorly developed standards could impose unnecessary costs and possibly also reduce animal welfare. Governments should thus ensure any new regulations actually enhance animal welfare, only impose the minimum requirements necessary to achieve their objectives, and involve best practice development and review (chapter 8).

7.11 Other potential impediments

Some inquiry participants identified other issues that can (or may) make it difficult for pigmeat producers and processors to be competitive. These issues include planning and development approval laws, and environmental and human health regulations.

Planning and development approval laws make an important contribution to land use in Australia, helping to minimise externalities that can arise through the proximity of a development to a potentially affected area, or managing other potentially negative impacts that may be large and difficult to reverse. Such laws, however, can hinder the competitiveness of pigmeat businesses by either imposing conditions on existing operations or making new or additional activities more difficult.

Most concerns from inquiry participants related to the delays in planning approval for expansion. The complexity of some approval processes can also add to costs. Given the need for the pigmeat industry to continue to restructure and adjust, timely and appropriate planning decisions are important for the industry.

Some inquiry participants noted constraints due to planning approvals as being a problem in a number of areas. Blackwood Piggery noted:

Regulations [on] building piggeries [are] also making it difficult to expand and develop in most of Victoria. (sub. 13, p. 2)

The NSW Farmers Association — NSW Pork noted:

All levels of government — Commonwealth, State and local — take part in the regulation of the pork industry, often without coordination and with frequent and sometimes ad hoc changes. This has resulted in a bewildering mish-mash of regulations.

... Bureaucratic delays for approvals of extension of existing piggeries and new projects should be reduced and changes to conditions during their currency avoided. (sub. DR54, pp. 17–18)

Most inquiry participants acknowledged the need for environmental controls and did not perceive environmental management as a major constraint. Some were concerned, however, that environmental controls are sometimes too prescriptive and impose requirements on the pigmeat industry that other industries do not have to meet. Windridge Farms noted:

The pig industry is highly regulated, forcing us to perform to a higher standard than other industries, which are not regulated but have similar activities. (sub. 18, p. 7)

The NSW Farmers Association — NSW Pork noted that effluent handling requirements increase the cost to business and change often:

... the requirements for [effluent handling systems] have certainly changed too in the last 25 years. That doesn't provide a cost advantage to production. It actually increases the cost to the business and most of that is done through environmental regulatory requirements, which change consistently. (trans., p. 280)

Some inquiry participants also expressed concerns over the future direction of environmental regulations. The Western Australian Department of Agriculture warned:

Growth of the pig industry in developed countries is beginning to slow primarily because of environmental concerns. (sub. 17, p. 7)

Australian Pork Limited responded to environmental concerns by developing *National Environmental Guidelines for Piggeries* (APL 2004h). The West Australian Pork Producers' Association expressed concern that legislative and planning requirements might override the guidelines:

WAPPA's major concern with [the National Environmental Guidelines for Piggeries] is that although they have been developed with the cooperation of state government departments and environmental authorities, the research community and producers, legislative and planning requirements override industry guidelines and codes of practice, including these national guidelines.

... the National Environmental Guidelines for Piggeries developed by the industry and the various state regulatory bodies, needs to be enshrined in legislation. WAPPA strongly believes such actions will avert the Australian industry encountering the sorts of prohibitive environmental requirements evident in the [European Union], which has

resulted in significant constraints on the capacity of many European countries' pork industries to be viable, let alone expand (for example, the Netherlands). (sub. DR56, p. 12)

While the Commission cannot assess the appropriateness of these guidelines, moves that help clarify rights and responsibilities, provide flexibility in meeting obligations, and avoid unnecessary differences across jurisdictions are likely to be beneficial.

Inquiry participants also raised government responses to human health issues as a potential impediment to competitiveness and profitability. Restrictions on the use of antibiotics and animal byproducts (such as meat meal and bone meal feed) in pig production have been identified as potentially having substantial impacts on production practices and costs. The West Australian Pork Producers' Association argued:

Production costs will rise unless cost-competitive alternative to antibiotics can be found and this should be a priority for research and development. (sub. 34, p. 9)

Overseas pigmeat businesses, however, also face many of these potential impediments and cost impositions. Planning and development approval laws, and environmental and human health regulations exist in all countries with which Australia competes, although they differ across countries.

For many inquiry participants, these regulatory issues are less important overall than those of grain prices or imports, but nevertheless make the business of pig producing and processing more difficult and, at times, more uncertain. The industry can act to anticipate and manage these regulatory issues (by developing codes of practice and undertaking research and development, for example). However, governments need to continue to examine regulatory activities to ensure they impose the minimum requirements necessary to achieve their objectives and involve best practice development and review (chapter 8).

7.12 Conclusion

Potential impediments to improving the performance and competitiveness of pigmeat businesses have been examined in this chapter. Many issues (such as pig size and risk management) do not appear to result from government or regulatory barriers, and those in the industry are best placed to deal with them. In many instances, they are best dealt with by individual businesses.

Other issues identified as impediments are clearly not unique to the pigmeat industry — for example, the availability and cost of labour are influenced by trends

in the wider economy. Some (such as plant quarantine, environmental protection and animal welfare requirements) can result in benefits to the broader community. Governments should aim, nevertheless, to ensure any requirements or distortions affecting pigmeat businesses are only the minimum needed to satisfy those other objectives.

The Commission considers that single-desk marketing of grain and government support for the ethanol industry are potential impediments to the pigmeat industry that may warrant government measures (chapter 8). Pig production is a low margin industry and any reduction in costs at the margin is important. Nevertheless, the Commission notes that reducing these impediments is unlikely to make a such a large improvement to the competitiveness of pigmeat businesses as to offset the fundamental disadvantages of relatively high feed costs and small scale (and often fragmented) industry structure. They would also not insulate the industry from significant forces affecting short-run competitiveness such as drought and fluctuating exchange rates.

FINDING 7.4

Governments should ensure any regulatory requirements — such as those related to quarantine, planning and development, animal welfare and environmental impacts — are the minimum necessary to achieve their objectives. However, this is unlikely to greatly alter the competitiveness of pigmeat businesses. The benefits are unlikely to be large, and could be slow to emerge. More significant factors affecting short-run competitiveness are forces such as drought and fluctuating exchange rates.

8 Measures to improve industry competitiveness

A key challenge for the pigmeat industry is to improve competitiveness at all stages of the supply chain and across all sources of competitiveness. Given that volatility is an inherent feature of the pigmeat industry, how businesses manage change and risk is critical, especially as the industry moves to greater vertical integration, larger scales of operation and integrates further with world markets.

This chapter examines industry and government measures to improve the competitiveness of Australian pigmeat businesses. Industry measures are discussed first, followed by possible government measures.

8.1 Industry and business measures to improve competitiveness

Participants in this inquiry suggested a number of measures (many of which are underway) that the pigmeat industry or individual pigmeat businesses could take to improve competitiveness. These include:

- undertaking greater vertical and horizontal integration along and across the supply chain
- using more long term supply contracts between pig producers and grain suppliers
- improving the efficiency of production or processing operations (including through research and development (R&D) and economies of scale)
- improving carcass measuring systems and quality assurance practices
- increasing pig carcass sizes
- increased value adding before selling to retailers or exporting (such as producing ready-to-use packages)
- improving product quality and choice for consumers (for example, avoiding boar taint and developing smaller cuts)
- undertaking greater product differentiation and marketing to increase sales domestically and overseas, including the labelling of Australian grown pigmeat products

-
- improving extension, information dissemination and business skills (including risk management skills).

Many of these measures are outlined in Australian Pork Limited's (APL) draft industry restructure plan (sub. DR62, pp. 35–51). APL, along with many other inquiry participants, for example, have emphasised the need for the industry and pigmeat businesses to generate efficiencies and better links across the supply chain. APL noted that it is shifting its investment in R&D towards initiatives that attempt to create innovation across the supply chain (where this can benefit producers). It also highlighted supply chain restructuring as a key strategic objective:

APL has developed a draft five year Australian Industry Strategic Restructure Plan with the key objective of radically restructuring the pork industry and its supply chains to create a globally competitive industry with long term sustainability that is able to take advantage of new market opportunities. (APL 2004d, p. 5)

Risk management also appears to be a priority for pigmeat businesses, especially as many become larger and more capital intensive and integration with world markets continues (chapter 5). Many pigmeat businesses have formal and/or informal risk management strategies, such as increasing or decreasing stocking levels, locating in areas that have several sources of feed and likely ongoing access to abattoirs, and/or developing business relationships or alliances across and along the supply chain. Some pigmeat businesses are also moving to long term contracts to help manage volatility and risk (despite sometimes experiencing difficulties in finding willing parties). AusPork Australia noted:

... Auspork has been very active in requesting, pushing, encouraging/exploring price stabilisation options with manufacturers and/or retailers. Very small headway has been made as no one is prepared to do it for fear of being out of step with their competitors. We, and our farmers, are happy to give up the high cycle, for assurances of cash flow in the low cycle, but have yet to find parties willing to make this work on a long term, equitable basis. We believe it is fundamental for a long term viable industry. (sub. 32, p. 3)

Paul Taylor (President of Queensland Pork Producers Inc.) noted greater success in achieving long term contracts and similarly highlighted their usefulness:

... we have been able to secure reasonably long-term contracts for the prices received for our pigs and similarly for our import costs. We simply have to be smarter how we do business. (trans., p. 181)

Several inquiry participants identified improved business skills and marketing as important, particularly in expanding exports. Ludvigsen Family Farms stated:

[Export managers] ... are selling to people with huge knowledge and market power and, because of their inexperience as export managers, have made poor decisions. We need to develop a strong marketing arm in our industry (like the wine industry has

done) to put our products into these markets better. We also need people with more understanding of exchange rates and futures markets in the exporting arm of our industry. (sub. 3, p. 5)

Improving education and information flows across the supply chain was similarly identified by inquiry participants as an important activity for pigmeat businesses:

... we believe that there's enormous opportunity within our supply chain to provide information down the line, information coming back from the growers with regard to how many weaners they have, what their growth rates look like, what their supply rates will be, all those sort of things; information coming from our operations showing carcass characteristics and their supply rates and all the things that go with that, meat quality as well. We're putting a lot of work and time into that and I believe that that will continue to make the industry more sophisticated, as it is in, for example, Canada or Denmark. (Hans Continental Smallgoods, trans., p. 210)

The pigmeat industry is already undertaking measures to improve the competitiveness of pigmeat businesses. As identified in chapter 6, APL's Strategic Plan for 2002–05 and draft industry restructure plan involves various industry initiatives and strategies, including investing in domestic and overseas marketing, accelerating product innovation, identifying improved carcass measuring systems, and encouraging technology transfer, training and quality assurance practices along the supply chain (APL 2002b, 2004d). The industry is also developing a national industry animal welfare strategy and has released a framework for managing environmental issues in its *National Environmental Guidelines for Piggeries* (APL 2004h).

Measures are also being adopted at the farm and processor levels. Some pig producers, for example, are seeking long term contracts with grain growers. Several inquiry participants commented that this is not easy (see above and chapter 7), but such practices appear to be becoming more widespread. Producers are also striving to improve product quality and to meet consumer tastes and preferences in Australia and overseas. (Examples include the use of chemical castration to avoid boar taint, and the development of special, lean pigmeat and lighter coloured pigmeat for Singapore.) At the processor level, some large scale processors are improving ways of tracking carcasses through the supply chain (such as electronic tags), with the aim of improving product quality and consistency, partly by improving feedback to producers.

Each of these approaches has advantages and disadvantages, and not all would suit or benefit every business. Long term contracts across the supply chain, for example, could reduce risk and volatility, and facilitate long term investment, but could also reduce operator flexibility. In some cases, businesses may need to be of a specific scale before a particular technology becomes worthwhile. Businesses also have

different risk profiles and capacity to absorb the transaction costs of some measures. Potential advantages and disadvantages of possible measures by industry and/or individual businesses are identified in table 8.1.

Pig producers, processors or the industry as a whole, as appropriate, need to judge the relative merits of these measures. While government assistance is provided for R&D, and education and extension, new technologies should emerge when commercial returns justify them, and the industry and individual businesses are best placed to make these decisions. Governments are ill-equipped to judge the commercial value of alternative measures (given the information requirements and skills necessary), and should avoid crowding out private investments or distorting business decisions. The Productivity Commission is unaware of any major regulatory or market impediments to businesses making informed commercial decisions about adopting such measures. Industry programs which receive government support (such as for R&D) need to be regularly, independently and transparently reviewed.

FINDING 8.1

The Australian pigmeat industry and pigmeat businesses can pursue a range of measures to improve business competitiveness. The relative merits of any such measures are best judged by individual pig producers or processors, or by the industry as a whole.

8.2 Government measures to improve competitiveness

As outlined in chapter 6, government measures need to address specific market or government failures, offer net benefits for the Australian community as a whole, and be the best option available. Relevant factors in assessing policy measures include their effectiveness (ability to achieve policy goals), efficiency (cost of achieving policy goals, including compliance and administration costs), and transparency.

Chapter 7 identified several impediments to the pigmeat industry's competitiveness that *may* warrant government measures. This section considers government measures to address these impediments. In addition, some inquiry participants argued government has a role in helping the industry adjust to economic challenges to ensure it remains competitive. In particular, several inquiry participants argued for temporary trade restrictions to provide industry with 'breathing space' to help facilitate adjustment and structural change. Whether additional industry-specific adjustment assistance is warranted is, therefore, also examined and some possible measures suggested by inquiry participants to assist adjustment are considered.

Table 8.1 Possible measures by industry and/or individual businesses

<i>Industry/business measure</i>	<i>Potential advantages</i>	<i>Potential disadvantages</i>
Increased integration across and along the supply chain	<ul style="list-style-type: none"> • Better information flows on product specifications and requirements • Greater security in sale and supply • Economies of scale 	<ul style="list-style-type: none"> • Lessening of competitive pressures • Some flexibility lost
Use of long term supply contracts	<ul style="list-style-type: none"> • Help in managing risk and volatility • Facilitation of long term investment • Help in developing long term business relationships 	<ul style="list-style-type: none"> • Inflexibility • Often need to pay for reduced variability
Improved production practices	<ul style="list-style-type: none"> • Lower costs per output • Greater consistency and quality of product 	<ul style="list-style-type: none"> • Cost (capital, labour retraining)
Improved carcass measuring systems	<ul style="list-style-type: none"> • Closer alignment of price and quality • Greater product consistency • Lower costs of processing 	<ul style="list-style-type: none"> • Initial cost
Increased pig carcass size	<ul style="list-style-type: none"> • Lower costs per kilogram • Preference of most export markets for larger pigs 	<ul style="list-style-type: none"> • Less suitable for domestic and some export markets • Costs in switching from smaller to larger pigs
Generic advertising and marketing	<ul style="list-style-type: none"> • Lift in domestic sales 	<ul style="list-style-type: none"> • Cost and the need for ongoing advertising • Costs to other Australian meat producers
Labelling of Australian produced pigmeat	<ul style="list-style-type: none"> • Improved information available to consumers • Increased sales of Australian pigmeat 	<ul style="list-style-type: none"> • Uncertain consumer preference for Australian grown produce • Cost of advertising campaign
Education and extension	<ul style="list-style-type: none"> • Increased adoption of new technologies and practices (including risk management tools) 	<ul style="list-style-type: none"> • Cost (especially given geographic dispersion)
Diversified income streams	<ul style="list-style-type: none"> • Reduced variability in overall income (especially useful during severe downturns in pig prices or high feed prices) 	<ul style="list-style-type: none"> • Reduced capacity to increase scale of pigmeat operations (preventing cost efficiencies being achieved) • Discouragement of the managerial advantages of specialisation • Reduced capacity to explore and invest in product differentiation

Sources: Possible measures based on information provided by inquiry participants, including APL 2004d; Blackwood Piggery, sub. 13; Craig Mostyn Group, sub. 35; Primary Industries and Resources South Australia, sub. 36; Queensland Pork Producers Inc., sub. 25; South Australian Farmers Federation, sub. 5; West Australian Pork Producers' Association, sub. 34.

Single-desk marketing of grain and support for ethanol production

The Commission concluded in chapter 7 that single-desk marketing arrangements for domestic and export sales of grain have the potential to raise domestic prices for grain, particularly during drought. There is ongoing reform of single-desk grain marketing (chapter 7), and by September 2005, single-desk marketing arrangements for grain should apply only to export markets.

To the extent that AWB (International) can use its monopoly export power to discourage growers to sell to the domestic market via other traders, it could dominate the domestic market for wheat. By dominating the domestic market, it may be able to raise domestic wheat prices above the world price of wheat. Similar arguments apply for other single-desk export marketers of grain.

The Commission considers, however, that arbitrage opportunities for grain growers should limit the scope for AWB (International) to raise domestic prices above export prices. As the domestic price rises above the export price, grain producers will have an incentive to switch sales from the single-desk pool and export markets to the domestic market. In the short term, grain growers might not be initially aware of arbitrage opportunities, and higher domestic prices might result. Over time, however, the potential for domestic prices to rise above world prices should be reduced.

Nevertheless, as noted in chapter 7, to the extent that a single-desk export arrangement results in grain producers receiving a higher export price, the price paid by domestic grain users is also likely to be higher than in the absence of a single-desk exporter (given the link between export and domestic prices).

Overall, the Commission considers that the potential costs of single-desk marketing arrangements (including market power in domestic markets) (PC 2000a), mean such arrangements should be regularly, independently and transparently reviewed. These reviews should ensure that the benefits of single-desk arrangements outweigh the costs, and that the arrangements are the minimum necessary to achieve these benefits. The Commission's discussion draft on its review of National Competition Policy reforms proposed that continuing restrictions on competition in export wheat marketing should be re-examined sooner rather than later (PC 2004c).

There might also be opportunities for the industry to develop strategies to reduce any potential domestic market power of the single-desk exporters, such as coordinating grain purchases. APL noted:

The Australian pork industry must address how it can best leverage its feed volumes to lower costs; this may be through a more strategic approach to feed ingredient procurement. (sub. DR62, pp. 40–41)

Seeking new ways of sourcing lower cost grain was also highlighted by PIC Australia:

The industry has to develop methods of obtaining more cost effective grain. Producers have the option to form alliances and increase their purchasing power. These alliances need to have supply contracts with grain growers restricting their ability to inflate the grain price. It would often be beneficial for grain growers to form alliances with either pig producer groups or feedlotters as the payment terms would be shorter than those presently in place with the AWB under the pool system. (sub. DR61, p. 7)

Some pig producers have already adopted strategies to purchase feed grain more cheaply, using buying groups, for example. The Victorian Farmers Federation — Pig Group noted:

Local northern Victorian pig producers have set up a buying group which has great purchasing power from the local feed mill. As this represents approximately 60 per cent of the feed mill's production, the group have good negotiating leverage on price and have access to the mill's feed nutritionist for formulation of specialised rations. (sub. 30, p. 5)

In addition, the Murray Goulburn Co-operative and Agrilink Feed Services recently announced a deal in Victoria to give dairy farmers access to discounted grain (Jackson 2004).

FINDING 8.2

Given the potential impacts of single-desk grain export arrangements on domestic grain-using industries, the Australian and relevant State governments should regularly review such arrangements to ensure their benefits outweigh the costs for the community as a whole.

The Commission also concluded in chapter 7 that government support for the ethanol industry encourages the expansion of that industry, which is likely to raise domestic prices for feed grain, adversely affecting the pigmeat and other intensive livestock industries. Government support for any industry in the absence of clear market or government failures can distort resource allocation and impose costs on other industries. Given these potential costs, the Australian Government should regularly, independently and transparently review the impacts of government support for ethanol production to ensure they offer net benefits for the community.

FINDING 8.3

Given the potential costs of government support for the ethanol industry, the Australian Government should regularly review that support to ensure the benefits outweigh the costs for the community as a whole.

Improving the regulatory environment

As outlined in chapter 7, unnecessarily strict planning and development approval laws, and environmental, health and animal welfare regulations can impede the competitiveness of the pigmeat industry. Although these impediments appear to be minor compared with the other impediments faced by the industry, governments have a responsibility to ensure their regulatory activities are efficient and effective, and do not impose unnecessary burdens on business.

The Australian Government, State and Territory governments, and local governments are continuing to review planning and development approval laws through the Development Assessment Forum (which commenced in 1998). Current projects include developing a leading practice model for development assessment, and reviewing the potential for comparative performance measuring and benchmarking (DAF 2004). Some State and Territory governments are also reviewing and implementing their own planning reforms. Queensland, for example, is completing the implementation of its integrated planning system. Victoria undertook a review of its planning system, *Better Decisions Faster*, during 2003.

The Commission has made recommendations in other inquiries to improve development approval processes (PC 2004a, 2004b). These include recommendations to achieve greater separation of policy making and administration, and to streamline permit approvals for minor and uncontentious developments. The experiences noted in submissions to this inquiry add weight to the argument for improving the process of development approval.

Environmental, health and animal welfare regulations that apply to the pigmeat industry can help the community achieve desirable environmental and social goals. They often involve a cost to industry, however, and regulators should ensure regulations generate net benefits to the community, are the best means of achieving policy goals, and minimise compliance costs (ORR 1998). Moves to increase environmental, health or animal welfare regulations should, therefore, account for potential effects on the pigmeat industry, and involve the best scientific information available and effective consultation with all affected parties. In some cases, consideration may need to be given to lead times for implementation, especially when changes in capital equipment are required. Effective institutional arrangements should also be in place to ensure transparent, timely and responsive regulatory processes. Rigorous and transparent regulation impact assessment at all levels of government would help achieve better policy decisions.

Using countervailing or anti-dumping measures

In general, countervailing duties can be imposed on agricultural imports under World Trade Organization (WTO) rules if it can be demonstrated that exported products are being subsidised, and that this is causing, or threatens to cause, material injury to a domestic industry. The Commission has found, however, that imports of pigmeat to Australia from Denmark and Canada (which make up the bulk of Australia's imports of pigmeat) do not benefit significantly from subsidies (chapter 4). Given low levels of subsidies relevant to pigmeat imports into Australia, even if countervailing duties could be established under WTO rules, the duties that could be applied would be correspondingly low. As such, the likely impact on the price or quantity of imports would most likely be small (especially given the significant price differences that can exist between Australian and imported products) (chapter 4).

Anti-dumping measures can be applied under WTO rules if it can be established that imported products are being sold at prices below their 'normal value' in their country of origin and that the domestic industry is suffering, or likely to suffer, material injury as a result. As noted in chapters 2 and 4, Australia is generally a high price destination for pigmeat exports from Europe and North America suggesting that dumping is unlikely to be occurring (at least on a large scale).

Anti-dumping and countervailing laws in Australia are governed by the *Customs Administration Act 1985* (Cwlth), the *Customs Act 1901* (part XVB) (Cwlth) and the *Customs Tariff (Anti-dumping) Act 1975* (Cwlth) and associated Regulations (Australian Customs Service 2002). The Australian Customs Service has sole responsibility for investigating and reporting on countervailing and anti-dumping measures in Australia. Australian industry must first lodge an application for such measures with the Australian Customs Service, which will investigate whether there is prima facie evidence of injurious dumping.

As part of the National Competition Policy, Australia's anti-dumping arrangements have been scheduled for review under the legislation review program. (The National Competition Policy requires those seeking to retain restrictions on competition to demonstrate that removal of the restrictions would not be in the interests of the broader community.) The Commission has identified this as a key piece of unfinished business and proposed that the review occur as soon as possible (PC 2004c).

Regardless of whether countervailing or anti-dumping measures meet WTO rules, such actions typically have costs as well as benefits to the community (PC 2004c). Restricting imports via countervailing or anti-dumping actions can restrict

competition and adversely affect Australian pigmeat consumers, retailers and manufacturers. In many cases, the benefits to pig producers of restricting pigmeat imports are short term because, while such restrictions may bring immediate improvement to pig prices in Australia, they are likely to discourage or delay the ongoing restructuring which is critical to industry performance in the long term. Increasing the price of pigmeat in Australia also makes it less competitive against other meats. Ludvigsen Family Farms noted:

Clearly one of the great benefits of imports is to level out price fluctuations in the domestic markets. There is nothing more destructive in our market than for pork to be at a higher price on the supermarket shelves than competing meats They also serve to force Australian producers and processors to look at their cost structures and to ensure they produce cheaply. (sub. 3, p. 5)

Restricting the import of pigmeat for processing may also have unintended adverse consequences on Australian pig producers and processors. In particular, it would increase the costs of production for Australian pigmeat manufacturers, putting upward pressure on the prices of smallgoods products made in Australia. To the extent that prices rise, the importation of smallgoods would become more attractive to wholesalers and retailers in Australia. This could mean Australian producers and primary processors end up supplying a greater percentage of a smaller domestic pigmeat manufacturing sector. Inquiry participants acknowledged this possible scenario, although transport and shelf life issues may make this less likely at the present time:

Yes. I think the thing that would deter that [importing manufactured pigmeat] would be the fact that you've got so much less shelf life, because you're transporting a product which, as soon as you put it in the packet, it's got, say, four weeks or six weeks. ... But yes, that's something that could still happen, if they improve technologies. (B.E. Campbell, trans., p. 266)

Finally, while the Commission acknowledges that many pig producers experienced difficult economic circumstances between mid-2002 and the end of 2003, making ongoing adjustment harder, countervailing or anti-dumping measures are very blunt ways in which to assist those in most need. If additional adjustment assistance for pigmeat businesses is justified, more effective options should be considered (see below).

FINDING 8.4

While additional restrictions on pigmeat imports into Australia may provide short term benefits to pig producers, they would adversely affect Australian pigmeat consumers, retailers and manufacturers. They could also discourage or delay ongoing restructuring and would fail to target those in greatest need of assistance.

Industry-specific adjustment assistance

The pigmeat industry in Australia has been undergoing significant change, like many other sectors of the economy and pigmeat competitors in other countries. This change is perhaps best highlighted by the substantial long term reduction in pig producer numbers and the increased average size of piggeries (chapter 2). Such change and adjustment has been an important means by which the pigmeat industry has improved competitiveness. Pigmeat businesses will continue to experience change.

Managing change effectively is important if the pigmeat industry is to remain competitive. Evidence suggests the industry is continuing to adjust by increasing its focus on value added products, better linking the supply chain and exploring export opportunities, among other initiatives. While the pigmeat industry has undertaken significant change on its own, several submissions asserted that industry-specific adjustment assistance is justified to ensure the industry's ongoing competitiveness and to assist some businesses to exit the industry.

This section considers whether industry-specific assistance for pigmeat businesses is warranted, and then considers the relative merits of several possible government measures.

Is additional adjustment assistance warranted?

As noted in chapter 6, a range of factors are relevant to assessing the merits or otherwise of additional industry-specific assistance for the pigmeat industry (PC 1999, 2001b, 2002). These factors include:

- the extent to which adjustment pressures exist (and whether they are short term or persistent)
- whether any unusual characteristics of pigmeat businesses give rise to market failures that impede adjustment for which government measures may be appropriate
- whether an equity case can be made for assistance
- the accessibility and relevance of existing government programs, including agricultural restructuring, R&D, and social security programs (especially given recent restructuring in the industry).

To what extent do adjustment pressures exist?

The extent to which adjustment pressures exist in the pigmeat industry depends on both the size and speed of current or anticipated changes. The degree of adjustment may also vary across different segments of the industry and across different regions.

While change is inherent to the pigmeat industry (chapter 2), as with any industry, some inquiry participants argued that the coincidence of several exogenous changes adversely affecting pigmeat businesses — including an appreciating Australian dollar, declining demand for exports due to the severe acute respiratory syndrome outbreak in Asia, high feed grain prices, and competition from imports from countries that offer more assistance to their pigmeat industries — has been ‘too much’ and that assistance is required. They claimed that these changes have threatened the economic viability of many pig producers (with a number having incurred a loss in recent years) and that some producers have thus decided to exit the industry. Queensland Pork Producers Inc. argued:

Pork producers are normally able to manage the usual swings in pork prices, the effects of imports, and other ‘competitiveness issues’ in the marketplace. However it was the extreme duration of high prices (30+ months, and record high prices for most feeds for 6+ months) and corresponding downturn in income which was just too long and deep for normal risk management strategies to work. (sub. 25, p. 6)

A critical question is whether the recent coincidence of adverse factors will continue — in other words, whether they represent long term structural changes or short term cyclical problems. As noted in chapter 6, periods of low (and high) income are to be expected in agricultural businesses. Over recent months, several factors have shown signs of improvement. Baconer pig prices, for example, rose by approximately 21 per cent between June and September 2004, with prices in August and September 2004 above those received in the same months in 2002 and 2003 (chapter 2). Baconer pig prices remained at September 2004 levels through to the end of 2004. Feed prices during 2004 were also 33 per cent, 36 per cent and 42 per cent lower than the average in 2002-03 for feed wheat, sorghum and barley respectively (chapter 2). While competition from imports is expected to continue, feed prices are unlikely to return to their 2002-03 highs (at least in the short term).

For many in the industry, increases in pig prices and decreases in feed costs are likely to improve financial conditions and ease the burden of adjustment. In particular, they should help facilitate investment and the building of competitiveness over the medium to long term. The improvement in economic conditions will also help those businesses wishing to exit the industry.

For how long the higher pig prices and lower feed costs will continue, however, is uncertain. APL (trans., p. 442) noted that improvements are likely to have to last

longer than 12 months to lift industry confidence and lead to significant increases in investment. Some producers, however, are already investing and expanding (Ludvigsen Family Farms, sub. 3, p. 1), with other producers deciding to remain in the industry (at least for the time being) based on recent improvements.

Some inquiry participants also noted that increases in the size and duration of variations in profitability generate significant adjustment pressure, increasing the risks faced by pigmeat businesses. In part, this variation may result from some businesses expanding the size of their operations which can amplify both profits and losses when prices and costs change, and may reduce their ability to quickly respond to market conditions (chapter 5). Increasing the size of pigmeat operations, however, can also provide businesses with opportunities to manage risk that smaller operations may find harder to achieve — opportunities such as developing long term contracts, developing extensive supply chain relationships and having access to more innovative financial risk management tools (such as currency hedging).

Overall, pigmeat businesses have faced some significant adjustment pressures since 1998, especially from mid-2002 to the end of 2003. Recent improvements in factors affecting the profitability of pigmeat businesses, however, should ease the urgency of recent adjustment pressures and help facilitate more manageable on-going adjustment (at least in the short to medium term).

Are there substantial impediments to adjustment?

Other important questions are how well the pigmeat industry can adapt to change, and whether there are any significant impediments or market failures that might justify government intervention. Change is an inherent feature of any business environment, and there are often winners and losers. Having to manage considerable change has been a notable feature of the pigmeat industry (chapter 2). An important question is whether any difficulties in adjusting are due to market or government failures (which government may be able to address) or the nature of the business environment (with well informed people making decisions in the absence of market or government failures).

A range of factors are relevant in considering whether businesses are likely to be able to adapt to change, including whether product lines can be easily changed, new markets can be found, management has a ‘learning culture’, a range of inputs are available, business assets are readily purchasable and tradable, and skills are adaptable, transferable and accessible. The Commission has not received evidence to indicate that the pigmeat industry is unable to develop new product lines or find new markets, or that it suffers from a poor learning culture. In fact, there are numerous examples of pigmeat businesses successfully undertaking new initiatives

and innovating. Although access to some overseas markets is restricted (chapter 7), many markets remain open to Australian producers and processors.

A few characteristics of the pigmeat industry may hinder adjustment, however, including exit from the industry. Some of the main concerns raised by inquiry participants in this regard, such as access to capital and undertaking risk management, were discussed in chapter 7. Other possible characteristics include ‘asset fixity’ and the short growing cycle of pig production. Asset fixity occurs where pig farming assets have low re-sale values, such that it is optimal to keep assets in use despite low returns. It may slow or prevent some adjustment that might otherwise occur (such as farm amalgamations) because the value of a business’s assets in their current use may remain greater than their value to a potential buyer. There are few alternative uses for pig sheds, for example, and their presence in many cases reduces the value of a pig farm when prospective buyers are not intending to continue pig production.

Windridge Farms noted:

All of the buildings that Windridge Farms owns have been specifically designed to house pigs and are not suitable for housing other animals or for any other use. Thus when the pig industry is not viable, the buildings are worth nothing and the value of the business is reduced to the value of the land we own. (sub. 18, p. 3)

While perhaps less of an issue in extensive agricultural industries, asset fixity is not unique to pig producers and occurs in other livestock industries (such as chicken and cattle feedlots) and a number of non-agricultural industries (such as manufacturing or mining). In addition, while thin markets and low re-sale prices for pigmeat business assets may slow adjustment, they do not necessarily indicate that resources are being allocated inefficiently. It is also difficult to argue that pig producers would not have been aware of the potential difficulty of on-selling many pig-specific assets (or of the assets’ depreciating nature) when they made investment decisions. Further, in the case of piggeries established some time ago, original assets are likely to have been heavily (if not fully) depreciated (having provided taxation benefits in the process).

The nature of the pig growing cycle too can sometimes restrict adjustment, given it is difficult to hold off selling pigs, unlike many other livestock. Once pigs go beyond their planned production cycle — approximately 40 weeks from conception in the case of porkers (chapter 2) — their value can decline substantially. On the other hand, the relatively short growing cycle of pigs can offer benefits in terms of quickly meeting an upturn in demand (which can be more difficult with other animals, for which building up stock can take time).

As noted in chapter 6, there may be more generic, agriculture-wide reasons why adjustment by pigmeat businesses may be slow, including the option for some of subsistence farming or postponed maintenance; attachment to farming as a way of life; potential capital gains from increases in land prices; and immobility caused by lack of knowledge of, or training for, other job opportunities. With the possible exception of knowledge and training, these factors are unlikely to be the result of market or government failures or to warrant government responses.

The nature and significance of these impediments to adjustment are changing as the size and structure of businesses in the industry change. As many businesses merge and become larger (often with corporate structures), they may have greater ability to invest in new plant and equipment, attract skilled workers, and fund (individually or jointly) research programs to deal with new risks and opportunities. As noted in chapter 5, however, larger businesses may have fewer options to increase or decrease production as circumstances change (although their ability to ride out difficult times might be greater). The ability of many businesses to adjust will thus differ from that of businesses five or 10 years ago.

Overall, the Commission has not found compelling evidence that the characteristics and location of pigmeat businesses are substantially impeding adjustment; in many cases, they do not appear to be significantly different from those faced by other agricultural industries. General assistance programs are likely, therefore, to be appropriate mechanisms for smoothing adjustment and minimising impediments to resource re-allocation, without the need for industry-specific assistance.

Is there an equity case for industry-specific assistance?

As noted in chapter 6, a case for industry assistance based on equity or fairness is likely to be strongest when the changes facing the industry involve clear and sizable burdens on a specific group in the community (especially if the affected group is relatively disadvantaged), deliver benefits mainly to relatively advantaged groups in the community, and/or are largely unanticipated and involve material changes to well defined and defensible property rights (PC 2001b). The Commission's assessment is that the pigmeat industry does not meet these criteria.

First, evidence from submissions indicates that many pig producers have been making profits over the medium to long term (five to 10 years). It is difficult to conclude, therefore, that an individual or household involved in pig production (as an owner or worker) belongs to a clearly defined financially disadvantaged group.

Second, it is hard to argue that many of the recent changes experienced by the industry have been unexpected or involve material changes to a well defined

property right. While droughts and increases in feed prices are hard to predict precisely, they are a regular feature of agricultural industries. Also, although competition from imports has been increasing, this increase has been at a fairly steady rate (figure 2.15), with quarantine decisions that allowed for increased imports being made some time ago (starting in 1990).

In addition, the pigmeat industry has already received government assistance delivered across 1999–2002 as part of the Pork Industry Restructure Strategy. This assistance included the PorkBiz and Pork Producer Exit Programs which attempted to target adjustment issues and the National Pork Industry Development Program and Pigmeat Processing Grants Program which aimed to improve the competitiveness of pigmeat businesses (chapter 6).

Some pig producers have nevertheless continued to find it difficult to adjust and some have left the industry. This behaviour does not on its own, however, represent a strong argument for pigmeat industry-wide assistance, especially when general agricultural and social security programs are available to assist those facing financial hardship. Structural adjustment usually involves some businesses leaving an industry while others may expand or change the way they operate. Moreover, as noted in chapter 6, governments should not address farm welfare issues through policies to assist businesses, because this approach confuses the objectives of the intervention, does not effectively target the welfare problem and can distort market signals to the businesses receiving (or potentially receiving) assistance, possibly reducing the efficiency of the industry.

Can the pigmeat industry adequately access general agricultural and business programs?

As noted in chapter 6, general assistance programs can help businesses and employees adjust to changing circumstances and make the transition to new business environments. Such measures have several advantages over industry-specific programs:

- They treat individuals in similar circumstances equally.
- They target assistance to those in genuine need, whatever the cause.
- They address the net effects of varying influences.
- They support individuals and families rather than a particular industry or activity.

The Commission has received little evidence that the pigmeat industry has been unable to access general agricultural, business or social security assistance. As outlined in chapter 6, the industry has used a range of government programs (such

as FarmBis and Farm Help) to improve its competitiveness and assist its adjustment through training, short term income support and assistance to exit agriculture, and tools to help manage risks. Reviews of many of these programs found them to be broadly effective in facilitating adjustment. Primary Industries and Resources South Australia also argued that such programs are an appropriate means of helping to facilitate adjustment:

Industry adjustment policy in Australia has come to a position where it is appreciated that, difficult as they are, it is best for industry in the long term that market forces determine the extent of adjustment in conjunction with appropriate support policies. The community-wide and rural sector services of Centrelink for farm family welfare, Rural Counselling Services for individual options assessment and Re-establishment Grants to aid farm exit are accepted ‘safety net’ policies, facilitating adjustment without impeding restructuring.

Any assistance to the industry will best be directed to improving competitiveness. (sub. 36, p. 14)

Eligible pigmeat businesses also have access to several taxation arrangements that can help them manage variations in profitability over time. The Australian Government, for example, has established tax averaging arrangements and Farm Management Deposit schemes allowing unincorporated pigmeat businesses to reduce the tax disadvantages of variable income (chapter 6 and appendix F).

Two other issues are pertinent to the accessibility and relevance of general assistance programs for pigmeat businesses:

1. the changing nature and characteristics of businesses in the industry
2. regional dimensions that can make adjustment more difficult.

In terms of the changing nature of the industry, many businesses are merging and increasing the size of their operations, with many becoming specialist producers or corporations (or being bought by large corporations). This trend can reduce the accessibility or relevance of some general agricultural programs (such as Farm Management Deposits or extension services) that are aimed at small to medium sized farming operations (box 8.1) (chapter 6). At the same time, however, it may also reduce the need for such programs, because businesses’ ability to manage risk, access skills and fund capital expenditure may improve. Further, other programs such as social security assistance and retraining programs may become more useful as the focus of adjustment changes to employees of larger businesses. This emphasises the need for generally available programs to be regularly reviewed for their ongoing performance and relevance to businesses (including pigmeat businesses) and adjusted as, and if, appropriate. The existing suite of government programs may need sub-programs directly relevant to pigmeat businesses (similar to the previous PorkBiz program under FarmBis), for example.

Box 8.1 Structural adjustment in the pigmeat industry

In general, rural adjustment assistance has been tailored to family farm businesses, which have been the dominant form of farm business structure in Australia. In the pigmeat industry, family farms have historically often been mixed rather than specialised pig producing enterprises, and generally smaller in scale than the large specialist enterprises, which are usually based on a 'corporate' style business structure.

The adjustment issues facing producers in the pigmeat industry are changing as the industry continues to undergo substantial structural change, and production is increasingly dominated by large corporate enterprises:

- There are now fewer family farms that will face adjustment pressures than in the past.
- Around 70 per cent of farms have fewer than 100 sows. Many businesses with small herds have more than one source of income (chapter 2, figure 2.3).
- Around 20 per cent of farms appear to be specialised rather than diversified, and are likely to be characterised by large sunk assets at times, with few alternative enterprise opportunities given the land and capital structure of the farm.

The relatively larger labour forces (drawn off-farm) of the corporate enterprises are likely to be a focus of future assistance concerns. The needs of these individuals are likely to be best met through the existing broader social welfare system.

The characteristics of regions affected by significant change can also influence whether general assistance programs are effective in ameliorating adjustment burdens (see below). The nature and extent of existing regional assistance programs (such as the Regional Partnerships Program, chapter 6) can, therefore, also influence the need for new assistance measures.

In summary, pigmeat businesses have faced significant adjustment pressures, especially during mid-2002 and in 2003. These pressures, however, eased in 2004 with improvements in several factors affecting the profitability of pigmeat businesses (including feed costs and pig prices). Although there are some characteristics of pigmeat businesses that may impede adjustment, many of these do not appear to be significantly different to those in other industries and most are not the result of market or government failures. The Commission's assessment is that there are insufficient grounds for additional adjustment assistance for equity reasons. To the extent that adjustment pressures are too great for some pigmeat businesses, or some information or education and training related market failures are impeding adjustment, generally available government programs exist to assist pigmeat businesses and individuals involved in such businesses. These programs should, however, be regularly reviewed for their effectiveness, efficiency and appropriateness for pigmeat businesses and employees.

Possible policy measures to assist adjustment

The following section discusses the relative merits of some additional policy measures suggested by inquiry participants to assist pigmeat businesses adjust and improve competitiveness.

Safeguard actions

Several inquiry participants argued that the Australian Government should undertake safeguard actions against certain imported pigmeat to help the industry to adjust. Safeguard actions are a special type of industry adjustment assistance involving emergency actions against injurious imports. Their purpose is to provide temporary assistance to an industry that has suffered (or been threatened with) serious material injury as a direct result of ‘unforeseen’ and ‘unexpected’ increases in imports, while requiring the affected industry to adjust. Safeguard investigations need to be conducted in accordance with the requirements of the WTO, and to follow procedures and criteria specified in its Safeguards Agreement and other relevant agreements.

The issue of safeguard measures raises two separate and important questions:

1. whether safeguard measures could be justified under WTO rules
2. whether safeguard measures would be the most appropriate policy measure to help industry adjust and improve the competitiveness of pigmeat businesses.

The Commission undertook an inquiry into safeguard measures for the pigmeat industry in 1998. It found that safeguard measures at that time could be justified under WTO procedures, but cautioned that they might not be the most appropriate policy tool. For this inquiry, however, the Commission has not been asked to undertake a safeguards (or preliminary safeguards) assessment and judge whether WTO rules could be met. Further, it could not undertake such an assessment without a formal request by the Australian Government.

Regardless of whether Australia has a case for introducing safeguard actions under WTO provisions, it is far from clear that such actions would be the most appropriate way to assist the pigmeat industry. As noted, the Commission’s assessment of safeguard measures in 1998 similarly concluded that safeguard measures were unlikely to be the best means of remedying serious injury and facilitating adjustment (PC 1998).

There are several reasons why safeguard actions are unlikely to be the most efficient and effective approach for assisting the pigmeat industry to adjust (PC 1998). First, restricting imports of pigmeat would adversely affect pigmeat consumers, retailers

and manufacturers as the import and domestic price of pigmeat in Australia increases. Consumers would be worse off by paying higher prices and consuming less. Pigmeat manufacturers would face higher costs of production and, to the extent that these costs are passed on to consumers, reduced demand for their products. Exporters of manufactured pigmeat would also lose competitiveness in overseas markets. Further, as noted in relation to countervailing duties, trade restrictions on frozen uncooked pigmeat imports may increase the attractiveness of importing final manufactured products, with adverse consequences for pigmeat manufacturing in Australia. Employment effects would be hard to predict, because a tariff might assist employment in production and primary processing (at least in the short term), but reduce employment in the manufacturing sector.

Second, safeguard actions would not create incentives for producers to adjust and may hinder rather than facilitate change. In particular, increasing tariffs or imposing quotas may discourage change and restructuring by diluting incentives to better link the supply chain or refocus on export markets, for example, and may even harm the industry's long term prospects. As argued by the Commission, the industry needs to be exposed to world prices if it to be internationally competitive (PC 1998). If safeguard measures were imposed which block these signals, it is possible the industry may experience another crisis in three or four years time when any safeguard measures are removed.

Some inquiry participants disagreed that 'temporary' assistance in the form of tariff protection would reduce the incentive for adjustment, and argued that improvements in profitability resulting from tariff protection could lift the ability and confidence of producers to invest (APL trans., p. 464). While improvements in profitability would help pigmeat businesses invest, many restructuring activities depend less on profitability and more on business acumen and determination (such as developing alliances, entering long term contracts or changing pig size). Further, falling investment in times of low profitability is a normal market reaction and, as noted in chapter 3, can reduce supply with subsequent increases in prices and re-investment (especially in the fresh pigmeat market where imports are restricted for quarantine reasons). Policies that help pigmeat businesses adjust without easing the incentive for improvements are likely to be more efficient and better promote improvements in long-term competitiveness.

In addition, safeguard actions involving either a tariff or quota would be a blunt, indirect and inefficient way of providing assistance because they would assist any producer regardless of whether they are profitable (whether from pig production or other income sources) or experiencing undue adjustment hardship.

Imposing safeguard measures would also require Australia to endeavour to maintain a substantially equivalent level of concessions to the affected exporter countries. If

agreement on compensation was not reached, exporting countries might suspend equivalent concessions after safeguard measures have been in place for three years (which could involve increasing tariffs on products that Australia exports). Actions to restrict pigmeat imports might also encourage other retaliatory actions in either the pigmeat industry or other industries in which Australia undertakes trade. It might also harm Australia's capacity to seek reductions in overseas trade barriers such that any benefit to pig producers may be at the expense of other Australian producers as well as users of pigmeat.

APL suggested it may be possible to impose tariff rates as part of safeguard measures that are applied once pigmeat imports reach particular trigger points or levels (trans., p. 471). The impacts of this approach to tariffs could differ from that of a tariff set at a uniform rate. To the extent that possible trigger points were reached, such tariff arrangements would have impacts similar to those discussed above (with manufacturers, retailers and consumers paying higher prices for pigmeat). If the triggers were not met, no action would be taken and producers would not be 'assisted'. If there were some periods when triggers were met and other periods when they were not met, protection afforded to producers would be lower than in the case of permanent tariffs, while the costs imposed on others would be correspondingly reduced. An additional disadvantage with this approach, however, would be the operating costs of such a scheme. Moreover, assistance would be linked to import levels regardless of profit performances (which may be favourable despite high import levels if grain prices were low, for example).

Some inquiry participants raised other trade restrictions as possible policy options (APL, sub. DR62, p. 4). Tariffs, quotas or bans not instituted under safeguard arrangements, however, suffer from the same problems. In addition, it would be difficult to gain WTO approval for such actions, given Australia has bound its tariff rate on pigmeat to zero; there would also be a strong possibility of retaliation if Australia were to breach that commitment. Such action would also be counter to Australia's longstanding position of reductions in trade barriers for agricultural products. (Trade restrictions under countervailing or anti-dumping arrangements were discussed above).

In arguing for trade restrictions, whether under safeguard arrangements or not, some inquiry participants claimed that the 'playing field' is uneven and that it is not 'fair' or 'equitable' that producers in other countries receive assistance and can export to Australia without some form of import restriction. Northern Co-operative Meat Company, for example, noted:

As we have proved since 1933 we have had a competitive business but we can not compete on an uneven playing field especially following the impacts of the 2002/03 drought. To compensate for the grain, freight and fuel subsidies received from our

overseas competitors, there should be either a quota on imported product or other form of equalisation for the Australian Industry. (sub. 45, p. 6)

NSW Farmers Association — NSW Pork similarly noted:

Therefore, New South Wales Pork is of the view that the government should not allow unfair and inequitable trading of pigmeat and other intensive animal industries. We believe that importation of pigmeat from countries that heavily subsidise production should see a response from our government of safeguard measures being put in place...(trans., p. 285)

The Commission acknowledges that people may perceive subsidies received by overseas producers as ‘unfair’ (see also chapter 7). There are nevertheless several reasons why trade restrictions would not be a good policy response. First, analysis by the Commission has indicated that assistance to producers overseas is little different from that available in Australia (chapter 4). Second, any additional domestic assistance would generate costs as well as benefits (as discussed above). Third, if assistance is justified, ‘levelling the field’ with trade restrictions is unlikely to be the most effective or efficient policy option available (for reasons given above). That said, the Australian Government should continue to work to reduce global trade barriers given the potential benefits to Australians from freer trade.

Subsidies for capital expenditure

Some inquiry participants argued for assistance in the form of government expenditures or tax concessions to help fund capital expansion or maintenance. Agripork Australia, for example, argued for accelerated depreciation for existing production:

If there was an ability for entities to reinvest in their business with quality facilities, best practice facilities — for example, depreciating those facilities over six years or the concrete in those facilities over six years, and only had a period of three to four years for that to occur, I believe we could actually get very good facilities for the pigs, very good facilities for the people, and consequently we would have a much greater or much more sustainable industry. (trans., p. 84)

Ludvigsen Family Farms suggested government subsidies for processing and boning rooms:

We need a government that’s going to say 40 or 50 million dollars to be put into our boning and packing sector real quickly to take advantage of the opportunities in front of us now. I believe our abattoirs in Australia are fully stretched from financing, expanding killing capacity and rationalisation and becoming export abattoirs. Doing what they’ve been doing over the last period of time has been absolutely fantastic. Like I’ve said, it’s government leads that has helped drive it. They’ve done very well but they’re going to need assistance with this next bit. (trans., p. 367)

Accelerating the rate at which pigmeat businesses could depreciate capital assets or expanding deductions for repairs and maintenance might help pig producers keep their equipment in better order and facilitate more investment as the costs of doing such would fall. Such a policy, however, would distort investment flows across industries in Australia and thus distort resource allocation. Further, if concessions were only offered to existing pigmeat businesses and not potential entrants (as suggested by Agripork Australia trans., pp. 84–85), this would put new entrants with new capital investment at a comparative disadvantage. This would discourage domestic competitive pressures and reduce the effectiveness of the policy in bringing about increasingly competitive pigmeat businesses.

In the case of subsidies for processing, boning rooms and packing, this approach may (if sufficient) expand Australia's boning and packing capacity. Explicit subsidies are also transparent in their costs and can be tied to particular adjustment activity. As with accelerated depreciation for existing pigmeat businesses, however, this approach has several problems.

First, and most fundamentally, while the Commission acknowledges the usefulness of having good quality processing and boning facilities in Australia that can assist Australian businesses export pigmeat products, there are no significant market failures preventing pigmeat businesses from making optimal business decisions about how much to invest and where. In the absence of market failures, businesses should make investment decisions facing the full risk and return responsibilities of such decisions, so resources can be efficiently allocated against competing uses.

Another concern with this option is the existing overcapacity in boning rooms and abattoirs. As noted by Queensland Pork Producers Inc.:

It could well be that with this industry restructure plan that is up and going now that there is an oversupply of export accredited slaughter facilities within the nation, and perhaps some of those will have to go. Slaughter facilities may have to be regionalised, and there will be some casualties in that side of the pig business. (trans., p. 181)

Offering financial incentives to establish new plants would further reduce the throughput levels of existing plants, putting their viability at greater risk. Another potential problem with this approach is that government subsidies for capital investment may 'crowd out' or replace private investment that would have occurred anyway. As noted by Australian Pork Limited:

... direct payments which enhance physical productive capacity through investment (for example, grants to build plants, or concessionary interest rates) tend to have a more immediate, direct effect on an industry than payments or incentives for R&D and training which have longer term, indirect impacts. Payments to enhance plant capacity can simply replace or crowd out investments that would have been made by private

firms anyway, and can involve governments second-guessing the market (or ‘picking winners’). (sub. 44, p. 39)

There would also be administrative costs with running such a program, and efficiently and equitably allocating funds to ‘appropriate’ projects.

Regional adjustment assistance

While many pig producers have faced considerable adjustment pressures in recent years, evidence received by the Commission indicates that the burden of adjustment has not fallen evenly across the industry or regions. In general, smaller non-specialist farms appear to have been affected most, with pig farms in New South Wales and Queensland being the most adversely affected by the recent drought. These two states also appear to have been especially affected by the decline in export demand from Japan (Ludvigsen Family Farms, sub. 3, p. 6). Some areas in northern New South Wales are also having to adjust to abattoir closures, making it considerably more difficult and expensive to transport pigs for killing and processing. Concern over the regional and community impacts of adjustment were raised by some inquiry participants (Grenfell Rural Producers Co-operative, sub. 11, p. 2; Victorian Farmers Federation, sub. 30, p. 5).

The geographic variability in the size of the adjustment burdens, and the ability of areas to respond and absorb change, can raise regional differences in the need for, and form of, adjustment assistance. Government assistance may, therefore, be usefully targeted at specific regions to help adjustment where it is most needed.

In general, region-specific approaches to assistance are more likely to be warranted when an adjustment shock occurs rapidly, is large relative to the size of a community and where opportunities for alternative employment are limited (PC 1999). In these circumstances, severe burdens can be placed on local infrastructure for delivering generally available assistance and, if a significant decline in population were to occur, the community would be at risk of descending into a self-reinforcing cycle of decline. Further, if the costs to producers (and their families, employees and community) were high and concentrated, they might generate additional non-financial adjustment costs for some people (such as adverse impacts on emotional and psychological health). The provision of region-specific assistance has tradeoffs, however, and would need to consider the equitability of treating people experiencing adjustment pressures differently depending on the source of the pressure, and the risks of lobbying for compensation. Governments would need to weigh up the benefits and costs of tailoring such assistance rather than relying on general measures (PC 1999).

The Commission has not been informed of any region or township currently facing major community decline due to adjustment in the pigmeat industry (although some areas are experiencing more adjustment pressure than others). In terms of anticipating potential problems, identifying regions at most risk from failing pigmeat businesses is a complex task.

The number of people employed in the industry as a percentage of the total employment of an area can indicate people's likely prospects of finding alternative employment. Analysis of employment levels in pig farming as a percentage of total employment in 2001 (chapter 2) showed that there were few statistical local areas where pig production accounted for greater than 3 per cent. Few statistical local areas had employment in pig production of 50 persons or more. Nevertheless, pig production is important to some local communities.

Sheales, Apted and Ashton (2004) argued, in relation to the non-farm aspects of the pigmeat industry, that abattoirs are likely to bear most of the adjustment pressure from any contraction in domestic production. Figure 2.7 shows the location of abattoirs and areas that may, on this basis, be at risk (with some already having closed) (chapter 2). Employment shares for pigmeat processing in statistical local areas is not available, although Sheales, Apted and Ashton (2004) estimated that employment shares in eight of Australia's major pig farming areas were low (approximately 0.3 per cent on average) (chapter 2).

One of the problems with identifying areas at risk of significant upheaval and adjustment is the difficulty in predicting the resilience of regional towns and communities as labour and other resources move from one industry to another or from one location to another. The difficulty in knowing in advance the success of general adjustment and welfare programs, and programs that exist at the local or regional level, also makes it harder to know which areas may be in special need. Moreover, as noted earlier and in chapter 6, governments should not address welfare issues through policies to assist businesses because doing so confuses the objectives of the intervention, does not effectively target the welfare problem and can distort market signals.

The Commission does not see a need for regional adjustment assistance for those involved in pigmeat businesses at the present time. To the extent that specific regional adjustment assistance is warranted in the future, however, this should be provided on a case by case basis and address the specific adjustment pressures faced by a region or community (PC 1999). Such measures should also facilitate rather than hinder necessary change, be transparent, simple to administer and of limited duration, and be compatible with general 'safety net' arrangements.

8.3 Conclusion

Australian pigmeat businesses need to continue to develop and implement new measures to keep improving competitiveness and achieve profitability. Measures that link and tighten the supply chain and improve the industry's ability to meet consumer needs (domestically and overseas) are likely to be especially important, as are measures that help businesses manage risk and fluctuations in profitability. Action to increase the competitiveness of the Australian pigmeat industry, in the face of international competition and other challenges, must come primarily from pigmeat businesses (and not governments), with new technologies and practices emerging when and as commercial returns justify them. Many pigmeat businesses are already undertaking measures to improve competitiveness and make the most of emerging opportunities.

Governments have a role to play in removing unnecessary impediments to industry competitiveness and adjustment. In particular, the Commission highlights the need to regularly, independently and transparently review single-desk grain export arrangements, and for existing and new regulations to provide net benefits, take account of effects on pigmeat businesses and be the most effective approach available.

The Commission does not see a need, however, for additional adjustment assistance to the pigmeat industry (including exit packages) at this time, especially given that many difficulties experienced by the industry relate to the continuously changing conditions of international pigmeat markets, climate variability (such as drought) and normal economic variability (such as an appreciating Australian dollar), and that a range of assistance programs are already available to agricultural businesses. The performance of general assistance programs should, however, be regularly reviewed and adjustments made if appropriate. If specific regions suffer severe losses, an argument for regional adjustment assistance may be made, but this should be on a case by case basis.

Trade restrictions would harm pigmeat consumers, retailers and manufacturers, and may not be in the long term interests of pig producers or primary pigmeat processors. There is little justification for governments to subsidise the capital expenditures of pigmeat businesses, especially given the distortions that special treatment would create in investment decisions within the industry and across the economy.

Overall, government measures to facilitate competitive pigmeat businesses are best directed at providing an economic environment conducive to sustainable economic

growth, providing ongoing support for R&D where appropriate, minimising any impediments to industry efficiency and competitiveness, and ensuring the effective and efficient performance of government programs.

FINDING 8.5

Additional adjustment assistance specific to the pigmeat industry is not warranted, but governments should regularly review generally available agricultural and business assistance programs and existing assistance targeted at the pigmeat industry to ensure their appropriateness, efficiency and effectiveness.

9 Outlook for competitiveness

Agricultural markets, reflecting their links with biological production processes and weather, are often characterised by highly variable prices. Unsurprisingly, businesses in the pigmeat industry face considerable variation in prices for pigmeat and feed grain. Together with fluctuating exchange rates, these price variations contribute to variable profitability and competitiveness. Lags in the supply response of pigmeat producers, after owners decided to vary production levels, have at times contributed to peaks and troughs in pigmeat prices. Further, international pigmeat prices have been affected by unforeseen disease outbreaks.

Variable feed prices (both domestically and internationally) have been caused by unseasonal weather conditions, while fluctuations in exchange rates have been driven by macroeconomic considerations. This variability is likely to continue to be important, so the competitiveness of Australian pigmeat businesses will also continue to fluctuate. In late 2004, the Australian pigmeat price improved in the favour of Australian pigmeat producers. Given the unpredictability of these factors, however, the medium to long term outlook remains unclear.

In addition to the variability of output and input prices, the change in quarantine arrangements for imports (particularly for imports from Denmark and Canada and other countries including the United States) has also affected the competitiveness of the Australian industry. Since the quarantine changes of the 1990s, imports have risen relatively consistently, and the Productivity Commission can see no reason for imports to abate in the near future. The rise appears to be the result of many factors, including product differentiation (such as different qualities) and the cost competitiveness of the imports. Nevertheless, since 1997-98, exports of Australian pigmeat improved in certain markets, demonstrating that at least some businesses in the Australian pigmeat industry can be competitive, particularly for selected products in selected Asian markets.

The pigmeat industries in Canada and the United States have some cost advantages over the Australian industry, including lower feed and processing costs. Australian pig producers and processors are unlikely to match these competitive advantages in the near future. The US Department of Agriculture (USDA 2005a) expects, for example, longer term US pigmeat exports to Australia to 'rise steadily perhaps following the growth trends established by Canada and Denmark following their

entry into the market in the 1990s' (chapter 2). Nevertheless, in some Australian export markets, the Canadian and US producers are at a competitive disadvantage when pigmeat fat is yellowed from corn feeding.

The sources of Danish competitive advantage are the uniformity of their product (weight, size and exact specifications) and the larger quantities they can supply (Danish Bacon and Meat Council, appendix D). Danish businesses also appear to have an advantage in production technologies (table 3.2), although they face relatively more restrictive environmental regulations (chapter 5). Further, many Canadian, Danish and US businesses have been able to achieve economies of scale (in both pig production and meat processing) that will be difficult to match profitably in Australia. AusPork Australia submitted:

Who are Australia's competitors in these overseas markets? We would argue that they are either a whole country acting as one entity (Denmark and their Co-op structure); or huge conglomerates as big, or bigger, than the whole industry of Australia! (Smithfield Foods; Seaboard Farms; Tyson Foods; Maple Leaf; etc). (sub. 32, p. 3)

Australia's main ongoing competitive advantages in export markets are its 'clean, green' image, disease free status and relative closeness to Asia. Australia is unlikely to achieve cost advantages in feed and processing costs in the near future, and the size and regional distribution of its industry may make it difficult to achieve significant economies of scale. Instead, businesses will become more reliant and focused on quality aspects of their product as they seek to value add in specialised markets. To this end, improving market signals from consumers to pigmeat producers will be critical.

In the long run, the international competitiveness of pigmeat businesses will be driven by sustainable cost advantages and/or product differentiation. Australian Pork Limited argued:

[The] Australian pig industry is in serious trouble. A substantial part of the industry is not globally competitive. (sub. 37, p. 6)

Nevertheless, the innovativeness and resilience of some Australian pigmeat businesses should not be underestimated:

Australia is changing from a closed domestic market in pigmeat to an open international market. Many of the participants are struggling with this change and wanting to resist it rather than to embrace the benefits of free trade and take advantage of the opportunities it is and will create for our industry. Those that do embrace the change and alter their businesses will create the new pig industry. (Ludvigsen Family Farms, sub. 3, p. 1)

To remain viable in global markets as a niche producer and exporter, attract further investment and build on past success, the industry must reduce the cost of production and add value to, or differentiate its product range. (Pork CRC full business case, p. 1)

As in the past, many businesses may struggle in the short to medium term, but in the long run there is likely to be a vanguard of highly competitive businesses seeking out high value niche markets for pigmeat. These businesses will be well located and managed, with strong supply chains, strategically targeted specific pigmeat markets in which they have competitive advantages.

APPENDIXES

A Conduct of the inquiry

Table A.1 List of submissions

<i>Individual or organisation</i>	<i>Submission number</i>
Alpair (trading as McLean Farms)*	27
Amitie	8
AusPork Australia*	32
Australian Food Group*	33
Australian Meat Industry Council	16, DR55
Australian Pork Farms Group*	31
Australian Pork Limited*	37, 44, DR46, DR62, DR70
Australian PRISM	4
B.E. Campbell*	19, DR60
Blackwood Piggery	13
Callum Downs Commodity News	DR57
Cameron Pastoral Company*	24
Canada Pork International	2
Charles I.F.E.	7
Corowa Shire Council	6
Covacs Agvet & Milling	DR50
Craig Mostyn Group*	35
D.A. Hall & Co.	21
Deluxe Meat Supply	12
Department of Agriculture (Western Australia)	17, DR51
Department of Primary Industries (New South Wales)	40, DR68
Department of Primary Industries and Fisheries (Queensland)	DR47
Evans, W.	9, DR53
Food and Resource Economics Institute, Denmark	DR66
Grenfell Rural Producers Co-operative	11, DR67
Gunpork Joint Venture*	39
Hans Continental Smallgoods	22
Local Government Association of NSW and Shires Association of NSW	43
Ludvigsen Family Farms	3, DR64
Lynch, T.D. and R.A.	38
M.H. West & Sons	42, DR48
Mount Compass Bacon Company	14
Northern Co-operative Meat Company*	45
NSW Farmers Association — NSW Pork	20, DR54
Oxenford, K.	1
Pastoralists and Graziers Association of Western Australia	DR72

(Continued next page)

Table A.1 (Continued)

<i>Individual or organisation</i>	<i>Submission number</i>
Perfect Pork	26
PIC Australia	15, DR61
Primary Industries and Resources South Australia	36
Prowse, T.	DR71
QAF Meat Industries*	29, DR49
Queensland Pork Producers Inc.	25
Ridley AgriProducts	DR58
South Australian Farmers Federation	5, DR63
Stockfeed Manufacturers Association (Queensland)	DR59
Tasmanian Farmers and Graziers Association	28
Tasmanian Government	41
Tasmanian Island Pork Alliance	23
Victorian Farmers Federation — Pig Group	30
West Australian Pork Producers' Association*	34, DR56
Western Australian Pig Stud Breeders Association	DR69
Windridge Farms	18, DR65
Windrush Pastoral	DR52
Yirani Farm	10

An asterisk (*) indicates that the submission contains confidential material not available to the public.

Table A.2 List of visits and meetings

<i>Interested parties</i>
<i>New South Wales</i>
B.E. Campbell
Department of Primary Industries (New South Wales)
Environment Protection Authority (New South Wales)
Northern Co-operative Meat Company
NSW Farmers Association
Peters Meats
Primo Smallgoods
QAF Meat Industries
Signium
Windridge Farms
<i>Victoria</i>
AusPork Australia
Coles Supermarkets
Pastoral Pork Company
Victorian Farmers Federation
<i>Queensland</i>
Department of Primary Industries (Queensland)
Hans Continental Smallgoods
Queensland Pork Producers Inc.
Swickers Kingaroy Bacon Factory

(Continued next page)

Table A.2 (Continued)

Interested parties

South Australia

Big River Pork
 Primary Industries and Resources South Australia
 Mount Compass Bacon Company
 Murraylands Regional Development Board
 PIRSA Rural Solutions
 Rural City of Murray Bridge
 South Australian Farmers Federation

Western Australia

Craig Mostyn Group
 Del Basso Smallgoods
 Department of Agriculture (Western Australia)
 George Weston Foods
 Linley Valley Pork
 Princi Smallgoods
 West Australian Pork Producers' Association

ACT

ABARE
 Australian Chamber of Commerce and Industry
 Australian Pork Limited
 Biosecurity Australia
 Corrs Chambers Westgarth
 Department of Agriculture, Fisheries and Forestry
 Department of Foreign Affairs and Trade
 Grains Council of Australia
 National Farmers Federation

Table A.3 **Public hearings**

<i>Participant</i>	<i>Transcript page numbers</i>
Melbourne — Tuesday 25 January 2005	
Victorian Farmers Federation — Pig Group	2–21
QAF Meat Industries	22–54
Ridley AgriProducts	55–62
Perth — Friday 28 January 2005	
Rob Wilson	70–80
Agripork Australia	81–95
Windrush Pastoral	96–103
Western Australia Pig Stud Breeders Association	104–17
Corackerup Farming	118–28
West Australian Pork Producers' Association	129–50
Shraugh Farm	151–7
Pastoralists and Graziers Association of Western Australia	158–64

(Continued next page)

Table A.3 (Continued)

<i>Participant</i>	<i>Transcript page numbers</i>
<i>Brisbane — Monday 31 January 2005</i>	
Queensland Pork Producers Inc.	167–82
A.J. and D.J. Stick	183–97, 247–52
Covacs Agvet and Milling	198–205
Hans Continental Smallgoods	205–21
Stockfeed Manufacturers Association (Queensland)	222–34
Alpair (trading as McLean Farms)	235–41
Queensland Pig Consultancy Group	242–6
<i>Sydney — Wednesday 2 February 2005</i>	
B.E. Campbell	256–71, 351–2
NSW Farmers Association — NSW Pork	272–99, 350
Australian Meat Industry Council	300–8
Department of Primary Industries (New South Wales)	309–25
PIC Australia	326–34
Callum Downs Commodity News	335–49
<i>Adelaide — Friday 4 February 2005</i>	
Ludvigsen Family Farms	360–80
AusPork Australia	381–408
South Australian Farmers Federation	409–31
Primary Industries and Resources South Australia	432
<i>Melbourne — Monday 7 February 2005</i>	
Australian Pork Limited	435–90

B Supplementary information on Australian markets for pigs and pigmeat

This appendix provides information additional to that provided in chapter 2 on Australian markets for pigs and pigmeat, covering the pigmeat supply chain, pig and pigmeat prices, and pigmeat exports and imports. It also discusses the shares of Australian and imported pigmeat used in secondary processing (manufacturing).

B.1 Pigmeat supply chain

As discussed in chapter 2, many businesses in the pigmeat industry are vertically and/or horizontally integrated. Table B.1 shows the degree of vertical integration by large pigmeat processors in 2003-04. Five of these abattoirs had links extending from pig production to secondary processing.

Pig production

As outlined in chapter 2, pig production has undergone significant structural change over the past 30 years or so. Table B.2 shows the steady decline in producer numbers from 1970-71 to 2002-03. Over the same period, sow numbers remained relatively stable, and slaughterings and pig production increased substantially.

Large producers (with 1000 or more sows) are carrying out an increasing proportion of pig production in Australia. From 1994 to 2003, the proportion of Australia's breeding sows that were controlled by large producers increased from 31 per cent to 52 per cent. In contrast, the proportion of Australia's breeding sows controlled by small producers (with fewer than 100 sows) decreased from 30 per cent to 12 per cent (table B.3).

Pig production is a relatively small sector of agriculture in Australia. In 2003-04, it accounted for about 2 per cent (\$0.9 billion) of the gross value of agricultural production (table B.4).

As noted in chapters 2 and 3, feed costs represent a significant part of total production costs, and grain is a major component of feed. Table B.5 contains information on crop production in Australia for 2003-04.

Table B.1 Vertical integration of large pigmeat processors, Australia^a

<i>Abattoir</i>	<i>State</i>	<i>Pig farm operations</i>	<i>Abattoir</i>	<i>Boning room</i>	<i>Associated smallgoods operations</i>
QAF Meat Industries	NSW	✓	✓	✓	✗
Swickers	Qld	✓	✓	✓	✓
Linley Valley Pork	WA	✓	✓	✓	✗
Port Wakefield (Primo)	SA	✗	✓	✓	✓
Big River Pork	SA	✓	✓	✓	✓
Cassino RSM	NSW	✗	✓	✗	✗
KR Castlemaine Foods ^b	Qld	✓	✓	✓	✓
Burrangong	NSW	✗	✓	✗	✗
Perfect Pork	Vic	✗	✓	✓	✗
Castle Bacon ^b	Vic	✓	✓	✓	✓
Gumby	Vic	✓	✓	✓	✗
CA Sinclair	Vic	✗	✓	✓	✗
Watsons Foods ^c	WA	✓	✓	✓	✓
Riverside Meats	Vic	✗	✓	✗	✗
Cowra	NSW	✗	✓	✗	✗
Diamond Valley Pork ^d	Vic	✗	✓	✓	✗
Primo Australia — Scone Abattoir ^e	NSW	✗	✓	✓	✓
Wollondilly Abattoirs	NSW	✗	✓	✗	✗
FC Nichols ^e	NSW	✗	✓	✗	✗
Pittsworth Abattoirs	Qld	✗	✓	✓	✗

^a Processor size is based on levy data collected by the Australian Government Department of Agriculture, Fisheries and Forestry. In 2003-04, the five largest primary pigmeat processors in Australia accounted for about 91 per cent of the national pig kill. ^b Darling Downs Foods has now merged with Castlemaine (Castle) Bacon creating KR Castlemaine Foods. ^c Watsons Foods has closed its abattoir and now has pigs killed under contract by Linley Valley Pork. ^d Hamsdale Australia (which also controls QAF Meat Industries) is the majority shareholder in Diamond Valley Pork. ^e Now closed.

Source: APL unpublished.

Table B.2 Pig production, Australia

	<i>Producers^{a, b}</i>	<i>Breeding sows^b</i>	<i>Slaughter</i>	<i>Pigmeat production</i>
	no.	'000	'000	kt
1970-71	39 498	338	na	182
1971-72	37 797	367	na	194
1972-73	39 252	460	4 743	236
1973-74	35 432	414	4 170	211
1974-75	na	323	3 454	175
1975-76	24 994	311	3 295	174
1976-77	23 830	308	3 478	185
1977-78	21 962	311	3 693	199
1978-79	20 073	301	3 589	199
1979-80	19 243	312	3 878	218
1980-81	19 279	352	4 216	233

(Continued next page)

Table B.2 (Continued)

	<i>Producers^{a, b}</i>	<i>Breeding sows^b</i>	<i>Slaughter</i>	<i>Pigmeat production</i>
	no.	'000	'000	kt
1981-82	17 281	343	4 059	228
1982-83	14 290	329	4 162	239
1983-84	13 548	341	4 401	253
1984-85	12 705	335	4 490	260
1985-86	11 159	333	4 550	271
1986-87	10 661	337	4 736	283
1987-88	8 524	341	4 923	297
1988-89	8 239	349	5 007	308
1989-90	7 593	339	4 942	317
1990-91	6 847	331	4 865	312
1991-92	6 231	307	5 132	336
1992-93	5 828	305	5 204	340
1993-94	4 754	308	5 374	357
1994-95	3 615	290	5 318	365
1995-96	3 522	290	5 017	347
1996-97	3 337	299	4 796	336
1997-98	3 318	320	5 091	358
1998-99	2 993	309	5 176	370
1999-2000	2 863	293	5 025	363
2000-01	2 831	332	5 016	365
2001-02	2 642	356	5 402	396
2002-03	2 323	353	5 742	420
2003-04	na	na	5 591	406

^a Producer numbers are based on the number of establishments with breeding sows and gilts (intended for breeding). ^b The number of producers and sows at December from 1970-71 to 1993-94, and at June from 1994-95. **na** Not available.

Sources: ABS, Livestock Products, Australia, Cat. no. 7215.0; ABS, Agricultural Commodities, Australia, Cat. no. 7121.0; ABS unpublished.

Table B.3 Pig producers and breeding sows, by herd size, Australia

	<i>Herd size</i>				
	<i>0-49</i>	<i>50-99</i>	<i>100-999</i>	<i>1000+</i>	<i>Total</i>
1994					
Sows	46 098	49 448	125 983	98 005	319 534
Producers	3 279	741	631	32	4 683
1997					
Sows	31 147	36 715	118 921	112 032	298 815
Producers	2 208	541	553	35	3 337
2000					
Sows	21 986	28 981	114 824	125 767	291 558
Producers	1 595	428	483	37	2 543
2003					
Sows	23 551	18 355	127 047	183 587	352 541
Producers	1 491	281	490	62	2 323

Sources: PC 1998; APL unpublished.

Table B.4 Pig production — key statistics, Australia

	<i>Pig sales</i>	<i>Turnover^a</i>	<i>Value added^b</i>	<i>Gross value of production</i>	
				<i>Pigs^c</i>	<i>Total agriculture</i>
	\$m	\$m	\$m	\$m	\$m
1991-92	549.8	643.8	181.5	658.6	19 707.0
1992-93	455.8	520.9	144.7	649.5	20 554.3
1993-94	571.5	680.6	206.4	660.5	22 122.8
1994-95	558.3	666.6	172.6	630.6	22 092.5
1995-96	583.6	673.8	168.0	597.8	25 325.9
1996-97	628.2	706.8	271.9	671.1	26 484.9
1997-98	549.4	624.0	144.9	709.8	28 258.0
1998-99	601.3	705.2	233.8	689.7	28 893.9
1999-2000	696.1	783.1	419.9	791.7	30 220.9
2000-01	na	na	na	822.3	34 236.7
2001-02	na	na	na	967.7	39 587.9
2002-03	na	na	na	911.3	32 563.0
2003-04	na	na	na	878.1	36 562.0

^a Total revenue for pig farms from the sale of crops, livestock and livestock products, rent and leasing revenue, and miscellaneous other farm and non-farm activities. ^b Estimate of turnover plus the value of increases in livestock, less purchases and selected expenses. ^c Gross value of pig slaughterings and other disposals. Includes total value of livestock intended for slaughter in adjacent States and Territories, where available. **na** Not available.

Sources: ABS, *Agricultural Industries Financial Statistics, Australia*, Cat. no. 7507.0; ABS, *Agricultural Industries Financial Statistics, Australia, Preliminary*, Cat. no. 7506.0; ABS, *Value of Agricultural Commodities Produced, Australia*, Cat. no. 7503.0; ABS, *Value of Principal Agricultural Commodities Produced, Australia, Preliminary*, Cat. no. 7501.0.

Table B.5 Crop production in Australia, 2003-04

<i>Crop</i>	<i>Area planted</i>	<i>Production</i>
	'000 ha	kt
Wheat	12 401	24 920
Barley	3 800	8 625
Oats	880	1 520
Triticale	356	675
Sorghum	570	1 850
Maize	79	392
Canola	1 005	1 622
Sunflower	46	58
Cotton seed	198	480
Lint	198	339
Rice	65	535
Lupins	638	953
Field peas	301	407
Chickpeas	152	178
Faba beans	155	277
Lentils	131	175

Source: ABARE 2004c.

Primary and secondary processing

Tables B.6 and B.7 present key statistics on Australia's meat processing and bacon, ham and smallgoods sectors.

Table B.6 Meat processing — key statistics, Australia

	<i>Turnover</i>	<i>Gross product</i>	<i>Employment</i>	<i>Establishments^a</i>
	\$m	\$m	no.	no.
1991-92	5 473.8	na	27 980	340
1992-93	6 224.1	1 377.0	30 168	390
1993-94	6 321.8	na	29 533	347
1994-95	6 177.5	na	29 014	345
1995-96	6 087.9	1 200.0	28 334	333
1996-97	5 650.1	1 303.0	28 849	340
1997-98 ^b	6 551.5	1 538.7	31 654	306
1998-99	6 822.0	1 552.9	29 806	309
1999-2000	7 035.6	1 522.4	27 784	334
2000-01 ^c	8 378.0	1 641.2	27 926	na
2001-02 ^d	10 250.9	1 584.2	na	na
2002-03	9 504.7	2 005.4	na	na

^a The ABS cautions against the use of numbers of establishments as an analytical indicator of industry performance across years. Establishment numbers are presented (along with other data) to give a broad indication of the size of the meat processing sector. Further advice should be sought before using these data for more detailed analyses. ^b From 1997-98, 'industry value added' replaced 'gross product' as the measure of industries' contribution to gross domestic product. ^c From 2000-01, ABS data were collected from manufacturing management units. Prior to 2000-01, data were collected from manufacturing establishments. Caution is thus advised when making comparisons to earlier years. From 2000-01, 'sales and service income' replaced 'turnover'. ^d Given changes in the way in which the ABS has collected manufacturing data since 2001-02 (mainly as a response to the introduction of the new tax system), caution is advised when making comparisons to earlier years. **na** Not available.

Sources: ABS, *Manufacturing Industry, Australia*, Cat. no. 8221.0; ABS unpublished.

Table B.7 Bacon, ham and smallgoods manufacturing — key statistics, Australia

	<i>Turnover</i>	<i>Gross product</i>	<i>Employment</i>	<i>Establishments^a</i>
	\$m	\$m	no.	no.
1989-90	1 021.1	na	6 527	134
1990-91	1 228.9	na	7 275	132
1991-92	1 233.4	na	6 828	129
1992-93	1 251.2	280.2	7 082	146
1993-94	1 302.1	na	7 118	152
1994-95	1 195.0	na	6 454	159
1995-96	1 210.2	330.9	6 683	168
1996-97	1 233.1	318.5	6 455	144
1997-98 ^b	1 256.1	369.0	6 661	148
1998-99	1 404.4	419.4	7 504	148
1999-2000	1 376.8	353.0	6 756	150
2000-01 ^c	1 758.2	394.6	8 381	na
2001-02 ^d	1 964.2	450.5	na	na
2002-03	2 059.7	510.4	na	na

^a The ABS cautions against the use of numbers of establishments as an analytical indicator of industry performance across years. Establishment numbers are presented (along with other data) to give a broad indication of the size of the bacon, ham and smallgoods manufacturing sector. Further advice should be sought before using these data for more detailed analyses. ^b From 1997-98, 'industry value added' replaced 'gross product' as the measure of industries' contribution to gross domestic product. ^c From 2000-01, ABS data were collected from manufacturing management units. Prior to 2000-01, data were collected from manufacturing establishments. Caution is thus advised when making comparisons to earlier years. From 2000-01, 'sales and service income' replaced 'turnover'. ^d Given changes in the way in which the ABS has collected manufacturing data since 2001-02 (mainly as a response to the introduction of the new tax system), caution is advised when making comparisons to earlier years. **na** Not available.

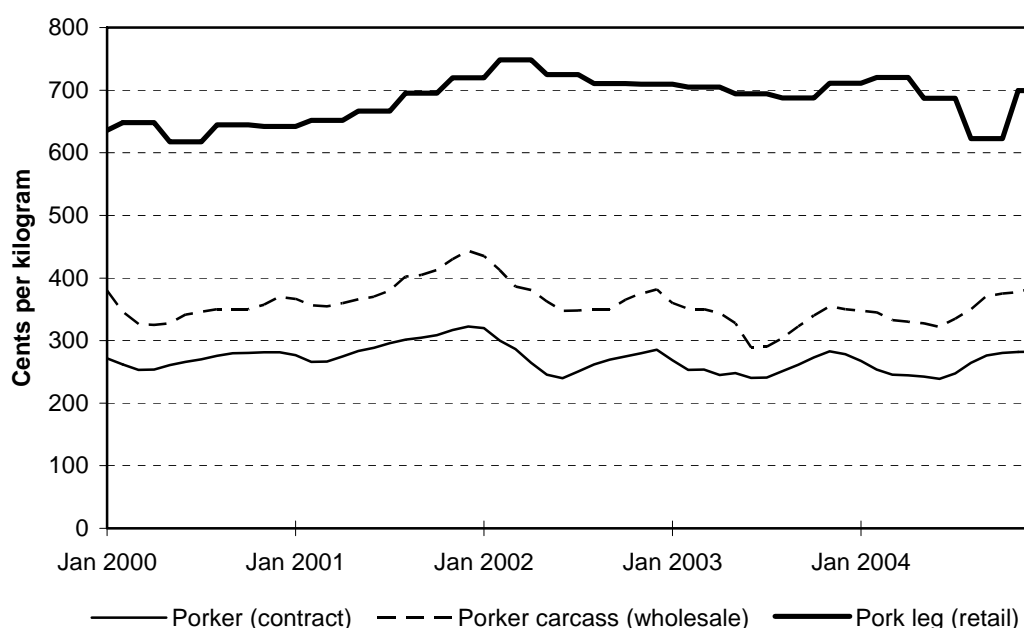
Sources: ABS, *Manufacturing Industry, Australia*, Cat. no. 8221.0; ABS unpublished.

B.2 Pig and pigmeat prices

Broadly, pig prices (often under contract), and wholesale and retail prices for pigs and pigmeat, have similar trends. During 2000 and 2001, for example, an increase in the average retail price for pork legs reflected increases in pig and wholesale prices (figure B.1).

There are some problems, however, with comparing retail prices for specific cuts with prices paid for whole pigs by processors or at the wholesale level. As mentioned in chapter 2, pig prices are driven by the prices paid for all cuts, so an increase in the price for one type of cut may be offset by a decrease in the price of another.

Figure B.1 Contract, wholesale and retail prices for pigs and pigmeat

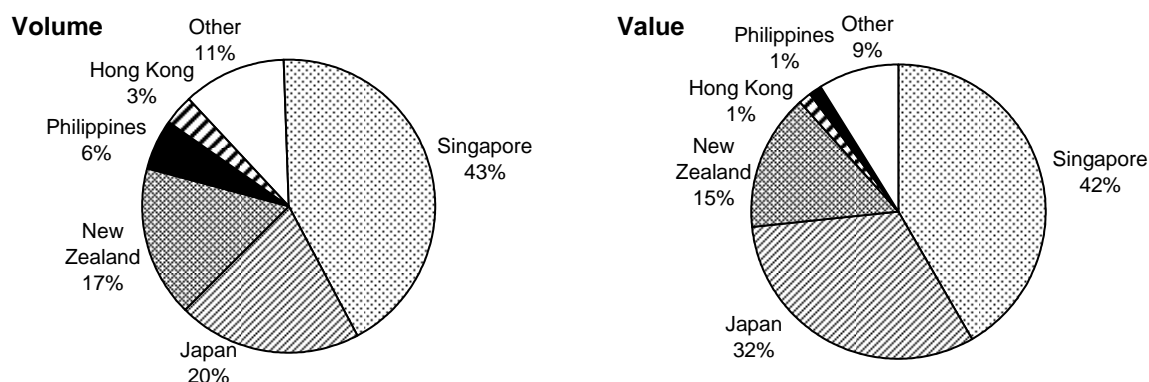


Sources: ABS unpublished; APL unpublished.

B.3 Exports and imports

Australia exported meat to 47 countries in 2003-04. The main markets for Australian pigmeat were Singapore and Japan (figure B.2). The relative size of different export markets for Australia's pigmeat has changed over time. In 1999-2000, exports to Singapore increased substantially owing to the impact of Nipah virus on pigmeat supplies from Malaysia (table B.8).

Figure B.2 Australian pigmeat exports, by volume and value, 2003-04



Source: ABS unpublished.

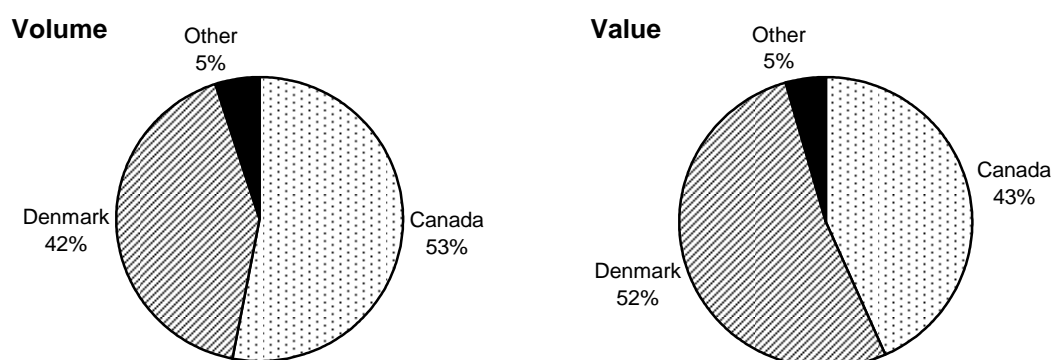
Table B.8 Australian pigmeat exports, by destination

	<i>Singapore</i>	<i>Japan</i>	<i>New Zealand</i>	<i>Philippines</i>	<i>Hong Kong</i>	<i>Other</i>	<i>Total</i>
Volume (tonnes shipped weight)							
1997-98	88	4 676	1 759	766	979	6 246	14 515
1998-99	2 764	4 729	2 609	1 208	1 942	5 867	19 120
1999-2000	25 606	5 972	2 221	652	1 243	5 905	41 600
2000-01	25 763	8 101	3 005	1 734	1 252	7 626	47 482
2001-02	30 568	12 360	5 633	2 521	1 006	9 953	62 042
2002-03	30 667	15 853	8 257	3 799	880	8 312	67 769
2003-04	24 189	11 323	9 421	3 226	1 817	6 446	56 424
Value (\$'000)							
1997-98	180	23 292	5 911	1 079	1 771	23 317	55 552
1998-99	9 508	26 859	7 593	1 303	6 278	25 334	76 877
1999-2000	93 512	36 005	6 557	887	4 755	24 759	166 478
2000-01	98 295	50 805	9 525	2 039	3 785	30 109	194 560
2001-02	122 803	85 472	19 123	3 383	2 885	40 249	273 916
2002-03	113 299	103 334	26 332	3 750	2 016	19 294	268 027
2003-04	80 911	61 858	29 134	2 707	2 839	17 190	194 642

Source: ABS unpublished.

The vast majority of pigmeat imports arriving in Australia are frozen, boneless cuts from Canada and Denmark (figure B.3 and table B.9). In 2003-04, pigmeat not specified as legs, shoulders or middles was the largest category of frozen boneless imports (45 per cent), followed by middles (41 per cent) and legs (11 per cent).

Figure B.3 Australian pigmeat imports, by volume and value, 2003-04



Source: ABS unpublished.

Table B.9 Australian pigmeat imports, by tariff code

	<i>Unit</i>	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04
Frozen, boneless pigmeat								
0203.29.00.12 Frozen pigmeat ^a	t	7.99	14.03	34.25	12.22	..	..	..
0203.29.00.40 Frozen, boneless leg cuts ^a	t	..	..	..	2.16	4.16	3.72	6.16
0203.29.00.41 Frozen, boneless middle cuts ^a	t	..	..	..	2.16	12.99	13.28	23.91
0203.29.00.42 Frozen, boneless shoulder cuts ^a	t	..	..	..	0.55	1.69	1.68	1.74
0203.29.00.45 Other frozen, boneless pigmeat ^a	t	..	..	..	6.70	23.05	26.29	26.04
Volume	t	7.99	14.03	34.25	23.79	41.91	44.97	57.87
Value	\$m	30.92	43.24	121.45	97.73	199.00	163.65	210.20
Various other pigmeat^b								
Volume	t	2.19	1.79	2.29	2.26	2.35	2.46	2.51
Value	\$m	8.93	7.27	8.27	9.25	10.74	10.12	9.18
Total volume	t	10.17	15.82	36.54	26.05	44.26	47.44	60.38
Total value	\$m	39.85	50.50	129.72	106.98	209.75	173.77	219.38

^a Prior to 1 January 2001, items arriving under tariff codes 0203.29.00.30, 0203.29.00.40, 0203.29.00.41, 0203.29.00.42 and 0203.29.00.45 were classified as a single commodity 0203.29.00.12. ^b Pigmeat other than frozen, boneless pigmeat, including prepared or preserved meat. .. Not applicable.

Source: ABS unpublished.

Table B.10 presents the volume and value of pigmeat imports arriving in Australia from 1997-98 to 2003-04 by country of origin. Over this period, Canada and Denmark increased their combined share of pigmeat imports (by volume) from 81 per cent to 96 per cent.

Table B.10 **Australian pigmeat imports, by origin**

	<i>Canada</i>	<i>Denmark</i>	<i>New Zealand</i>	<i>Other</i>	<i>Total</i>
Volume (tonnes shipped weight)					
1997-98	8 082	120	10	1 961	10 172
1998-99	13 279	783	6	1 755	15 824
1999-2000	17 752	16 599	88	2 099	36 539
2000-01	13 964	9 846	138	2 102	26 051
2001-02	24 930	17 006	233	2 096	44 265
2002-03	31 288	13 683	279	2 185	47 435
2003-04	32 277	25 559	291	2 252	60 380
Value (\$'000)					
1997-98	31 269	480	55	8 043	39 848
1998-99	41 025	2 331	29	7 118	50 504
1999-2000	61 342	60 478	313	7 589	129 722
2000-01	56 796	40 992	111	9 083	106 982
2001-02	111 474	87 688	333	10 251	209 746
2002-03	98 934	64 719	444	9 678	173 775
2003-04	95 258	114 848	502	8 777	219 384

Source: ABS unpublished.

B.4 Imported and domestic pigmeat used in secondary processing

Inquiry participants noted that pigmeat imports into Australia are mainly Canadian legs and Danish middles. Danish and Canadian imports arriving in Australia are boneless, so the tonnage cannot directly be compared with Australian pigmeat production, which is calculated on a carcass weight equivalent basis. For pigmeat imports to be compared with domestic production, therefore, the two must be converted to a comparable basis. Domestic production must first be adjusted by removing pigmeat destined for the fresh market, which does not directly compete with imports (around 40 per cent). Next, domestic production can be divided into different types of cut. Industry estimates that legs account for 34 per cent of the pig carcass, while middles account for around 33 per cent. Meat yield is approximately 56 per cent for legs and 65 per cent for middles, giving conversion factors of 1.79 and 1.54 respectively (for example, 1 tonne of boned leg import equates with 1.79 tonnes on a carcass weight equivalent basis).

Table B.11 estimates the proportion of legs used by the Australian secondary processing sector that is supplied by Canada. Canadian leg imports include items arriving under tariff subheadings 0203.29.00.40 and 0203.29.00.45. Tariff subheading 0203.29.00.40 relates specifically to frozen, boneless leg cuts. Items

arriving under 0203.29.00.45 are not specified as legs, shoulders or middles, but a large portion is likely to be leg cuts. Danish middles imports include items arriving under tariff subheadings 0203.29.00.41 and 0203.29.00.45 (table B.12). Again, 0203.29.00.41 relates to a specific cut (middles) and 0203.29.00.45 is a non-specific category, assumed to be made up largely of middles.

Table B.11 indicates that Canadian legs accounted for about 28–38 per cent of legs supplied to the Australian secondary processing sector in 2003-04, while Denmark supplied about 32–3 per cent of middles (table B.12). During the latter half of 2004, declining domestic production and increasing import volumes meant Canada's share of legs supplied to the Australian secondary processing sector further increased to 31–41 per cent, while Denmark's share of middles increased to 33–4 per cent. This analysis needs to be interpreted with caution, because the results are sensitive to the assumptions made about meat yield and the proportion of domestic production entering the manufacturing sector.

Australian Pork Limited suggested that a longer time frame should be considered when assessing the impact of imports, and it advocated a 10 year assessment period (DR62, p. 53). Although figures 2.14 and 2.15 in chapter 2 represent annual import volumes and values for the past 15 years, adopting a similar time frame of analysis for the share of pigmeat supplied to the secondary manufacturing sector by imports has some difficulties. First, as outlined above, results are sensitive to assumptions about meat yield and domestic supply: by increasing the period of analysis, annual estimates of import share are likely to be even less comparable, given the underlying variables are likely to vary over time. Further, before 2000-01, all frozen, boneless pigmeat imports were classified under the same tariff code. Consequently, if an analysis were extended to before 2000-01, stronger assumptions would have to be made about the proportion of imports that are legs, middles and shoulders. As table B.11 and B.12 show, even with more detailed trade data, different assumptions about the proportions of imports that are legs, middles and shoulders can lead to import share estimates that differ by as much as 11 percentage points for the same year.

Table B.11 Proportion of legs used by the Australian secondary processing sector supplied by Canada

	<i>Unit</i>	<i>2001-02</i>	<i>2002-03</i>	<i>2003-04</i>
Domestic production				
Australian pigmeat production	t	395 534	419 556	405 898
Australian pigmeat used by Australian secondary processing sector ^a	t	237 320	251 734	243 539
Australian legs used by Australian secondary processing sector ^b	t	80 689	85 589	82 803
Canadian imports				
Legs imported under 0203.29.00.40	t	3 108	3 669	5 951
Other frozen, boneless pigmeat imported under 0203.29.00.45	t	19 600	24 364	21 756
Assumption 1: 100 per cent of pigmeat imported under 0203.29.00.45 is legs.	t	22 707	28 033	27 708
Assumption 2: 80 per cent of pigmeat imported under 0203.29.00.45 is legs.	t	18 787	23 160	23 356
Assumption 3: Proportional ^c share of pigmeat imported under 0203.29.00.45 is legs.	t	14 534	16 580	18 277
Carcass weight equivalent^d				
Assumption 1	t	40 646	50 179	49 597
Assumption 2	t	33 629	41 457	41 808
Assumption 3	t	26 016	29 678	32 716
Proportion of legs used by the Australian secondary processing sector supplied by Canada				
Assumption 1	%	33.5	37.0	37.5
Assumption 2	%	29.4	32.6	33.6
Assumption 3	%	24.4	25.8	28.3

^a Assumed to be 60 per cent of domestic production. ^b Assumed to be 34 per cent of carcass. ^c Calculated using imported legs as a proportion of imported middles, shoulders and legs (that were disclosed under tariff codes relating to the specific cut). ^d Assumes conversion factor of 1.79.

Sources: ABS unpublished; Commission estimates.

Table B.12 Proportion of middles used by the Australian secondary processing sector supplied by Denmark

	<i>Unit</i>	<i>2001-02</i>	<i>2002-03</i>	<i>2003-04</i>
Domestic production				
Australian pigmeat production	t	395 534	419 556	405 898
Australian pigmeat used by Australian secondary processing sector ^a	t	237 320	251 734	243 539
Australian middles used by Australian secondary processing sector ^b	t	78 316	83 072	80 368
Danish imports				
Middles imported under 0203.29.00.41	t	12 409	11 688	20 868
Other frozen, boneless pigmeat imported under 0203.29.00.45	t	3 448	1 921	4 283
Assumption 1: 100 per cent of pigmeat imported under 0203.29.00.45 is middles.	t	15 857	13 609	25 151
Assumption 2: 80 per cent of pigmeat imported under 0203.29.00.45 is middles.	t	15 168	13 225	24 295
Assumption 3: Proportional ^c share of pigmeat imported under 0203.29.00.45 is middles.	t	15 577	13 597	25 070
Carcass weight equivalent^d				
Assumption 1	t	24 420	20 958	38 733
Assumption 2	t	23 358	20 367	37 413
Assumption 3	t	23 988	20 940	38 608
Proportion of middles used by the Australian secondary processing sector supplied by Denmark				
Assumption 1	%	23.8	20.1	32.5
Assumption 2	%	23.0	19.7	31.8
Assumption 3	%	23.4	20.1	32.5

^a Assumed to be 60 per cent of domestic production. ^b Assumed to be 33 per cent of carcass. ^c Calculated using imported middles as a proportion of imported middles, shoulders and legs (that were disclosed under tariff codes relating to the specific cut). ^d Assumes conversion factor of 1.54.

Sources: ABS unpublished; Commission estimates.

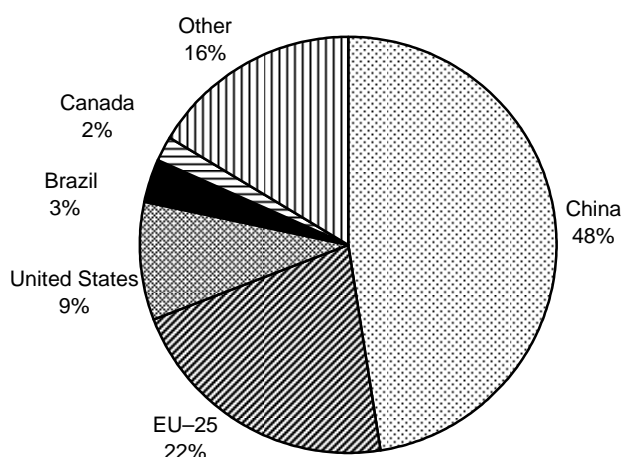
C Supplementary information on world markets

This appendix provides additional information on world pigmeat production, consumption and trade. It also provides brief profiles of several pigmeat producing and trading countries.

C.1 World pigmeat production, consumption and trade

For the past two decades, pigmeat has accounted for the largest share of world meat consumption. World production of pigmeat was approximately 100 million tonnes in 2004, accounting for 39 per cent of total meat production (FAO 2005). Pigmeat production is dominated by China (accounting for 48 per cent), the European Union–25 (22 per cent) and the United States (9 per cent). Other large producers include Brazil and Canada (figure C.1).

Figure C.1 **World pigmeat production**



Source: FAO 2005.

Consumption of pigmeat per person varies considerably across countries (table C.1). Major importers of pigmeat include Japan, the United States and the Russian Federation, and major exporters include the European Union, Canada, the United States and Brazil (table C.2).

Table C.1 Pigmeat consumption per person, by selected country

<i>Country</i>	<i>1999</i>	<i>2002</i>
	kg	kg
North America		
Canada	32.5	34.3
Mexico	10.7	13.5
United States	31.5	29.8
European Union–15		
Denmark	75.8	61.7
France	37.7	36.1
Germany	57.7	52.9
Italy	37.6	36.8
United Kingdom	25.2	24.6
Eastern Europe		
Poland	40.2	48.7
Russian Federation	13.6	15.0
Asia		
Japan	17.0	18.7
Republic of Korea	21.0	21.9
Singapore	15.2	18.2
Australia	18.6	20.8

Source: APL 2004c.

Table C.2 Major importers and exporters of pigmeat, 2004^a

<i>Importers</i>	<i>Share of trade</i>	<i>Exporters</i>	<i>Share of trade</i>
	%		%
Japan	33.1	European Union ^b	29.9
United States	13.7	Canada	23.0
Russian Federation	13.5	United States	22.4
Mexico	11.2	Brazil	13.6
Hong Kong	8.6	China	7.9
Republic of Korea	5.4	Australia	1.4
Canada	3.0	Mexico	1.2
Romania	2.4	Other	0.6
Peoples Republic of China	2.4		
Chinese Taipei	2.1		
Australia	2.0		

^a Provisional estimates. ^b Data were revised to represent EU–25 member states. Estimates are provisional.

Source: USDA 2005b.

C.2 Country profiles

North America

In 2004, North America accounted for around 11 per cent of world pigmeat production and 45 per cent of world exports.

United States

The United States is the third largest producer of pigmeat after China and the European Union, and the sixth largest exporter of pigmeat on a country basis (FAO 2005). Its major markets are Japan, Mexico, Canada and Chinese Taipei.

The pigmeat processing sector in the United States processes more than 100 million pigs per year (FAO 2005). Several large vertically integrated businesses, such as Smithfield Foods and Tyson Foods, operate within the US pigmeat processing sector. These businesses operate some of the largest pigmeat processing plants in the world — for example, in 2004, Smithfield controlled eight pig processing plants with an aggregate slaughter capacity of 104 000 pigs per day (Smithfield Foods Inc. 2004, p. 2). In 2001, the five largest pig processors accounted for 67 per cent of the United States' slaughter capacity (BPEX 2002, p. 109).

As in Australia, the US pig farming sector has rationalised in recent decades. The number of pig operations declined by almost 90 per cent between 1980 and 2004 from around 661 000 to just over 69 000. In 2004, the 2 per cent of US pig businesses that had over 5000 pigs controlled more than 75 per cent of the country's pigs. Further, the 0.2 per cent of businesses that had over 50 000 pigs controlled over half of the United States' pigs. Around 12 per cent of US pig farms were run by contract growers (Plain 2005).

Canada

On a country basis, Canada is the eighth largest pigmeat producer in the world and the second largest exporter of pigmeat behind Denmark (FAO 2005). Its major markets are the United States and Japan. In 2004 (to November), Australia accounted for less than 4 per cent of total Canadian pigmeat exports (Canadian Pork International unpublished).

Between 1976 and 2001, the number of pig farms in Canada fell by 81 per cent from around 64 000 to 12 000 (Canadian Pork Council 2005). While some Canadian producers are expanding to develop economies of scale, many smaller

producers have exited the industry. Unlike the United States, where pig production is dominated by corporate pig operations, Canadian pig production is still largely undertaken by independent family operations (BPEX 2002, p. 94).

The Canadian pigmeat processing sector is highly concentrated with the eight largest plants accounting for roughly 80 per cent of the national kill in 2000. In the same year, two companies, Maple Leaf Foods and Olymel and Company accounted for 60 per cent of the Canadian pig kill. Unlike many other countries, the number of pigmeat processing plants in Canada remained relatively stable during the 1990s, owing to increased production in Canada over the same period (BPEX 2002, p. 100).

Canada is also a major exporter of live pigs, mainly to the United States. In 2004 (to November), Canada exported 7.8 million live pigs almost all of which went to the United States (High Commission of Canada unpublished).

Asia

Asian countries account for around 56 per cent of world pigmeat production and more than half of total pigmeat imports (FAO 2005).

Japan

While Japan is one of the largest pigmeat producers in Asia, it is also the largest importer of pigmeat in the world (FAO 2005). The majority of its imports come from the United States, Denmark and Canada. Importers in Japan often have detailed requirements for the pigmeat they purchase, which extend to meat colour, consistency of cuts, degree of fat trimming and weight ranges (Makise 2002). These requirements have implications for the size of pigs grown for Japanese markets and the type of feed used. Japan is generally viewed as a high value market. Around 50 per cent of Australia's exports to Japan are high value loins and bellies (APL, sub. 37, p. 82).

The number of pig farms in Japan has declined substantially in recent years, from around 83 000 in 1985 to just over 9 000 in 2003 (MAFF 2005). Pig farmers in Japan are protected by a standard import price, or 'gate price', that is designed to keep domestic prices stable. Various measures are also used to prevent surges in imports (USDA 2004c).

Singapore

While Singapore is a relatively small market for imported pigmeat, compared with other Asian countries such as Japan, Hong Kong, China and the Republic of Korea, it accounts for a large portion of Australian pigmeat exports (appendix B). Like Japanese importers, Singaporean importers often have specific requirements for the pigmeat they buy. For instance, importers frequently request meat from gilts (unmated female pigs) rather than barrows (castrated male pigs) to avoid boar taint. While Singaporeans have traditionally favoured fresh pigmeat (which is often purchased through ‘wet markets’), imports of frozen pigmeat from countries such as Brazil are increasing (USDA 2004a).

China

China was the world’s largest producer and consumer of pigmeat in 2004. Although China is both a major importer and exporter of pigmeat, its international pigmeat trade is small relative to its domestic production.

Pig production in China is not as specialised as in other countries. In 2001, around 80 per cent of China’s pigmeat output came from backyard operations, 15 per cent came from specialised households (that were principally employed in pig production), and 5 per cent came from large-scale commercial operations (USDA 2001, p. 37).

China also exports a significant number of live pigs. In 2003, China exported around 1.9 million pigs, mostly to Hong Kong (FAO 2005).

European Union

Collectively, the European Union is the second largest pig producing area in the world, accounting for 22 per cent of world production in 2004. While EU members are collectively the biggest exporters in the world, much of this trade is with other members.

The major pig growing areas in the European Union are Germany, Spain, France, Poland and Denmark (FAO 2005). A distinctive feature of several member countries is that pigmeat production is being subject to increasingly stringent environmental and animal welfare regulations.

Denmark

The Danish pigmeat industry is highly specialised and highly integrated, with most producers belonging to cooperative systems (box C.1). It produced 24.7 million pigs in 2003, exporting nearly 90 per cent of its production (mainly to other countries within the European Union). Danish production represented about 2 per cent of world pigmeat and about 10 per cent of pigmeat in the European Union–15.

The Danish pigmeat industry has undergone much rationalisation over the past few decades. The number of pig producers in Denmark declined by 78 per cent between 1983 and 2003 from around 52 000 to just over 11 000. Danske Slagterier reported that the number of slaughterhouses owned by its members declined from 54 in 1970 to just two in 2003 (Danske Slagterier 2004, pp. 4, 10).

Box C.1 **The Danish pigmeat industry**

The Danish industry is characterised by a large number of producers — around 11 750 in 2002, of which about 5200 were ‘farrow to finish’, 1250 were specialist breeders and 5300 were specialist finishers. The processing sector is dominated by two producer owned cooperatives:

- Danish Crown which slaughters about 20.5 million pigs a year.
- TiCan which slaughters about 1.4 million pigs a year.

Danske Slagterier (the Danish Bacon and Meat Council) is an umbrella organisation of these two co-operatives, responsible for research and development, marketing and support services such as inspection services, disease outbreak control and market support. It is funded by a compulsory slaughter levy, membership subscriptions and a rebate of Danish land tax.

In addition, the National Committee for Pig Production is responsible for assisting private breeders to improve herd genetics. In 2002, there were 42 ‘nucleus’ or ‘mother’ herds that produced purebred breeding pigs. These pigs were sold to 175 ‘multiplier’ herds to produce crossbred sows and boars, which were then used in around 6500 commercial breeding herds. The Danish National Committee for Pig Production estimates that ‘new establishments’ would have lost DK125 (about A\$28.80) per pig in 2003.

Sources: Danske Slagterier 2004; Finn 2003; National Committee for Pig Production 2004.

Other countries

Brazil

Brazil is the fourth largest producer of pigmeat in the world and the fourth largest exporter of pigmeat. Brazil's main pigmeat export market is the Russian Federation, which accounts for around 60 per cent of Brazil's pigmeat exports (USDA 2004a). Recently, Brazilian pigmeat exports to the Russian Federation have been impacted by Russian import quotas for pigmeat. The USDA (2004a, p.12) reports Brazil is responding to reduced exports to the Russian Federation by diversifying into other markets such as Singapore.

Ten pigmeat processors account for around 40 per cent of Brazil's pigmeat production. Although Brazil's largest pigmeat processor, Sadia, accounts for 11 per cent of production, the smaller processor Seara — which accounts for 5 per cent of total pigmeat production in Brazil — accounts for 26 per cent of all pigmeat exports (USDA 2004a, p.11). Brazil is generally considered to be a low cost producer but its exports remain restricted because of its animal health status.

D Correspondence

A number of inquiry participants raised concerns that imports of frozen pigmeat are highly subsidised and are affecting the competitiveness of the Australian industry. This view appears to have been primarily based on the Organisation for Economic Cooperation and Development's producer support estimates.

The Productivity Commission consulted with ABARE and Danske Slagterier on this issue. This appendix reproduces correspondence between Dr Neil Byron (Presiding Commissioner, Productivity Commission) and Dr Brian Fisher (Executive Director, ABARE) and correspondence between the Commission and Mr Knud Buhl (Head of Office — Brussels, Danske Slagterier).



Australian Government
Productivity Commission

Melbourne Office

Level 28, 35 Collins Street
Melbourne VIC 3000

Locked Bag 2 Collins Street East
Melbourne VIC 8003

Telephone 03 9653 2100

Facsimile 03 9653 2199

Canberra Office

Telephone 02 6240 3200

www.pc.gov.au

27 January 2005

Dr Brian Fisher
Executive Director
ABARE
GPO Box 1563
CANBERRA 2601

Dear Brian

As you are aware, the Productivity Commission is currently undertaking an Inquiry into the Australian Pigmeat Industry. An issue of concern to me is that some participants have come to believe imports of frozen pigmeat, in particular middles from Denmark, are highly subsidised and are affecting the competitiveness of the Australian industry.

A number of participants have drawn my attention to the producers support estimates (PSE) calculated by the OECD which attribute comparatively high levels of support to EU pig producers. I note that ABARE considered this issue in its report, *Economic assessment of the effects of pigmeat imports on the Australian industry*, observing that:

In 2002, the last year for which estimates are available, producers in Australia, Canada and the United States were only lightly assisted — receiving 4 per cent 7 per cent and 5 per cent respectively of their revenue from government programs (OECD 2003). These figures are in marked contrast with the situation in the European Union (of which Denmark is a member) where producers receive 26 per cent of their earnings from the government.

However, I currently see little evidence to give credence to the view that Danish producers are heavily subsidised. The Productivity Commission investigated the PSE estimates in its recently released Draft Report and has been attempting to reconcile the OECD estimates for the EU with evidence of the characteristics of the Danish pigmeat industry. For example:

- The OECD estimate is an average over 15 countries. The level of assistance provided by different national governments, will vary between countries.
 - There do not appear to be any individual government programs or budgetary outlays that point to large subsidies to Danish pig producers.
- Assistance is provided to EU producers in two ways: (1) directly, and (2) by 'market support' mechanisms, such as tariff quotas, that are designed to increase prices within the EU compared to world prices.

-
- Direct assistance contributes around 4 percentage points to the PSE for the EU. Danish producers mainly receive similar forms of assistance to that provided to Australian producers, for example, R & D, extension, fuel rebates, promotion assistance, etc.
 - The remaining percentage points of the PSE for the EU are attributed to 'Market support' assistance, yet we are unable to identify large government expenditures to account for the support *and* Eurostat statistics show that Denmark achieves higher prices exporting to non-EU countries than to other EU countries (over 30 per cent of Danish pigmeat is sold to non EU countries).
 - If, prices in the EU were 20 per cent higher than world prices (as suggested by the PSE estimate), why would the Danish industry export such a high percentage of production?
 - One answer may be export subsidies, but there are few export subsidies for pigmeat, and those that do occur are normally occasional, and measured in tens of millions of Euros in a market whose value of production is about 20 billion Euros. EU exports of pigmeat are about 1 000 000 tonnes, and Danish exports are about 600,000 tonnes. A 20 per cent export subsidy would equate to approximately 500 Euros per tonne, about 500 million Euros for the EU, or about 300 million Euro for Denmark. We cannot find any evidence of subsidies of this scale.
 - In the absence of export subsidies, firms export because they can achieve higher prices overseas than on their domestic markets.
 - If EU internal prices are at/below world prices for particular grades/cuts of pigmeat, it is very difficult to argue that the tariffs/quotas/ tariff quotas have significantly raised EU prices, especially when we know that most quotas are substantially under-filled.

While the OECD does not calculate a PSE for the Danish pigmeat industry, it does argue that a net exporting country, with no policies specifically affecting the imports or exports of a given commodity 'corresponds to the case of zero Market Producer Support' (see OECD 2004, *Methodology for the measurement of support and use in policy evaluation*, p.14).

I would be grateful of any views you or your staff might have on these 'troublesome' observations. Has ABARE undertaken analysis that steps beyond the EU estimate and considered its applicability to the Danish pigmeat industry specifically?

Over and above clearly setting out the arguments against government assistance, it seems to me that an important role for this inquiry could be to dispel a myth (that on first glance appears to be easy to fall for), that estimates of EU assistance to the pigmeat industry are evidence that the Danish industry is exporting heavily subsidised pigmeat to Australia.

Yours faithfully



Dr Neil Byron
Commissioner



Australian Government
Australian Bureau of Agricultural
and Resource Economics

Dr Neil Byron
Commissioner
Productivity Commission
Locked Bag 2
Collins St East
Melbourne 8003

Dear Neil

In your letter dated 27 January, you raised a number of questions in relation to your inquiry on the Australian pigmeat industry. These questions focussed on the Danish and EU pigmeat industries. In addition to the letter, follow up communication from your staff indicated that any assistance that could be provided on the relative cost of feed grains in Denmark and other EU countries would be useful.

This letter provides a broad response to your request, with the attached documents providing underlying data and source material.

The majority of questions raised focussed on the apparent inconsistency between the OECD estimates of support provided to EU pigmeat producers and the fact that Denmark (and the Netherlands) have been exporting pigmeat products with no apparent export subsidies. A reason for seeking clarification from ABARE is that ABARE included a reference to EU support in our publication *Economic assessment of the effects of pig meat imports on the Australian industry*.

Although we do not have definitive answers to your questions, after confering with the OECD Secretariat we can confirm the following information about the underlying data used to calculate Producer Support Estimates (PSE) by the OECD:

- That the commodity specific PSE for pigmeat in the European Union predominantly (about 90 per cent) comprises a category termed market price support:
 - For a country that is a net exporter, market price support is calculated by comparing unit export values with farm gate/domestic prices;
 - For EU pigmeat, exports to Japan are excluded from the calculation of unit export values because these exports are deemed to be of a 'high quality';
 - The exclusion of exports to Japan reduces the export price used in the comparison;
 - The OECD adjusts the unit export value by subtracting estimates of processing costs in France in order to make it comparable with the domestic price;
- According to the OECD calculations, the domestic price exceeds the modified unit export value, thereby providing a positive estimate of market price support to pigmeat producers;
- This estimated market price support has been in the range of 22-24 per cent of the value of production in recent years (2000 to 2002);
- The main other support present in the estimated EU pigmeat PSE is from direct government payments at the sub national level (ie by individual EU member governments) in the form of expenditure for on-farm services, interest subsidies and environmental programs;
 - While there are payments to pigmeat producers by other EU member governments, the OECD is not aware of any specific assistance or payments from the Danish government to Danish pig farmers.

abare

www.abareconomics.com

Tel +61 2 6272 2000

Fax +61 2 6272 2001

GPO Box 1563 Canberra

ACT 2601 Australia

Edmund Barton Building

Macquarie Street, Barton, ACT 2600

You raised a series of questions designed to test the economic veracity of an estimate of market price support for an exported product when there are no apparent export subsidies and that tariff quotas for the given product have not been filled.

The presence of market access barriers, such as tariff quotas, can only provide market price support for a net exporting country if there are explicit or implicit export subsidies provided or if there are restrictions of trade within the country.

- The European Union does not require the export of some pigmeat products and does not provide a deficiency payment to pigmeat producers or processors – as such, no implicit export subsidy appears to exist for EU pigmeat.
- In recent years, the European Union has provided export subsidies for pigmeat products;
 - The volume of EU subsidised exports were 58 per cent, 8 per cent and 7 per cent of total exports for 1999-00, 2000-01 and 2001-02 respectively (the last three years for which notifications are available). The value of subsidised exports for the same period were less than one per cent, 1.4 per cent and 9 per cent of the total value of exports.
 - Over the three years, the volume of subsidised exports averaged 24 per cent of total EU exports while their value averaged 4 per cent of total value of EU exports.
 - For 1999-2000, The European Union has utilised roll over provisions of export subsidies to avoid breaching its volume and value commitments for pigmeat export subsidies.
 - The current volume and value limit on EU pigmeat subsidised exports are 443.5 kt and 191.3 million Euros.
 - The products for which export subsidies were provided do not include the products exported to Australia;
 - A report by the Danish Bacon and Meat Council indicates that EU export refunds have been provided on highly processed pigmeat products (sausages and cooked hams) rather than uncooked cuts and carcasses.
- While there are controls on the movement of live animals within the European Union, there are no controls on the movement of pigmeat products that would represent an artificial barrier to intra-EU trade;
 - The European Union has standardised labelling and health regulations to ensure the free movement of goods throughout the EU territory;
 - Administrative and transport costs however make pigmeat prices in some areas of the European Union higher than prices in the export dominated areas.

As evidence to disprove a substantial price difference across the European Union, you have noted that the EU tariff quota for pigmeat has a very low rate of fill.

- However, work by ABARE (Podbury and Roberts, 1999, *WTO Agricultural Negotiations: Important market access issues*) indicates that tariff quota underfill may occur for many reasons and that the presence of persistent underfill of tariff quotas does not of itself indicate a lack of economic demand for imports at the in-quota tariff rate. For example:
 - Some of the administrative arrangements that can lead to underfill of quotas include allocation of the quota into non commercial quantities, allocation of the quota to exporting countries which have very high cost industries, restriction of the quota to a subset of the relevant tariff lines that has a low level of commercial activity and limitations on the use of goods imported within the tariff quota.
- Although the EU pigmeat tariff quotas have no end use requirements and are not allocated to specific supplying countries, these quotas are small in volume and are divided into a subset of the pigmeat tariff lines.
 - The European Union has six pigmeat quotas with a total volume of about 123,000 tonnes. Most of these quotas are small (3,000 to 6,000 tonnes) and the returns from

exporting to the European Union under these quotas may not justify the compliance costs in meeting the EU requirements for imported pigmeat to the European Union. This could be one reason for the quotas being persistently underfilled.

ABARE also has data indicating that, in some years and for some products, average prices received for Danish pigmeat sales in the European Union are lower than those obtained for exports even after excluding the high valued exports to Japan. For example average prices received by Danish producers for bacon in the European Union were lower than average export unit values in 2001, 2002 and 2003. Similarly average unit prices received from sales in the European Union of pig carcasses (fresh or frozen) were lower than corresponding export unit values in 2002 and 2003. This raises doubts about the appropriateness of using the OECD MPS and PSE estimate for EU pigmeat producers to ascertain the level of support for Danish pigmeat producers. In an attempt to address this issue, we contacted the OECD secretariat to enquire about the availability of PSE estimates for specific EU member countries. While they confirmed that efforts to produce such estimates have occurred in the European Commission and in EU member states, they advised that the results of those efforts are not publicly available.

In addition to the questions raised in your letter, your staff have also indicated the need for information on the comparative cost of grain in the European Union. Based on published figures by the European Commission, there is evidence that the price of barley is higher in Denmark than in most EU countries. We have included the source and original data underlying this claim in the attachment.

The information provided indicates that there are no apparent production subsidies to Danish pigmeat producers or export subsidies on products exported to Australia. In addition, returns to Danish producers are closely linked to prices obtained on international markets. I hope this information is useful to your inquiry. Please contact myself or my staff if you have further queries.

Yours sincerely



BRIAN FISHER
Executive Director
16 February 2005

Attached:

Danish Pigmeat Data

DANSKE SLAGTERIER STATISTICS 2003

Danish pigmeat exports by volume and value

Exports to EU countries

2001

Tonnes	UK	Italy	Germany	France	Other EU	Total
Live pigs and sows	0	1,474	70,706	29	3,990	76,199
Bacon	120,389	71	1,952	992	3,887	127,291
Carcases, fresh/frozen	2	17	63,424	0	617	64,060
Cuts	131,491	132,101	155,358	64,359	62,621	545,930
By-products	26,560	4,122	21,062	7,950	44,118	103,812
Canned meat	21,698	1,586	15,331	1,908	15,301	55,824
Other processed products	6,870	89	1,132	6,047	7,594	21,732
Total	307,010	139,460	328,965	81,285	138,128	994,848
Share	30.9%	14.0%	33.1%	8.2%	13.9%	100.0%

1000 DKr	UK	Italy	Germany	France	Other EU	Total
Live pigs and sows	155	36,650	941,808	2,328	50,870	1,031,811
Bacon	3,085,686	2,351	71,517	27,967	110,332	3,297,853
Carcases, fresh/frozen	57	324	781,487	0	7,651	789,519
Cuts	2,262,198	2,178,789	3,046,394	1,096,402	1,481,630	10,065,413
By-products	136,652	52,253	149,737	107,990	181,029	627,661
Canned meat	618,939	28,879	368,688	46,368	368,800	1,431,674
Other processed products	221,707	1,958	37,367	127,481	189,020	577,534
Total	6,325,395	2,301,205	5,396,998	1,408,536	2,389,328	17,821,462
Share	35.5%	12.9%	30.3%	7.9%	13.4%	100.0%

Unit value 1000 Dkr/t	UK	Italy	Germany	France	Other EU	Total
Live pigs and sows	0.00	24.86	13.32	80.28	12.75	13.54
Bacon	25.63	33.11	36.64	28.19	28.38	25.91
Carcases, fresh/frozen	28.50	19.06	12.32	0.00	12.40	12.32
Cuts	17.20	16.49	19.61	17.04	23.66	18.44
By-products	5.15	12.68	7.11	13.58	4.10	6.05
Canned meat	28.53	18.21	24.05	24.30	24.10	25.65
Other processed products	32.27	22.00	33.01	21.08	24.89	26.58
Total	20.60	16.50	16.41	17.33	17.30	17.91

Exports to EU countries

2002

Tonnes	UK	Italy	Germany	France	Other EU	Total
Live pigs and sows	85	3,164	73,855	19	5,256	82,379
Bacon	113,982	351	1,946	468	4,037	120,784
Carcases, fresh/frozen	0	7	66,934	0	663	67,604
Cuts	141,517	133,696	162,192	50,435	66,176	554,016
By-products	22,017	4,931	24,255	6,766	61,465	119,434
Canned meat	22,199	1,770	15,706	2,195	17,885	59,755
Other processed products	6,825	102	921	5,916	7,721	21,485
Total	306,625	144,021	345,808	65,799	163,204	1,025,457
Share	29.9%	14.0%	33.7%	6.4%	15.9%	100.0%

1000 Dkr	UK	Italy	Germany	France	Other EU	Total
Live pigs and sows	3,389	65,862	863,299	1,879	54,237	988,666
Bacon	2,717,585	10,518	58,897	15,811	111,941	2,914,752
Carcases, fresh/frozen	7	75	581,511	0	5,862	587,455
Cuts	2,037,473	1,775,938	2,388,595	689,310	1,371,008	8,262,324
By-products	112,653	65,184	182,296	126,315	153,425	639,873
Canned meat	593,692	27,952	352,989	59,151	412,912	1,446,696
Other processed products	210,311	2,179	31,590	117,539	189,614	551,233
Total	5,675,109	1,947,709	4,459,178	1,010,004	2,298,998	15,390,998
Share	36.9%	12.7%	29.0%	6.6%	14.9%	100.0%

Unit value 1000 Dkr/t	UK	Italy	Germany	France	Other EU	Total
Live pigs and sows	39.87	20.82	11.69	98.89	10.32	12.00
Bacon	23.84	29.97	30.27	33.78	27.73	24.13
Carcases, fresh/frozen	0.00	10.71	8.69	0.00	8.84	8.69
Cuts	14.40	13.28	14.73	13.67	20.72	14.91
By-products	5.12	13.22	7.52	18.67	2.50	5.36
Canned meat	26.74	15.79	22.47	26.95	23.09	24.21
Other processed products	30.81	21.36	34.30	19.87	24.56	25.66
Total	18.51	13.52	12.89	15.35	14.09	15.01

Exports to EU countries

2003

Tonnes	UK	Italy	Germany	France	Other EU	Total
Live pigs and sows	106	2,611	81,125	77	2,271	86,190
Bacon	117,149	566	3,259	44	4,604	125,622
Carcases, fresh/frozen	3	323	66,540	1	2,578	69,445
Cuts	157,564	132,106	212,900	44,460	67,909	614,939
By-products	20,749	4,676	28,041	7,021	69,424	129,911
Canned meat	10,711	806	8,502	1,372	10,009	31,400
Other processed products	4,815	63	1,345	4,625	6,937	17,785
Total	311,096	141,151	401,712	57,599	163,734	1,075,292
Share	28.9%	13.1%	37.4%	5.4%	15.2%	100.0%

1000 Dkr	UK	Italy	Germany	France	Other EU	Total
Live pigs and sows	4,744	52,303	834,340	3,054	32,512	926,953
Bacon	2,728,280	14,094	85,163	1,637	118,941	2,948,115
Carcases, fresh/frozen	70	2,607	546,530	5	21,339	570,551
Cuts	2,227,357	1,583,873	2,611,276	559,822	1,372,607	8,354,935
By-products	101,121	75,834	175,982	128,244	159,836	641,017
Canned meat	264,049	12,944	195,259	36,523	231,902	740,677
Other processed products	117,333	1,395	36,315	91,505	157,926	404,474
Total	5,442,954	1,743,049	4,484,865	820,789	2,095,065	14,586,722
Share	37.3%	11.9%	30.7%	5.6%	14.4%	100.0%

Unit value 1000 Dkr/t	UK	Italy	Germany	France	Other EU	Total
Live pigs and sows	44.75	20.03	10.28	39.66	14.32	10.75
Bacon	23.29	24.90	26.13	37.20	25.83	23.47
Carcases, fresh/frozen	23.33	8.07	8.21	5.00	8.28	8.22
Cuts	14.14	11.99	12.27	12.59	20.21	13.59
By-products	4.87	16.22	6.28	18.27	2.30	4.93
Canned meat	24.65	16.06	22.97	26.62	23.17	23.59
Other processed products	24.37	22.14	27.00	19.78	22.77	22.74
Total	17.50	12.35	11.16	14.25	12.80	13.57

Source: Danske Slagterier, Statistics 2002 & 2003

Danish pigmeat exports by volume and value

Exports to non-EU countries

2001

Tonnes	Japan	USA	Russia	Other countries	Total excl. Japan	Total
Live pigs and sows	0	1	19	251	271	271
Bacon	189	88	7	727	822	1,011
Carcases, fresh/frozen	4	0	619	1,402	2,021	2,025
Cuts	221,032	36,707	76,334	91,427	204,468	425,530
By-products	2,116	1,277	24,263	73,372	98,912	101,028
Canned meat	5,680	13,102	2,243	11,198	26,543	32,223
Other processed products	1,497	952	3,951	14,349	19,252	20,749
Total	230,518	52,127	107,436	192,756	352,319	582,837
Share	39.6%	8.9%	18.4%	33.1%	60.4%	100.0%

1000 Dkr	Japan	USA	Russia	Other countries	Total excl. Japan	Total
Live pigs and sows	0	135	1,288	18,879	20,302	20,302
Bacon	10,999	2,776	379	24,866	28,021	39,020
Carcases, fresh/frozen	95	0	6,697	15,793	22,490	22,585
Cuts	6,240,628	1,177,530	793,941	1,375,370	3,346,841	9,587,469
By-products	17,887	14,712	144,493	486,511	645,716	663,603
Canned meat	111,414	322,149	46,907	247,712	616,768	728,182
Other processed products	39,357	27,163	78,815	232,232	338,210	377,567
Total	6,420,380	1,544,465	1,072,520	2,401,365	5,018,350	11,438,730
Share	56.1%	13.5%	9.4%	21.0%	43.9%	100.0%

Unit value 1000 Dkr/t	Japan	USA	Russia	Other countries	Av. excl. Japan	Average
Live pigs and sows	0.00	135.00	67.79	75.22	74.92	74.92
Bacon	58.20	31.55	54.14	34.20	34.09	38.60
Carcases, fresh/frozen	23.75	0.00	10.82	11.26	11.13	11.15
Cuts	28.23	32.08	10.40	15.04	16.37	22.53
By-products	8.45	11.52	5.96	6.63	6.53	6.57
Canned meat	19.62	24.59	20.91	22.12	23.24	22.60
Other processed products	26.29	28.53	19.95	16.18	17.57	18.20
Total	27.85	29.63	9.98	12.46	14.24	19.63

Exports to non-EU countries

2002

Tonnes	Japan	USA	Russia	Other countries	Total excl. Japan	Total
Live pigs and sows	0	3	28	277	308	336
Bacon	28	135	16	982	1,133	1,134
Carcases, fresh/frozen	1	0	215	368	583	583
Cuts	233,065	38,027	64,886	99,364	202,277	435,342
By-products	4,663	1,361	36,059	72,356	109,776	114,439
Canned meat	4,062	13,265	842	11,450	25,557	29,619
Other processed products	1,553	1,107	2,334	13,909	17,350	18,903
Total	243,372	53,899	104,380	198,705	356,984	600,356
Share	40.5%	9.0%	17.4%	33.1%	59.5%	100.0%

1000 Dkr	Japan	USA	Russia	Other countries	Total excl. Japan	Total
Live pigs and sows	0	1,002	2,035	19,362	22,399	22,399
Bacon	1,720	4,916	748	24,927	30,591	32,311
Carcases, fresh/frozen	15	0	1,826	3,934	5,760	5,775
Cuts	5,761,288	1,044,734	498,147	1,335,254	2,878,135	8,639,423
By-products	90,562	13,412	144,764	410,310	568,486	659,048
Canned meat	97,640	310,431	17,028	245,927	573,386	671,026
Other processed products	38,643	27,562	42,223	221,200	290,985	329,628
Total	5,989,869	1,402,057	706,771	2,260,911	4,369,739	10,359,608
Share	57.8%	13.5%	6.8%	21.8%	42.2%	100.0%

Unit value 1000 Dkr/t	Japan	USA	Russia	Other countries	Av. excl. Japan	Average
Live pigs and sows	0.00	334.00	72.68	69.90	72.72	66.66
Bacon	61	36.41	46.75	25.38	27.00	28.49
Carcases, fresh/frozen	15.00	0.00	8.49	10.69	9.88	9.91
Cuts	24.72	27.47	7.68	13.44	14.23	19.85
By-products	19.42	9.85	4.01	5.67	5.18	5.76
Canned meat	24.04	23.40	20.22	21.48	22.44	22.66
Other processed products	24.88	24.90	18.09	15.90	16.77	17.44
Total	24.61	26.01	6.77	11.38	12.24	17.26

Exports to non-EU countries

2003

Tonnes	Japan	USA	Russia	Other countries	Total excl. Japan	Total
Live pigs and sows	2	2	24	295	321	323
Bacon	2	87	16	970	1,073	1,075
Carcases, fresh/frozen	0	0	0	168	168	168
Cuts	235,712	55,153	38,663	118,510	212,326	448,038
By-products	1,469	998	32,051	87,887	120,936	122,405
Canned meat	5,310	14,857	597	11,487	26,941	32,251
Other processed products	1,488	1,326	1,161	13,181	15,668	17,156
Total	243,983	72,422	72,513	232,497	377,432	621,415
Share	39.3%	11.7%	11.7%	37.4%	60.7%	100.0%

1000 Dkr	Japan	USA	Russia	Other countries	Total excl. Japan	Total
Live pigs and sows	0	158	1,786	19,195	21,139	21,139
Bacon	91	2,313	660	25,411	28,384	28,475
Carcases, fresh/frozen	27	0	0	2,059	2,059	2,086
Cuts	5,210,200	1,155,036	250,107	1,378,834	2,783,977	7,994,177
By-products	16,151	11,263	125,824	414,051	551,138	567,289
Canned meat	103,027	308,879	10,729	241,215	560,823	663,850
Other processed products	34,524	32,639	18,757	194,417	245,813	280,337
Total	5,364,020	1,510,287	407,862	2,275,184	4,193,333	9,557,353
Share	56.1%	15.8%	4.3%	23.8%	43.9%	100.0%

Unit value 1000 Dkr/t	Japan	USA	Russia	Other countries	Av. excl. Japan	Average
Live pigs and sows	0.00	79.00	74.42	65.07	65.85	65.45
Bacon	45.50	26.59	41.25	26.20	26.45	26.49
Carcases, fresh/frozen	0.00	0.00	0.00	12.26	12.26	12.42
Cuts	22.10	20.94	6.47	11.63	13.11	17.84
By-products	10.99	11.29	3.93	4.71	4.56	4.63
Canned meat	19.40	20.79	17.97	21.00	20.82	20.58
Other processed products	23.20	24.61	16.16	14.75	15.69	16.34
Total	21.99	20.85	5.62	9.79	11.11	15.38

Source: Danske Slagterier, Statistics 2002 & 2003

Av. unit export values for Danish pigmeat DKr/t

2001

Unit value DKr/t	Av. EU countries	Av. non-EU countries	Av. non-EU countries excl. Japan
Live pigs and sows	13,541	74,915	74,915
Bacon	25,908	38,595	34,089
Carcases, fresh/frozen	12,325	11,153	11,128
Cuts	18,437	22,531	16,369
By-products	6,046	6,569	6,528
Canned meat	25,646	22,598	23,237
Other processed products	26,575	18,197	17,568

2002

Unit value DKr/t	Av. EU countries	Av. non-EU countries	Av. non-EU countries excl. Japan
Live pigs and sows	12,001	66,664	72,724
Bacon	24,132	28,493	27,000
Carcases, fresh/frozen	8,690	9,906	9,880
Cuts	14,914	19,845	14,229
By-products	5,358	5,759	5,179
Canned meat	24,210	22,655	22,436
Other processed products	25,657	17,438	16,771

2003

Unit value DKr/t	Av. EU countries	Av. non-EU countries	Av. non-EU countries excl. Japan
Live pigs and sows	10,755	65,446	65,854
Bacon	23,468	26,488	26,453
Carcases, fresh/frozen	8,216	12,417	12,256
Cuts	13,587	17,843	13,112
By-products	4,934	4,635	4,557
Canned meat	23,588	20,584	20,817
Other processed products	22,742	16,340	15,689

Av. unit export values for Danish pigmeat USD/t

2001

Unit value US\$/t	Av. EU countries	Av. non-EU countries	Av. non-EU countries excl. Japan
Live pigs and sows	1,627	9,001	9,001
Bacon	3,113	4,637	4,096
Carcases, fresh/frozen	1,481	1,340	1,337
Cuts	2,215	2,707	1,967
By-products	726	789	784
Canned meat	3,081	2,715	2,792
Other processed products	3,193	2,186	2,111

2002

Unit value US\$/t	Av. EU countries	Av. non-EU countries	Av. non-EU countries excl. Japan
Live pigs and sows	1,521	8,449	9,217
Bacon	3,058	3,611	3,422
Carcases, fresh/frozen	1,101	1,255	1,252
Cuts	1,890	2,515	1,803
By-products	679	730	656
Canned meat	3,068	2,871	2,843
Other processed products	3,252	2,210	2,126

2003

Unit value US\$/t	Av. EU countries	Av. non-EU countries	Av. non-EU countries excl. Japan
Live pigs and sows	1,633	9,936	9,998
Bacon	3,563	4,022	4,016
Carcases, fresh/frozen	1,247	1,885	1,861
Cuts	2,063	2,709	1,991
By-products	749	704	692
Canned meat	3,581	3,125	3,160
Other processed products	3,453	2,481	2,382

Av. exchange rate for Dkr of 8.3 per US\$ in 2001
 Av. exchange rate for Dkr of 7.9 per US\$ in 2002
 Av. exchange rate for Dkr of 6.6 per US\$ in 2003

Source: Danske Slagterier, Statistics 2002 & 2003

Consumer Prices of Pigmeat in Denmark

DKr/kg	Tender-loins	Cuts from loin	Bellies	Cuts from ham	Minced pigmeat
1. quarter	70.9	51.9	43.2	63.1	35.9
2. quarter	67.8	51.2	44.9	64.3	36.3
3. quarter	65.1	49.2	44.9	62.3	36.2
4. quarter	67.2	41.9	35.9	61.8	35.5

DKr/kg					
Total year 2003	67.5	47.6	41.6	62.9	36.0
Total year 2002	74.3	49.7	41.5	64.6	37.0
Total year 2001	86.2	50.8	42.2	65.7	39.8

DKr/t					
Total year 2003	67,500	47,600	41,600	62,900	36,000
Total year 2002	74,300	49,700	41,500	64,600	37,000
Total year 2001	86,200	50,800	42,180	65,700	39,800

USD/kg	Tender-loins	Cuts from loin	Bellies	Cuts from ham	Minced pigmeat
1. quarter	10.7	7.9	6.5	9.6	5.4
2. quarter	10.3	7.8	6.8	9.7	5.5
3. quarter	9.9	7.5	6.8	9.4	5.5
4. quarter	10.2	6.3	5.4	9.4	5.4

USD/kg					
Total year 2003	10.2	7.2	6.3	9.5	5.5
Total year 2002	9.4	6.3	5.3	8.2	4.7
Total year 2001	10.4	6.1	5.1	7.9	4.8

USD/t					
Total year 2003	10,227	7,212	6,303	9,530	5,455
Total year 2002	9,405	6,291	5,253	8,177	4,684
Total year 2001	10,386	6,120	5,082	7,916	4,795

Av. exchange rate for Dkr of 8.3 per US\$ in 2001

Av. exchange rate for Dkr of 7.9 per US\$ in 2002

Av. exchange rate for Dkr of 6.6 per US\$ in 2003

Source: Danske Slagterier, Statistics 2002 & 2003

Email letter from Productivity Commission to Danske Slagterier

28 January 2005

The Productivity Commission (the Australian Government's principal review and advisory body on microeconomic policy and regulation) is currently undertaking an Inquiry into the Australian Pigmeat Industry (see <http://www.pc.gov.au/inquiry/pigmeat/index.html>). An issue of concern is that some Inquiry participants have come to believe imports of frozen pigmeat, in particular middles from Denmark, are highly subsidised and are affecting the competitiveness of the Australian industry. A number of participants have drawn my attention to the producers support estimates (PSE) calculated by the OECD which attribute comparatively high levels of support to EU pig producers. I note that another Australian government agency, ABARE (see <http://www.abare.gov.au/>), considered this issue in its report, Economic assessment of the effects of pigmeat imports on the Australian industry, (see <http://abareonlineshop.com/product.asp?prodid=12824>) observing that:

In 2002, the last year for which estimates are available, producers in Australia, Canada and the United States were only lightly assisted - receiving 4 per cent 7 per cent and 5 per cent respectively of their revenue from government programs (OECD 2003). These figures are in marked contrast with the situation in the European Union (of which Denmark is a member) where producers receive 24 per cent of their earnings from the government. However, I currently see little evidence to give credence to the view that Danish producers are heavily subsidised. The Productivity Commission investigated the PSE estimates in its recently released Draft Report (see <http://www.pc.gov.au/inquiry/pigmeat/draftreport/pigmeat.pdf>) and has been attempting to reconcile the OECD estimates for the EU with evidence of the characteristics of the Danish pigmeat industry. For example:

- * The OECD estimate is an average over 15 countries. The level of assistance provided by different national governments, will vary between countries.
- * There do not appear to be any individual government programs or budgetary outlays that point to large subsidies to Danish pig producers.
- * Assistance is provided to EU producers in two ways: (1) directly, and (2) by 'market support' mechanisms, such as tariff quotas, that are designed to increase prices within the EU compared to world prices.
- * Direct assistance contributes around 4 percentage points to the PSE for the EU. Danish producers mainly receive similar forms of assistance to that provided to Australian producers, for example, R & D, extension, fuel rebates, promotion assistance, etc.

* The remaining percentage points of the PSE for the EU are attributed to 'Market support' assistance, yet we are unable to identify large government expenditures to account for the support and Eurostat statistics show that Denmark achieves higher prices exporting to non-EU countries than to other EU countries (over 30 per cent of Danish pigmeat is sold to non EU countries).

* If, prices in the EU were 20 per cent higher than world prices (as suggested by the PSE estimate), why would the Danish industry export such a high percentage of production?

* One answer may be export subsidies, but there are few export subsidies for pigmeat, and those that do occur are normally occasional, and measured in tens of millions of Euros in a market whose value of production is about 20 billion Euros. EU exports of pigmeat are about 1 000 000 tonnes, and Danish exports are about 600,000 tonnes. A 20 per cent export subsidy would equate to approximately 500 Euros per tonne, about 500 million Euros for the EU, or about 300 million Euro for Denmark. We cannot find any evidence of subsidies of this scale.

* In the absence of export subsidies, firms export because they can achieve higher prices overseas than on their domestic markets.

* If EU internal prices are at/below world prices for particular grades/cuts of pigmeat, it is very difficult to argue that the tariffs/quotas/ tariff quotas have significantly raised EU prices, especially when we know that most quotas are substantially under-filled. While the OECD does not calculate a PSE for the Danish pigmeat industry, it does argue that a net exporting country, with no policies specifically affecting the imports or exports of a given commodity 'corresponds to the case of zero Market Producer Support' (see OECD 2004, Methodology for the measurement of support and use in policy evaluation, p.14). I would be grateful of any views you or your staff might have on these observations regarding the support to the Danish pigmeat industry. Could you confirm the support arrangements for the industry and those available for the export of middles to non EU countries? Unfortunately the Pigmeat Inquiry being undertaken by the Productivity Commission has a very short timeframe to report within and so I would greatly appreciate a prompt reply to this query.

Email letter from Danske Slagterier to Productivity Commission

January 28th, 2005
Kbu
Kbu@agridan.be
Tlf.: +32 2 230 27 05

Inquiry into market support arrangements for Danish pig producers

Thank you very much for consulting us on the above mentioned issue.

First of all we shall confirm that we fully agree with your general observations on market support and price relations. The EU pigmeat sector has always been one of the most liberal animal sectors within the CAP with very few market support measures applied and during the latest years these measures have been very seldom used. Supply and demand have been determining the price level.

Regarding tariff quotas it is correct that the EU-GATT-quota on about 70.000 tonnes has always been substantially under-filled (mostly under 10%).

Regarding export subsidies we shall confirm that there have – except for a short period (6 weeks) in the beginning of 2004 – been no export subsidies on fresh/frozen pork since July 2000. In this connection it should also be stressed that our main export product item for Australia – i.e. middles – have never been eligible for export subsidies.

Once again thank you for contacting us and should you need any further explanations please do not hesitate to contact us.

Email letter from Productivity Commission to Danske Slagterier

7 February 2005

Thank you for your prompt reply to my colleague. The information is very useful in improving our understanding of EU and Danish market support arrangements for pigmeat production in Denmark.

I would be grateful if you could assist us further on four issues we do not fully understand.

First, EU statistics indicate that farm gate prices for pigmeat in Denmark are below the EU average. We are puzzled as to why this is so, and any explanation for this differential would be appreciated.

Second, we are not sure if the 'bonus payment' referred to on the Danske Slagterier website

http://www.danskeslagterier.dk/smcms/Danske_Slagterier_UK/Statistics/6671/6694/6697/Index.htm?ID=6697 refers to a bonus for the quality of the pigmeat supplied, or if it represents a member's share of the profits of the respective co-operative. Your clarification will be appreciated.

Third, our analysis of Danish export data indicates that the Australian market provides Danish exporters with above average returns for the type and quality of pigmeat supplied. On the other hand, some submissions to our inquiry have suggested that Danish pigmeat is being sold to Australia at prices below the wholesale price in Denmark. We would be grateful if you could confirm which view is correct. Any evidence you can provide (for example, average Danish wholesale price for the type and quality of pigmeat exported to Australia) will be gratefully received.

Fourth, economic theory suggests that the size and efficiency of the Danish pigmeat processing sector could provide an important competitive advantage to the Danish industry. On the other hand, some participants in the inquiry have suggested that the Australian processing sector is as efficient as the Danish processing sector. We would be grateful for any information you could provide on the efficiency of the Danish processing sector. We would be particularly interested in any evidence on the average cost of processing a pig (either on a per pig or per kg basis).

Once again, many thanks for your assistance to date. We look forward to your reply.

Email letter from Danske Slagterier to Productivity Commission

February 18, 2005
Kbu
Kb@agridan.be
Tlf: +32 2 230 27 05

Thank you very much for your e-mail of February 7. 2005.

We are very sorry for the delay in answering your questions.

You start by mentioning that we by fax and e-mail of January 28, 2005 have improved your understanding of EU and Danish market support measures for the pig meat production. In this connection we hope that we have clarified that there never has been domestic Danish support measures and very few EU support measures for many years for this sector and in case of any EU support measures there have never been any support for the specific product - i.e. middles - which we export to Australia.

Now your questions:

Number 1

Firstly it should be mentioned that the farm gate prices, which each EU-member country reports to the EU-Commission each week, are not comparable between the countries even if this perhaps was the intention when the calculation of an EU-average price (pigs over 50 kg with a lean meat content between 50% and 60%) was established. Different local preferences in slaughter weight and different methods of measuring the lean meat content means different prices. The EU-Commission has acknowledged this fact and is only using the weighted average price as an indicator of the market situation and to see in which direction the market moves.

Concerning your specific question as to how Danish prices compare with the EU-average the situation is the following:

When marketing the Danish pork production on 130 different markets world wide the average price is significantly higher than the EU-average. This is due to our ability to access practically all markets in the world and to supply high quality uniform tailor made cuts in big quantities and in accordance with our clients specifications. In that way we are able at any time to match each specific item of the pig with the market segment that world wide is paying the best price.

The difference between the average price for Danish pork and the EU average is also influenced by the fact that Denmark is exporting to countries outside the Union, and here we have been hit by the low rate of exchange for especially the US dollar as a lot of this export is invoiced in US dollars. Also on our most important market outside the EU - Japan - we have been hit by competition from low-rate-dollar US exporters.

Due to the currency situation the difference between the Danish price and the EU-average has been reduced but the Danish average is still higher than the EU-level.

Unfortunately our costs for producing at a high standard are also higher than the EU-average. That goes in particular for the labor costs. The salaries for slaughterhouse workers in Denmark are no doubt the highest in the world.

Due to this high cost situation combined with the currency situation the farm gate price for pigs is for the time being lower in Denmark than the EU-average although as mentioned it can be difficult to establish the exact difference. Measured over a longer period the Danish farm gate price is however at least matching the EU-average.

Number 2

You are quite right in your last assumption. The bonus payment has nothing to do with quality but represents the members (the pig producers) share of the profit of the cooperative slaughterhouse company. Bonus is paid once a year after the results of the financial year has been established and published and this bonus varies from company to company depending on the size of its profits.

Number 3

You are correct about the better prices but it is impossible to compare these prices with domestic wholesale prices on the same product i.e. middles. Bacon is not really eaten in Denmark, as we have no preferences for it. Middles are therefore "designed" for and exported to "bacon eating" countries such as UK, Japan, Australia etc. Therefore in fact we have no wholesale price for this product in Denmark. If comparisons should be made it should be with the UK prices. In this connection it should also be mentioned that for climatic reasons consumption of bacon varies seasonally and therefore also "anti-cyclically" between UK and Australia and prices varies therefore accordingly.

Number 4

As you know the products we are selling on the Australian market are de-boned middles for further processing and it is our impression that the Australian meat processing industry is just as efficient as the Danish one. It is also our impression that the reason why the Australian meat processors are buying Danish middles is that they from Denmark can get more uniform products (in weight, size and exact specifications) and in bigger quantities from individual suppliers than they can from Australian suppliers. You get what you order and in the quantity you have ordered. It is our impression that this is a problem for the Australian pig meat sector which is more fragmented and diversified (different cut weights and sizes which are not optimal for a processor) in its supplies of pork cuts.

The strength of the Danish pig meat sector has always been that we are very efficient in supplying our customers worldwide with tailor-made "semi processed" cuts for further processing.

Finally we must say that we are not able to give you an average cost of processing a pig as it depends on a lot of things. The only thing we can say is that - as mentioned above - costs are high in Denmark and therefore higher than in almost all the countries with

which we are competing, but as also mentioned above, we have been able to create preferences for our products globally due to efficiency in supplying uniform, tailor-made cuts in bigger quantities. So the higher costs are counterbalanced by a better marketing price for the meat.

Once again thank you for contacting us and should you need any further clarifications please do not hesitate to contact us again.

E Producer support estimates

This appendix provides additional information on the calculation of the Organisation for Economic Cooperation and Development's (OECD) producer support estimates (PSE) for pigmeat. For the European Union the OECD does not disaggregate its PSE calculations for member States. Tables E.1 and E.2 detail the OECD PSE for Australia and other major participants in the pigmeat market.

E.1 Components of producer support estimates

The PSE is a measure of the 'monetary value of gross transfers from consumers and taxpayers to agricultural producers, measured at the farm gate level, arising from policy measures that support agriculture, regardless of their nature, objectives or impacts on farm production or income' (OECD 2002). Essentially, it is comprised of direct payments made to pig producers (post farmgate expenditures are not included) and a measurement of market price support, which refers to policies that create a price gap between domestic and world prices. Some forms of assistance to agriculture not incorporated in the PSE estimates include: research and development and adjustment programs.

Direct payments

In the European Union, direct payments can be made from the European Commission as well as national governments. Direct payments include payments based on:

- limited or unlimited output — payments made per tonne of output (for example, payment per tonne produced for sunflower seeds)
- historical entitlements — for example, support to northern Sweden to compensate for the decline in support from Sweden's accession to the European Union
- limited or unlimited area planted/animal numbers — payments made per hectare planted or animal numbers (for example, payments made per hectare of sugarcane planted)

-
- input use — for example, fuel rebates, disease management and extension programs
 - input constraints — for example, payments made to compensate producers for disease outbreaks
 - overall farming income — disaster payments, direct income support (for example, income insurance and income safety-net programs).

Most direct payments are by national governments. Almost every EU member makes such payments. The only payments that the European Commission makes to pigmeat producers are for exceptional circumstances, mainly compensation for costs incurred during disease outbreaks. In 2003, the OECD estimated that the pigmeat industry received €797 million in direct payments, amounting to 3.6 per cent of the total value of farm gate production (OECD 2004).

Market price support

The main element of the EU pigmeat PSE is market price support. When measuring market price support, the OECD aims to measure the value of policy related transfers from taxpayers and consumers to producers that create a price gap between domestic market prices and border prices. This value includes the effect of tariffs and quantitative trade barriers, intervention purchasing, export refunds, sanitary and phytosanitary barriers.

To compare domestic prices to those of the rest of the world, the OECD compares the price of the product received in the European Union at the farm gate, to the price of the good exported to the rest of the world at the border (known as the free on board export price). It then adjusts export price for handling and processing. The larger the difference between these two prices, the larger the market price support estimate.

In the case of pigmeat, the OECD estimated that the domestic farm gate price for 2003 was €1.17 (A\$2.03) per kilogram, and the reference export price was €1.28 (A\$2.22) per kilogram. The deduction for handling and processing was €0.36 (A\$0.63) giving a farm gate equivalent price of €0.92 (A\$1.62) per kilogram. The market price differential between domestic and export prices, therefore, was €0.25 (A\$0.43) per kilogram, or about 21.4 per cent of the domestic price (OECD 2004).

The OECD estimate of the export price removes trade in pigmeat to Japan from price data used in the calculation of the PSE, due to product quality differentiation. If Japanese trade were included, the reference price could rise above the world price, explaining the incentive for EU producers to export their product to the rest of the world. In this instance, the market price differential would become negative.

The PSE calculation cannot account for the negative price differential that is observed in trade data. In this instance, there is effectively no market price differential because no policy explicitly affects *all* exports of that commodity.

Table E.1 OECD producer support estimates^a, by commodity

<i>Commodity</i>	<i>1986–88</i>	<i>2001–03</i>
	%	%
Rice	81	78
Sugar	54	51
Milk	59	48
Other grain	52	41
Sheep meat	55	38
Wheat	47	37
Beef and veal	32	33
Other commodities	29	26
Maize	40	24
Oilseeds	27	24
Pigmeat	18	21
Poultry	20	17
Eggs	17	8
Wool	7	5
Average for all commodities	37	31

^a Producer support estimates as defined in section E.1.

Source: OECD 2004.

Table E.2 OECD producer support estimates^a for pigmeat, by selected country

<i>Country</i>	<i>1986–88</i>	<i>2001–03</i>
	%	%
Japan	42	53
European Union	16	22
Canada	5	7
United States	4	4
Australia	3	3
New Zealand	3	0
OECD	18	21

^a Producer support estimates as defined in section E.1.

Source: OECD 2004.

F Summary program information for Australia

The material in this appendix supplements the discussion in chapter 4 on government and industry programs in Australia:

- Section F.1 summarises Australian Pork Limited programs for:
 - research and development
 - marketing and market development.
- Section F.2 summarises the Cooperative Research Centre for an Internationally Competitive Pork Industry.
- Section F.3 summarises the Pork Industry Restructure Strategy, which consisted of four programs delivered between 1999 and 2002:
 - the National Pork Industry Development Program
 - the Pigmeat Processing Grants Program
 - PorkBiz
 - the Pork Producer Exit Program.
- Section F.4 summarises the Export Market Development Grants program (administered by Austrade).
- Section F.5 summarises selected taxation provisions for agriculture that are relevant to the pigmeat industry:
 - valuation of livestock for taxation
 - accelerated depreciation for expenditure on Landcare
 - tax averaging
 - the Energy Grants Credit Scheme (previously the Diesel Fuel Rebate Scheme).
- Section F.6 summarises ‘Agriculture — Advancing Australia’ programs, including FarmBis, Farm Help, Farm Management Deposits and the Rural Financial Counselling Service.
- Section F.7 summarises Exceptional Circumstances (EC) drought assistance (administered by the Australian Government Department of Agriculture, Fisheries and Forestry).

F.1 Australian Pork Limited programs

Name of program	<i>Australian Pork Limited (APL) research and innovation program</i>
Program description	
Stated objectives	No single objective for APL R&D policy. APL has multiple R&D strategies under its three core program objectives: (1) maximise opportunities for industry growth; (2) build competitiveness throughout the supply chain; and (3) deliver information and services of value to members.
Type of program	APL R&D funding (funded through the pig slaughter levy and matching government funds, as for other rural R&D industries)
Year of commencement and completion	Ongoing
Program evaluation	
Eligibility	Producers, manufacturers, researchers and other parties may apply for APL R&D funds for a range of projects.
Thresholds/limits	No explicit thresholds
Uptake	In 2002-03, 120 new and ongoing projects were administered by APL's Research and Innovation Division.
Cost to government and industry	APL's R&D activities are funded through a component (70 cents per head slaughtered) of the statutory pig slaughter levy and matching government funding. In 2003-04, the R&D levy raised \$4.03 million, with the Australian Government contributing a further \$4.6 million.
Impact on production, prices, investment	Information not available
Transparency	APL is subject to financial reporting requirements in its annual report. Limited detailed information is publicly available on individual projects and outcomes.
Sunset clause	Ongoing program
Review mechanism	APL does not appear to have review processes for this program other than its annual report.
Overall assessment	<ul style="list-style-type: none"> • APL funds a wide range of R&D projects. • Limited information is available on the performance and benefits generated.

Sources: APL 2003a, 2004b.

Name of program	<i>APL marketing and market development program</i>
<i>Program description</i>	
Stated objectives	No single objective for APL marketing and market development policy. APL has multiple marketing strategies under its objectives for Marketing, Policy, and Communications and Industry Services.
Type of program	Industry funded activities (pig slaughter levy)
Year of commencement and completion	Ongoing
<i>Program evaluation</i>	
Eligibility	Most activities are undertaken by APL divisions and appointed consultants. APL determines projects and funding levels.
Thresholds/limits	No thresholds other than total funds available
Uptake	Range of projects
Cost to government and industry	APL's marketing and market development activities are funded through a component (\$1.65) of the statutory pig slaughter levy. In 2003-04, this levy component raised \$9.5 million. The Australian Government does not provide any matching funds for this component.
Impact on production, prices, investment	Information not available
Transparency	APL is subject to financial reporting requirements in its annual report. No detailed information is publicly available on individual projects and outcomes.
Sunset clause	Ongoing program
Review mechanism	APL does not appear to have any review processes for the benefits generated by this program. Limited information is available in the annual report about performance.
Overall assessment	<ul style="list-style-type: none"> • APL funds a wide range of marketing projects. • Limited information is available on the performance and benefits generated.

Source: APL 2004b.

F.2 Cooperative Research Centre for an Internationally Competitive Pork Industry

Name of program	<i>Cooperative Research Centre for an Internationally Competitive Pork Industry</i>
Program description	
Stated objectives	To reduce feed costs, improve herd feed conversion efficiency and demonstrate the health benefits of consuming nutritionally enhanced pigmeat products.
Type of program	Government and industry funded activity.
Year of commencement and completion	2005-06 to 2011-12
Program evaluation	
Eligibility	Not applicable.
Thresholds/limits	Project involves various research and development projects designed to achieve program objectives.
Uptake	Not applicable.
Cost to government and industry	Australian Government will contribute \$25.75 million. Participants will contribute \$55.8 million (\$44.7 million in kind, and \$11.1 million in cash). These include pigmeat producers and processors, feed and therapeutic manufacturers and suppliers, Australian Pork Limited, New Zealand Pork Industry Board, State government departments, universities.
Impact on production, prices, investment	Research and development programs expected to: <ul style="list-style-type: none"> • reduce production costs for pigmeat through more reliable and consistent protein and energy supplies via innovative grain production, co-product utilisation and quality assessment • reduce production costs for pigmeat through improved herd feed conversion efficiency • increase demand for high-quality, niche Australian pork products as a result of an enhanced capacity to deliver nutrients that promote the health and well-being of consumers via consumption of pork and pork products.
Transparency	CRC governance and management arrangements include a Board (responsible for decisions relating to the spending of Pork CRC Ltd funds, the research program, protection and commercialisation of IP, and appointment of a CEO) and participant meetings.
Sunset clause	Seven year program to 2011-12.
Review mechanism	
Overall assessment	<ul style="list-style-type: none"> • CRC yet to begin.

Sources: Nelson (2004), Pork CRC full business case.

F.3 Pork Industry Restructure Strategy programs

Name of program	<i>National Pork Industry Development Program</i>
<i>Program description</i>	
Stated objectives	To improve the industry's international competitiveness, identify market opportunities, enhance industry skills and boost export market development
Type of program	System of grants for the Australian Pork Corporation (peak industry body) and for individual producers to enhance market development and international competitiveness
Year of commencement and completion	1999-2000 to 2001-02
<i>Program evaluation</i>	
Eligibility	All pigmeat producers were eligible to lodge a detailed application with reference to the program objectives.
Thresholds/limits	Do not appear to be any limits on individual applications funded. Projects ranged from \$7500 (individual producer) to \$2.7 million.
Uptake	61 applications received, with 32 receiving funding
Cost to government and industry	\$11.6 million
Impact on production, prices, investment	Range of projects funded. Main categories were 'production/processing methods', 'market development', 'training', 'quality assurance', 'alliances' and 'strategic studies'. Programs were targeted primarily at export markets, with production and investment likely to have increased in the short term.
Transparency	Program was publicly advertised. Program name, level of funding and outcomes are available. Ernst and Young undertook an audit that has not been publicly released.
Sunset clause	Program was completed in 2001.
Review mechanism	Final review was undertaken, detailing the level of funds provided to individual projects, project outcomes and 'lessons learned'.
Overall assessment	<ul style="list-style-type: none"> • It is not possible to calculate a benefit–cost ratio for this program. • Some spillovers were likely for domestic market producers and other livestock farming and processing sectors

Sources: DAFF 2003a; Ernst and Young 2001.

Name of program	<i>Pigmeat Processing Grants Program</i>
<i>Program description</i>	
Stated objectives	To stimulate investment in the processing sector and help address efficiency and productivity problems
Type of program	System of grants to encourage processors to invest in new plant and equipment to either upgrade their existing facilities or construct new works
Year of commencement and completion	1999-2000 to 2001-02
<i>Program evaluation</i>	
Eligibility	All pigmeat producers were eligible to lodge a detailed application with reference to the program objectives.
Thresholds/limits	Individual project grants to fund up to 10 per cent of associated costs of new plant and equipment
Uptake	17 applicants, with 11 meeting eligibility criteria
Cost to government and industry	\$7.14 million
Impact on production, prices, investment	<p><i>Production</i> capacity increased: one million (estimate) pig slaughter additional capacity, with four new abattoirs constructed and four existing abattoirs upgraded; and one million (estimate) pig boning additional capacity, with four new boning facilities and six existing boning facilities upgraded.</p> <p><i>Investment</i> increased, with a total capital outlay of \$96 million. Impact on productivity and efficiency is unknown.</p>
Transparency	Program was publicly advertised. A summary of completed projects and outcomes is available.
Sunset clause	Program funding was completed in 2001.
Review mechanism	Individual projects were reviewed on an ongoing basis as projects met agreed milestones and funds were paid. Program and individual projects were reviewed in 2002 by a consultant for the Australian Government Department of Agriculture Fisheries and Forestry. The full final review is confidential and not publicly available, although a summary is available from the department.
Overall assessment	<ul style="list-style-type: none"> • Detailed information on individual project performance is not publicly available. • It is not possible to calculate a benefit–cost ratio for this program. • Program had potential overlap with APL programs.

Source: DAFF 2003b.

Name of program	<i>PorkBiz</i>
<i>Program description</i>	
Stated objectives	To improve the competitiveness and market focus of pig producers by facilitating their participation in a national initiative; to improve on farm business management skills; to encourage more widespread adoption of enterprise level business planning and the formation of vertical and horizontal networks so as to achieve critical mass and maximise supply chain efficiencies
Type of program	Management workshops and on-farm consultations
Year of commencement and completion	Two stages: Stage 1 — July 1999 to December 2000 Stage 2 (extension) — December 2000 to March 2002
<i>Program evaluation</i>	
Eligibility	All pig producers were eligible to participate in the workshops.
Thresholds/limits	Pig producers were eligible to attend workshops and receive on-farm consultations.
Uptake	348 businesses attended the three-day workshop; 194 attended a follow-up workshop; and 105 participated in on-farm consultations.
Cost to government and industry	\$1.1 million
Impact on production, prices, investment	Likely to be small
Transparency	Program was publicly advertised. A summary of completed consultations and outcomes is available.
Sunset clause	Program was completed in March 2002. All primary producers can still access funding grants under the Australian Government FarmBis Australia Program (see FarmBis table) to enhance business management skills.
Review mechanism	Reports were completed after stage 1 (April 2001) and stage 2 (May 2002), detailing participation, outcomes and funding components. Program evaluation surveys were conducted and published.
Overall assessment	Program is likely to have improved the farm and business management skills of participating pig producers.

Sources: Rendell McGuckian 2001, 2002.

Name of program	<i>Pork Producer Exit Program</i>
<i>Program description</i>	
Stated objectives	To assist the most severely affected pig producers to voluntarily exit pig production, through the provision of financial assistance
Type of program	One-off financial payment to exit industry for a minimum period of five years
Year of commencement and completion	1999-2000 to 2001-02
<i>Program evaluation</i>	
Eligibility	Eligible applicants were producers who had been in pig production for a minimum of two years before December 1998, were unable to obtain bank finance, had sought professional advice, were effectively in control of their pig producing enterprise, were an Australian resident and had decided to leave pig production. These producers agreed to not engage in pig production for five years after the payment of financial assistance.
Thresholds/limits	A maximum grant of \$45 000 was made available to those producers who, when exiting pig production, had net assets of \$90 000 or less. Others exiting pig production with net assets in excess of \$90 000 had their grants reduced by \$2 for every \$5, up to a maximum net assets of \$202 500. Up to \$3000 was also available per applicant to assist with professional advice to assess future options.
Uptake	90 applications received, with 74 applications approved
Cost to government and industry	\$3.1 million
Impact on production, prices, investment	Potential slight increase in domestic price, given lowered supply capacity.
Transparency	Program was publicly advertised. Summary information is publicly available. No detailed information is publicly available.
Sunset clause	Program was completed in June 2002
Review mechanism	Program was subject to a final review, with summary information available.
Overall assessment	<ul style="list-style-type: none"> • Basis for program is unclear from the objectives. • Detailed program information is not available. • It is not possible to calculate benefit–cost ratio for this program.

Source: DAFF 2002a.

F.4 Export Market Development Grants

Name of program	<i>Export Market Development Grants</i>
<i>Program description</i>	
Stated objectives	To encourage small and medium sized Australian businesses to develop export markets.
Type of program	Grant payment to cover part cost of export promotional activities.
Year of commencement and completion	Commenced in 1997 under the <i>Export Market Development Grant Act 1997</i> . Program is to be revised in 2005-06.
<i>Program evaluation</i>	
Eligibility	All small and medium sized Australian business are eligible to apply for the grants. Businesses need to have spent \$15 000 over two years on eligible export marketing expenses.
Thresholds/limits	The grants reimburse up to 50 per cent of expenses incurred on eligible export promotional activities, less the first \$15 000.
Uptake	In 2003-04, 3699 grants were paid to businesses. In past six years, 26 grants were paid to pigmeat industry participants.
Cost to government and industry	Total funding in 2003-04 was \$143.8 million (all industries). Funding from 1997-98 to 2002-03 for pig production was \$290 000 and for pigmeat manufacturing was \$1.172 million.
Impact on production, prices, investment	Export promotion may lead to slightly increased demand (and production) and increased prices (for example, for niche branding). May have flow-on effects to investment.
Transparency	Grant information about industry and level of funding is publicly available.
Sunset clause	Program is ongoing. Next review is in 2005-06.
Review mechanism	Austrade conducts program reviews, and is subject to annual audit and reporting requirements through its annual report.
Overall assessment	<ul style="list-style-type: none"> • Level of benefits generated is not measured. • There has been limited uptake by the pigmeat industry. • The program has potential overlap with APL activities.

Source: Austrade, pers. comm., 28 September 2004.

F.5 Tax provisions

Name of program	<i>Valuation of livestock for taxation</i>
<i>Program description</i>	
Stated objectives	To reduce compliance costs by providing a simple method of valuing the natural increase in livestock
Type of program	Income tax concession for primary producers. Allows natural increase of livestock (including pigs) to be valued using prescribed values.
Year of commencement and completion	Long established, ongoing program
<i>Program evaluation</i>	
Eligibility	All livestock producers are eligible.
Thresholds/limits	Nil
Uptake	Unknown, but likely to be high (above 95 per cent)
Cost to government and industry	Estimated tax revenue forgone of \$145 million in 2003-04 for all livestock producers; estimates are unavailable for pig producers.
Impact on production, prices, investment	Prescribed value is currently (2004-05) \$12 per pig. To the extent the prescribed value is below the actual cost of pigs on hand at the end of a financial year, there is a deferral of tax, which may provide a mild incentive to increase livestock numbers.
Transparency	Valuation method is included in Australian Taxation Office material for primary producers. Cost estimates are published annually in Treasury Tax Expenditure Statements.
Sunset clause	Regulation prescribing values expire every five years.
Review mechanism	No formal review mechanism
Overall assessment	<ul style="list-style-type: none"> • Provisions are likely to have little impact on investment in pigs. • Most producers are unlikely to be aware that they receive a small tax deferral. • Provisions are consistent with tax provisions for other livestock producers.

Source: Deutsch et al. 2004.

Name of program	<i>Accelerated depreciation for expenditure on Landcare (immediate tax deduction) and conveying and conserving water (tax deductions over three years)</i>
<i>Program description</i>	
Stated objectives	To encourage investment in Landcare, and conveying and conserving water
Type of program	Income tax concession for primary producers
Year of commencement and completion	Long established, ongoing programs
<i>Program evaluation</i>	
Eligibility	All primary producers are eligible.
Thresholds/limits	Nil
Uptake	Unknown
Cost to government and industry	Estimated tax revenue forgone of \$25 million in 2003-04 for all primary producers; estimates are unavailable for pig producers.
Impact on production, prices, investment	Program provides a small incentive to invest in Landcare, and in the conservation and conveyance of water.
Transparency	Information is included in Australian Taxation Office material for primary producers. Cost estimates are published annually in Treasury Tax Expenditure Statements.
Sunset clause	Nil
Review mechanism	No formal review mechanism
Overall assessment	<ul style="list-style-type: none"> • Provisions have little impact on investment in pigs. • Provisions are consistent with tax provisions for other primary producers.

Source: Deutsch et al. 2004.

<i>Name of program</i>	<i>Tax averaging</i>
<i>Program description</i>	
Stated objectives	To reduce 'period inequity' (the additional tax that a progressive tax rate schedule may impose on fluctuating incomes)
Type of program	Income tax provision for primary producers. Allows taxation rates to be calculated by reference to five year average income.
Year of commencement and completion	Long established, ongoing program
<i>Program evaluation</i>	
Eligibility	Most primary producers are eligible, except primary producers that are taxed with proportional tax rates (such as companies and some trusts).
Thresholds/limits	Nil
Uptake	Unknown, but likely to be high
Cost to government and industry	Estimated tax revenue forgone of \$280 million in 2003-04 for all primary producers; estimates are unavailable for pig producers.
Impact on production, prices, investment	Reduces tax payments when taxable income for a year is higher than average income, but can increase tax payments when taxable income is less than average income. May provide a small incentive to invest in agricultural activities.
Transparency	Program details are included in Australian Taxation Office material for primary producers. Cost estimates are published annually in Treasury Tax Expenditure Statements.
Sunset clause	Nil
Review mechanism	No formal review mechanism
Overall assessment	<ul style="list-style-type: none"> • Provisions have little impact on investment in pigs. • Most producers are likely to be aware that they receive a small tax saving in most years. • Provisions are consistent with tax provisions for other primary producers.

Source: Deutsch et al. 2004.

Name of program	<i>Energy Grants Credit Scheme</i>
<i>Program description</i>	
Stated objectives	To provide a rebate of excise for eligible off-road agricultural activities
Type of program	Rebate of excise for diesel used in eligible agricultural activities
Year of commencement and completion	1 July 2003 (replaced longstanding Diesel Fuel Rebate Scheme)
<i>Program evaluation</i>	
Eligibility	All primary producers eligible
Thresholds/limits	Nil
Uptake	About 176 000 claims received in 2002-03. Eligible primary producers can make multiple claims.
Cost to government and industry	About \$580 million in 2003-04 for all primary producers; estimates are unavailable for pig producers.
Impact on production, prices, investment	Provides an incentive to use diesel fuel.
Transparency	Program details are included in Australian Taxation Office material for primary producers. Cost estimates are published annually in Australian Taxation Office statistics.
Sunset clause	Nil
Review mechanism	No formal review mechanism
Overall assessment	<ul style="list-style-type: none"> • Scheme has little impact on investment in pigs. • Scheme is consistent with provisions for other primary producers.

Source: Deutsch et al. 2004.

F.6 Agriculture — Advancing Australia programs

Name of program	<i>FarmBis</i>
Program description	
Stated objectives	To assist primary producers participate in business and natural resource management training to improve the viability and profitability of their business enterprises
Type of program	Training and consultancy services
Year of commencement and completion	Extension (phase 2) commenced in 2004, with the next review due in 2008.
Program evaluation	
Eligibility	Must be a primary producer, spouse of producer, farm family member, partner or professional farm manager
Thresholds/limits	No explicit limits
Uptake	
Cost to government and industry	The Australian Government funds 50 per cent, with the remaining costs met by State government matching funds. Australian Government funding of \$67.7 million has been allocated for 2004-05 to 2007-08. In 2002-03, \$23.7 million was funded of which \$267 831 was assistance to pig producers.
Impact on production, prices, investment	Likely to be small
Transparency	
Sunset clause	Next program review is due in 2008.
Review mechanism	The Australian Government Department of Agriculture, Fisheries and Forestry conducted a review of Agriculture — Advancing Australia programs in 2004. The Australian National Audit Office conducted a review of Agriculture — Advancing Australia programs in 2003.
Overall assessment	This program targets the skill of primary producers, not production or investment.

Sources: ANAO 2003; Australian Government 2004b; DAFF 2004a; DAFF, pers. comm., 4 October 2004.

Name of program	<i>FarmHelp</i>
<i>Program description</i>	
Stated objectives	To provide short term income support to low income farm families who are experiencing financial hardship and cannot borrow further against their assets, while they take action to improve their long term financial situation by improving the financial performance of their farm enterprise, finding alternative sources of income or re-establishing outside farming
Type of program	Income support
Year of commencement and completion	Commenced 2000; extended July 2004 with some changes to June 2008
<i>Program evaluation</i>	
Eligibility	Several criteria are used to assess eligibility and level of income support.
Thresholds/limits	Provides a package of measures delivering assistance of up to \$55 500 per farm family.
Uptake	In 18 months to June 2004, 34 applications were received from pig producers.
Cost to government and industry	In 2002-03, \$28.2 million; pig production component unknown
Impact on production, prices, investment	Likely to be small
Transparency	Information for pig production is not available.
Sunset clause	Next program review is due in 2008.
Review mechanism	The Australian Government Department of Agriculture, Fisheries and Forestry conducted a review of Agriculture — Advancing Australia programs in 2004. The Australian National Audit Office conducted a review of Agriculture — Advancing Australia programs in 2003.
Overall assessment	This agriculture income support program provided \$28.2 million of assistance in 2002-03.

Sources: ANAO 2003; Australian Government 2004b; DAFF 2004a; DAFF, pers. comm., 8 September 2004.

Name of program	<i>Farm Management Deposits</i>
<i>Program description</i>	
Stated objectives	To provide an instrument that allows primary producers to set aside pre-tax primary production income in profitable years to help balance income between good and bad years
Type of program	Income tax concession for primary producers
Year of commencement and completion	Introduced in 1999 (replacing the Income Equalisation Deposits and Farm Management Bonds schemes)
<i>Program evaluation</i>	
Eligibility	Multiple eligibility criteria. Early access to Farm Management Deposits for primary producers in EC declared areas provides an exception to the 12 month waiting period without the loss of tax benefits.
Thresholds/limits	Multiple criteria, including that the total of all Farm Management Deposits must not exceed \$300 000 at any time in any year of income
Uptake	39 537 farm businesses in December 2002. Farm Management Deposits for pig producers in 2002-03 totalled \$21.5 million for 444 producers.
Cost to government and industry	Tax revenue forgone was \$470 million in 2002-03 (estimate).
Impact on production, prices, investment	May provide a small incentive to invest in agricultural activities.
Transparency	Data are available from the Australian Government Department of Agriculture, Fisheries and Forestry.
Sunset clause	Ongoing program
Review mechanism	The Australian Government Department of Agriculture, Fisheries and Forestry conducted a review of Agriculture — Advancing Australia programs in 2004. The Australian National Audit Office conducted a review of Agriculture — Advancing Australia programs in 2003.
Overall assessment	<ul style="list-style-type: none"> • Instrument is a risk management tool for primary producers to deal with the inherent variability of agricultural incomes. • It is a voluntary mechanism for primary producers to smooth the tax payable on fluctuating incomes.

Sources: ANAO 2003; APL 2004f; DAFF 2004a.

Name of program	<i>Rural Counselling Financial Service</i>
<i>Program description</i>	
Stated objectives	<p>To assist primary producers, fishing enterprises and small rural businesses that are experiencing financial hardship (and have no other sources of financial assistance or information), with a range of counselling and information services, including:</p> <ul style="list-style-type: none"> • reviews of contracts and loan applications with lending institutions • communication and facilitation of meetings with lenders and financial institutions • information on government and industry assistance schemes • assistance with business decision making in relation to their rural enterprise
Type of program	Financial counselling service
Year of commencement and completion	Current phase commenced in 2004 and next review is due in 2008.
<i>Program evaluation</i>	
Eligibility	All rural businesses may access the service.
Thresholds/limits	No explicit limits
Uptake	In 2002-03, 25 548 agriculture businesses accessed the service, including 323 pig producers.
Cost to government and industry	The Australian Government funds 50 per cent of rural financial counsellors' employment costs, with the remaining costs met by State Governments and the local community. Australian Government funding of \$23.3 million has been allocated for 2004-05 to 2007-08.
Impact on production, prices, investment	Likely to be small
Transparency	
Sunset clause	Ongoing program
Review mechanism	The Australian Government Department of Agriculture, Fisheries and Forestry conducted a review of Agriculture — Advancing Australia programs in 2004. The Australian National Audit Office conducted a review of Agriculture — Advancing Australia programs in 2003.
Overall assessment	Service is orientated to help producers experiencing hardship to assess and address their situation.

Sources: ANAO 2003; Australian Government 2004b; DAFF 2004a; DAFF, pers. comm., 31 September 2004.

F.7 Exceptional Circumstances drought assistance

Name of program	<i>Exceptional Circumstances assistance</i>
<i>Program description</i>	
Stated objectives	To help ensure viable primary producers are not forced to leave the land by events that are beyond the boundaries of normal risk management
Type of program	Interest rate subsidies and income support to assist viable farm businesses and farm families that have been adversely affected by exceptional climatic events, such as drought. Eligible recipients are also provided with a Health Care Concession Card and access to the Youth Allowance.
Year of commencement and completion	Current package of assistance commenced in 2002-03 and is budgeted to continue until at least 2005-06.
<i>Program evaluation</i>	
Eligibility	State and Territory governments are responsible for lodging applications for assistance with the Australian Government Minister for Agriculture, Fisheries and Forestry once they consider that the criteria have been met. Applications must demonstrate that the event (whether a drought or other occurrence): <ul style="list-style-type: none"> • is rare (a one-in-20–25 year event) • results in a severe downturn in farm incomes over a prolonged period • affects a significant number of primary producers in a region or industry • is not predictable or part of a process of structural adjustment.
Thresholds/limits	Eligible producers can apply for up to two years of income support (administered by Centrelink) and up to \$100 000 in interest rate subsidies a year over two years. Eligible primary producers may also receive a Health Care Concession Card and concessions under the Youth Allowance means test, and have access to their Farm Management Deposit within the 12 month waiting period.
Uptake	In 2003-04, 90 pig producers received \$1.58 million in interest rate subsidies. Income support data are not available.
Cost to government and industry	\$279.1 million was distributed under the program in 2002-03.
Impact on production, prices, investment	May be significant by allowing businesses to stay operational despite drought.
Transparency	Interest rate subsidy information for pigmeat industry is available from the Australian Government Department of Agriculture, Fisheries and Forestry. Centrelink does not have disaggregated information for individual industries.
Sunset clause	Ongoing program
Review mechanism	No current review
Overall assessment	Provides income support and interest rate subsidies to producers experiencing a 'severe and prolonged' decline in income due to a 'rare and severe' event.

Sources: Australian Government 2004b; DAFF 2004a; DAFF, pers. comm., 8 October 2004.

Attachment I: Programs assisting pigmeat producers in Canada, the European Union and the United States

As part of this inquiry, the Productivity Commission contracted Professor Clair Nixon to provide information on programs assisting pigmeat producers in Canada, the European Union and the United States. This attachment reproduces his report.

Professor Nixon is Associate Dean and PWC Accounting Excellence Professor in the Mays Business School at Texas A&M University, and co-director of the Texas A&M University Agribusiness Degree Program. He has extensive experience in analysing the impact of government programs on agriculture, not only in the United States and Canada, but also in Argentina, Australia, Brazil, the European Union, and New Zealand. The results of his work have been published in leading academic journals, including the *American Journal of Agricultural Economics*, the *Agricultural Finance Review*, and the *Review of Agricultural Economics*.

Professor Nixon's catalogue of programs, and associated budgetary outlays, provides a basis for understanding the types and size of assistance to pigmeat producers in major competitor countries (summarised in table I.1). The data presented by Professor Nixon are consistent with the estimates and analysis presented in chapter 4 which concluded there are relatively small levels of producer support in Australia, Denmark and the United States, and somewhat more assistance in Canada (table 4.1).

Since the release of Professor Nixon's report in the Productivity Commission's draft report on the pigmeat industry, Professor Nixon has made two amendments to his report. First, the aggregate measure of support for pigmeat in Denmark should be €0.6 million, not €0.6 billion. Second, the estimate of assistance under the 'Young Farmers' Scheme' has been disaggregated to show budgetary outlays and the value of guarantees outstanding.

Table I.1 **Summary of programs listed in attachment I assisting pig producers in Canada, Denmark and the United States^a**

<i>Program</i>	<i>Year</i>	<i>Value in local currency</i>
Canada		\$C millions
Value of production		
Agriculture	2003	32 621 ^b
Pigmeat	2003	3 841 ^b
Pigmeat specific programs		
Saskatchewan Provincial Short-term Pig Loan		4
General agricultural programs		
Canadian Agricultural Income Stabilisation	2003	1 112 ^b
Crop Insurance		410 ^b
Federal Improvement and Marketing Cooperatives Guaranteed Loan		na
Transitional Industry Support (March 2004 to July 2004)	2004	995
United States		\$US millions
Value of production		
Agriculture	2003	192 014 ^b
Pigmeat	2003	9 948 ^b
Pigmeat specific programs		
Livestock Risk Protection Insurance — Pig ^c		
General agricultural programs		
Environmental Quality Incentives	2003	504
Conservation Reserve Enhancement and Conservation Reserve	2003	1 789
Market Access	2003	90
Federal Crop Insurance — Risk Management Agency ^c	2003	2 000
Direct Payment & Counter Cyclical Payment (feed grain and soybeans)	2003	2 479
Marketing Assistance Loan (corn and soybeans)	2003	25

(Continued next page)

Table I.1 (Continued)

<i>Program</i>	<i>Year</i>	<i>Value in local currency</i>
Denmark		DK millions
Value of production		
Agriculture	2003	56 112 ^d
Pigmeat	2003	17 418 ^d
Pigmeat specific programs		
National Committee for Pig Production (NCP) and Danske Slagterier	2002	120
Export Subsidies — Budgetary outlay and quantity reduction commitments	2003	149
General agricultural programs		
Aid Scheme to Benefit Less Favoured Agricultural Areas	2002	10
Young Farmers' Scheme	2002	174
Aid to Promote Development of Agricultural and Fishery Products	2001	193
Advisory Services to Agriculture	2002	97
Aid for Investments in Animal Welfare	2002	200
Environmentally Friendly Farming	2002	90
Improving Processing and Marketing of Agricultural Products	2003	25
Innovation, Research and Development in the Food, Agriculture and the Fisheries Sectors	2003	151
Control of Animal Diseases	2002	8
General measures — Per mille tax funds and production tax funds for the sectors of Agriculture and gardening	2002	720

^a Data are summarised from those supplied by Professor Nixon, except as noted. ^b OECD 2004. ^c Federal Crop Insurance Program includes Livestock Gross Margin Insurance Policy and Livestock Risk Protection Insurance — Pig. ^d Danish Agriculture 2004. ^{na} Not available.

Sources: Danish Agriculture 2004; OECD 2004; Report prepared by Professor Nixon.

Report to the Productivity Commission

by Professor Clair Nixon

I.1 Executive summary

Australia has a competitive advantage from two standpoints. First, Australia is favourably viewed as being relatively disease free. Importing countries are very conscious of the health standards of imported meat. Second, Australia is in a good geographic position to service the Asian markets. The export opportunities certainly exist in Japan, the Republic of Korea and, increasingly, Chinese Taipei. Still, the real question is not what the United States, Canada and the European Union are going to do, but what will happen in Brazil.

The challenge Australia faces in the international pig market is being competitive from a feed cost standpoint. It is basically a geographical issue for Australia. The key ingredients in North American pig feed are corn and soybeans. The corn belt of the United States and significant portions of Brazil have the climate and soils that are conducive to producing massive quantities of feed grain at relatively low costs. The European Union has instituted government policies that provide for lower cereal grain costs to pig producers within the member countries. There is not enough reliable rainfall in Australia to embark on large scale corn and soybean production. In addition to these natural restrictions on the production of corn and soybeans in Australia, there are significant quarantine restrictions on the importation of feed grain into Australia, which are intended to prevent the entry of plant diseases and weeds. This policy has left pig producers in a difficult position because it drives up the cost of feed grain. If Australia wants to be a big pig exporter, it needs to look closely at its grain program — it is all about low cost feed.

I.2 International production

China is by far the largest pig producer in the international pig market. It produces nearly one half of pigs worldwide, and most of its production is consumed domestically. Most of its current production is from small scale operations, but China is involved in building a large scale pig industry. China would like to become a major pig exporter. Demand in China, however, will increase as incomes rise

rapidly, so the country is unlikely to become a significant net exporter of pig products soon.

During the period 2000–03, the net increase in pig production varied considerably between countries (USDA 2004c). Brazil had a 27.4 per cent increase, followed by Canada with a 14.8 per cent increase. China had a 12.1 per cent increase (nearly 5 million tonnes). The United States had a 5.4 per cent increase and the European Union had a 2.5 per cent increase. As pig production continues moving east in the European Union, out of France, the Netherlands and Germany to Poland, Romania and Bulgaria, costs of production are likely to continue to fall. A major factor influencing the lower costs of production in eastern Europe is the cost of labour: the developing countries of Poland, Bulgaria and Romania have lower labour costs than those of their western European counterparts. Of course, these countries also have fewer environmental issues and population density is lower.

Japan, on the other hand, has had a continual decline in its pigmeat production because it has limited rural areas for pigmeat production. There should be continued high demand for pigmeat imports by Japan.

The fastest growing pigmeat producer and exporter in the world is Brazil. It may export more pig products in 2005 than exported from the United States. Grain production in Brazil is growing fast, with the result being low feed costs. The most significant challenge facing Brazil is health related: Brazil does not currently have the health standards in pigmeat production that will enable it to become a major player in the developed countries' market. Initiatives are underway, however, to enhance Brazil's health standards.

With rapidly expanding global demand for meat and a projected need for a 20 per cent increase in global food production by 2020, the pig sector will continue to play an important role in meeting global demand. Concurrently, the environmental consequences of pig production are of increasing public concern, particularly regarding water and air pollution, as well as manure management. In areas of high concentration of pig production, the negative environmental impacts may forestall continued expansion and even result in a contraction of pig operations. The regions of northern Europe, Japan and the Republic of Korea are especially vulnerable to negative environmental effects owing to population concentrations. The Organisation for Economic Cooperation and Development (OECD) has grouped pig production into four categories according to the level of risk as measured by nitrogen balance. The risk is highest in Belgium, the Czech Republic, Denmark, France, Germany, Japan, the Republic of Korea, the Netherlands, Norway and Switzerland. In contrast, the risk of nitrogen pollution is low in Australia, Italy, Mexico, Poland, Sweden and the United States.

Agricultural support policies for OECD pig producers

Support levels for pigmeat producers worldwide are low compared to those for other commodities, but there are significant differences across countries. Price supports (including tariffs and export subsidies) are the main form of support provided to pig producers. Pig producers do not receive significant direct subsidies, although pig producers in the European Union, Canada and the United States have benefited from reforms in the feed grain sector. Those countries with the highest levels of support for pigmeat production (mainly in northern Europe and north east Asia) are also those with high levels of risk of water and air pollution from pig production.

The OECD has calculated producer support estimates by commodity for many years. The producer support estimate (as a proportion of gross farm receipts) for pigmeat is among the lowest for all commodities. In 2001–03, only poultry, eggs and wool had lower producer support estimates than pigmeat. There was, however, an increase in the producer support estimate for pigmeat from 18 per cent in 1986–88 to 21 per cent in 2001–03. Pigmeat was one of only four commodities that experienced an increase during this period. Further, for these four commodities, the increase in producer support estimate for pigmeat was most significant, both in absolute and percentage terms.

The level of support can also be expressed on a product weight basis. The OECD estimated that producers in 2001 in Australia, Canada and the United States received less than US\$0.07 per kilogram, while producers in the European Union received US\$0.29 per kilogram. Even higher levels of support can be found in individual countries, such as Iceland, Norway, Japan and Switzerland.

Both the level of support provided to pig producers and the reliance on the most distorting forms of support have increased for pig producers in nine countries. The most significant increases have occurred for pig producers in the Czech Republic, the European Union, Hungary, Poland and the Slovak Republic. Further, there are cases where producer support estimates for pigmeat does not fully account for incentives provided to producers through federal and state/provincial tax laws. Some of these tax provisions are not included in OECD estimates.

I.3 United States

US farm policy

The US Farm Security and Rural Investment Act of 2002 (the 2002 Farm Act) was signed into law on 13 May 2002 and covers six years of federal farm programs culminating in financial year 2007. Commodity market impacts attributable to the 2002 Farm Act will be derived principally from commodity provisions and indirectly from changes in the conservation provisions. The 2002 Farm Act builds on previous farm policy and provides an improved safety net for farmers through a new countercyclical income stabilisation program. It appears that loan rate changes under the marketing assistance loan program will initially result in an increase in total planted acreage of eight major program crops. The increase, however, is likely to be less than 1 per cent. On the other hand, studies by the Economic Research Service of the US Department of Agriculture suggest that the overall plantings of the eight program crops studied will be lower in the long run under the 2002 Farm Act than under a continuation of the 1996 Farm Act. The direct effects on the livestock sector are relatively small. Farm income is likely to increase, mostly due to higher government payments to the farm sector under the new law. Still, without greater direct support payments to the crop sector, the world price of feed grain is likely to increase.

Although the direct government payments to the pig industry are relatively low, the indirect effects of assistance to the crop sector are critical to lowering costs of production. The price supports under the 2002 Farm Act for crop production result in greater corn and soybean production, and thus lower feed prices, than would have occurred under the 1996 Farm Act. On the other hand, there is also a federal Conservation Reserve program that sets aside about 40 million acres of potential crop production. The result is lower production, which is likely to have an upward pressure on crop prices and, therefore, feed prices. It is difficult to determine the combined effect of these government programs on crop prices.

There was a direct payment to pig producers in the late 1990s as part of the pseudo-rabies disease eradication program. The US Government purchased and subsequently eliminated herds, although less than 1 per cent of the total herd was affected during this period.

US tax law

The American Jobs Creation Act of 2004 provided limited agricultural tax relief for US farmers. Most of the provisions in the 2004 Act are narrowly focused, with little

potential impact on agricultural production, prices or investment — for example, there is a new bio-diesel fuel income tax credit in conjunction with the extension of the alcohol fuel credit. There are, however, general tax provisions that will have an impact on farmer tax liabilities. The enhanced expensing provisions enacted in 2003 have been extended for two years. Farmers and others can thus immediately deduct up to US\$102 000 (in 2004) of the cost of new equipment used in the business, rather than depreciating the cost of the asset. Other provisions in the 2003 Act include a capital gains rate reduction to 5 per cent and 15 per cent, depending on the taxpayer's tax bracket. This provision is especially attractive to livestock producers that raise breeding stock, because sales of breeding stock may be taxed as a capital gain. The federal income tax rates have also been lowered; the lowest rate is 10 per cent and the maximum rate is 35 per cent. The 2002 Trade Adjustment Act had a single tax provision that enabled self-employed individual taxpayers to receive a tax credit for a certain amount of health insurance premiums paid. Given that most farmers are self-employed, this provision effectively reduces their net health costs. These provisions combined are likely to enable all US farmers with positive farm incomes to pay less tax in the near term. The amount of reduction is a function of the multiple components of each tax return. There are, however, no specific provisions in the US tax law solely for pig producers.

Trade disputes

Two major pieces of litigation occurred in the past year. First, the US Department of Commerce reviewed a claim for a countervailing duty charge by various US pigmeat producer associations. The department made a preliminary determination in August 2004 that subsidies provided to producers or exporters of live pigs from Canada would not attract countervailing duties. Specifically, the Canadian Agricultural Income Stabilisation (CAIS) Program and its predecessors (Net Income Stabilisation Accounts and Agricultural Income Disaster Assistance) were excluded in this review. The other programs included in the suit were determined to be insignificant.

The second suit is an anti-dumping allegation. On 15 October 2004, the US International Trade Commission ruled that there had been dumping by Canadian pig producers, and it would impose import duties on Canadian pigs. The duties will average about 14 per cent on live pigs from Canada to the United States. The duty will be based on the market value of the inbound pig. The duty will apply only to live pigs and will not include breeding stock. The result is likely to be an increase in the number of piglets shipped to the United States for finishing; fewer finished pigs are likely to be shipped to the United States. Specialised programs in various provinces also support pig production. On Prince Edward Island, for example, there

is huge support for pig production to preserve the industry, although there are no exports of pig products from the island. Other assistance measures are discussed in the attached tables.

It is important to understand the genesis behind the anti-dumping claim by US producers. The comparatively large increase in pig imports from Canada in the third quarter of 2003 was the result of several market factors:

- First, Canadian slaughter pig exports have been gradually declining, while feeder/weaner pig exports have been rapidly increasing.
- Second, the US corn belt has a competitive advantage in pig finishing, while Canadians suggest they have a competitive advantage in breeding weaner pigs.
- Third, Canadian herd growth has been driven by sows, not by market/slaughter pigs.
- Fourth, the US pig price differential in favour of US producers has been declining over time.
- Fifth, rapid appreciation of the Canadian dollar during 2003 and continuing today has resulted in material revenue loss amounting to approximately C\$20 a head. With an exchange rate of C\$1/US\$0.79, the labour market is likely to be a major impediment to the Canadian pig industry remaining competitive, not just with the United States, but internationally.
- Sixth, another critical factor in the Canadian pig industry was the discovery of bovine spongiform encephalopathy (BSE) in a Canadian cow, and resultant bans on imports of Canadian beef into some other countries. There was a strong consumer rally for the beef industry — Canadian consumers bought more domestic beef. This indirectly hurt the pigmeat industry because there was a major drop in domestic demand for pigmeat. Slaughterhouses closed because they could not ship meat internationally. The processing sector is just beginning to recover.

There are other factors, but the primary causes of the significant increase in pig imports from Canada to the United States are listed above. The impact of BSE is abating as beef exports resume — a change that will also help the pigmeat industry.

I.4 Canada

Canadian farm policy

The Government of Canada and the provincial and territorial governments are attempting to develop a new direction for Canada's agricultural policy. The objective is to create a stronger and more commercially successful sector by being a world leader in food safety, innovation and environmentally responsible production. The agri-food system provides one in seven jobs in Canada and, in 2000, accounted for 8.3 per cent of total Canadian gross domestic product. The size of the primary and processing parts of the farm sector varies across the provinces, with Saskatchewan being more than double the national average. Further, the mix between primary and processing varies, with the prairies being mostly primary and east of Manitoba being more heavily processing.

The CAIS program (commenced in 2003) combines income stabilisation and disaster assistance into one program. Deficiency payments provide a floor on farm income defined as 'a production margin'. This program essentially removes below average prices from the production cycle. As such, is not just a safety net: it guarantees a fixed margin of income based on a five-year average of income.

One of the competitive advantages that Canada has enjoyed over the United States in the past several years has been providing a relatively disease free environment for piglet production. It appears, however, that the health gap is closing between the United States and Canada; a number of US pig facilities have upgraded their production facilities to meet health standards required by the European Union, which are arguably the most stringent in the world.

Transportation subsidy

A major shift in the pig industry in Canada occurred in the late 1990s, as a result of the elimination of the grain transportation support. In a worldwide competitive market, it has become less economic for grain producers in the Canadian prairies to ship their product to British Columbia for export. Instead, these grain producers are selling their produce to local pig producers. As a result, a significant number of large scale pig operations have been built in Saskatchewan and Manitoba. Piglet production has significantly increased.

Canadian marketing boards

There are provincial marketing boards in British Columbia, Ontario, Prince Edward Island, Quebec, New Brunswick and Nova Scotia. Other provinces do not have the same requirement of marketing through a board, but many have associations that provide similar services.

The provincial marketing boards are created under government authority and are quasi-public entities. Generally, all production is marketed through the board. In Ontario, for example, a producer can make a deal with a packer, but it still must go through the marketing board. The producer price is formula driven off the US price that the US Department of Agriculture publishes. The marketing boards provide research, investment and international trade activities, at a cost of C\$1.75–\$2.25 per animal. The differences in the cost reflects grading fees, research and trade defence. The associations in the prairie provinces charge about C\$1.00 per animal for these services.

Canadian tax law

In Budget 2003, the Government of Canada announced measures to strengthen the Canadian tax advantage compared with the United States. These measures build on the Five-Year Tax Reduction Plan introduced in 2000, which was the largest Canadian tax reduction in history. The plan reduced personal income tax rates at all income levels and introduced other tax measures to promote investment and entrepreneurship. The average corporate tax rate will be 6 percentage points below the average US corporate tax rate by 2008, and there is an ongoing C\$500 000 lifetime capital gains exemption for small business shares. This directly benefits the agriculture sector (especially the livestock sector) in Canada. There is also a 35 per cent refundable tax credit available to smaller Canadian controlled private corporations, which is more favourable than provisions for similar US corporations. In addition, taxpayers may use up to C\$2 million in tax-free rollovers of gains from business investment. The rollover provision is especially attractive to investors looking to invest in the pig industry by using gains from other investments. The federal capital gains tax is being eliminated for small and medium sized businesses. The combination of an increasingly favourable federal income tax environment with substantial risk reducing federal support has created a highly attractive investment environment in Canada. The expansion in the Canadian pigmeat industry is evidence of the producer reaction to these benefits.

1.5 European Union

The European Union produces over 17 million tonnes of pigmeat each year and is the second largest producer in the world after China. The major EU pig producing countries in 2002 were Germany (23.1 per cent of production), Spain (17.5 per cent), France (13.2 per cent), Denmark (9.9 per cent) and the Netherlands (7.7 per cent). Direct domestic support in the European Union for pigmeat production is small, however, compared to that for other agricultural products. In 2000-01, direct outlays for export subsidies of EU pigmeat production were €20 million (with a commitment of €191 million), compared to beef export subsidies of €388 million (with a commitment level of €1.3 billion). The total aggregate measure of direct support for pigmeat in 2000-01 was €9.6 million, while it was €11.2 billion for beef. Interestingly, the production value of pigmeat in the European Union for this period was €26 billion, while beef production value was €21 billion. The export subsidies to the EU pigmeat industry are important contributors to the competitive position of these producers in the world market.

The European Union maintains a two-tier pricing system: internal and external (export). Meat imports are nearly zero as a result of sanitary restrictions. Foreign meat packers may be deemed to not meet the EU standards, keeping much foreign meat out of the European Union. This maintains a high price domestically, with the surplus being sold in foreign markets.

Although there is limited EU direct assistance to pig producers and to the pigmeat market, import tariffs under WTO agreements benefit these producers. The tariff quotas allow for approximately 250 000 tonnes per year to be imported, of which only about 50 000 tonnes are actually imported. Significant health/sanitary restrictions are imposed on imported pigmeat, making it very difficult to enter the market. In addition, export refunds are sometimes made available on some pigmeat products to remove surplus product from the market. Otherwise, there are no specific measures to maintain the EU pigmeat market at any particular price level. Further, pig producers do not generally qualify for direct aid payments from the European Union. Still, as in many other countries, pigmeat producers benefit from measures that reduce the cost of feed. The common agricultural policy (CAP) reforms of 1992 and 1999 have helped improve the competitiveness of EU pigmeat production by lowering costs of production. These reforms are expected to continue to assist EU pigmeat producers.

The environmental impacts of pig production, particularly those related to water and air pollution, are an increasing concern among members of the European Union. As a result, different policy measures have been introduced in the past several years to deal with the environmental impacts of pig production. Increasingly, pig production

is moving from the traditional production countries of Denmark, France and Germany to newer members of the European Union including Poland, Bulgaria and Romania. Several factors have contributed to this shift in pig production. Environmental concerns are one of the leading inhibitors to expansion of pig production in western Europe. At the same time, eastern Europe, with its less stringent environmental regulations, is rapidly expanding its pig production.

Imports into the European Union are not significant. They represent only 50 000 tonnes per year compared to the production of over 17 million tonnes annually. Exports are very important, however, especially to Denmark. The European Union exports between 1 and 1.5 million tonnes annually.

I.6 Research, inspection, education and extension services

Canada

Canadian research and extension services are provided at both federal and provincial levels. The federal government will spend an estimated C\$381 million on research in 2004 and C\$559 million on inspection services — 21 per cent and 33 per cent respectively of total federal support to the agri-food sector. In addition, the provincial governments are expected to spend C\$116 million on research in 2004, and C\$85 million on inspection services. Similar to the United States, there are federal research agencies for agriculture, as well as their counterparts at the provincial level. The agencies conduct research across a broad spectrum of agricultural issues. Key research areas for hogs include:

- the maintenance of high health standards
- feed combinations to maximise growth rates of piglets
- the efficiency of different barley varieties in the feed mix.

Canadian provincial governments also expend significant amounts in education and extension. In 2004, provincial governments are expected to spend C\$55 million on education and C\$15 million on extension. The federal government's financial commitment to education and extension is relatively small compared to that of the provincial governments: budgeted federal education expenditure for 2004 is C\$0.8 million, while budgeted extension expenditure is C\$2.7 million. On the other hand, the federal government in 2004 will expend C\$194 million in marketing and trade programs, while the provincial governments will collectively spend C\$37 million.

Denmark

In Denmark, the federal government has invested significantly in its public agricultural and fisheries research. For 2003, the government spent an estimated DK582 million to promote agricultural and fisheries development. Danish research places special importance on food quality, safety, plant and animal health, animal welfare and the working environment. The research is primarily carried out through public research institutes under the Ministry of Food, Agriculture and Fisheries. Specifically, the Danish Veterinary Institute is charged with conducting research and diagnostics to prevent and control livestock diseases and zoonoses, contributing to the production of safe and healthy food, while safeguarding livestock health and welfare. The Danish government is focused on avoiding BSE outbreaks that have devastated the livestock sectors in some countries. The Danish government also spent DK95 million in 2003 on advisory services to agriculture.

United States

One of the primary benefits of US government intervention in the pig industry is the money used to fund research and education. The federal and state governments directly support the state experiment stations and extension services, which result in research on how to raise more pigs and create greater feed efficiencies. It is difficult to quantify the impact on pig production and related costs. The US Government also pays all costs of the Animal Plant Health Inspection Service, which maintains a high health standard on all imported animals to the United States. The maintenance of these standards has had a positive impact on the ability of the United States to export pig products. Similarly, federal meat inspectors enable pigmeat exports to receive a good health rating, which is critical for markets such as Japan. US producers also have a Check-Off Program, funded by producers, that promotes domestic consumption, export of pigmeat products and producer education. The charge is a mandatory 0.4 per cent of the market value for all pigs sold. Exports have significantly increased over the past two years. The largest importers of US production are Japan, Mexico and Canada respectively. In addition, as a result of the 1997 foot and mouth disease outbreaks in Chinese Taipei, the United States has become a major exporter to that country.

I.7 Outlook

The European Union (including Denmark as a major exporter), the United States and Canada are important players in the international pigmeat industry. The United States and Canada are currently embroiled in accusations of unfair trade practices, and the two disputes discussed earlier are evidence of cross-border agitation.

Further, Mexico has joined the fray by recently asserting anti-dumping charges against the United States. The National Pork Producers Council in the United States contends that Canadian pig subsidies under CAIS continue to distort the market, causing significant harm to the US pigmeat industry. The Canadian Pork Council, on the other hand, responds that the CAIS program is not specific to the pig industry, but applies to all agriculture across Canada. In either case, both countries provide benefits to pig producers either directly or indirectly, and there are competitive advantages that both countries enjoy: the United States has the corn belt for raising low cost feed, and Canada has a fairly disease free environment for raising piglets. Both the United States and Canada are likely to continue to exploit their competitive advantages.

Similarly, the European Union enjoys certain competitive advantages with its proximity to Russia and other developing countries. The expansion of the European Union provides an opportunity for enhanced pig production in member states as well as for export. Beneficial crop production policies that have reduced the cost of feed will continue to be an important benefit to pig producers and enable them to remain competitive in the global market. Further, restrictions on imports into the European Union will continue to provide an artificial two-tier pricing system for pig products. Finally, numerous government programs assist farmers in reducing their investment costs in agriculture.

It will be difficult for Australian pig producers to be highly profitable in a world market dominated by producers that enjoy lower costs of production. Although Australia is favourably viewed as being relatively disease free, more countries are focusing on increased health standards to meet world demand for safety in meat products. The competitive advantage of being relatively disease free may not last. The other advantage of location may continue to benefit Australia as meat consumption continues to rise in developing countries of Asia.

The future of pig production on a global basis may not lie with the current major exporters, but rather with the emerging producers such as Brazil. With low cost feed and labour, Brazil has a good chance of becoming a major pig product exporter. Australia's competition, rather than being the European Union, the United States or Canada, may be the relatively untapped resources of Brazil or emerging EU countries.

I.8 Summary of specific programs

The tables in this section provide details of specific programs that may affect pig farmers in Canada, Denmark, the United States and the European Union. Details of current programs are described first, followed by details of superseded programs that may still have an impact on pig farmers.

Current programs

Country	Canada
Name of program	Canadian Agricultural Income Stabilisation (CAIS) Program
<i>Program description</i>	
Stated objectives	Enable agricultural producers to mitigate the effect of poor yields or prices through government payments.
Type of program	Combines stabilisation assistance (NISA) and disaster assistance (CFIP) into one program. Deficiency payment puts a floor on farm income — defined as production margin. Insurance/direct support is based on comparing producer margin for the current year to a reference margin, which is an average of previous years' margins. Margin is allowable income minus allowable expenses.
Year of commencement and completion	New program in 2003; changes in 2004; full implementation by 2006
<i>Program evaluation</i>	
Eligibility	Available to all agricultural producers in Canada. To participate, producer must contribute to program.
Thresholds/limits	Government funds are paid out based on the funds that the producer has on account and the size of the loss experienced. Government contributions are made at a 20:80 rate, or C\$1 from the producer for every C\$4 from government. Producer receives government contributions at this rate until the combined amount of the producer's own funds plus government contributions restores 70 per cent of the reference margin. The maximum government contribution is the lesser of C\$975 000 or 70 per cent of the margin decline in the program year relative to the reference margin.
Uptake	New program
Cost to government	New program
Impact on production, prices, investment	Provides a base income for all agricultural producers; not commodity specific. Likely to provide enhanced stabilisation for investment in agriculture. Greater downward pressure on commodity prices as supply side is supported. Currently, this program is the most significant government farm program.
Transparency	Significant amount of information available on multiple web sites.
Sunset clause	No sunset date.
Review mechanism	Continual updating for new insurance products. Full complement of products likely to be available by 2006. Review of success/failure is ongoing. Program subject to audit by government auditors.
Overall assessment	New program to replace other income stabilisation programs. Probably has most significant direct benefit to the producer. Basically, program is an insurance program with government support. More money will be transferred to producers under this program, which will likely enable producers to remain in production or increase production.

Sources: Agriculture and Agri-Food Canada (AAFC), www.agr.gc.ca/caisprogram.

Interview: James Rude – University of Manitoba
 Jack Silber – Ontario Pork
 Brad Marceniak – Saskatchewan Pork
 Harvey Wagner – Saskatchewan Pork
 Martin Rice – Canadian Pork Council

Country	Canada
Name of program	Crop Insurance Program
<i>Program description</i>	
Stated objectives	Provide production risk protection to producers by minimising the economic effects of crop losses caused by natural hazards. Also a provision for crop damage incurred by protected migratory waterfowl.
Type of program	Provincially delivered program whereby federal financial contributions are made to provincial crop insurance schemes. Producer pays premiums into the program in return for adequate protection against natural perils. Production guarantee is based on a producer's probable yield. The producer will be protected for a yield per hectare based on the individual's previous production history. If production falls below that yield, the producer will be eligible for an indemnity.
Year of commencement and completion	Ongoing
<i>Program evaluation</i>	
Eligibility	This program can cover virtually any farmer. Given that crop insurance is provincially delivered, coverage will vary according to crops grown in that province.
Thresholds/limits	Generally, maximum coverage is 80 per cent based on the historic average yield in an area or the individual farmer's average yield, while up to 90 per cent coverage is available for low risk crops or producers.
Uptake	Provincially delivered — see individual provincial statistics.
Cost to government	Federal government contributes financially to provincially administered crop insurance plans that form with the Federal Income Protection Act (FIPA). Premium rates must be set in an actuarially sound manner, provincial schemes must be self-sustaining, and the method used to establish probable crop yields must reflect actual yields produced. The federal government may enter into a re-insurance agreement with provinces. Five provinces have re-insurance agreements with the federal government. Other provinces have purchased re-insurance from the private sector.
Impact on production, prices, investment	Provides income protection to those who participate. Program provides incentive to enhance production. It has a negative impact on producer market prices. A risk management program, it provides stability for investment.
Transparency	Information is available on the government web site.
Sunset clause	No sunset clause
Review mechanism	Government auditors
Overall assessment	This standard crop insurance program with government support, enables farmers to insure against crop failure thereby providing a base for continued production. It is a production sustaining program.

Source: Agriculture and Agri-Food Canada, www.agr.gc.ca/review/rb-ep.

Country	Canada
Name of program	Federal Improvement and Marketing Cooperatives Guaranteed Loan (FIMCLA) Program
<i>Program description</i>	
Stated objectives	Increase the availability of loans for the improvement and development of farms, and the marketing, processing and distribution of farm products by cooperative associations.
Type of program	Federal guarantee of farmer loan. Rate is 2 per cent above prime lending rate. In effect, the program reduces the cost of capital.
Year of commencement and completion	Enacted in 1987
<i>Program evaluation</i>	
Eligibility	Must meet lender's lending requirements
Thresholds/limits	Loan guarantees cover 95 per cent of the debt outstanding for projects that are related to farm management or increased farm production. Maximum loan is C\$250 000. For marketing cooperatives, the maximum amount is C\$3 000 000.
Uptake	Data unavailable
Cost to government	Data unavailable. The loan must be repaid so only limited risk to the government.
Impact on production, prices, investment	Viewed as low impact. Use among pig producers is limited.
Transparency	Information is available on web sites.
Sunset clause	None.
Review mechanism	Subject to normal review by federal auditors.
Overall assessment	Little impact on the pig sector. Interest rate is close enough to commercial lending rates to not distort the market. Not cited as a countervailing subsidy.

Source: AAFC.

Country	Canada
Name of program	Transitional Industry Support Program (TISP)
<i>Program description</i>	
Stated objectives	Financial assistance to producers who were affected by BSE
Type of program	Direct assistance
Year of commencement and completion	March 2004 to 31 July 2004
<i>Program evaluation</i>	
Eligibility	Livestock producers affected by BSE restrictions on export (not including dairy and poultry producers).
Thresholds/limits	A direct payment to Canadian producers of up to C\$80 per head for cattle and other eligible ruminants. This payment is made to producers to address income challenges as they move to CAIS program.
Uptake	78 000 producers have received C\$376 million in direct payments. 159 000 producers have received C\$140 million in general payments. These payments represent 70 per cent of the final payment, with the remainder to be issued in the fall.
Cost to government	C\$995 million when program is complete
Impact on production, prices, investment	One-time impact on production, prices and investment. The funds are intended to assist producers affected by the BSE situation and help producers make the transition to new business risk management programs.
Transparency	Information is available through Agriculture and Agri-Food Canada (AAFC).
Sunset clause	31 July 2004
Review mechanism	Government auditors
Overall assessment	A temporary transfer payment to producers as a result of BSE and the shutting of the US border to exports of livestock products. Several meat packing plants in Canada were closed in response to the BSE. Price adjustments should be temporary, with these plants moving back into production.

Source: AAFC.

Country	United States
Name of program	Environmental Quality Incentives Program
<i>Program description</i>	
Stated objectives	To provide a voluntary conservation program for farmers and ranchers that promotes agricultural production and environmental quality as compatible national goals.
Type of program	Incentive payments and cost shares to implement conservation practices
Year of commencement and completion	FY2002 and beyond
<i>Program evaluation</i>	
Eligibility	People who are engaged in livestock or agricultural production on eligible land may participate. Plan of operations is developed in conjunction with the producer that identifies the appropriate conservation practices to address the resource concerns. The local conservation district approves the plan.
Thresholds/limits	EQIP may cost-share up to 75 per cent of the costs of certain conservation practices. Incentive payments may be provided for up to three years. Under certain conditions, the cost-share rises to 90 per cent. The maximum for an individual or entity is \$450 000 for all EQIP contracts.
Uptake	New
Cost to government	2003 - US\$504 million; 2004 estimated – US\$774 million 2005 estimated - US\$1.016 million
Impact on production, prices, investment	Program is likely to have an upward impact on production. Costs related to meeting environmental and other resource issues are cost-shared with the federal government. Net capital investment costs are reduced. Enhanced capacity should lead to reduced product market prices.
Transparency	Information is available on the EQIP web site.
Sunset clause	None
Review mechanism	Government auditors
Overall assessment	With the significant amount of concentration in most animal sectors, especially pig and poultry, there have been increasing demands by the animal industry, environmental regulators, the public and Congress to provide increasing assistance to animal feeding operations, both technically and financially. This program will help the producers comply with local, state, and federal regulatory requirements, as well as help producers address natural resource concerns in a manner that makes regulatory action unnecessary.

Sources: www.NRCS.usda.gov/programs/eqip
Ron Plain – University of Missouri
Millie Haley – Economic Research Service, US Department of Agriculture
David Anderson – Texas A&M University
John Wainio – Economic Research Service, US Department of Agriculture

Country	United States
Name of program	Conservation Reserve Enhancement Program (CREP) and Conservation Reserve Program (CRP)
<i>Program description</i>	
Stated objectives	To address specific state and national significant water quality, soil erosion and wildlife habitat issues related to agriculture.
Type of program	Financial incentives beyond the Conservation Reserve Program (CRP) are offered to encourage farmers and ranchers to enrol in 10–15 year contracts to retire land from production. Producers may offer land for competitive bidding based on an Environmental Benefits Index. Funded through the Commodity Credit Corporation.
Year of commencement and completion	1985 Farm Bill; 1996 Farm Bill; and 2002 Farm Act
<i>Program evaluation</i>	
Eligibility	Producers who have environmentally sensitive cropland
Thresholds/limits	Enrolment limit is 39 million acres. Producers enter into 10-15 year contracts to retire land from production.
Uptake	Data not available
Cost to government	2003 — US\$1 789 million 2004 estimated — US\$1 861 2005 estimated — US\$2 190
Impact on production, prices, investment	Reduction in land available for crop production is likely to decrease product supply. Should translate into a positive price effect. Overall impact is likely to be nominal.
Transparency	Information is readily available from the US Department of Agriculture
Sunset clause	None
Review mechanism	Government auditors
Overall assessment	Not likely to have a significant impact on farm production

Sources: Congressional Budget Office 2004, www.ers.usda.gov

Country	United States
Name of program	Market Access Program
<i>Program description</i>	
Stated objectives	To encourage development, maintenance and expansion of commercial commodity exports to specific markets.
Type of program	Direct payment
Year of commencement and completion	2002–2007
<i>Program evaluation</i>	
Eligibility	Organisations including non-profit trade associations, state regional trade groups and private companies.
Thresholds/limits	US\$90 million annually
Uptake	Data not available
Cost to government	Potential cost is US\$90 million annually.
Impact on production, prices, investment	No expected impact
Transparency	Information is available through the US Department of Agriculture.
Sunset clause	2007
Review mechanism	Government auditors
Overall assessment	Formerly the Market Promotion Program. Funds provided to enhance expansion of commercial commodity exports. Should have a positive impact on US exports to specific markets.

Source: www.ers.usda.gov

Country	United States
Name of program	Federal Crop Insurance Program — Risk Management Agency (RMA)
<i>Program description</i>	
Stated objectives	Provides farmers with a means to manage the risk of crop losses resulting from natural disasters.
Type of program	Federal crop insurance policies that consist of the common crop insurance policy (often with specific crop provisions), actual production history insurance, group risk plan, dollar plan, revenue insurance plans, group risk income protection, adjusted gross revenue, crop revenue coverage, income protection and revenue assurance.
Year of commencement and completion	1930s
<i>Program evaluation</i>	
Eligibility	Farmers may select from various types of policy including multi-peril crop insurance and yield based insurance.
Thresholds/limits	RMA provides policies for more than 100 crops. These policies insure against yield losses due to natural causes, such as drought, excessive moisture, hail, wind, frost, insects and disease. The farmer selects the amount of average yield that he or she wishes to insure from 50 per cent to 75 per cent (in some areas, 85 per cent). The farmer also selects the proportion of the predicted price that he or she wants to insure, between 55 per cent and 100 per cent of the crop price established annually by RMA. The farmer is paid an indemnity on the difference between harvest yield and insured yield. The revenue based options determine revenue differently – for example, adjusted gross revenue insures the revenue of the entire farm rather than an individual crop by guaranteeing a percentage of average gross farm revenue, including a small amount of livestock revenue. Producer tax forms provide the expected farm revenue.
Uptake	Federal eligible acres 266 million (2002), 267 million (2003) Federal insured acres 215.5 million (2002), 219 million (2003) 81 per cent insured (2002), 82 per cent insured (2003) Producer premiums US\$1.2 billion (2002), US\$1.4 billion (2003) Premium support US\$1.7 billion (2002), US\$2.0 billion (2003) Total indemnities US\$4.1 billion (2002), US\$3.4 billion (2003) Loss ratio of 1.392 (2002), 1.075 (2003) Insured acres in Iowa in 2003: 10.3 million of corn with 83 per cent of all acres insured, and 9.0 million of soybeans with 85 per cent of all acres insured
Impact on production, prices, investment	Provides a price support for the farmer. Encourages production. World price should decrease. Acts to stabilise investment.
Transparency	Information is available through the Risk Management Agency and Congressional Budget Office.
Sunset clause	None
Review mechanism	General Accounting Office
Overall assessment	Program is an important risk management provision available to crop farmers, and provides significant government assistance to farmers. Participation is optional, but includes the majority of acres planted.

Source: US Department of Agriculture.

Country	United States
Name of program	Title I — Commodity Program — direct payment
<i>Program description</i>	
Stated objectives	Provide income stabilisation to farmers of certain crops.
Type of program	Direct payment income support
Year of commencement and completion	2002 Farm Act; FY2003–07
<i>Program evaluation</i>	
Eligibility	A producer must enter into an annual agreement and produce wheat, corn, sorghum, barley, oats, rice, upland cotton, soybeans, and other oilseeds.
Thresholds/limits	The payment rate is fixed for each crop and is not affected by current production or current market prices. Payment is based on historical acreage average and historical yields. Limitation of US\$40 000 per person per crop year. Three-entity rule is retained — that is, an individual can receive a full payment directly and up to a half payment from two additional entities.
Uptake	Expected harvested 2005 acres: corn 72.9 million and soybeans 73 million
Cost to government	All federal government outlays from the Commodity Credit Corporation: <ul style="list-style-type: none"> • Feed grain in FY2003 — US\$1572 million • Soybeans in FY2003 — US\$907million • Expected direct payments in FY2005 — US\$2095 million for corn and US\$602 million for soybeans.
Impact on production, prices, investment	Significant impact on production, prices and investment. One of three main support payments provided to crop farmers.
Transparency	Public information is available through the Congressional Budget Office and the Economic Research Service, US Department of Agriculture.
Sunset clause	FY2007
Review mechanism	General Accounting Office
Overall assessment	There are three main income support programs to US crop farmers. The 2002 Farm Act modified the 1996 Farm Bill and enhanced a number of the government transfer provisions.

Source: Congressional Budget Office Baseline March 2004.

Country	United States
Name of program	Title I — Commodity Program — counter cyclical payment
<i>Program description</i>	
Stated objectives	To replace most ad hoc market loss assistance payments that were provided to producers during 1998–2001
Type of program	Price-dependent benefits for covered commodities
Year of commencement and completion	Farm Act of 2002; FY2003–07
<i>Program evaluation</i>	
Eligibility	A producer must enter into an annual agreement and produce wheat, corn, sorghum, barley, oats, rice, upland cotton, soybeans, and other oilseeds.
Thresholds/limits	Payments are based on historical area and yields, and are not tied to current production of the covered commodity. Target price is established for each commodity. When the higher of the loan rate or the season average price plus the direct payment rate is below the target price, a counter cyclical payment is made, at a rate equal to that difference. The payment amount for counter cyclical payment is equal to the product of the national counter cyclical payment for the commodity, the producer's payment acres (85 per cent of base acres) for the crop, and the producer's counter cyclical payment yield for that crop. Limitation of US\$65 000 per person per crop year. Three-entity rule is retained — that is, an individual can receive a full payment directly and up to a half payment from two additional entities.
Uptake	Expected harvested 2005 acres: corn 72.9 million; soybeans 73 million
Cost to government	All federal government outlays from the Commodity Credit Corporation: <ul style="list-style-type: none"> • Feed grain in FY2003 — US\$1572 million • Soybeans in FY2003 — US\$907 million • Expected counter cyclical payment in FY2005 — US\$691 million for corn and US\$62 million for soybeans.
Impact on production, prices, investment	Significant impact on production, prices and investment. One of three main support payments provided to crop farmers
Transparency	Information is available on US Department of Agriculture web site.
Sunset clause	FY2007
Review mechanism	General Accounting Office
Overall assessment	Not as significant in dollar terms at the direct payment, but still a key support payment to eligible crop farmers.

Sources: Congressional Budget Office, www.ers.usda.gov

Country	United States
Name of program	Title I — Commodity Program — Marketing Assistance Loan Program
<i>Program description</i>	
Stated objectives	To provide income support when market price is low, through commodity loans
Type of program	A commodity program that allows producers of designated crops to receive a loan from the federal government at a commodity-specific loan rate per unit of production by pledging production as loan collateral.
Year of commencement and completion	Farm Act of 2002; FY2003–07.
<i>Program evaluation</i>	
Eligibility	Continuation of commodity loan program. Available for wheat, rice, corn, grain sorghum, barley, oats, upland cotton, soybeans, and other oilseeds.
Thresholds/limits	<p>When market prices are below the loan rate, farmers are allowed to repay commodity loans at a loan repayment rate that is lower than the loan rate. Rates are set for 2002–03 and then reduced slightly for 2004–07.</p> <p>Farmers may choose to receive marketing loan benefits through direct loan deficiency payments when market prices are lower than commodity loan rates. This option allows the producer to receive the benefits of the marketing loan program without having to take out and subsequently repay a commodity loan.</p> <p>The 2002 Farm Act sets a payment limitation on marketing loan gains and loan deficiency payments: US\$75 000 per person per crop year. Producers with adjusted gross income of over \$2.5 million, averaged over three years, are not eligible for payment unless more than 75 per cent of adjusted gross income is from agriculture.</p> <p>Three-entity rule is retained — that is, an individual can receive a full payment directly and up to a half payment from two additional entities.</p>
Uptake	<p>2003 — Soybeans — US\$1897 million in loans</p> <p>2003 — Corn — US\$2635 million in loans</p>
Cost to government	<p>2003 — Soybeans — US\$17 million</p> <p>2003 — Corn — US\$8 million</p>
Impact on production, prices, investment	Production encouraging mechanism. Provides a price floor for the producer. Has a negative impact on world prices. Provides a base for producer investment.
Transparency	Information is available on US Department of Agriculture web site and through the Congressional Budget Office.
Sunset clause	FY 2007
Review mechanism	General Accounting Office
Overall assessment	The third part of the Commodity Program of the Federal Government. Taken together, these programs provide significant financial security for crop farmers. The result is lower market prices, which enables the pig industry to operate with lower costs.

Sources: *The 2002 Farm Act: Provisions and Implications for Commodity Markets/AIB-778*, www.ers.usda.gov; Congressional Budget Office 2004.

Country	United States
Name of program	Livestock Risk Protection Insurance — Pig (LRP)
<i>Program description</i>	
Stated objectives	To insure the producer against declining market prices for pigs
Type of program	Pigmeat producers may select from a variety of coverage levels and periods of insurance to correspond with the time their pigs would normally be marketed.
Year of commencement and completion	Agricultural Risk Protection Act of 2000, starting 2001. Sale of insurance began July 2002 in Iowa and has expanded to 19 other states.
<i>Program evaluation</i>	
Eligibility	Pigmeat producers submit a one-time application.
Thresholds/limits	Coverage may be purchased for up to 10 000 head of pigs that are expected to reach market weight near the end of the insurance period. The length of insurance available is 13–26 weeks. The annual limit is 32 000 head per producer per crop year. Producers may select coverage prices ranging from 70 per cent to 95 per cent of the expected ending value.
Uptake	Data not specific to program. Totals are included in Federal Crop Insurance Program.
Cost to government	Data not specific to program. Totals are included in Federal Crop Insurance Program.
Impact on production, prices, investment	Provides price support mechanism for production. Likely to have a negative impact on world price as production increases. Provides for greater stability in investment for the pig producer.
Transparency	Information is available through the Risk Management Agency, US Department of Agriculture.
Sunset clause	None
Review mechanism	General Accounting Office
Overall assessment	Relatively new insurance program directly focused on pig producers in selected states. Producers can use the program as a hedge against vacillating market prices. Can insure up to 95 per cent of expected ending value.

Source: Risk Management Agency, US Department of Agriculture.

Country	United States
Name of program	Livestock Gross Margin Insurance Policy
<i>Program description</i>	
Stated objectives	To provide protection against the loss of a gross margin on pigs.
Type of program	The indemnity at the end of the six-month insurance period is the difference, if positive, between the gross margin guaranteed and the actual gross margin.
Year of commencement and completion	Commenced in 2002
<i>Program evaluation</i>	
Eligibility	Only agricultural producers of pig fed in Iowa counties. Producers are eligible as determined by Federal Crop Insurance Corporation (FCIC). The producer's target sales may not be greater than the producer's approved target sales. Does not cover against death or other loss or destruction of pig.
Thresholds/limits	Producers must select the number of pig, target marketings, to be insured during the period. They may select coverage levels of 80 per cent to 100 per cent to apply to all target marketings. The producer's premium is due with the application. Market weight of pig is assumed to be 260 pounds.
Uptake	Data not available
Cost to government	Data not available
Impact on production, prices, investment	Prices are based on simple averages of futures contract daily settlement prices and no based on the prices the producer receives at the market. Should have a negative impact on market price, as insurance payment is not a function of market price.
Transparency	Information is available on Risk Management Agency web site.
Sunset clause	None
Review mechanism	General Accounting Office
Overall assessment	A program that is similar to livestock risk protection by providing insurance to pig producers. An important part of the pig producer's risk management plan, it enables the producer to hedge price risk.

Source: Risk Management Agency, US Department of Agriculture.

Country	Denmark
Name of program	National Committee for Pig Production (NCP) and Danske Slagterier
<i>Program description</i>	
Stated objectives	Funding of research into all aspects of pig production
Type of program	Industry research and educational program — Danish Meat Research Institute.
Year of commencement and completion	Ongoing
<i>Program evaluation</i>	
Eligibility	Research institutes
Thresholds/limits	€16.2 million total in 2002
Uptake	
Cost to government	2002 – budget of €12 million; salmonella DT 104 control funding of €2.7 million and research mapping program funding of €1.5 million.
Impact on production, prices, investment	The impact on production is through funding research in the breeding and multiplication, housing and production systems, nutrition plus reproduction, management and coordination, and veterinary/advisory services. Likely to have a nominal impact on the prices and investment.
Transparency	Information is available on government web sites.
Sunset clause	None
Review mechanism	Governmental auditors
Overall assessment	This program provides pig producers with the latest research in pig production and management.

Source: www.teagasc.ie

Country	Denmark
Name of program	Aid Scheme to Benefit Less Favoured Agricultural Areas
<i>Program description</i>	
Stated objectives	To give compensatory allowance to farmers in less favoured areas
Type of program	A yearly compensatory allowance
Year of commencement and completion	Initiated 18 May 2000 — ongoing
<i>Program evaluation</i>	
Eligibility	Farmer must be a resident on one of the islands that are appointed as less favoured areas.
Thresholds/limits	Maximum grant per farmer is approximately DK67 000. The assistance is granted per hectare on the basis of agricultural areas used on the holding.
Uptake	The maximum number of eligible units is 100.
Cost to government	2001 — National financed — DK7.7 million 2002 — National financed — DK7.5 million (estimate) 2001 — EU financed — DK2.6 million 2002 — EU financed — DK2.5 million (estimate)
Impact on production, prices, investment	Nominal impact on production, prices and investment. Enables farmers to continue production in limited areas.
Transparency	Information is available on government web sites.
Sunset clause	None
Review mechanism	Government auditors
Overall assessment	The program likely has no impact on trade. The grant is a yearly compensatory allowance in accordance to a yearly application.

Source: World Trade Organisation Committee on Subsidies and Countervailing Measures, 15 December 2003.

Country	Denmark
Name of program	Young Farmers' Scheme
<i>Program description</i>	
Stated objectives	To encourage and ease the generational transition in the agricultural sector
Type of program	Term loans of 20 years; direct aid of seven years.
Year of commencement and completion	2000 — permanent scheme
<i>Program evaluation</i>	
Eligibility	Applicant under 40 years of age, starting in agriculture as main occupation and fulfilling conditions regarding education and capital.
Thresholds/limits	Maximum loan of DK500 000 depending on value of the holding. Interests and repayment are wholly or in part paid by the state during the first seven years of its term.
Uptake	Estimates not available
Cost to government	EU refund 2000 — DK36.5 million EU refund 2001 — DK36.1 million (estimate) EU refund 2002 — DK38.5 million (budgeted) National funding and direct aid: 2000 — DK127 million 2001 — DK140 million (estimate) 2002 — DK136 million (budgeted) Guarantees outstanding 2000 — DK1828 million 2001 — DK2967 million (estimate) 2002 — DK2254 million (budgeted)
Impact on production, prices, investment	No expected impact on production or prices. It does reduce the cost of investment to eligible farmers.
Transparency	Information is available on government web sites.
Sunset clause	None
Review mechanism	Government auditors
Overall assessment	No expected impact on trade

Source: World Trade Organisation Committee on Subsidies and Countervailing Measures, 15 December 2003.

Country	Denmark
Name of program	Aid to Promote Development of Agricultural and Fishery Products
<i>Program description</i>	
Stated objectives	To promote the development activity in primary agriculture and the manufacturing sectors of agriculture and fisheries
Type of program	A payment of up to 50 per cent of the cost of new product development, marketing, and processed products.
Year of commencement and completion	2000 — ongoing.
<i>Program evaluation</i>	
Eligibility	Applicants must possess the necessary skills to carry out projects submitted for consideration.
Thresholds/limits	50 per cent of the additional expenses of the project are covered.
Uptake	Data not available
Cost to government	1999 — DK174.6 million — national financed 2000 — DK290.0 million — national financed (estimate) 2001 — DK192.6 million — national financed (budgeted)
Impact on production, prices, investment	Limited expected impact on production and investment. No expected impact on prices.
Transparency	Information is available on government web sites.
Sunset clause	None
Review mechanism	Government auditors
Overall assessment	An aid program given to commercial exploitation of the development projects for the agriculture and fisheries sector. As a general rule, aid is repayable, if the results of the projects are used commercially. If, however, a sector as a whole, or in part, benefits from the subsidised activity, the aid is not repayable. No significant impact expected on the pig sector.

Source: World Trade Organisation Committee on Subsidies and Countervailing Measures, 15 December 2003.

Country	Denmark
Name of program	Advisory Services to Agriculture
<i>Program description</i>	
Stated objectives	To further the extension of new techniques of production and management and to ensure that farmers are offered low cost advisory services within specific relevant productions
Type of program	Government payment of 50 per cent of the wage expenditure for advisory services
Year of commencement and completion	1988 — permanent
<i>Program evaluation</i>	
Eligibility	Farmers who engage agricultural advisory services
Thresholds/limits	Limit is 50 per cent of the cost of wage expenditure for the services, within specific approved consultancy programmes.
Uptake	Data not available
Cost to government	2000 — DK138 million — national financed. 2001 — DK120 million — national financed (estimate) 2002 — DK97 million — national financed (budgeted)
Impact on production, prices, investment	No expected impact on production, prices or investment
Transparency	Information is available on government web sites.
Sunset clause	Permanent
Review mechanism	Government auditors
Overall assessment	Aid to farmers to use agricultural advisory expertise. Limited in scope, so not likely to have any significant impact on the pig sector.

Source: World Trade Organisation Committee on Subsidies and Countervailing Measures, 15 December 2003.

Country	Denmark
Name of program	Aid for Investments in Animal Welfare
<i>Program description</i>	
Stated objectives	To improve the conditions on holdings by supporting investments
Type of program	Payment to farmer of 5 per cent of eligible investment
Year of commencement and completion	2000 — permanent
<i>Program evaluation</i>	
Eligibility	Applicant must have an agricultural education, and the agricultural holding must have a need for labour of at least 833 hour per year and be in need of support, and present an investment plan.
Thresholds/limits	5 per cent of eligible investment
Uptake	Data not available
Cost to government	2000 — DK85 million — EU (refunds) 2001 — DK60 million — EU refunds (estimate) 2002 — DK50 million — EU refunds (budgeted) 2000 — DK170 million — national financed. 2001 — DK167 million — national financed (estimate) 2002 — DK150 million — national financed (budgeted)
Impact on production, prices, investment	No expected impact on production or prices; some limited impact on investment
Transparency	Information is available on government web sites
Sunset clause	Permanent
Review mechanism	Government auditors
Overall assessment	Little impact expected from this provision on pig operations. It does, however, reduce the effective cost to the pig producer of investment in the sector.

Source: World Trade Organisation Committee on Subsidies and Countervailing Measures, 15 December 2003.

Country	Denmark
Name of program	Environmentally Friendly Farming
<i>Program description</i>	
Stated objectives	To encourage environmentally friendly extensive cultivation of the areas and to minimise the risks of pollution of the ground water resources
Type of program	Annual payment to farmers based on holdings
Year of commencement and completion	1999 — permanent
<i>Program evaluation</i>	
Eligibility	Land situated in environmentally sensitive areas
Thresholds/limits	Annual payment between DK500 and 5000 per hectare depending on the purpose, the year and possibly the yield level, for five years (20 years for set-aside arable land).
Uptake	Data not available
Cost to government	2000 — DK24 million — EU refunds 2001 — DK45 million — EU refunds (estimate) 2002 — DK45 million — EU refunds (budgeted) 2000 — DK24 million — national financed 2001 — DK45 million — national financed (estimate) 2002 — DK45.1 million — national financed (budgeted)
Impact on production, prices, investment	No expected impact on production or prices. Program is likely to encourage investment because net cost of holding is reduced.
Transparency	Information is available on government web sites
Sunset clause	Permanent program
Review mechanism	Government auditors
Overall assessment	Not expected to have a significant impact on the pig sector. May provide limited benefit to pig producers facing environmental issues, especially with regards to groundwater quality.

Source: World Trade Organisation Committee on Subsidies and Countervailing Measures, 15 December 2003.

Country	Denmark
Name of program	Improving Processing and Marketing of Agricultural Products
<i>Program description</i>	
Stated objectives	The purpose of this scheme is to facilitate the improvement, rationalisation and processing and marketing of agricultural products and thereby make the products more competitive and give them enhanced added value. The objective is to improve the income of the primary producer.
Type of program	Direct payment to applicant
Year of commencement and completion	2000; program ends 2006
<i>Program evaluation</i>	
Eligibility	Applicant must have proof that the project will increase the primary producer's income or that the income is unchanged if the sale decreases.
Thresholds/limits	Project must be maintained for five years. The applicant must be able to demonstrate that own financing of the investment will amount to at least 50 per cent.
Uptake	Indeterminate
Cost to government	2001 — DK36 million — EU refund 2002 — DK7.8 million — EU refund (estimate) 2003 — DK12.5 million — EU refund (budgeted) 2001 — DK19 million — national funding 2002 — DK7 million — national funding (estimate) 2003 — DK12.5 million — national funding (budgeted)
Impact on production, prices, investment	The amounts being allocated to this program are sufficiently large to have a significant impact on production, prices or investment. Still, for individual farming units, this program may provide important support to the primary producer.
Transparency	Information is available on government web sites
Sunset clause	2006
Review mechanism	Government auditor.
Overall assessment	Improving processing and marketing conditions implies more competitive products, by the trade effects cannot be quantified.

Source: World Trade Organisation Committee on Subsidies and Countervailing Measures, 15 December 2003.

Country	Denmark
Name of program	Innovation, Research and Development in the Food, Agriculture and the Fisheries Sectors
<i>Program description</i>	
Stated objectives	To promote innovation research and development in the primary agricultural sector and the processing sectors of agriculture and fisheries
Type of program	Payments to research group
Year of commencement and completion	2000 — ongoing
<i>Program evaluation</i>	
Eligibility	Research institutes, groups or networks of small and medium sized enterprises.
Thresholds/limits	Up to 100 per cent support of project with a high degree of research, provided that the results are published. Support may be provided for up to 50 per cent of the additional costs of small and medium sized enterprises.
Uptake	Data not available
Cost to government	2001 — DK182 million — national financed 2002 — DK213 million — national financed (estimate) 2003 — DK151 million — national financed (budgeted)
Impact on production, prices, investment	Research and innovation can have a significant impact on sector investment, production and prices. The impact of this particular provision is uncertain.
Transparency	Information is available on government web sites.
Sunset clause	None
Review mechanism	Government auditors
Overall assessment	These types of program have the potential to have an impact both production and prices. The estimates of the effect on trade are indeterminate. Not likely to affect prices and production in the near term.

Source: World Trade Organisation Committee on Subsidies and Countervailing Measures, 15 December 2003.

Country	Denmark
Name of program	Control of Animal Diseases
<i>Program description</i>	
Stated objectives	Provide compensation for animals and feed destroyed as part of the control programs for animal diseases.
Type of program	In relation to control of animal diseases and zoonoses, compensation is paid to producers. Compensation is partly paid for loss of profits due to this destruction.
Year of commencement and completion	1999 — permanent
<i>Program evaluation</i>	
Eligibility	Animals and feed subject to government destruction order
Thresholds/limits	No specific thresholds
Uptake	Not available
Cost to government	2000 — DK2.0 million — national financed 2001 — DK8.0 million — national and EU financed (estimate) 2002 — DK8.1million — national and EU financed (budgeted)
Impact on production, prices, investment	No expected impact on production, prices or investment
Transparency	Information is available on government web sites.
Sunset clause	Permanent
Review mechanism	Government auditors
Overall assessment	Not a significant issue. Costs rose in 2002 as a result of a severe outbreak of Newcastle disease in poultry.

Source: World Trade Organisation Committee on Subsidies and Countervailing Measures, 15 December 2003.

Country	Denmark
Name of program	General measures — Per Mille Tax Funds and Production Tax Funds for the Sectors of Agriculture and Gardening
<i>Program description</i>	
Stated objectives	To contribute to the financing of common activities in the agriculture and gardening sectors concerning sales promotion, research, product development, counselling, training, prevention of diseases, control and special activities by the Minister of Food, Agriculture and Fisheries
Type of program	Payments to various individuals and entities
Year of commencement and completion	1973 — permanent
<i>Program evaluation</i>	
Eligibility	Various individuals and entities
Thresholds/limits	Indeterminate
Uptake	Indeterminate
Cost to government	2000 — DK646 million — national financed 2001 — DK676 million — national financed (estimate) 2002 — DK720 million — national financed (budget)
Impact on production, prices, investment	The tax funding various common activities will likely have an indirect impact on production, prices and investment. These are general measures covering a wide variety of agriculture activities.
Transparency	Information is available on government web sites.
Sunset clause	Permanent
Review mechanism	Government auditors
Overall assessment	Program is unlikely to have a significant impact on the pig production sector. Although the funding is significant overall, it is spread through so many activities that it will not likely have any direct impact on the pig sector.

Source: World Trade Organisation Committee on Subsidies and Countervailing Measures, 15 December 2003.

Country	European Union (EU)
Name of program	Export Subsidies — Budgetary Outlay and Quantity Reduction Commitments
<i>Program description</i>	
Stated objectives	Provide support for the pig production industry in the European Union.
Type of program	Payments to pig producers and processors
Year of commencement and completion	Ongoing
<i>Program evaluation</i>	
Eligibility	Various individuals and entities
Thresholds/limits	Indeterminate
Uptake	Indeterminate
Cost to government	€20 million — export assistance €191 million — annual commitment level
Impact on production, prices, investment	The funding provides pig producers and processors with a competitive advantage in production, with a resulting lower world price. Investment risk is reduced.
Transparency	Information is available on government web sites.
Sunset clause	Permanent
Review mechanism	Government auditors
Overall assessment	Program is likely to have an impact on the pig production sector.

Source: World Trade Organisation Committee on Agriculture, 26 May 2003.

Superseded programs

Country	Canada
Name of program	Agriculture Income Disaster Assistance (AIDA)
<i>Program description</i>	
Stated objectives	To provide income support to producers who are actively farming in Canada, when, for reasons beyond their control, there is an extreme reduction in their farm income
Type of program	National program available in all provinces. Claim payments were based on gross margins. Generally, the gross margin represented the income available to a farmer after deducting operating costs.
Year of commencement and completion	Introduced for the 1998–1999 taxation years under the Farm Income Protection Act. Replaced by CAIS in 2003.
<i>Program evaluation</i>	
Eligibility	Available to individuals, farming corporations, co-operatives and trusts filing a farm income tax return and supplementary information whose gross margin dropped below 70 per cent of their average gross margin over a three year reference period. All commodities were covered.
Thresholds/limits	A cap on payments. The federal share was based on a cap to individuals that did not exceed C\$175 000. Payments to corporations or cooperatives reflected the number of shareholders or members, to a maximum of five. Caps for the provincial share were determined by each province and might have affected the total amount receive by an applicant. Applicants were not required to pay an administration fee to qualify for federal funds under the program. Some provinces might have levied an administration fee to access provincial funds.
Uptake	15 000 assistance payments in 1998, when an additional 20 000 claims did not generate a payment
Cost to government	60 per cent federal and 40 per cent provincial. If producers were also participating in NISA, program payments under this program were reduced by an amount equivalent to 3 per cent of the producer's claim year eligible net sales, to eliminate duplicate support payments.
Impact on production, prices, investment	Provided a base income for all agricultural producers; not commodity specific. Program was likely to provide stabilisation for investment in agriculture and commodity prices.
Transparency	Significant amount of information was available on multiple web sites.
Sunset clause	Program is completed.
Review mechanism	Operational review by Agriculture and Agri-food Canada. Designed to meet the 'green box' criteria of the World Trade Organisation. AIDA was unable to process the 1998 claims for payment within fully acceptable time frames or error limits. Engaged PricewaterhouseCoopers to assess the Action Plan Agriculture and Agri-Food Canada.
Overall assessment	Program was an income stabilisation initiative. Precursor to the CAIS program. Difficult to administer. Basically an insurance program with government support.

Source: Agriculture and Agri-Food Canada, www.agr.gc.ca/review/rb-ep

Country	Canada
Name of program	Canadian Farm Income Program (CFIP)
<i>Program description</i>	
Stated objectives	To provide funds to producers who had a sudden and severe drop in income for reasons beyond their control such as flooding, disease, price collapse, or rapidly rising input costs
Type of program	National income support program available in all provinces. Designed to cover losses beyond a 30 per cent drop in income.
Year of commencement and completion	CFIP was a three-year program covering 2000, 2001 and 2002 claim years. Replaced the AIDA.
<i>Program evaluation</i>	
Eligibility	Producer must have been actively farming for at least six consecutive months in the claim year. Actively farming means carrying out the work to produce and market agricultural commodities, or participating in day-to-day management decisions. A producer must also have completed the production cycle during this time. A producer must have reported farm income or loss to the Canada Customs and Revenue Agency for the claim year.
Thresholds/limits	No dollar limitation. If producers were also participating in NISA, program payments under this program were reduced by an amount equivalent to 3 per cent of the producer's claim year eligible net sales in order to eliminate duplicate support payments.
Uptake	Claims received in 2002 stabilisation year — 38 672; Claims paid — 24 783 ^a
Cost to government	Jointly funded by national and provincial governments. Total value of direct payments in 2002 stabilisation year — C\$514 million. ^a
Impact on production, prices, investment	Production enhancing mechanism. Kept producers in business through floor on income. Stabilised investment in the sector.
Transparency	Significant amounts of information were available on web sites. FAQ's address most producer questions on eligibility and claim filing.
Sunset clause	Fiscal period had to end in 2002 to be eligible for payments
Review mechanism	Government auditors
Overall assessment	Program was an income stabilisation initiative — precursor to the CAIS program

Source: Agriculture and Agri-Food Canada, www.agr.gc.ca/review/rb-ep

^a Summary of CFIP/NISA Statistics — 2002 Stabilisation Year — Agriculture and Agri-Food Canada 2004.

Country	Canada
Name of program	Net Income Stabilisation Account (NISA)
<i>Program description</i>	
Stated objectives	Help producers achieve long term farm income stability on an individual basis.
Type of program	Voluntary program developed jointly between producers and the Government of Canada and participating provinces. Producers deposit money annually into their NISA account and receive matching government contributions. In lower income years, producers can make withdrawals from the funds they have set aside.
Year of commencement and completion	Completed for fiscal year 2002
<i>Program evaluation</i>	
Eligibility	Available to all agricultural producers; not commodity specific
Thresholds/limits	Up to 3 per cent of net eligible sales could be deposited to a savings account that was matched by the government. Producers could make additional, non-matchable deposits of up to 20 per cent of net sales, and could withdraw funds from a NISA account under a stabilisation or a minimum income trigger. NISA was effectively used as a retirement account.
Uptake	134 754 active participants for 2002 stabilisation year (at 27 June 2004). Value of account balances — C\$2.5 billion ^a
Cost to government	Variable. Depends on annual deposits by agricultural producers.
Impact on production, prices, investment	Provided base support for producers. Enabled producers to remain in business. Stabilised investment. Acted as levelling mechanism for producers. Allowed producers to draw down on NISA account in poor performing years.
Transparency	Information was readily available to producers on web sites and through email to government officials.
Sunset clause	Completed in 2002
Review mechanism	Government auditors
Overall assessment	The program, which has been superseded by CAIS, provided an income support mechanism for agricultural producers.

Source: Agriculture and Agri-Food Canada, www.agr.gc.ca/review/rb-ep

Country	Canada
Name of program	Saskatchewan Provincial Short-term Pig Loan Program
<i>Program description</i>	
Stated objectives	To assist pig producers experiencing high feed prices brought on by a severe drought in 2001 and 2002, and low market prices in 2002 and 2003
Type of program	Pig producers could receive three-year, variable-rate loans that did not require repayment until either (1) pig prices rose above C\$150 per hundred weight or (2) no later than 1 May 2004, with all loans and accrued interest going into repayment at that time. Repayable loan was made by provincial government at prime lending rate.
Year of commencement and completion	1998-99 and 2002-2003; completed April 2003
<i>Program evaluation</i>	
Eligibility	Pig producers
Thresholds/limits	Repayable at prime interest rate; no specific limitation
Uptake	Data unavailable
Cost to government	Maximum of C\$4million in loans
Impact on production, prices, investment	Little to no impact on production. Eased cost of investment. No expected impact on prices.
Transparency	Information was available from Saskatchewan provincial government.
Sunset clause	Completed April 2003
Review mechanism	Provincial auditors
Overall assessment	This short term loan program for pig producers was specific to the province. Other provinces have had similar programs. The total dollar amount was not significant enough to have a significant effect on pig production, prices or investment.

Source: Agriculture and Agri-Food Canada.

Country	Canada
Name of program	Saskatchewan Livestock and Horticultural Facilities Incentives Program
<i>Program description</i>	
Stated objectives	Assist in the diversification of Saskatchewan's rural economy by encouraging investment and job creation.
Type of program	Sales tax rebate on construction materials and equipment for livestock and horticultural facilities
Year of commencement and completion	Began June 1997; expired December 2003. Last date to apply for benefits was 30 June 2004.
<i>Program evaluation</i>	
Eligibility	Livestock and horticultural operators in Saskatchewan
Thresholds/limits	Above the first C\$500 in sales taxes on buildings and other farm equipment was rebated to the livestock and horticultural producer
Uptake	Data not available
Cost to government	Data not available
Impact on production, prices, investment	Small impact on production. Provided limited tax relief on investment in capital items.
Transparency	Information was available through Saskatchewan provincial taxing authorities.
Sunset clause	Completed December 2003
Review mechanism	Provincial auditors
Overall assessment	Each province has its own mechanism for administering tax policies. Some provinces have no sales tax (Alberta) and other provinces did not implement a rebate. Part of the US countervailing subsidy suit, program had little impact.

Source: Agriculture and Agri-Food Canada.

Country	Canada
Name of program	Western Grain Transportation Act
<i>Program description</i>	
Stated objectives	Lock in grain transportation costs to ports.
Type of program	Transportation assistance. Federal government set the transportation cost for shipping grain to the ports.
Year of commencement and completion	Early 1900s to 1995
<i>Program evaluation</i>	
Eligibility	All transporters of grain
Thresholds/limits	C\$25/ton flat fee for transporting grain to port
Uptake	Highly beneficial to grain farmers in Eastern Saskatchewan and Western Alberta
Cost to government	Data not available
Impact on production, prices, investment	Significant impact on costs related to shipping of grain. Downward pressure on prices. On its termination, landowners were entitled to receive a one-time payment to compensate for loss of transportation assistance. Only about 20 per cent of landowners received the payment.
Transparency	Established policy was well known among grain producers and exporters.
Sunset clause	Act was repealed in 1995.
Review mechanism	
Overall assessment	Transportation costs increased from C\$25 to C\$50 per ton following the repeal of the Act. Grain farmers faced a significant increase in the cost of shipping grain. Producers have shifted from export to feeding the grain through pigs in Saskatchewan and Alberta especially.

Source: Agriculture and Agri-Food Canada.

Country	Canada
Name of program	Farm Credit Canada Financing (FCC) — Flexi-Pig Loan Program
<i>Program description</i>	
Stated objectives	Help pig producers deal with market fluctuations and better manage temporary downturns.
Type of program	One-year deferral of principal payments for up to three times during life of loan
Year of commencement and completion	May 2000 – December 2003 (when merged into FCC's Flexi-Farm product)
<i>Program evaluation</i>	
Eligibility	Pig producers
Thresholds/limits	Pig producers offered fixed or variable rate, long term loans with flexible repayment terms. Interest payments required even when principal deferral was elected. Maximum loan period of 15 years for new facilities construction.
Uptake	Data not available
Cost to government	Data not available
Impact on production, prices, investment	Minimal impact on production and prices. Provided some cash flow relief to investment. Offered lower interest rates than on comparable private sector loans
Transparency	Information was available through FCC.
Sunset clause	December 2003
Review mechanism	Government auditors
Overall assessment	Program was included in the US countervailing subsidy suit. Not likely to have had a significant impact on production and prices for pig producers.

Source: FCC.

References

- AAFC (Agriculture and Agri-food Canada) 2004, *Canadian Agricultural Income Stabilization Program (CAIS) Handbook*, Revised edn, British Columbia, Canada.
- ABARE (Australian Bureau of Agricultural and Resource Economics) 2000, *Australian Commodity Statistics 2000*, Canberra.
- 2001, *Australian Commodity Statistics 2001*, Canberra.
- 2003a, *Australian Commodity Statistics 2002*, Canberra.
- 2003b, *Australian Commodity Statistics 2003*, Canberra.
- 2004a, *Australian Commodities*, vol. 11, no. 3, Canberra.
- 2004b, *Australian Commodity Statistics 2004*, Canberra.
- 2004c, *Australian Crop Report September 2004*, no. 131, Canberra.
- ABS (Australian Bureau of Statistics) 2005a, *Agricultural Census 2001* (unpublished), Canberra.
- 2005b, *Australian Industry 2001-02 and 2002-03*, Cat. no. 8155.0 (and previous years), Canberra.
- 2005c, *Value of Principal Agricultural Commodities Produced, Australia, Preliminary 2003-04*, Cat. no. 7501.0, Canberra.
- ACCC (Australian Competition and Consumer Commission) 2002, *Food and Beverage Industry: Country of Origin Claims and the Trade Practices Act*, Canberra, www.accc.gov.au/content/index.phtml/itemId/306388 (accessed 5 October 2004).
- 2004a, *Country of Origin Claims and the Trade Practices Act*, Canberra, www.accc.gov.au/content/index.phtml/itemId/303666 (accessed 5 October 2004).
- 2004b, *Food Labelling*, www.accc.gov.au/content/index.phtml/itemId/503366/fromItemId/7119 (accessed 5 October 2004).
- ANAO (Australian National Audit Office) 2000, *AQIS Cost Recovery Systems: Australian Quarantine Inspection Service*, Audit report no. 1 2000-01, Canberra.

-
- 2003, *Administration of Three Key Components of the Agriculture — Advancing Australia (AAA) Package: Department of Agriculture, Fisheries and Forestry Australia, Centrelink, Australian Taxation Office*, Audit report no. 1 2003-04, Canberra.
- Animal Health Australia 2004, *Animal Health in Australia 2003*, Canberra, www.aahc.com.au/status/ahiareport/ (accessed 5 October 2004).
- APL (Australian Pork Limited) 2002a, *Draft National Environmental Strategy for the Pig Industry*, Canberra.
- 2002b, *Strategic Plan 2002–2005*, Canberra.
- 2003a, *Annual Report 2002-03*, Canberra.
- 2003b, ‘Australian Pork Limited receives Commonwealth funding to research the conversion of pig waste to electricity’, Media release, Canberra, 2 April.
- 2003c, *Guidelines for APL’s Product Development Program*, Canberra.
- 2003d, *Pigstats 2002* (and previous years), Canberra.
- 2003e, ‘Pork industry boosts quality program’, Media release, Canberra, 6 January.
- 2003f, *Research Newsletter*, Canberra, 12 November.
- 2004a, ‘About APL’, www.australianpork.com.au/index.cfm?menuid=E6780FAA-B0D0-36D2-5CEB4493CC31D2E7 (accessed 23 September 2004).
- 2004b *Annual Report 2003-04*, Canberra.
- 2004c, *Australian Pig Annual 2003*, Canberra.
- 2004d, *Australian Pork Industry Strategic Restructure Plan*, Canberra.
- 2004e, ‘Drought information: Western Australia’, www.australianpork.com.au/index.cfm?menuid=F867299E-F168-23BF-221E89956F7CD8FE#WA (accessed 29 September 2004).
- 2004f, *Farm Management Deposits*, Fact sheet, Canberra, 5 January.
- 2004g, ‘Hello — pork leads change in consumer eating habits’, Media release, Canberra, 20 July.
- 2004h, *National Environmental Guidelines for Piggeries*, Canberra.
- 2004i, ‘Pork industry applauds HomeGrown initiative’, Media release, Canberra, 7 October.
- 2004j, ‘Pork industry responds to Productivity Commission’s draft report’, Media Release, Canberra, 15 December.

-
- 2004k, 'Pork industry welcomes global initiative', Media release, Canberra, 18 May.
- 2005a, 'So, you're thinking of expanding your piggery', www.australianpork.com.au/index.cfm?menuid=BB24D751-9027-E533-1F8E2A1A5BFC0305 (accessed 15 February 2005).
- 2005b, *Technology Adoption: Pigline 2002 international farmgate benchmarking project – Project no 1290*, www.apl.au.com/index.cfm?menuid=FB225F6D-B0D0-36D2-5C9F7E2B4BDD0F3D (accessed 8 March 2005).
- AQIS (Australian Quarantine and Inspection Service) 1999, *Porcine Semen Import Risk Analysis: Technical Issues Paper*, Canberra, www.affa.gov.au/content/publications.cfm?ObjectID=9019EF32-8A99-4DD0-995E1AEF46DEABA0 (accessed 11 October 2004).
- 2000, *Draft Porcine Semen Import Risk Analysis: Risk Assessment and Risk Management Options*, Canberra, www.affa.gov.au/corporate_docs/publications/pdf/market_access/biosecurity/animal/2000/00-020a.pdf (accessed 11 October 2004).
- 2002, *AQIS Fees and Charging Policy*, Canberra, www.affa.gov.au/corporate_docs/publications/pdf/quarantine/executiv/AQISFeesandChargesPolicy.pdf (accessed 4 October 2004).
- 2004, *Export — the Export Process*, www.affa.gov.au/corporate_docs/publications/pdf/quarantine/pr/efo.pdf (accessed 5 October 2004).
- Australian Customs Service 2002, *Dumping and Subsidisation*, vol. 22, Canberra.
- Australian Government 2004a, *A Stronger Economy, a Stronger Australia, the Howard Government Election 2004 Policy: Quarantine and Border Protection*, www.liberal.org.au/2004_policy/Sept30_Quarantine_and_Border_Protection.pdf (accessed 12 November 2004).
- 2004b, *Budget 2004-05: Budget Paper no. 2*, Australian Government, Canberra.
- Biosecurity Australia 2003, *Import Risk Analysis Handbook*, Australian Government Department of Agriculture, Fisheries and Forestry, Canberra, www.affa.gov.au/content/publications.cfm?ObjectID=D667DCE6-A412-4673-A6B49B7579CF4AD7 (accessed 4 October 2004).
- BPEX (British Pig Executive) 2002, *EU Cost of production project*, www.bpex.org/technical/publications/pdf/2002COPrepor.pdf (accessed 14 February 2005).

Canadian Pork Council 2005, *Statistics*, www.cpc-ccp.com/stats.html (accessed 16 February 2005).

CIE (Centre for International Economics) 2001, *Review of the Tasmanian Wheat Freight Scheme*, Report prepared for the Australian Government Department of Agriculture, Fisheries and Forestry Australia, Canberra.

— 2003, *The Rural Research and Development Corporations: A Case Study for Innovation*, Report prepared for Science and Innovation and Mapping, Department of Education, Science and Training, Canberra.

Clare, R. and Johnston, K. 1993, *Education and Training in the 1990s*, Economic Planning Advisory Council background paper no. 31, Canberra.

DAF (Development Assessment Forum) 2004, 'About DAF', www.daf.gov.au/about.aspx (accessed 4 November 2004).

DAFF (Department of Agriculture, Fisheries and Forestry) 2001, *Innovating Rural Australia: Research and Development Corporations Outcomes 2001*, www.affa.gov.au/corporate_docs/publications/pdf/innovation/innovating_rural_australia.pdf (accessed 25 February 2005).

— 2002a, *Pork Producer Exit Program*, Australian Government, Canberra, www.affa.gov.au/content/output.cfm?ObjectID=D2C48F86-BA1A-11A1-A2200060B0A00025 (accessed 6 October 2004).

— 2002b, *Tasmanian Wheat Freight Scheme*, Australian Government, Canberra, www.affa.gov.au/content/output.cfm?ObjectID=D2C48F86-BA1A-11A1-A2200060B0A00122 (accessed 16 November 2004).

— 2003a, *National Pork Industry Development Program — Overview*, Australian Government, Canberra, www.affa.gov.au/content/output.cfm?ObjectID=52CE5207-47F0-417C-9A05F62175550C51 (accessed 28 September 2004).

— 2003b, *Pigmeat Processing Grants Program*, Australian Government, Canberra, www.affa.gov.au/content/output.cfm?ObjectID=BB66029D-8886-432B-96A735F7A252FEDB (accessed 28 September 2004).

— 2004a, *Agriculture Advancing Australia*, Australian Government, Canberra, www.affa.gov.au/content/output.cfm?ObjectID=D2C48F86-BA1A-11A1-A2200060B0A00144&contType=outputs (accessed 4 October 2004).

— 2004b, *Generic Import Risk Analysis (IRA) for Pig Meat: Final Import Risk Analysis Report*, Australian Government, Canberra, www.affa.gov.au/content/publications.cfm?ObjectID=EAA47406-D373-4205-AC85A3D6A8AA7046 (accessed 5 October 2004).

-
- 2004c, *Innovating Rural Australia: Research and Development Corporations Outcomes 2003*, www.daff.gov.au/content/output.cfm?ObjectID=E5D66AF6-2168-4A56-94D27A11D9D6ACF5 (accessed 1 February 2005).
- 2004d, *Review of the Agriculture — Advancing Australia Package 2000–04: Summary of Findings and Issues*, Canberra, www.affa.gov.au/content/publications.cfm?ObjectID=C6CB6741-1D69-4F3E-B1DEECBD0653A17E (accessed 18 February 2005).
- 2004e, *The SPS Agreement: Helping Australia Trade*, Australian Government, Canberra, www.affa.gov.au/content/publications.cfm?ObjectID=DD716FD7-1C6C-4882-9BCDF4DE4B20781F (accessed 5 October 2004).
- 2005, *Exceptional Circumstances (EC)*, www.affa.gov.au/content/output.cfm?ObjectID=63D99C14-DAC4-4BFD-A299B8B576A735CA (accessed 15 March 2005).
- Danish Agriculture 2004, *Agriculture in Denmark 2003-04*, www.landbo.dk/data/177465/4683/ENG-LO-2003.pdf (accessed 9 February 2005).
- Danish Competition Authority 2002, *The Merger Between Danish Crown and Steff-Houlberg*, National decision 26 April 2002, www.ks.dk/english/competition/national/before04/Kap1-danishCrown/ (accessed 28 February 2005).
- Danish Crown 2004, *Annual Report 2003-04*, Randers, Denmark.
- Danske Slagterier 2004, *Statistics 2003*, www.danskeslagterier.dk/smmedia/UK_stat_pdf?mb_GUID=254A7C6F-508C-4B9A-8009-63FF0AD0893C.pdf (accessed 4 November 2004).
- Debus, B. (New South Wales Minister for Environment) 2003, 'New partnership addresses effluent re-use', Media release, Sydney, 3 November.
- DEST (Department of Education, Science and Training) 2004, 'Notification of intent', Australian Government, Canberra, www.crc.gov.au/Information/AcceptedNOIDetail.aspx?RefID=442 (accessed 4 November 2004).
- Deutsch, R.L., Friezer, M.L., Fullarton, I.G., Gibson, M.M., Hanley, P.J. and Snape, T.J. 2004, *Australian Tax Handbook 2004*, Australian Tax Practice, Sydney.
- Dial, G.D., Roker, J.R. and McWilliams, M.S. 2004, 'Driving cost out of the production system', Greenleaf Agribusiness Group, Prairie Swine Centre, www.thepigsite.com/FeaturedArticle/Default.asp?Display=1099 (accessed 22 November 2004).
- DITR (Department of Industry, Tourism and Resources) 2005, *Government Biofuels Initiatives*, Canberra, www.industry.gov.au/content/itrinternet/cmscontent.cfm?

objectID=A9D9A207-0351-51FB-F20C287758203878 (accessed 24 February 2005).

DOTARS (Department of Transport and Regional Services) 2004a, *Australia's Regions: Working in Partnership*, Australian Government, Canberra, www.dotars.gov.au/dept/budget/regional/2003_2004/infrastructure.aspx (accessed 15 November 2004).

—— 2004b *Regional Development*, Australian Government, Canberra, www.dotars.gov.au/regional (accessed 12 October 2004).

—— 2004c, *Tasmanian Freight Equalisation Scheme*, Australian Government, Canberra, www.dotars.gov.au/transprog/maritime/tfes.htm (accessed 15 November 2004).

Douglas, R., Dwyer, G. and Peterson, D. 2004, 'Activity gross margins and water reform', *Connections*, May, www.agrifood.info/10pub_conn_Aug2004.htm (accessed 24 November 2004).

DPI (Department of Primary Industries) 2004, *Drought Assistance — Intensive Livestock Industry (Pigs, Poultry, Aquaculture and Bee-Keeping)*, Queensland Government, Brisbane, www.dpi.qld.gov.au/drought/11884.html (accessed 29 September 2004).

Drought Review Panel 2004, *Consultations on National Drought Policy*, Department of Agriculture, Fisheries and Forestry, Australian Government, Canberra.

EconStats 2005, Chicago Board of Trade, *Wheat pit Futures — closing price*, www.econstats.com/fut/xc_b_em3.htm (accessed 24 January 2005).

Ernst and Young 2001, *Review of the National Pork Industry Development Program*, Report to the Department of Agriculture, Fisheries and Forestry, Australian Government, Canberra.

European Commission 2004, *Agricultural Markets — Prices*, Directorate General of Agriculture, europa.eu.int/comm/agriculture/publi/prices/2004/prix2004_3.pdf (and previous years) (accessed 8 December 2004).

European Competition Authority 1999, Case No. IV/M.1313 Danish Crown / Vestjyske Slagterier 9/3/1999, Brussels, Luxembourg.

—— 2002, Case No. COMP/M.2662 Danish Crown / Steff-Houlberg 14/2/2002, Brussels, Luxembourg.

—— 2004a, Case No. COMP/M.3401 Danish Crown / Flagship Foods 17/06/2004, Brussels, Luxembourg.

—— 2004b, Case No. COMP/M.3522 Danish Crown / HK / Sokolow 13/9/2004, Brussels, Luxembourg.

-
- European Union 2003, 'EC Regulation 1458/2003', *Official Journal of the European Union*, no. L208, 19 August.
- Finn, J. 2003, *The Danish Pig Industry*, Teagasc Irish Agriculture and Food Development, Moorepark, www.teagasc.ie/publications/2003/pigconf/paper07.htm (accessed 3 November 2004).
- FAO (Food and Agriculture Organization of the United Nations) 2004, 'Agricultural data', faostat.fao.org/faostat/form?collection=Production.Livestock.Primary&Domain=Production&servlet=1&hasbulk=&version=ext&language=EN (accessed 24 November 2004).
- 2005, 'Agricultural data', faostat.fao.org/faostat/form?collection=Production.Livestock.Primary&Domain=Production&servlet=1&hasbulk=&version=ext&language=EN (accessed 16 February 2005).
- Gaus, J. and Haxsen, G. 2004, *International Comparison of Costs and Returns in Pig Production at the Farm Level*, Institut für Betriebswirtschaft, Braunschweig, Germany.
- Grains Council of Australia 2004, *Review of National Competition Policy Reforms*, Submission to the Productivity Commission on the discussion draft report, Canberra.
- Hafi, A. and Connell, P. 2003, *Feed Grains: Future Supply and Demand in Australia*, ABARE eReport 03.21, Prepared for the Grains Research and Development Corporation, Canberra.
- Hardaker, J.B., Huirne, R.B.M. and Anderson, J.R. 1997, *Coping with Risk in Agriculture*, CAB International, Wallingford, United Kingdom.
- Harris, S. 1970, 'Farm adjustment and the role of government', *Australian Journal of Agricultural Economics*, vol. 14, no. 2, pp. 107–20.
- Hassall & Associates 1994, *Pig Processing Benchmarking Study*, Report for the Pig Research and Development Corporation and Agri-Food Council Secretariat, Department of Industry Science and Technology, Australian Government, Canberra.
- IC (Industry Commission) 1993, *Horticulture*, Report no. 29, Canberra.
- 1995a, *Pigs and Piguineat*, Research Project, Canberra.
- 1995b, *Research and Development*, Report no. 44, Canberra.
- 1996, Submission to the Mid-term Review of the Rural Adjustment Scheme, Canberra.

-
- Irving, M., Arney J. and Lindner B. 2000, *National Competition Policy Review of the Wheat Marketing Act 1989*, National Competition Policy — Wheat Marketing Review Committee, Canberra.
- Jackson, M. 2004, 'Grain discount win', *Weekly Times*, 29 September, p. 3.
- Lattimore, R., Martin, B., Madge, A. and Mills J. 1998, *Design Principles for Small Business Programs and Regulations*, Productivity Commission staff research paper, Canberra.
- Macarthur Agribusiness 2003, *Review Options to Reduce Feedstuff Supply Variability in Australia*, Report prepared for Meat and Livestock Australia, Sydney.
- MacDonald, J.M. and Ollinger, M.E., 2000, 'Scale Economies and Consolidation in Hog Slaughter', *American Journal of Agricultural Economics*, no. 8, pp. 334–46.
- MAFF (Ministry of Agriculture, Fisheries and Forestry of Japan) 2005, *Number of Farm Households Raising Pigs by Size*, www.maff.go.jp/toukei/abstract/1_5/23b.htm (accessed 16 February 2005).
- Makise K. 2002, *Maintaining and Expanding Export Pork Demand to Japan*, www.banffpork.ca/proc/2002pdf/Chap04Makise.pdf (accessed 16 February 2005).
- Mauldon, R.G. and Schapper, H.P. 1974, *Australian Farmers under Stress in Prosperity and Recession*, University of Western Australia Press, Perth.
- McColl, J.C., Donald, R. and Shearer, C. 1997, *Rural Adjustment: Managing Change*, Mid-term Review of the Rural Adjustment Scheme, Department of Primary Industries and Energy, Australian Government, Canberra.
- Mounter, S.W, Griffith, G.R. and Piggott, R.R. 2004, *The Payoff from Generic Advertising by the Australian Pig Industry in the Presence of Trade*, University of New England Graduate School of Agricultural and Resource Economics and School of Economics working paper 04-3, Armidale, New South Wales.
- Murraylands 2004, *Primary Production and Packing: Auspork Australia Pty Ltd*, www.murraylands.org.au/export/primaryproduction/secondleveltemp.cfm?ID=718m (accessed 20 October 2004).
- Musgrave, W.F. 1990, 'Rural adjustment', in Williams, D.B. (ed), *Agriculture in the Australian Economy*, 3rd edition, Sydney University Press, Sydney, pp. 248–65.
- National Committee for Pig Production 2004, *Annual Report 2003*, www.danskeslagterier.dk/smcms/LU_engelsk/Research_and_dev_lu/Annual_Report/Index.htm?ID=539 (accessed 22 November 2004).

-
- National Competition Council 2003, *Assessment of Governments' Progress in Implementing the National Competition Policy and Related Reforms: Volume Two — Legislation Review and Reform*, Melbourne.
- 2004, *NCC Occasional Series: a Review of the NCP Grain Market Reforms*, Melbourne.
- Nelson, B. (Minister for Education, Science and Training) 2004, '\$400 million boost for innovation — Cooperative Research Centres grants announced', Media release, Canberra, 21 December.
- New South Wales Agriculture 2003, 'Pig producers turn to improved breeding and animal selection as drought hits industry harder', Media release, Sydney, 6 June.
- OECD (Organisation for Economic Cooperation and Development) 2002, *Methodology for the Measurement of Support and Use in Policy Evaluation*, www.oecd.org/dataoecd/36/47/1937457.pdf (accessed 7 February 2005).
- 2003a, *Agriculture, Trade and the Environment: the Pig Sector*, Paris.
- 2003b, *Development Co-operation Review Denmark*, Development Assistance Committee, Paris.
- 2004, *Producer and Consumer Support Estimates*, OECD database 1986–2003, www.oecd.org/document/58/0,2340,en_2649_33727_32264698_1_1_1_1,00.html (accessed 4 November 2004).
- ORR (Office of Regulation Review) 1998, *A Guide to Regulation*, 2nd edn, Productivity Commission, Canberra.
- PC (Productivity Commission) 1998, *Pig and Piguemeat Industries: Safeguard Action against Imports*, Report no. 3, Canberra.
- 1999, *Impact of Competition Policy Reforms on Rural and Regional Australia*, Report no. 8, Canberra.
- 2000a, *Single-Desk Marketing: Assessing the Economic Arguments*, Staff research paper, Canberra.
- 2000b, *Submission to the National Competition Policy Review of the Wheat Marketing Act 1989*, Melbourne.
- 2001a, *Cost Recovery by Government Agencies*, Report no. 15, Canberra.
- 2001b, *Structural Adjustment — Key Policy Issues*, Staff research paper, Canberra.
- 2002, *Citrus Growing and Processing*, Report no. 20, Canberra.
- 2003, *Review of TCF Assistance*, Report no. 26, Canberra.

-
- 2004a, *Assessing Environmental Regulatory Arrangements for Aquaculture*, Canberra.
- 2004b, *First Home Ownership*, Report no. 28, Melbourne.
- 2004c, *Review of National Competition Policy Reforms*, Discussion draft, Canberra.
- 2004d, *Trade and Assistance Review 2002-03*, Annual Report Series 2002-03, Canberra.
- Peterson, D.C., Dunne, S.H., Morris, P.C. and Knopke, P. 1991, 'Developments in debt for broadacre agriculture', *Agriculture and Resources Quarterly*, vol. 3, no. 3, pp. 349–59.
- Plain, R. 2005, *US Swine Economics Report*, www.thepigsite.com/LatestNews/Default.asp?AREA=LatestNews&Display=8890 (accessed 16 February 2005).
- Porter, M.E. 1990, *The Competitive Advantage of Nations*, Macmillan, London.
- and Ketels, C.H.M. 2003, *UK Competitiveness: Moving to the Next Stage*, DTI Economics paper no. 3, www.esrc.ac.uk/esrccontent/DownloadDocs/Paper%203_Porter_and_Ketels_Published.pdf (accessed 6 October 2004).
- ProAnd Associates 1998, *Desk Study of International Information to Access the Competitiveness of the Australian Pork Processing Industry*, Report for the Pig Research and Development Corporation, Canberra.
- 1999, *Review of Opportunities for Pork Co-products*, Report for the Pig Research and Development Corporation, Sydney.
- 2000, *A Comparison of the Value Chain for Pork in Australia and Western Canada*, Report for the Pig Research and Development Corporation, Sydney.
- QAF 2004, *Annual Report 2003*, www.qaf.com.sg/ar2003/QAF2003.pdf (accessed 29 November 2004).
- 2005, *Full Year Financial Statement and Dividend Announcement for the year ended 31 December 2004*, www.qaf.com.sg/QAFFY2004Results.pdf (accessed 3 March 2005).
- Rasmussen, J. 2002, *Production Costs in International Pig Production 2000*, National Committee for Pig Production, Danish Bacon and Meat Council, Copenhagen, www.gov.mb.ca/agriculture/livestock/pork/swine/pdf/bab18s07.pdf (accessed 23 September 2004).
- 2004, 'Costs of pig production — an international perspective', Presentation to the Manitoba Swine Seminar, Winnipeg, Canada, 28–29 January,

-
- www.gov.mb.ca/agriculture/livestock/pork/swine/bab18s07_files/frame.html
(accessed 23 September 2004).
- Rendell McGuckian 2001, *PorkBiz Final Report*, Report to the Department of Agriculture, Fisheries and Forestry, Australian Government, Canberra.
- 2002, *PorkBiz Extension*, Report to the Department of Agriculture, Fisheries and Forestry, Australian Government, Canberra.
- Roberts, I. 2005, *WTO Agreement of Agriculture: The Blue Box in the July 2004 Framework Agreement*, ABARE eReport 05.04, Canberra.
- Robinson, L.J. and Barry, P.J. 1987, *The Competitive Farm's Response to Risk*, Macmillan, New York.
- RSM Bird Cameron 2005, *Review of the Benefits and Costs of the Operations of the Grain Marketing Act 2002 and the Grain Licensing Authority*, Report to the Department of Agriculture (Western Australia), Perth.
- Sheales, T., Apted, S. and Ashton, D. 2004, *Economic Assessment of the Effects of Pig Meat Imports on the Australian Industry*, ABARE eReport 04.15, Prepared for the Market Access and Biodiversity Division, Department of Agriculture, Fisheries and Forestry, Australian Government, Canberra.
- Smithfield Foods Inc. 2004, *Annual Report 2004*, Smithfield, USA.
- Solutions Marketing and Research 2003, *AAA/AFFA Program Evaluation: Rural Producer Survey 2002*, Final report to the Department of Agriculture, Fisheries and Forestry, Australian Government, Canberra, www.affa.gov.au/content/publications.cfm?ObjectID=C6CB6741-1D69-4F3E-B1DEECBD0653A17E
(accessed 12 November 2004).
- Spencer, S. 2004, *Price Determination in the Australian Food Industry: a Report*, Department of Agriculture, Fisheries and Forestry, Australian Government, Canberra.
- Statistics Denmark 2005, *KORNI: Sale prices for cereals, rape seed and peas by crop*, www.statbank.dk/statbank5a/default.asp?w=1024 (accessed 23 January 2005).
- Taylor, L. 2005, 'Nats pushing for ethanol–petrol blend', *The Australian Financial Review*, 16 February, p. 3.
- Troeth, J. (Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry) 2004, 'Pork industry sets guidelines for the future', Media release, Canberra, 23 August.
- Truss, W. (Minister for Agriculture, Fisheries and Forestry) 2002a, 'New processing plant to enhance pork exports', Media release, Canberra, 1 May.

-
- 2002b, 'NSW communities affected by dairy deregulation to share in \$14.2 million federal funding', Media release, Canberra, 31 May.
- 2003, 'Queensland Atherton dairy and pork producers eligible for interim Australian Government drought support', Media release, Canberra, 31 August.
- 2004a, 'Export assistance for pork industry', Media release, Canberra, 18 May.
- 2004b, 'Helping Australian shoppers buy HomeGrown', Media release, Canberra, 7 October.
- 2005, 'HomeGrown challenge for fair dinkum shoppers', Media release, Canberra, 27 January.
- US Meat Export Federation 2003, *An Assessment of Fresh/Frozen US Pork Export Potential to Australia*, Denver, Colorado.
- USDA (US Department of Agriculture) 2001, *China: Agriculture in Transition*, ERS Agriculture and Trade Report no. WRS012, Washington DC.
- 2004a, *Brazil Livestock and Products Annual Report 2004*, www.fas.usda.gov/gainfiles/200408/146107381.pdf (accessed 15 February 2005).
- 2004b, *Canada's Pork Situation*, www.fas.usda.gov/dlp/countrypages/capksit.pdf (accessed 16 November 2004).
- 2004c, *International Trade Report: Japan's Pork Safeguard*, Agriculture and Trade Report, Foreign Agricultural Service, Washington DC.
- 2004d, *Livestock and Poultry: World Markets and Trade*, Foreign Agricultural Service, Circular Series DL&P 2-04, Washington DC.
- 2004e, *Pork Summary Selected Countries*, www.fas.usda.gov/psd/complete_tables/LP-table2-28.htm (accessed 24 November 2004).
- 2004f, *US-EU Food and Agriculture Comparisons*, Agriculture and Trade Report WRS-04-04, Economic Research Service, Washington DC.
- 2005a, *Australia: Livestock and Products Semi Annual 2005*, www.fas.usda.gov/gainfiles/200502/146118708.pdf (accessed 10 March 2005).
- 2005b, *Production, Supply and Distribution Database for Meat, Swine*, www.fas.usda.gov/psd/complete_files/LP-0113000.csv (accessed 15 February 2005).
- Weiss, J. 2004, *People's Republic of China and Its Neighbors: Partners or Competitors for Trade and Investment?*, ADB Institute discussion paper no. 13, www.adbi.org/scripts/download_file.php?file=2004.08.dp13.prc.neighbors.trade.investment.pdf (accessed 6 October 2004).

-
- Western Research Institute 2002, *Socio-Economic Impacts of the Australian Pork Industry*, Report prepared for Australian Pork Limited, Bathurst, New South Wales.
- Wheat Marketing Review Panel 2004, *2004 Wheat Marketing Review: Growers' Report*, www.2004wheatreview.gov.au/documents/growers_report.pdf (accessed 15 October 2004).
- WTO (World Trade Organization) 1997, *Economic Effects of Services Liberalization*, Council for Trade in Services, docsonline.wto.org/gen-search.asp (accessed 24 November 2004).
- 2003, *New and Full Notification Pursuant to Article XVI:1 of the GATT 1994 and Article 25 of the Agreement on Subsidies and Countervailing Measures: European Communities*, addendum relating to subsidy programmes of Denmark.
- 2004, *Understanding the WTO: the Agreements — Standards and Safety*, www.wto.org/english/thewto_e/whatis_e/tif_e/agrm4_e.htm (accessed 5 October 2004).
- x-rates.com 2004a, *Canadian dollars to 1 AUD: average rates*, www.x-rates.com/d/CAD/AUD/hist2004.html (and previous years) (accessed 1 October 2004).
- 2004b, *Danish kroner to 1 AUD: average rates*, www.x-rates.com/d/DKK/AUD/ (and previous years) (accessed 1 October 2004).
- 2004c, *US dollars to 1 AUD: average rates*, www.x-rates.com/d/USD/AUD/hist2004.html (and previous years) (accessed 1 October 2004).
- 2004d, *British Pounds to 1 AUD: average rates*, www.x-rates.com/d/GBP/AUD/hist2002.html (accessed 23 February 2005).
- 2004e, *Euros to 1 AUD: average rates*, www.x-rates.com/d/EUR/AUD/hist2002.html (accessed 23 February 2005).
- 2005, *Danish Kroner to 1 USD: average rates*, www.x-rates.com/d/DKK/USD/hist2005.html (and previous years) (accessed 25 February 2005).