PPI

AMPC

mla
MEAT & LIVESTOCK AUSTRALIA

International benchmarking of the small goods industry M.671

Prepared by:
Hassall & Associates Pty Ltd

Published: December 1995

Meat & Livestock Australia acknowledges the matching funds provided by the Australian Government and contributions from the Australian Meat Processor Corporation to support the research and development detailed in this publication.

MEAT & LIVESTOCK
AUSTRALIA

CONTENTS

List of Tables:

EXECUTIVE SUMMARY

INTRODUCTION

This is the FIRST benchmarking study undertaken of the performance of the Australian processed meats industry (subsequently referred to as the smallgoods industry).

The study provides objective measures of the current structure of the industry, and the performance of a range of large and medium sized plants. The performance of Australian smallgoods plants is compared with that of best practice plants in the United States and Europe.

The objective of these comparisons is to provide information, ideas and stimulus to promote continuous improvement in the performance of Australian plants.

The data for the study was provided by:

- Six major Australian plants who participated in detailed plant visits and follow-ups by Hassall & Associates;
- Twelve medium sized plants who responded to a mail questionnaire; and
- Six overseas plants - three in Germany, two in the United States and one in the United Kingdom.

The cooperation of all the above companies in the study is gratefully acknowledged.

Like most pioneering ventures, the study has faced many barriers in terms of product and process definition, allocation of labour and costs, and more generally in persuading participants of the value of better measurement of their performance relative to others.

The market and business environments faced by the overseas plants are different in many respects from the Australian environment. Nevertheless, the best practice plants in Europe and the United States have prospered in a more competitive environment. They are a rich source of knowledge and innovation as to the necessary steps to improved performance.

Hassall & Associates hope this report will encourage Australian smallgoods plants:

- to better measure their performance
- so as to better manage their performance
- to become more internationally competitive.

Plant size

Plant comparisons also involved comparing Australian plants with mostly larger plants overseas, although a range of different sized plants were involved with both the domestic and overseas benchmarks. The suitability of the overseas plants was based on the fact they were producing similar product ranges, using similar processes at lower unit costs, and hence a potential source of information on best practice.

Size of enterprise

Australia	Best Practice (BP) plants in the study had an average annual value of sales of $44 million.
United States	Largest meat processing companies have multiple plants with annual sales in excess of $1,000 million. Major plants have turnovers well in excess of $100 million.
Germany	Major plants have turnovers in excess of $100 million.

Meat consumption

Per capita meat consumption in total is highest in the United States, followed by Australia, then Europe, and the break up of meat types varies markedly. The differences in the availability, price, and consumer acceptance of the various meat types impacts on their relative usage in smallgoods, and on the relative costs of final products.

Meat consumption per capita

		Australia	United States	European Union
Pork	Kg	18.8	30.6	40.5
Beef	Kg	37.8	42.7	19.4
Poultry	Kg	26.3	39.9	18.8
Sheepmeat	Kg	19.6	1.3	4.1
TOTAL	**Kg**	**102.5**	**114.5**	**82.8**

Meat Usage

Pork is the dominant meat used in smallgoods. In Australia, the large firms in the benchmark program used 80% pork. The medium sized companies, however, averaged 63% pork usage and have a much higher mutton usage (23%).

Meat usage in benchmarked plants

	Australia		United States	Europe
	6 larger plants (%)	12 medium plants(%)	%	%
Pork	80	63	(a)	>90
Beef	9	10	(a)	<10
Poultry	1	4	(a)	<1
Mutton	10	23	(a)	Nil
TOTAL	**100**	**100**		**100**

(a) Average usage in United States is not known; one plant used 95% pork, 5% beef and no poultry; other plants use up to 50% poultry in hot dogs and bologna.

Comparable figures are not available for the United States but poultry usage - both chicken and turkey - would be substantial compared with the very low usage in Australian and European benchmark firms.

The study identified significant differences between Australia and the United States in the availability of raw materials, in terms of species, types of raw materials, quantity available, and relative prices. It concluded that:

1. The United States processor has a much broader range of raw materials for processing available over more species in "ready to use" form:
   - Beef - as muscles, and various Chemical Lean (CL) trims;
   - Chicken - as mechanically deboned chicken;
   - Turkey - as mechanically deboned turkey, boneless breast, boneless thigh;
   - Mutton - as boneless trim; and
   - Pork - as muscles, derind bellies, various CL trims, pre-rigour trim.
2. The United States processor can "specialise" in production of a few items utilising the same process:
   - only pre-rigour pork sausage;

benchmark plants (No.)			
Av. output/person/week (Kg)	1,268	1,436	1,921

Retail Prices

The study team undertook a cursory study of retail prices for packaged smallgoods in Australia and the United States (Chapter 5). Newspaper advertised prices in Madison, United States are compared with supermarket prices in Canberra, Australia.

The results indicated that:

- bacon is three times more expensive in Australia - partly due to comparison of mainly streaky (belly) bacon in the United States with middle rashers in Australia;
- prices for cooked sausage and manufactured ham are broadly similar in the two countries; and
- hot dogs and luncheon meats (eg., bologna) are substantially cheaper in the United States reflecting the greater volume and automation in their processing. In the United States these products also utilise cheaper meats through the use of (mechanically deboned) chicken and turkey, and pork trim.

Lessons for Australia

The study demonstrates that the Australian smallgoods industry is at a substantial competitive disadvantage relative to best practice plants in Europe and the United States. This disadvantage is reflected in the lower productivity and higher unit costs. Moreover, the cost disadvantage is spread over most of the key components - the meat cost, spices, filler and pickle costs, and processing costs. The only area where Australia appears to be broadly competitive is packaging.

This indicates the major challenge facing the Australian industry if it is to become more internationally competitive and export oriented.

The particular benefit of the benchmarking study is that it provides individual companies in the industry with relevant performance data to evaluate their own performance against national and international best practice. This provides a basis for companies to develop strategies to enhance their export performance in terms of what actions are required to close the gaps in terms of work practices, technology, product development, etc.

There are substantial differences between firms in the extent and source of deviations from best practice and it is difficult to generalise. The following chart gives a broad classification of targets and actions to achieve them, which may help industry members to formulate an action plan to meet their own requirements.

The benchmarking study measures comparative plant performance at a point of time. It does not analyse the costs and benefits of introducing specific changes to improve competitiveness. However the study team is of the firm opinion that there is scope for cost effective improvements, particularly in the following areas:

- Increased efficiency in early stage processing (see Hassall & Associates' benchmarking study on abattoirs and boning rooms).
- Getting carcase breakdown into primals and deboning to more closely reflect the meat cut specifications of processors.
- More efficient use of meat. This study argues in Chapter 5 that compared with overseas, Australian smallgoods manufacturers have available to them a smaller range of meat types and cuts, and this limits the scope for process and product specialisation.
- Lower operating costs. Significant labour and other cost savings have been made in certain plants, but the large interfirm variation in operating costs of the Australian plants suggests there is significant scope for increased efficiency in certain plants.
- Lower overheads. While there is significant excess capacity in certain departments of certain firms, this is not seen as a major source of high costs. The key potential area for lowering overheads is through increased throughput, and increased process and product specialisation. This allows for greater process automation and scale economies, and for less start-up and down time on equipment. Increased throughput and product and process specialisation also will lead to lower labour and other operating costs.
- Product innovation. The study team visits to the United States and Europe, highlighted the importance of product innovation in best practice plants. Leading companies are continually changing their products with:

  ⇒ new raw materials, eg., turkey ham, turkey bologna;

  ⇒ new products, eg., meat and cheese combinations;

  ⇒ increased health appeal, eg., fat free sausages;

  ⇒ improved packaging, eg., see through vacuum packaging, longer shelf life; and

  ⇒ ready-to-eat, convenience products, eg., microwavable hot dog in a bun.
- Hygiene requirements are increasing pressures for automation (less human handling), and modern (easier to clean) premises.

CHAPTER 1: STUDY OBJECTIVES AND APPROACH

1.1 Why Benchmarking?

Benchmarking is a practical tool for facilitating continuous improvement in practices and processes, that is applicable to a single firm, a group of firms, or a whole industry. It is the process of comparing practices and results with the best organisations in the world and then adapting the key features of those practices to your organisation or industry.

Benchmarking examines the sources of product/service competitiveness and firm/industry profitability by identifying for each process the gaps between actual and world best practice in the production and distribution chain. In the case of rural industries, this chain stretches from the gene stock to retail and export marketing. For each process, a number of performance indicators, measured in both physical terms (eg., productivity per person hour) and financial terms (eg., cost per kilogram), are specified. These measures are used to quantify best practice in Australia, best practice overseas, and the gaps between Australian industry performance norms and the best practice targets.

Major firms in industries such as steel and automobiles have a long history of comparing their productivity and other performance indicators with overseas competitors. It was only in the early 1980's, however, that Xerox and a number of other leading United States corporations, developed benchmarking to become an integral part of their management philosophy. Interfirm co-operation in benchmarking has been facilitated by the establishment of the International Benchmarking Clearinghouse, a service provided by the American Productivity and Quality Centre in Houston, Texas. The Clearinghouse now has 380 members.

An essential feature of benchmarking is that it complements other management practices. As shown in Figure 1.1, there are two way linkages between benchmarking and strategic planning, quality management and employee involvement. Of particular note is that current management practices are largely aimed at greater efficiency from existing processes and resources. Benchmarking can complement these processes by identifying new processes, organisation and structures to catch up or stay ahead of competitors.

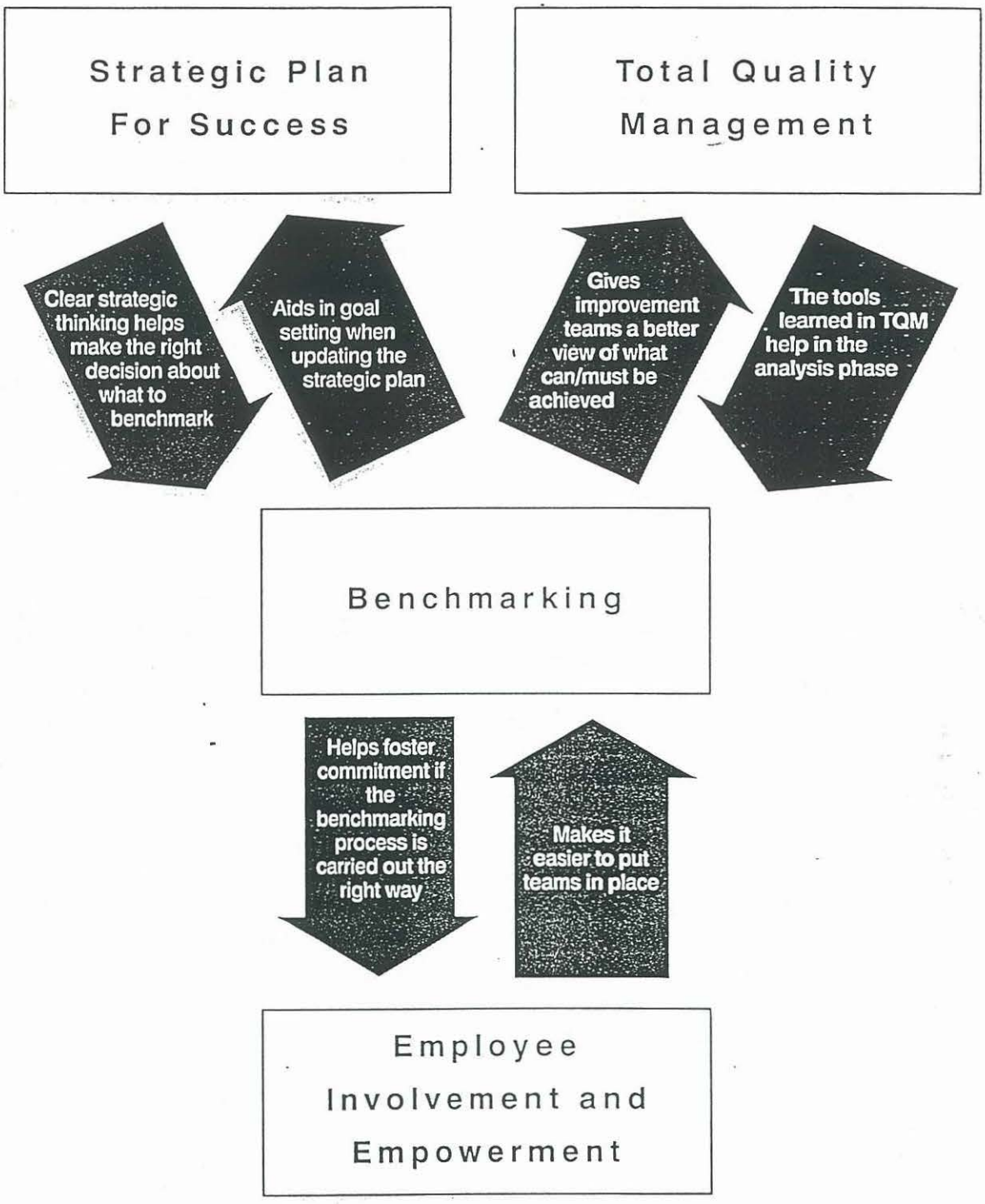
1.2 Industry Benchmarking

In recent years the application of international benchmarking has been extended from single firms to whole industries. The principles involved, and the potential benefits, are essentially the same but in this case, the intercountry comparison is between 'composite' best practice plants so that the confidential performance data of individual companies is not revealed.

Australia has been a leader in developing international benchmarks for whole industries. In Australian agriculture, the following industries have been benchmarked:

- Beef processing - Booz Allen Hamilton;
- Dairy - Boston Consulting;
- Horticulture - Boston Consulting;
- Pig processing - Hassall & Associates;

Figure 1.1 : Linking Benchmarking With Other Management Practices



Source: *The Australian Best Practice Demonstration Program and NIES, "Benchmarking Self Help Manual", AGPS, 1993.*

1.4 Methodology

The study began in December 1994 with joint funding from the Meat and Allied Trades Federation of Australia (MATFA), the Meat Research Corporation (MRC), and the Department of Primary Industries and Energy (DPIE). There was a six phase approach to the study with the focus on developing "a set of national and international comparisons of sufficient depth and rigour to provide catalyst, opportunity and direction for change". As this implies, benchmarking is essentially about seeking ideas and quantifying the costs of change, rather than adopting tailor-made solutions from overseas.

1.4.1 Project Scope and Process Definition

Existing information on the smallgoods industry was reviewed in order to produce the background paper - "*A Profile of the Australian Smallgoods Industry*". This included an extensive review and compilation of statistical information produced by the Australian Bureau of Statistics (refer to Chapter 2).

In this benchmarking study, we have defined smallgoods to include all *factory* production of processed meats. Production of sausages and saveloys in butcher shops have been excluded.

Identification of processes in the smallgoods industry was complex due to the wide range of end-products produced. Preliminary visits and discussions with two smallgoods manufacturers, and consultation with the industry at the Industry Search Conference, resulted in the classification of nine product categories under three headings:

1. Whole muscle meats:

   (i) Ham;
   (ii) Bacon: and
   (iii) Cooked meats.

2. Manufactured meats:

   (iv) Australian smallgoods - frankfurters; cooked sausages; knobs, chubbies; manufactured hams;
   (v) Salami; and
   (vi) Other continental.

3. Other meats:

   (vii) Sausage meat (uncooked);
   (viii) Canned meat; and
   (ix) Dried meat.

Key operations or processes in the production of seven of these product categories are shown in the charts in Appendix 1. The charts also indicate the main items of equipment employed and the employment required in a typical plant. The employment figures are

The data collected on labour productivity, costs, etc. was supplemented by substantive additional information in an attempt to identify the causal factors behind inter-country differences in performance, and to identify those areas where there is scope for change in Australia.

1.4.5 Survey of Australian Industry Performance

This phase aimed to provide supplementary information on the variation within the Australian smallgoods industry as to the size of operations, employment, productivity and unit costs. 72 companies were mailed a questionnaire asking for similar details to those asked of the six firms in the best practice reference.

Results of this mail questionnaire were then used to outline features of the medium sized plants compared with best practice and for the comparison of unit costs.

1.4.6 Reporting and Dissemination

Throughout the course of the study there have been three meetings of the steering committee which monitored the progress of the study. Contact with industry has been maintained throughout the project including:

- an industry search conference in the initial stages of the study - to create ownership, explain the purpose of the study, target key issues, review questionnaire;
- plant visits and later review of data and performance indicators; and
- a planned stakeholder workshop to disseminate results of the study.

Each participating company (both international and domestic) will receive the report along with a private report showing their individual data in comparison with the benchmark data.

1.5 Studies Related to the Smallgoods Industry

An extensive literature review failed to identify any economic studies of the smallgoods industry, either in Australia or in other English speaking countries. The efficiency and competitiveness of smallgoods has been overlooked by industry analysts.

This is surprising when it is recognised that smallgoods are the major outlet for pig meat and a significant one for beef, mutton and poultry. Also, meat producers in Australia have been ready to point the finger at processors as a major source of competitive disadvantage for their final products in world markets. Recent international benchmarking studies for beef and pig meat, and further international comparisons done for the Industry Commission inquiry into Meat Processing (see below), all confirmed that early stage meat processing (ie., in abattoirs and boning rooms) in Australia suffers significant cost disadvantages in a number of areas compared to world best practice.

Labour costs and productivity were found to be the most important differences between the United States and Australia, followed by overheads.

Final Report of the Industry Commission on *Meat Processing*, April 1994

Meat processing is an important part of the Australian economy and can be categorised as an industry with low livestock costs, high processing costs and low utilisation of physical capital. The inquiry outlined a number of challenges for the industry in its endeavours to increase efficiency and improve competitiveness, as well as some major opportunities.

Some of the challenges include costs largely beyond our control. Australia's level of wages and labour on-costs are not the major reason for Australian processors being disadvantaged compared with their international competitors. Some of the cost disadvantages arise because of the natural environment in which stock are produced - seasonality of production, its geographic dispersion and the smaller size and weight of grass fed cattle compared with grain fed cattle.

Costs within our control are the regulatory rigidities which characterise meat processing (only some of which are imposed by overseas governments), low levels of research and development expenditure by meat processing companies, a workforce which receives low levels of training and lacks job security, high rates of industrial disputation, and a poor record of Occupational Health and Safety (OH&S). The inquiry says these contribute to relatively low levels of labour productivity and to poor utilisation of abattoir capacity.

The inquiry extends the Booz Allen and Hamilton study by undertaking detailed cost comparisons between two Australian abattoirs and comparable New Zealand abattoirs. The analysis concentrated on slaughter and chilling costs only and excluded further processing such as boning. Cost models were developed for a specialist beef abattoir and for the sheep chain of a large multi-species abattoir. The cost models were then used to calculate the effects on Australian slaughtering and chilling costs on the adoption of New Zealand staffing and work conditions. The cost savings of improvements on the slaughter floor were also analysed.

2.2 Smallgoods Industry Location and Composition

Table 2.2 summarises smallgoods industry information by State and Territory. It shows there are smallgoods establishments in all States and the Territories. New South Wales and Queensland are the biggest producing States accounting for 29% and 28% of national turnover respectively. Victoria was the third largest producer accounting for 23% of turnover. However, Victoria accounted for 27% of employment reflecting the smaller and more labour intensive operations in that State compared with Queensland and NSW.

Table 2.2: State and Territory Composition of the Bacon, Ham and Smallgoods Industry, 1992-93

STATE	Establishments	Employment	Turnover	Value Added	Turnover per person employed
	(% of Total)				($'000)
NSW	26.7	24.8	29.0	25.9	218
VIC	25.2	27.0	23.1	23.4	160
QLD	15.3	24.2	28.2	29.3	218
SA	13.7	np	np	np	np
WA	13.7	10.1	9.7	11.7	180
TAS	3.8	2.6	2.3	2.2	170
ACT and NT	1.5	np	np	np	
AUST (%)	100.0	100.0	100.0	100.0	187
AUST	No. 131	No. 7,007	$m 1,312	$m 436	

Source: Australian Bureau of Statistics

2.3 Size of Establishment

Table 2.3 summarises smallgoods size of establishment details. In 1990-91, 18 establishments in the Bacon, Ham and Smallgoods industry employed 100 or more employees. This group accounted for 73% of turnover and 70% of employment. The smaller establishments (ie., those employing less than 20) numbered 80 and accounted for 7.4% of turnover and 8.9% of employment.

The industry as a whole is relatively labour intensive and this tendency was more marked in the smaller establishments. The average turnover per employee was $145,000 in establishments employing less than 20, $164,000 in those employing 20-99 persons and $179,000 in the 100 and greater employee group. This would reflect the scope for more mechanisation and scale economies in larger plants but probably also reflects a more labour intensive product mix in the smaller plants.

Table 2.4: Major Firms In Australian Bacon, Ham And Smallgoods Industry

Australian Company	Parent Company	Overseas Affiliation	Export Licence	Backward Integration to Boning Room (BR), Abattoir (AB) or Pig Production (PP)
New South Wales:				
MQF, Sydney	Nippon Meat Packers	Japan	Yes	BR, AB
PM Primo, Sydney			Yes	BR
Melosi Fine Foods, Sydney	George Weston	UK	Yes	
Chisolm Manufacturing, Sydney	Woolworths			BR
Norco, Casino				BR, PP
Queensland:				
Darling Downs, Toowoomba			No	BR, AB, PP
Hans Continental, Brisbane	Asahi Chemical	Japan	Yes	
Snickers Bacon Factory, Kingaroy			No	BR, AB
Victoria:				
Castle Bacon			No	BR, AB
Dons Smallgoods, Melb.	Bunge Aust.	Brazil	Yes	
Tibaldi Smallgoods, Melb.		Japan	Yes	BR
Tasmania:				
Blue Ribbon, Launceston			Yes	BR, AB
South Australia:				
George Chapman, Nairne	George Weston	UK	No	BR, AB
Wintulichs, Gawler				
Western Australia:				
Watsons Foods, Fremantle	George Weston	UK	No	BR, AB
Globe Meats, Fremantle	Derby Industries		No	BR

Source: Hassall & Associates Pty Ltd

The dispersion of the value of turnover in 1992-93 (ie., $1,312 million) was as follows:

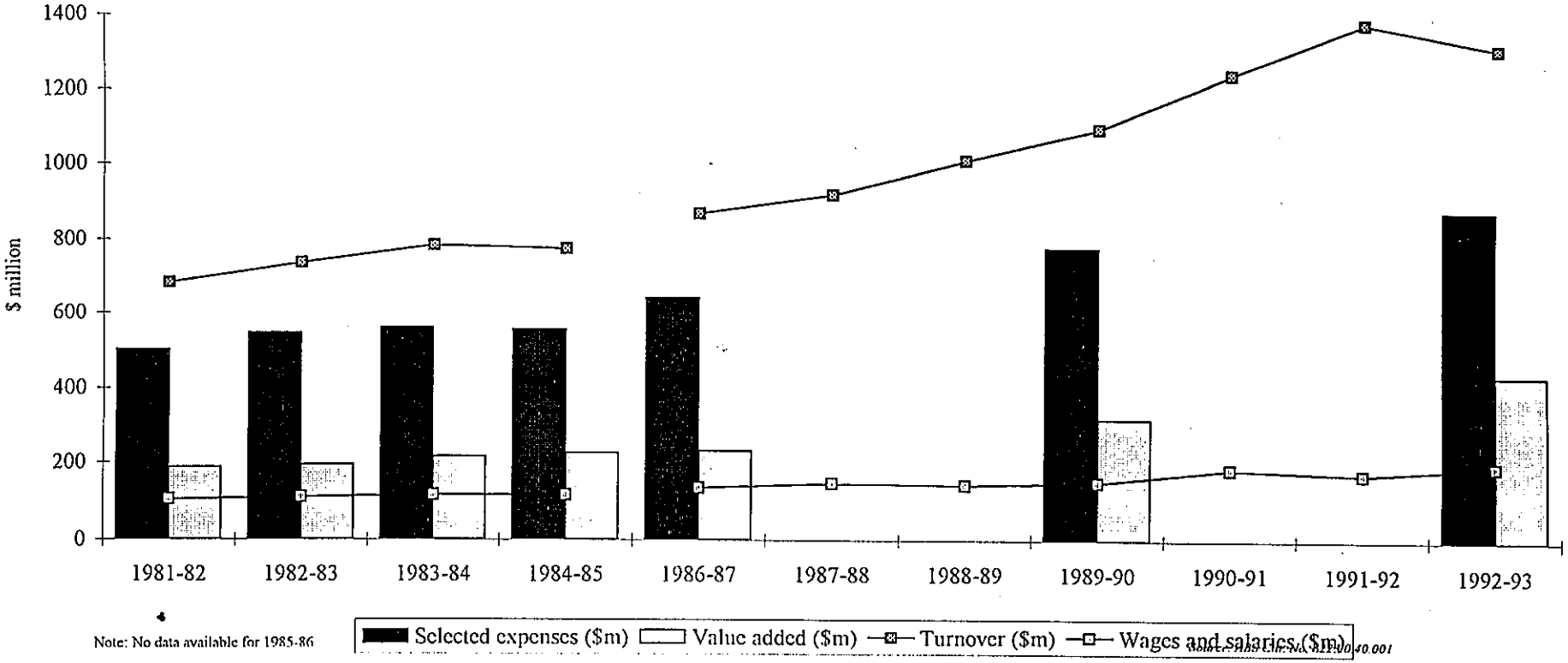
Purchases and transfers in of meat and other materials	$ 816m
Other selected expenses (eg., rent, lease and hire, outward freight, vehicle running expenses, repairs and maintenance)	$ 63m
Increase in stocks	($ 3m)
Value added	$ 436m
	$1,312m

The value added within companies in the Bacon, Ham and Smallgoods industry was dispersed as:

Wages and salaries	$ 192m
Residual available for investment, dividends, etc.	$ 244m
	$ 436m

Chart 2.1

: Bacon, Ham and Smallgoods (ASIC 2117) Historical Data for Selected Expenses, Value Added, Turnover, Wages and Salaries, 1981-82 to 1992-93



Note: No data available for 1985-86

2.5.2 Production and Financial Performance Ratios

The production performance figures in Table 2.6 indicate moderate growth in the industry over the six years to 1992-93. Turnover per establishment and value added per establishment rose by 44% and 89% respectively over this period. The corresponding rise in turnover per employee was 50%, while wages and salaries per employee rose by 42%.

Two important trends are the increase in the ratio of value added to turnover and the decline in the wage and salary share of value added. These trends suggest that significant capital/labour substitution has occurred, particularly in the late 1980s, and that the residual of value added after payment of wages and salaries has increased, thus providing scope and incentive for increased investment.

Table 2.7 compares production performance ratios for 1989-90 for the Bacon, Ham and Smallgoods industry with those for All Meat Products and Total Food, Beverages and Tobacco.

Establishments in the Bacon, Ham and Smallgoods industry were, on average, smaller than for the larger food industries in terms of turnover, value added and turnover per employee. Wages and salaries share of value added was significantly higher, and wages and salaries per employee marginally lower, in the Bacon, Ham and Smallgoods industry.

Financial performance data are available for 1989-90 only. Table 2.8 shows that trading profit to sales was marginally lower for Bacon, Ham and Smallgoods than for All Meat Products. The return on assets and the return on net worth in Bacon, Ham and Smallgoods were less than half that from All Meat Products.

The poor financial returns in 1989-90 are reflected in the fact that there was significant disinvestment in both Bacon, Ham and Smallgoods and All Meat Products in that year.

Table 2.8: Financial Performance of Bacon, Ham and Smallgoods Industry Compared with All Meat Products , 1989-90*

		Bacon, Ham and Smallgoods (ASIC 2117)	All Meat Products (ASIC 211)
Operating businesses	No	108	512
Combined sales	$m	942	8550
Trading profit	$m	274	2660
Total assets	$m	380	3876
Total liabilities	$m	270	2971
Net worth	$m	110	905
Net capital expenditure	$m	-114	-111
Industry ratios:			
Trading profit to sales	%	29.1	31.1
Return on assets	%	6.5	13.2
Return on net worth	%	22.6	56.7
Debt to assets	%	71.0	76.6
Debt to equity	%	245.3	328.0

Source: Australian Bureau of Statistics

* ABS do not compile these statistics on a regular basis; they are available for 1989-90 only.

2.5.3 Sales of Smallgoods and Prepared Meat Products

The Australian Bureau of Statistics does not regularly publish statistics on sales of a wide range of smallgoods commodities. The most complete data available is that for 1989-90. A similar commodity census was undertaken with respect to 1992-93 sales but this will not be released for some time.

The 1989-90 sales data are presented in Tables 2.9 and 2.10. The value of sales of prepared and processed meats in that year was $1,776m of which $1,151m, or 65%, could be broadly classified as smallgoods.

Within the smallgoods category, 58% was whole muscle pigmeat products, 39% was sausages and prepared meats, and the remaining 13% was corned and smoked beef, etc.

In addition to the 1989-90 sales data, ABS publish further information on the production of bacon, ham and other processed pig meat (Cat No 8359.0). This shows *canned bacon and ham* production fell from 4,638 tonnes in 1982-83 to 2,663 tonnes in 1988-89 (later years

Table 2.10: Sales of Other Prepared or Preserved Meat or Meat Offal Products, 1989-90

ABS Commodity Code and Description		Sales and Quantity	Transfers Out Value
		Tonnes	$'000
017.71	Meat pies	np	252,828
017.72	Prepared meals (e.g. TV dinners), of meat or meat offal	32,283	199,687
017.73	Meat pastes	4,843	18,271
017.77	Canned prepared or preserved meat or meat offal, n.e.s.	np	12,806
017.78	Poultry meat and meat offal, prepared or preserved, n.e.s., not canned	10,700	57,019
017.79	Meat and meat offal, prepared or preserved, n.e.s. (e.g. crumbed lamb cutlets)	23,779	74,232
Total of above		np	614,813

Source: Australian Bureau of Statistics

2.5.4 Trade In Smallgoods

Exports of smallgoods account for four to five percent of domestic production and imports make an almost negligible contribution to domestic supplies.

(i) Exports.

The export picture is shown in Table 2.11. In 1993, total processed meats exports amounted to 8,125 tonnes (shipped weight) with canned meats accounting for about two-thirds of this total. The volume of canned meat exports declined from 1988 to 1992, but recovered ground in 1993. The main destinations were Canada and the Pacific Islands.

Exports of other (not canned) processed meats go mainly to Japan, however a large part of this market has been lost over the last six years.

Few Australian smallgood producers are what may be termed dedicated producers for export. B-B Products of Sydney is an exception, a small company targeted to high value added niche markets.

(ii) Imports

Imports of smallgoods - as far as they can be identified from ABS statistics - were as follows:

Table 2.12: Imports of Smallgoods, 1990-91 to 1993-94

Imports of Smallgoods	1990-91	1991-92	1992-93	1993-94
Volume (tonnes)	1872	1332	598	621
Value ($m)	8.6	6.5	3.6	3.7

Source: Australian Bureau of Statistics

The main sources of imports were the Netherlands and Ireland, and the major items were Ham and Cuts, Canned or Bottled and Preserved Shoulders.

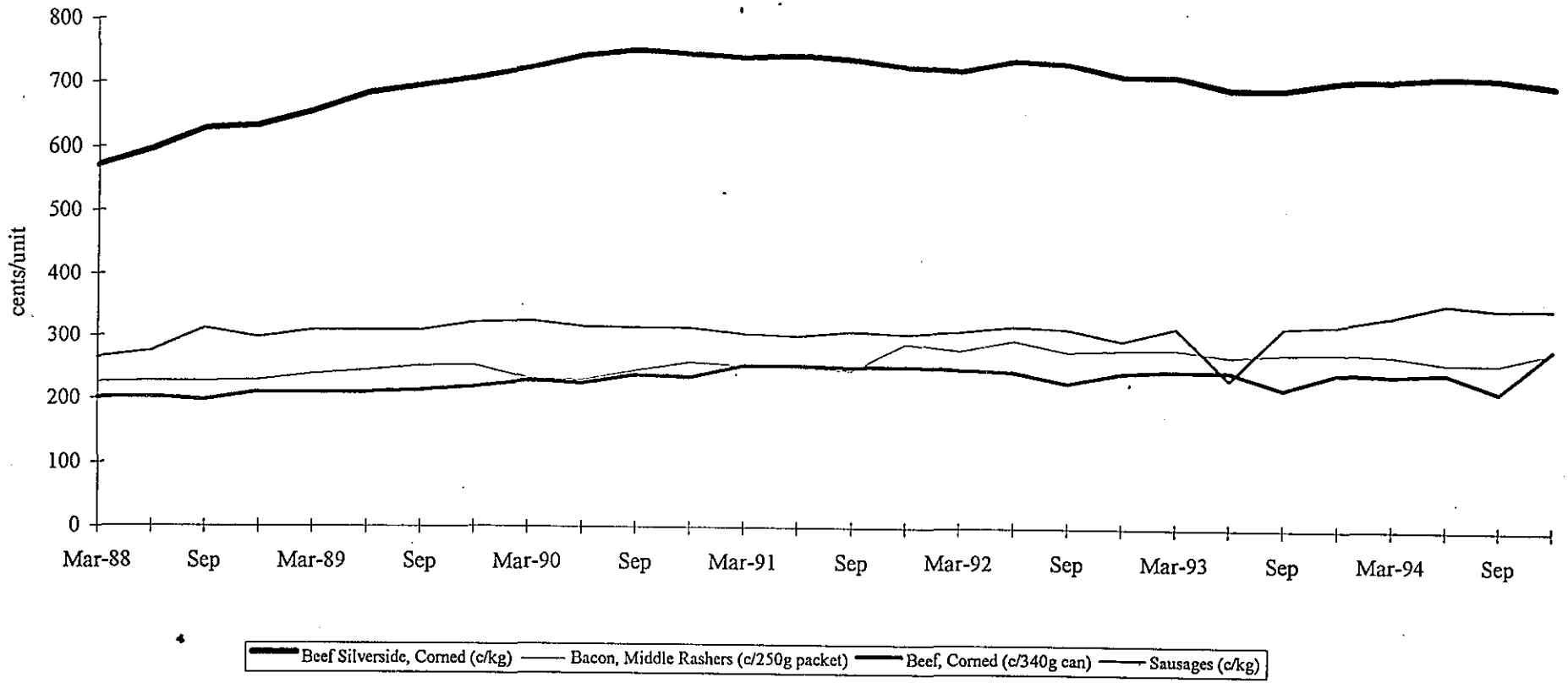
Anti-dumping measures apply to imports of canned ham. In August 1990, the Australian Customs Service reached a Preliminary Finding that Canned Ham from Denmark, Ireland and the Netherlands was being exported to Australia at dumped prices. The finding was confirmed by the Anti-Dumping Authority in January 1991. Anti-dumping measures against two companies and countervailing measures against exports of canned ham from Denmark, the Republic of Ireland and the Netherlands have applied since 1991.

2.5.5 Retail Prices

The ABS collects average retail prices for each capital city for four smallgoods items as inputs to its Consumer Price Index (CPI). The resulting prices for Sydney for the last seven years are shown in Table 2.13 and Chart 2.3.

Comparing the four quarters' average price for 1994 with the corresponding price for 1988, the strongest price growth was for corned beef in cans (23%) and sausages (22%); and the weakest growth in Beef Silverside (17%) and Bacon (19%).

Chart 2.3 : Average Retail Prices of Selected Smallgoods Items, Sydney, 1988 - 1994



CHAPTER 3: PERFORMANCE INDICATORS FOR SIX MAJOR AUSTRALIAN SMALLGOOD PRODUCERS

3.1 Coverage

The information provided in this chapter has been derived from confidential company information supplied by six major plants operating in the Australian smallgoods industry. The six plants responded to an invitation by the Meat and Allied Trades Federation of Australia (MATFA) to participate in the study by way of a financial contribution to the study,and active participation in the planning and data collection phases.

The identity of the six plants is confidential. Three plants were amongst the largest operators in Australia with annual turnovers of over $30m. The other three were substantial medium sized producers with annual turnovers of $10-15m. The plants were distributed over all States, except Queensland. They were all multi-product plants producing most, if not all, of the main categories of smallgoods.

It is considered these six plants provide a suitable cross-section of the larger operator end of the Australian smallgoods market, and a suitable base for the selection of Australian best practice benchmarks.

In the following tables, performance indicators are provided for:

- the mean for the six plants; and
- a best practice composite plant (BP).

The BP estimates are the average of the three plants, (sometimes two plants), who were best practice in terms of lowest unit costs of processing in each of the product categories.

3.2 Production (Table 3.1)

The whole muscle meats together accounted for 50% of total production for the BP plants. This category comprises ham (25%); bacon (19%); and cooked meats such as roast beef, roast ham, silverside (6.4%). As indicated in the unit values column, the whole muscle meats command a significant price premium over the manufactured and other meats.

The Australian smallgoods category (31% of the total) comprises scalded and cooked sausages (10%); knobs and chubbies (15%) which go to the retail trade for in-store deli slicing and also to the food service trade; and manufactured hams (6%). The latter is made by blending together different pig meats, mainly from the shoulder.

Salami is produced by three of the six companies under review and other continental products, such as paté, by five of the plants. One of the study plants specialised in these products which represented 86% of its output. These products were a minor component of production in the other plants.

Uncooked sausages were produced in five plants. They represented 21% of the product mix in one plant but were a minor component elsewhere.

Value refers to the ex-factory selling price. Over all products, the average selling price for the BP plants in 1993-94 was $4.26/kg. The highest value categories were salami and leg ham while knobs/chubbies, and uncooked sausages sold for $2.25/kg.

The product mix of the BP plants did not differ greatly from the six plants. However, the BP plants did have a higher proportion of ham and cooked meats in their product mix, and lesser shares of the lower priced knobs/chubbies, and uncooked sausage.

It is noted that unit values for the BP plants are consistently lower than for the six plants. The following cost analysis in this study indicates total costs per unit of output are almost identical in the BP plants to that in the six plants. Hence, the lower unit selling prices in the BP plants may reflect that BP plants are operating in a more competitive marketplace.

3.3 Meat and Other Materials Used

Table 3.2 shows the costs for meats and other materials used in production. Most of the non-meat materials are purchased from outside suppliers and valued at cost into factory. A substantial part of the meat, particularly pork, is slaughtered and deboned in the same or sister plants, and priced at the transfer cost into the smallgoods division.

The major cost items are meat (77% of total), packaging (8%), casings (6 to 7%) and fillers, spices and pickle (7%). This cost structure was essentially the same for the six plants as for the BP plants.

With meat representing 77% of total materials cost, it is clear that efficient meat acquisition, efficient utilisation of the meat purchased, and using the most economical meat type and cut, are all critical to the economics of smallgoods production.

The proportions of the different animal species used in different products is shown in Table 3.3. In broad terms, the composition of meats used by the smallgoods plants in the study was pork 80%, beef 10%, and mutton 10%. Only one manufacturer used poultry meat and another used a small quantity of goat meat.

The dominant share held by pork is partly explained by the importance of ham and bacon in the final product mix. Looking at the other product categories, beef accounts for more than half the meat used in cooked meats (eg., roast and corned beef, silverside). Beef and pork were equally important as the main meats used in salami. Mutton was a major ingredient in Australian smallgoods and in uncooked sausage.

The unit purchasing costs for the various meats used (Table 3.2) shows the average price for pork was close to that for beef. This comparison is influenced by the type of meat used - the pork includes a large proportion of whole muscle meat, while much of the beef used is trim and lower valued cuts which are blended with other meats.

Mutton was extremely cheap but its usage varied greatly between plants. Mutton usage in Australian Smallgoods ranged from 7% of total meat in one plant to 68% in another. Similarly in uncooked sausage, mutton use ranged from nil in one plant to 64% in another.

Table 3.3: Proportions of Quantity of Meat Types Used

Meat Used In:	Beef (%)		Mutton & Lamb (%)		Pork (%)		Poultry (%)		Game meat & venison		Total meat (%)	
	Mean	BP	Mean	BP	Mean	BP	Mean	BP	Mean	BP	Mean	BP
All Smallgoods	11.5	9.0	9.1	9.5	77.8	80.1	1.1	0.9	0.5	0.4	100.0	100.0
Selected Products:												
Cooked Meats	54.8	62.5	2.8	0.5	42.4	37.0	0.0	0.0	0.0	0.0	100.0	100.0
Australian smallgoods	28.8	13.5	36.3	59.0	33.8	27.5	1.3	0.0	0.0	0.0	100.0	100.0
Salamis	42.5	42.5	4.0	4.0	43.5	43.5	0.0	0.0	10.0	10.0	100.0	100.0
Other continental	20.8	19.0	16.3	15.0	58.0	66.0	0.0	0.0	5.0	0.0	100.0	100.0
Sausage (uncooked)	14.0	10.5	30.8	44.5	53.8	45.0	1.4	0.0	0.0	0.0	100.0	100.0

Source: Hassall & Associates Pty Ltd

3.4 Labour

Total employment in smallgoods operations was 147 averaged over the six plants, and 167 for the BP plants (Table 3.4).

The allocation of the workforce by task was similar for the six plant average and the BP plants. For the BP group, direct labour accounted for 73% of the total; indirect labour for 21%; and management for 6%. The average ratio of direct to indirect labour was 3.6 to 1. However, there was considerable variation between plants, with one plant having a ratio of less than 2 to 1 indicating a significant indirect labour cost burden.

The major areas where indirect labour was employed were repairs and maintenance (6.2% of total employment for the BP plants); the packing room (5.3%); and cleaning (3.9%).

Only three of the six plants employed a research and development (R&D) person - with one plant having two researchers. On average, three quality assurance/laboratory people were employed per plant. Again this varied, with the larger plants having their own laboratories and staff and the smaller ones having their products regularly tested at commercial laboratories.

Turning back to direct labour, slicing and packaging was by far the major task in terms of employment. For the BP plants, slicing and packaging accounted for 40% of total labour and 54% of direct labour. Preparation and cooking of manufactured meats accounted for 21% of total labour, and preparation and cooking of whole muscle meats for 13%.

3.5 Labour Productivity

This is an important benchmark of performance. The study made estimates of labour productivity for each plant and for each major product category. This required the allocation of all labour - direct and indirect, normal hours and overtime - to each product category. Most of the plants do not undertake this labour allocation as part of their routine accounting, and a special effort was made for the benchmarking study. The results are shown in Tables 3.6 and 3.7.

The share of total labour allocated to different product categories is shown in Table 3.5 below, together with the corresponding allocation of production.

Table 3.5: Share of Total Labour and Share of Total Production

	BEST PRACTICE PLANTS	
	Share of total labour, % (TABLE 3.4)	Share of total production, % (TABLE 3.1)
Ham	27.5	25.2
Bacon	18.6	18.8
Cooked Meats	6.1	6.4
Australian Smallgoods	26.3	31.3
Salami	3.7	3.2
Other Continental	11.8	10.7
Sausages	5.9	4.0
All products	100.0	100.0

Source: Hassall & Associates Pty Ltd

This comparison indicates that fresh sausages, ham and continental smallgoods are more labour intensive, and the Australian smallgoods category is more capital intensive (ie., more automated).

Productivity is measured in terms of weekly output per person and per person hour. The estimates for each product category are shown in Table 3.7.

The results show output per person hour was 33.1 kg of smallgoods in the BP plants. This was 11% higher than the average productivity for the six plants of 29.8 kg. This higher productivity in the BP plants is associated with these firms working relatively less hours per worker.

Table 3.7: Labour Productivity, by Smallgoods Category

Product Category	Mean for Six Plants		Best Practice	
	Weekly output (kg) per person	Weekly output (kg) per person hour	Weekly output (kg) per person	Weekly output (kg) per person hour
Ham	1,168.2	27.9	1,163.3	30.2
Bacon	1,163.6	25.3	1,281.4	33.2
Cooked Meats	941.5	23.2	1,335.9	33.4
Australian Smallgoods	1,491.3	38.6	1,507.1	40.7
Salami	1,113.7	28.0	1,113.7	28.0
Other Continental	1,087.9	28.6	1,142.9	31.4
Sausages	1,134.2	26.9	919.4	21.8
All Products	1,229.3	29.8	1,267.6	33.1

Source: Hassall & Associates Pty Ltd

Table 3.8: Unit Processing Costs for Smallgoods Categories, 1993-94 ($/Kg)

	Ham		Bacon		Cooked Meat		Australian Smallgoods		Salami		Other Continental		Sausages		All Products	
COST ITEMS ($/kg)	Mean	BP	Mean	BP	Mean	BP	Mean	BP	Mean	BP	Mean	BP	Mean	BP	Mean	BP
Direct labour (loaded)	0.49	0.40	0.50	0.35	0.71	0.32	0.40	0.37	0.53	0.53	0.49	0.47	0.34	0.23	0.46	0.38
Indirect labour (loaded)	0.21	0.17	0.22	0.16	0.39	0.14	0.15	0.14	0.23	0.23	0.12	0.15	0.14	0.10	0.19	0.16
Packaging materials	0.27	0.28	0.37	0.24	0.32	0.28	0.28	0.22	0.24	0.24	0.33	0.20	0.23	0.26	0.27	0.25
Electricity, wood, oil, steam, gas	0.27	0.08	0.08	0.06	0.09	0.06	0.08	0.06	0.09	0.09	0.09	0.09	0.08	0.06	0.09	0.06
Water	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.02	0.01	0.02	0.02
Quality assurance	0.02	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.02	0.02	0.01	0.01	0.02	0.01	0.02	0.01
Inspection	0.03	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.02	0.02	0.02	0.01	0.04	0.00	0.02	0.00
Repairs and maintenance (without labour)	0.08	0.07	0.07	0.06	0.08	0.05	0.07	0.06	0.10	0.10	0.08	0.07	0.07	0.07	0.08	0.07
Depreciation	0.18	0.08	0.07	0.04	0.07	0.04	0.07	0.04	0.09	0.09	0.07	0.06	0.07	0.07	0.07	0.04
Cleaning	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.02	0.02	0.01	0.01	0.02	0.02
Administration and management	0.13	0.12	0.06	0.04	0.07	0.04	0.06	0.04	0.08	0.05	0.13	0.06	0.08	0.09	0.10	0.09
Other production costs	0.08	0.05	0.08	0.06	0.08	0.06	0.08	0.06	0.08	0.08	0.06	0.07	0.07	0.04	0.08	0.06
TOTAL	1.79	1.29	1.50	1.06	1.91	1.03	1.24	1.04	1.53	1.49	1.44	1.22	1.16	0.94	1.41	1.16

Source: Hassall & Associates Pty Ltd

3.8 Unit Material and Processing Costs (Table 3.10)

A total unit cost per kilogram of smallgoods produced has been estimated as follows. The cost of meats and of other materials in Table 3.2, were divided by total production (Table 3.1) and then added to processing costs from Table 3.8.

Table 3.10: Total Unit Costs for Smallgoods Manufacture

	Average for Six Plants	Best Practice
	$/kg	$/kg
Purchases of:		
Meat	1.91	2.06
Other materials	0.56	0.61
Total meat and materials	2.47	2.67
Processing costs:		
Direct and indirect labour	0.65	0.54
Other production costs*	0.32	0.24
Overheads	0.17	0.13
Total processing	1.14	0.91
TOTAL COST TO MANUFACTURE	3.61	3.58

Source: Hassall & Associates Pty Ltd

* Excludes packaging costs which are included in Other materials.

The average cost to manufacture smallgoods up to the point of ex-factory sale was $3.58/kg in the Best Practice plants. The six plant average was almost the same unit value - its higher processing costs were offset by lower meat and material costs.

The composition of costs in the Best Practice plants was meat 57.5%; other materials 17.0%; direct and indirect labour 15.1%; other production costs 6.7%; and factory overheads 3.6%.

The Australian cost structure is compared with that for the United States and Europe in Chapters 5 and 6.

3.9 Human Resource Management Programs

3.9.1 Employee Consultation and Participation

Three of the six companies participating in the study had a consultative committee for their smallgoods operation. The committees provided a broad consultative forum, with key responsibilities including enterprise bargaining, product quality, work practices and employee concerns. Of the remaining companies, one did not have a formal structure for consultation; one had a specific work safety committee dealing with occupational health

3.9.3 Occupational Health and Safety (OH&S)

All companies employed an OH&S co-ordinator. In one instance this was a shared role, and in another, the role was part of larger duties. Over half the companies have committees which deal with OH&S issues.

Some companies had undertaken changes which improved OH&S. These included pallet height adjusters; reduction in noise levels due to process change; confined spaces policy and training; product roller systems; and mechanisation of prepack with safety features.

Table 3.11 shows the average number of days lost due to injury in the smallgoods area for the six plants and the best practice plant. The 262 days lost for the six plant average reflects a loss of work days of less than one percent. The breakdown of these lost days due to injury type reveals that lacerations and muscle strains are the predominant injury type.

Table 3.11: Days Lost Due to Injury in the Smallgoods Area

	Mean for Six Plants	Best Practice
Total days lost due to injury	364	262
Percentage breakdown by injury type:		
- burns	16.3	16.7
- tenonitis	12.0	16.0
- broken bone	1.3	1.7
- lacerations	25.3	33.3
- muscle strains	32.0	30.0
- hernia	13.3	2.3

3.9.4 Labour Turnover Ratios

Some companies did not have this information available. Of those that did, average annual turnover for full time employees was 22.6%, and for casual employees, 48.6%.

4.2 Marketing

4.2.1 Domestic Market

A breakdown of the respondent's domestic sales by destination revealed on average:

- 22% of domestic sales go to supermarkets, with all products being sold under the manufacturers' own label;
- 34% of sales go to butchers and delicatessens;
- 29% to wholesalers; and
- 15% to the food service industry.

4.2.2 Export Markets

Eleven (92%) responding firms are not export accredited. The one firm which *is*, has not yet begun to utilise its export licence.

4.3 Production and Value of Product Lines, 1993-94

Table 4.1 provides a summary of the average proportions of smallgoods product categories manufactured by the responding firms. It also gives an average unit value (ex-factory) for each product category.

- The total product mix for the responding firms is fairly similar to that of the six firms in the best practice reference.
- Most firms produced a range of smallgoods, with leg ham (produced by nine firms) and cooked meats (eight firms) being the most common.
- Three firms specialised in only one or two products - patè, leg ham, silverside, and sausage (uncooked).

4.4 Smallgoods Labour, 1993-94

- Most firms (73%) found it difficult to allocate their smallgoods labour to product categories.
- Average total labour employed in the smallgoods operation by each firm is 18 people, comprising 15 direct labour and three indirect.
- Average hours worked per week per person are 37.3 hours.

4.5 Ingredients Used in Production

Table 4.2 reveals meat types used in smallgoods production by responding firms.

Table 4.2: Meat Type as a Proportion of Total Meat Used in Smallgoods Production

Meat Type	Percentage Breakup
Beef	10.1
Mutton and lamb	23.3
Pork	62.7
Poultry	3.8
Game meat and venison	0.1
TOTAL	100.0

Source: Hassall & Associates Pty Ltd

- Beef, mutton and lamb represents 33.4% of all smallgoods, compared with 20.6% used by the six firms studied in detail (Chapter 3).
- The pork component (62.7%) is lower than that used by the six firms (77.8%).
- Poultry, game meat and venison remain low.

Table 4.3 shows the proportional value of input ingredients, and unit costs per kilogram of these inputs.

4.6 Smallgoods Processing Costs for 1993-94 ($)

Table 4.4 shows the responding firms' average unit processing costs for all products .

- Average unit processing costs for all products is $1.81. This is 28% higher than the six firms in the best practice reference, and 57% higher than the best practice reference.
- The cost of direct labour is the main contributor to this factor being 50% higher than the mean for the six firms in the best practice reference.
- This is closely followed by the cost of administration and management, which is 220% higher than the mean for the six firms in the best practice reference.

Table 4.4: Unit Processing Costs for Smallgoods Categories, 1993-94

Cost Items	All Products ($/kg)
Direct labour (loaded)	0.69
Indirect labour (loaded)	0.18
Packaging materials	0.21
Electricity, wood, oil, steam, gas	0.11
Water	0.01
Quality assurance	0.02
Inspection	0.00
Repairs and maintenance (without labour)	0.09
Depreciation	0.08
Cleaning	0.03
Administration and management	0.32
Other production costs	0.07
TOTAL	1.81

Source: Hassall & Associates Pty Ltd

In Chapter 3, processing costs were expressed in two ways, with packaging costs included in Table 3.8 and excluded in Table 3.10.

If packaging costs are excluded from Table 4.4, total processing costs in the 12 small to medium sized firms averaged $1.60/kg compared with $1.14/kg in the six large plants and $0.91/kg in the Best Practice.

Table 5.1 : United States Leading Meat Packers and Processors, 1995

Company/ Location	Total Sales (US$ million)	Total Employees	Total No. of plants	Pork slaughter capacity (daily)	Pork boning	Fresh sausage	Cured sausage	Ham	Bacon	Beef processing	Poultry processing
Con Agra Inc., Omaha, NE	18,119 (prepared foods)	87,309	79	*	x	x	x	x	x	x	x
IBP Inc., Dakota City, NE	12,075	30,000	20	63,900	x			x		x	
Cargill Meat Sector, Witchita, KS	9,500 (est)	13,000	12	25,600	x	x	x	x	x	x	x
Monfort Inc., Grealey, CO*	8,000	20,000	11	38,500	x						
Tyson Foods Inc., Springdale, AR	5,100 (total sales)	55,800	8	11,800	x	x	x	x	x	x	x
Sara Lee Corp, Chicago IL	3,100 (packaged meats)	15,600	29	10,000	x	x	x	x	x		x
Hormel Foods Corp. Austin, MN	3,065	10,400	12	36,700	x	x	x	x	x		
Oscar Mayer Foods Corp. Madison, WI	2,200	10,000	8	Nil		x	x	x	x		x
Armour Swift-Eckrich, Downers Grove, IL*	2,000	12,000	28	*	x	x	x	x	x		
John Morrell & Co, Cincinatti, OH	1,600	6,000	4	30,000	x	x	x	x	x		
Smithfield Foods Inc., Smithfield, VA	1,447	8,000	8	35,300	x	x	x	x	x		
Farmland Foods Inc., Kansas City, MO *	1,250	5,000	6	22,000	x	x	x	x	x		

* Subsidiaries of Con Agra Inc. Con Agra's only pork slaughter involvement is through Monfort Inc (shown separately)

x Indicates processes undertaken by each company

Source: Meat Marketing and Technology, *"Industry Elite"*, June 1995
National Pork Producers Council, *"Pork Facts"*, 1995-96

The development of a stronger market focus is enhanced by vertical integration. The market is seeking a level of product consistency and quality that requires high technology processing, as well as production agreements for hogs to ensure appropriate quality of raw material.

Pork and poultry are in an advantageous position relative to beef with respect to suitability for vertical integration and greater consumer orientation. Bryan Salvage, editor of *"Industry Elite Meat Marketing and Technology"* writes in the June 1995 issue:

> "It would be very difficult to vertically integrate all phases of beef. The challenge for beef is to come up with branded products and increase its marketing. Since there is further integration and branded products in poultry and pork, beef has to make the transition from a commodity to a branded product."

5.3 Plant Visits

Hassall & Associates was privileged to visit two plants in the United States, to speak to a number of senior managers, and to witness high volume, state of the art, processing chains at work. While some data on operating performance was provided, it was not sufficient to form a detailed range of performance benchmarks comparable to those compiled for Australia.

The two plants visited produced a wide range of smallgoods - smoked hams, cooked hams, bacon, hot dogs, linked sausages and cold cuts (luncheon meats) - however, they operated under quite different operating and marketing philosophies. They were indicative of the enormous size and diversity of the United States market, and cast doubt on the validity of attempting to identify one best practice composite plant for the United States. To do justice to this versatility, would require benchmarking best market prototypes in a number of market segments.

A brief pen picture of these two plants will help to illustrate these differences.

Company A, the larger of the two operations, has an established national sales network. It has a very strong brand name image through national advertising and promotion activity, and by capturing significant display space on supermarket shelves. The company has concentrated its production and marketing on three of America's most popular meat products - bacon, weiners and bologna. However, it has managed to produce a continuing stream of innovations to provide a new image to promote these "old" products.

The innovations include: early introduction of turkey and chicken in pure and blended forms into a wide range of products traditionally made from pork and beef; new packaging to improve shelf life and image; increased convenience to both food service and household customers with pre-sliced, pre-portioned, partly and fully cooked meats; greater variety by combining other foods, such as cheese and pickles, into traditional smallgoods items; and increasing the range of products in terms of meat type, fat content, slice thickness and so on.

There are important differences between Australia and the United States in these regulatory requirements. A key requirement in Australia derives from the prescribed definition of "manufactured meat":

> "Manufactured meat is the food, not elsewhere standardised in this Standard, containing at least 660 g/kg of meat, prepared from a blend of meat and other foods including water, and includes:
>
> - smallgoods such as frankfurters, saveloys, brawn, devon, strasburg, meat paste, chicken roll and similar foods; and
>
> - extended muscle products.
>
> Manufactured ham is manufactured meat, the meat content of which is cured pig meat derived from the hind leg or shoulder, or a mixture thereof."

In the United States, ham must be from the pig's hind leg. Shoulder meat is called Boston Butt (upper) and Picnic (lower). Also, the water content must be specified on the final product. Four categories of smoked ham are identified in the United States:

- dry;
- natural juice;
- water added; and
- ham and water product.

Because of variations in meat yields between products and countries, it is better to separate yielded costs for ingredients (meat and spice/extender) from the total cost for the product, and concentrate on identifying and quantifying the cost elements within processing and packaging.

The Yielded Meat Cost (YMC) is the cost of the meat block (ie., meat ingredients) divided by the finished packaged weight. It is the meat cost after adjustment for both water and spices added, and for yield losses during processing and packaging.

The methodology for deriving the YMC and its application to the five final products being costed, is shown in Appendix 4. The resulting estimates of YMC, yielded spices/extenders costs, and subsequent processing costs are shown in Table 5.2.

The combined cost of utilities, plant and equipment, and indirect costs and overheads was about US$0.09-$0.11/lb of final product.

There was close agreement between the company data and the indicative cost estimates with respect to the above packaging and overhead costs. The difference between the two estimates of processing costs was almost entirely due to much higher direct labour costs in the available company data.

The cost of labour per unit of output is determined by award and overtime pay rates, and by labour productivity (ie., output per person).

United States Department of Labour statistics for the United States meat processing industry (excluding meat packing) for 1993 are:

- Average weekly earnings - US$415;
- Average weekly hours - 42.0; and
- Average hourly earnings - US$9.88.

The company data indicated a normal 40 hour week, plus five to eight hours overtime per week in different departments. Award wages (average payment per employee), however, were 16-33% above the industry average earnings, indicating the plants visited had above average labour costs.

For labour productivity, the company data showed a weekly output per person employed of 3,380 kg for direct labour, and 1,354 kg for direct and indirect labour combined.

Another productivity figure is available for Thorn Apple Valley, the eighth largest pig slaughter company in the United States. Thorn Apple Valley stated in a recent public report that it produced 337 million pounds (153 million kilograms) of manufactured product per year, using 1,930 production employees. This represents 174,000 lbs per employee per year, or 1,518 kg per employee per week.

United States meat consultant, Paul Gould, confirmed that a large variation in unit labour costs is a feature of the United States meat processing industry. The newer plants are generally more specialised (less products and processes), which leads to higher labour productivity. They also often have lower wage costs (some as low as US$7/hour) reflecting the labour market conditions at the time these plants were established.

The company data collected is from long established companies with broad product ranges. It is noted that these companies tend to have higher labour costs than newer and more specialised plants. The indicative labour costs given in Table 5.2 are considered to be representative of labour costs in the latter group of plants.

COGS/sales ratio for processing than for pork slaughter. This adjustment was not required for Foodbrands which does not include a slaughter function.

The company records suggest that corporate overheads, and sales and distribution expenses associated with meat processing operations involve a *markup on ex-factory cost.* This ranges from 15% for store label processors to 30% for heavily marketed premium brands.

However as noted above, many of these expenses apply on a weight basis (ie., $/lb) and for the indicative cost exercise, a *minimum* cost of US$0.15/lb has been set for corporate overheads, and sales and distribution.

Profit margins (ie., income before tax divided by sales) varied from -2% to +6% for the four processing companies reviewed for the 1993-94 year.

Table 5.3: Allocation of Sales Revenue for Four United States Meat Processing Companies

	Hormel Foods Corp.		Foodbrands (Doskocil)		Smithfield Foods		Thorn Apple Valley	
	US$m	% Sales	US$m	% Sales	US$m	% Sales	US$m	% Sales
Sales	3065	-	751	-	1447	-	772.1	-
Cost of products sold	2345	76.5	604	80.5	1240	85.7	693.8	89.9
Selling expenses	467	15.2	91	12.2	139	9.5	24.2	3.1
Admin & general exp.	65	2.1	27	3.7			22.3	2.9
Depreciation	NA		13	1.7	22	1.5	8.3	1.1
Interest	(3)	-	20	2.7	12	0.8	2.2	0.3
Income before tax	191	6.2	(13)	(1.7)	33	2.2	22.3	2.9

Source: Annual Reports of the four companies.

Note: *Delivery costs* are included in Thorn Apple Valley accounts in the cost of products sold; in Hormel and Smithfield accounts with selling expenses; and are not specified for Foodbrands.

5.7 United States Retail Market

Smallgoods are sold through three main outlets:

1. Packaged meats through grocery stores. These sales were valued at US$14,348m in 1992, with cold cuts and sausage products being the major categories (Table 5.4).

5.9 Retail Prices

Prices for processed meat products at retail were obtained from two sources: official statistics on retail meat prices (Table 5.5), and a survey of newspaper advertised prices of a number of supermarkets in Madison, Wisconsin (Table 5.6).

Table 5.5: Average Retail Prices for Processed Meat Products, United States, 1993

Processed Meat Products	$US/lb
Sliced bacon	1.93
Smoked picnic (shoulder)	1.16
Canned ham	3.17*
Fresh pork sausage	2.11
Frankfurters	2.11
Bologna	2.38

Source: American Meat Institute, "1994 Meat and Poultry Facts"
* 1992

Table 5.6: Retail Prices Obtained from United States Advertising, Madison, WI, July 1995

	Average Price	Count	Maximum Price	Minimum Price
	US$/lb		US$/lb	US$/lb
Bacon	1.28	7	1.59	0.89
Sausage, Fresh	1.90	15	2.78	1.49
Sausage, Cooked	1.97	13	2.39	1.49
Hot Dogs/Franks	0.79	6	0.99	0.50
Luncheon (Bologna) Sliced	1.20	1	-	-
Manufactured Ham	2.23	7	2.49	1.89
Salami	3.09	5	4.98	1.20

Source: Hassall/Gould Study

It is noted there is a wide range in the advertised prices, which no doubt partly reflects differences in product or quality. For example, the use of No. 2 bacon, and the extensive use of poultry meat and pork trim in the lower priced hot dogs and luncheon meats.

Most of the advertised prices were also significantly lower than the official average retail prices. This would reflect the discount element in advertised prices and also the concentration on lower quality items.

Table 5.7: United States Indicative Cost Structures for Selected Smallgoods Items, 1995

	Hot Dog	Pork Luncheon Loaf		Bacon	Smoked Ham
		Bulk loaf	Sliced, packaged		
	US¢/lb	US¢/lb	US¢/lb	US¢/lb	US¢/lb
Material inputs:					
Meat (yielded cost)	19.49	30.91	30.91	50.86	101.15
Spices, cures, extenders (yielded cost)	1.27	1.27	1.27	1.00	0.83
Casings and other process packaging	3.00	5.00	3.00	-	3.00
Final packaging	10.00	3.00	10.00	10.00	5.00
Factory inputs:					
Direct labour (loaded)	3.00	3.00	4.00	5.00	3.00
Utilities (power, water)	2.00	2.00	2.00	2.00	2.00
Depreciation	4.00	3.00	4.00	4.00	4.00
Repairs & maintenance					
Indirect costs & overheads	4.00	4.00	4.00	4.00	4.00
Ex-factory cost	46.76	52.18	59.18	76.86	122.98
Sales & distribution expenses and corporate overheads	15 - 30	15 - 30	15 - 30	15 - 30	15 - 30
Selling price to account	62 - 77	67 - 82	74 - 89	92 - 107	138 - 153
Min retail markup[a]	16 - 19	17 - 21	19 - 22	23 - 27	35 - 38
Indicative retail prices	78 - 96	84 - 103	93 - 111	115 - 134	173 - 191
Sample of advertised retail prices[b]	79	-	120	128	223

Source: Hassall/Gould Study

(a) Equal to 20% of the retail selling price
(b) From Table 5.6

5.11 Differences in Product/Process Groups Between United States and Australia

The Hassall/Gould study also outlined:

- differences between the United States and Australia in the physical characteristics of major smallgoods categories, and the popularity of different products; and
- the volume split between retail and HRI sales for each product/process category, and the mix of raw materials used in each market.

The detailed findings are given in Appendix 5. Key points of interest are:

- Fresh pork sausage:

  Fresh sausage for retail sale in the United States is predominantly made by processors and sold under their brand names. Pre-rigour pork (which retains a strong red meat colour) is the main meat used and production is possible only at the

5.12 Raw Material Availability to Processors

An important issue in Australia is the extent to which processing efficiency, and the range of final products, are being adversely affected by the availability of raw materials for processing.

The Hassall/Gould study identified important differences between Australia and the United States in the availability to processors of raw materials - in terms of species, types of raw material, quantity available, and relative prices (Appendix 6). The study concluded that:

1. The United States processor has a much broader range of raw materials for processing available over more species in "ready to use" form:

   - Beef: as muscles, and various Chemical Lean (CL) trims;
   - Chicken: as mechanically deboned chicken;
   - Turkey: as mechanically deboned turkey, boneless breast, boneless thigh;
   - Mutton: as boneless trim; and
   - Pork: as muscles, derind bellies, various CL trims, pre-rigour trim.

2. The United States processor can "specialise" in production of a few items utilising the same process:

   - only pre-rigour pork sausage;
   - only sliced retail bacon, or only HRI precooked bacon;
   - only hot dogs;
   - only smoked hams, or cooked hams;
   - only bulk cooked products (beef, turkey, ham) for deli, or HRI; and
   - only dry sausage for HRI.

3. In Australia, trade essentially occurs in whole and half carcases and there is little, if any, trade in most pig components. Consequently, the processor buying pork raw materials (in the form of pork carcase), is forced into producing a wide variety of cured and sausage products to best utilise the range of raw materials from the pork carcase. This limits capacity to specialise in both the process used and the range of final products.

   The potential losses involved are probably greatest when the carcase goes directly to the retail butcher or supermarket. In this case, the retail shop becomes a miniature processor by default - having to adjust product range or dispose of any unwanted raw materials. It appears to be a classic case of supply (production) driving the manufacturing process rather than demand (ie.,. the consumer).

4. While low cost mutton is readily available in Australia, there is a limit on how much can be made into sausage. The less readily available (higher cost) access to poultry raw materials (chicken and turkey) limits the range of products that can be made.

5.13 Comparison of Australia and United States Retail Prices

A small sample of Australian retail prices is shown in Table 5.8.

Table 5.8: Australian Retail Prices, Canberra, July 1995 - Average Price Per Kilogram, A$

		Product Size (grams)							
Smallgoods		100	125	175	250	375	500	1,000	2,000
Bacon	Packaged			13.70	10.01		9.93	6.33	
	Deli							6.99	
Cooked/preserved sausage (cabanossi, clobassi etc)	Packaged				8.29	8.24	6.25		
	Deli							7.98	
Luncheon (devon, etc.)	Packaged	10.4			4.06		5.84	2.69	
	Deli							4.94	
Hot dogs/franks	Packaged					5.2	5.3	5.61	
	Deli							5.05	
Leg ham	Packaged	20.01	16.32					13.59	
	Deli							10.42	
Shoulder ham	Packaged		13.44					5.99	
	Deli							7.99	
Manufactured ham	Packaged	18.98	12.99	10.35	9.48		6.58	9.13	6.97
	Deli							9.99	

Source: Hassall & Associates

Table 5.8 also highlights the very high costs associated with packaging and retailing small product sizes in Australia. The retail price per kilogram of product more than doubled for bacon, luncheon meat, and shoulder ham purchased in 100 - 250 gram packs compared with 1 kg packs.

The deli prices, which are fixed per kg irrespective of the amount purchased, were higher than the packaged prices for 1 kg packs but lower than the prices for smaller packs (100-250 gram). Purchasers of small quantities can clearly benefit by purchasing from in-store delis, and avoiding the high costs associated with pre-packaged equivalent products.

A comparison of United States and Australian retail prices is given in Table 5.9.

CHAPTER 6: EUROPEAN BENCHMARKS

6.1 Introduction

Smallgoods manufacture, traditionally, has been a local area production activity. Nearly every European country has a range of smallgoods plants, varying from large best practice plants to very small producer/retailers. The study made preliminary inquiries in a number of countries, but decided to concentrate on Germany (where three plants were visited) and the United Kingdom (one plant visited).

The European Union (EU) is more than self-sufficient (ie., production exceeds consumption) in both beef and pig meat. However, the importance of the two main meats is the reverse to Australia: per capita consumption of pig meat in the European Union is 40.5 kg/year, and in Australia 19.0 kg/year; while the corresponding consumption figures for beef are 19.4 kg/year in the EU and 41.4 kg/year in Australia.

The main trade in processed meats is within the European Union and in particular the export of pig meat products from Denmark and the Netherlands. The United Kingdom (UK) is a major importer, and sources over half its bacon requirements overseas.

The traditional processed meats plants in many parts of Europe, are facing significant rationalisation and adjustment and this is illustrated in the following brief review of the German industry.

6.2 German Meat Products Industry

Key statistics for 1994 are:

6.2.1 Industry structure

- No. of enterprises 394
- Net turnover DM 16,999 million ($A14,406m)
- Gross income DM 2,263 million ($A1,918m)
- No. employed 55,147

6.2.4 Plant visits

Hassall & Associates visited three plants in Germany and one in the United Kingdom. Two plants were very large scale operations - with annual turnovers in excess of A$200 million - one operated by a multinational food company and the other by a family company. Both were vertically integrated concerns controlling slaughter, processing and distribution. The third and fourth plants were medium sized - over A$50 million - and involved in meat processing only.

6.3 Production - Four Plants

There was evidence of greater product specialisation in European plants than in Australia. Table 6.2 shows that of the four plants visited, ham was the only product category produced by all four plants. Three of the four plants produced scalded and cooked sausages and the other six product categories were produced by only one or two of the plants.

Table 6.2: Production in Four European Plants

	No. of plants producing product	Average production ('000 Kg)	Share of total production (%)	Largest producer production (Kg)
Ham - cooked and smoked	4	7159	22	>10m
Bacon	2	9875	15	>15m
Other cooked meats	1	261	0.2	-
Frankfurters/scalded sausage	3	4985	11	>10m
Cooked sausages	3	3140	7	>5m
Salami	2	1077	2	>1.5m
Other continental	2	653	1	>0.6
Uncooked Sausage	1	41600	31	>40m
Canned meat	1	14750	31	>14m
			100.0	

In terms of volume of production, the average annual output was 33 million kilograms. This compares with an average production of 10 million kilograms per year in the Australian Best Practice plants.

The average composition of production was 37% whole muscle meats (compared with 56% in Australia), 19% cooked and scalded sausages, 31% uncooked sausage, and 11% canned meat. The latter two product categories were each produced in only one of the four plants which probably exaggerates their importance.

The composition of processing costs for three broad product categories are provided in Table 6.4.

Table 6.4: Europe - Composition of Processing Costs

	Cooked ham	Scalded sausage	Cooked sausage	All products
Direct labour (loaded)	36.9	26.8	27.4	32.0
Packaging	14.4	28.8	27.4	21.3
Electricity, wood, oil, steam, gas	4.5	5.1	6.9	5.1
Depreciation	12.4	12.5	10.6	12.2
Other production costs	31.8	26.8	27.7	29.5
TOTAL	100.0	100.0	100.0	100.0

Direct labour's contribution to total processing costs was 32% in the European plants. This corresponds closely to labour's share in the Australian Best Practice plants, but is double the labour share in the United States indicative cost study (Chapter 5).

The second major processing cost was packaging which represented 21% of the total in European plants, compared with 22% in Australia and 45% in the United States.

6.6 Employment and Labour Productivity

Average employment (Table 6.5) in the four European plants in the smallgoods operation was 333, approximately double that in the Australian Best Practice plants. Direct labour represented 61% of the total.

Table 6.5: Europe - Employment and Labour Productivity

	No. employed (4 plant average)	Output/person/week (kg) (4 plant average)
Direct labour	202.75	3,150
Indirect labour	129.75	4,922
Total	332.50	1,921

Average output per person for total labour was 1,921 kg per week. This compares with 1,268 kg per week in Australian Best Practice plants and 1,350 to 1,500 kg per week in the two US plants.

6.7 Labour Payments

Three European plants provided details of their labour payments - these are summarised in Table 6.6.

CHAPTER 7: LOOKING AHEAD - THREATS AND OPPORTUNITIES FOR INCREASED COMPETITIVENESS

7.1 Infrastructure and Investment

Most smallgoods manufacturing activity in Australia occurs in old plants which are not designed for modern equipment and product flows. The average age of the six plants studied in detail was over 50 years. We are not aware of any new medium to large size plant being established in Australia, or of major investment in the refurbishment of existing plants in recent years. Several managers indicated that upgrading their plants to export standards was not a realistic option due to the high cost of building renovations required.

The average investment in the six plants in the smallgoods operation over the past three years was $1.1 million. Much of this investment was in the replacement of existing equipment items, but this enabled new technology and labour savings to be incorporated. The major area for new investment was in equipment for slicing and vacuum packaging of retail meat packs. This priority appears to be partly demand driven (ie., increasing consumer preference for convenience packs and see-through packaging) and partly due to labour savings and increased operating efficiency.

In the plants visited, most had made recent investment in slicing and packaging and had reached varying degrees of partial automation. The slicing and packaging department still accounted for over 50% of total direct employment in smallgoods manufacture.

Plant size in the study group varied from 2 - 16 million kilograms in terms of annual turnover. This compares with throughput in the range of 8 - 80 million kilograms in the participating overseas plants. The impact of these differences in scale on operating efficiency are discussed in the Section 7.2.

Capacity utilisation in smallgoods plants is largely determined by the capacity of the cooking/smoking/cooling facilities and the (ham) massaging machines which can be operated 24 hours a day. There is a distinct seasonal peak in production in the three months prior to Christmas to meet the peak demand at that time. Production in this period is approximately 30% higher than in the remainder of the year. The capacity of the continuous use equipment like ovens is designed to meet this peak demand.

The hours of plant operation varied from 1 - 1.5 shifts, with a full second shift operating occasionally in some departments and during the pre-Christmas peak. The use of a second shift occurred more frequently in the bacon and ham department and in the slicing and packaging process.

7.2 Scale Economies and Operating Efficiency

There is scope for economies, and associated lower operating costs per unit of output, in most stages of smallgoods manufacture. The scope for automation was most evident in the cooked and scalded sausage production facilities in Europe and the United States.

7.4 Cost Data

The sample of Australian smallgoods producers who participated in this study did not, in the consultants' view, maintain cost accounts which were adequate for benchmarking and many other planning purposes. The adage "you need to measure it to manage it" appeared to have received little attention.

None of the firms had recent estimates of the cost to produce individual final products or groups of products. Most firms had considerable difficulty in deriving these estimates from their records for the benchmarking exercise. Several firms were in the process of upgrading their accounting records to provide this type of information.

This lack of attention to unit costs suggests management does not see much scope for varying either output mix, or input mix, to maximise profits by moving more resources into those products, processes and materials where unit returns are highest. It suggests a mind set that sees each company's markets, products and processes as relatively entrenched. This mind set often involves production of the whole range of bacon, ham and smallgoods items required by existing customers, rather than specialisation and winning larger markets in areas of comparative advantage.

7.5 Product Specialisation

The larger markets in Europe and the United States do encourage a higher level of product specialisation, but this is by no means universal. Some leaders in the industry have retained centralised processing operations with a wide product range, while others have established separate plants for specific product areas.

Tulip International, for example, has a ham factory and a canned meat factory in Denmark; one bacon factory in Denmark and two more in the United Kingdom; and three cooked meat factories in the United Kingdom.

Specialist bacon factories were evident in the Netherlands (with major bacon exports to the United Kingdom), and in the United States.

Specialisation is mainly in terms of end product with plants specialising in bacon, smoked ham, cooked ham, luncheon meats or uncooked sausage. However, there is also specialisation by process with the slicing and packaging of cooked meats being undertaken, in some instances, in separate plants from the meat preparation/cooking process.

The production of canned and bottled smallgoods, with the meat frequently supplemented with beans and other vegetables, appeared to be a more important process in Europe and frequently a specialised operation.

7.6 Availability of Meat Cuts

An important factor affecting the scope for product specialisation is the availability of the required cuts and quality of meat sought. Australian smallgoods manufacturers appear to be at a considerable disadvantage here. In Europe and the United States there are

Thirdly, the proportion of meals eaten out of the home continues to grow and is approaching 50% in the United States. This has resulted in a more rapid growth in food service sales of smallgoods than supermarket sales. It also has provided a boost to sales of cooked whole muscle meats which are then heated and sliced at the service outlet. Beef accounted for over half of the meat used in Cooked Meats produced by the six plants benchmarked in this study.

A fourth development, possibly more driven by producers and retailers than consumers, is that towards greater product differentiation. A wide range of smallgoods are now sold regularly under manufacturer (or "premium") labels for the higher priced products and "store" labels for discounted lines. The premium label may reflect a higher quality product (eg., No. 1 bacon, while No. 2 bacon is sold under store labels) or additional services (eg., better display, advertising, free recipes, training of retail staff) or the assurance of continued availability and quality associated with leading brand names.

Some smallgoods manufacturers see the increased use of store labels as an unwelcome source of downward pressure on product quality and prices. In reality it reflects, in part, consumers' demands for a wider range of product quality, presentation and sales services, and consequently a wider range of retail prices.

7.8 Smallgoods Industry at the Crossroads

It is widely accepted amongst smallgoods manufacturers in Australia that major changes are inevitable - that putting up barriers to changes and trying to maintain the status quo is not a realistic option.

The immediate pressure for change is in the health, Quality Assurance, inspection and product quality areas where a number of reforms have been initiated or accelerated, following the Garibaldi incident. Key developments include:

- Pig Research and Development Corporation (PRDC) action to bring together producers, processors, and regulators to develop and implement a Pig meat Hygiene Program. The ultimate objective is to assure consumers, both domestic and overseas consumers, that Australian pig meat products are safe and wholesome.

- The above program will include Hazard Analysis Critical Control Points (HACCP) which identify possible hazards and where each hazard can be most effectively controlled along the production chain. The HACCP method can be used in a Quality Assurance audit.

- PRDC, National Pork Quality Improvement Program which aims at producing national standards for reducing PSE (pale, soft, exudative pork). These standards will be validated by audits at each abattoir.

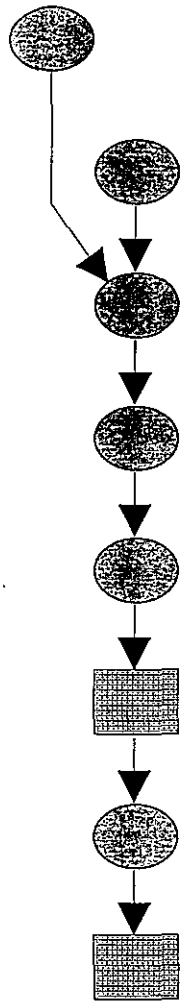
- A proposal to establish a Smallgoods Producers' Accreditation Scheme.

In addition to the above immediate concerns and responses, there are longer term pressures which will inevitably lead to major industry changes. Many of the existing smallgoods

APPENDIX 1

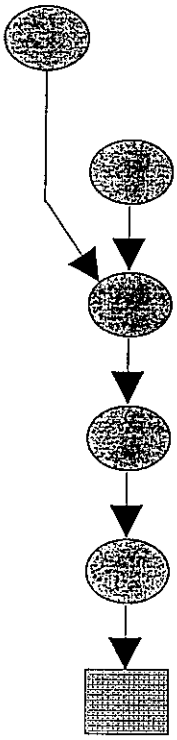
2) MANUFACTURED MEAT

EQUIPMENT	OPERATION	EMPLOYEES
	Weighing of dry ingredients	1 Employee
	Weighing of raw ingredients	2 Employees
Cutter or mixer	Cutting and / or mixing of ingredients	2 Employees
Vacuum filler	Filling into casings	4-6 Employees
Smokehouse	Smoking and / or cooking	1 Employee
	Chiller	
Slicer and packaging equipment	Slicing and packaging	6 Employees
	Storage chiller	



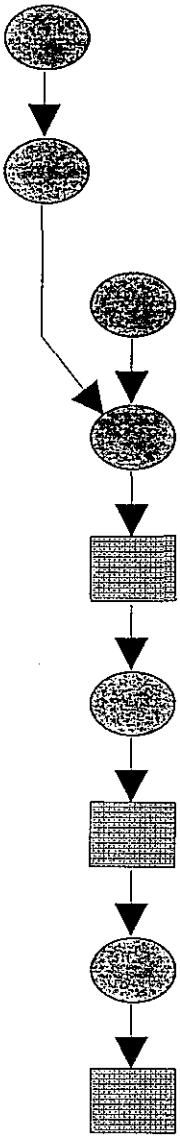
4) SAUSAGES

EQUIPMENT	OPERATION	EMPLOYEES
	Weighing of dry ingredients	1 Employee
	Weighing of raw ingredients	2 Employees
Cutter or mixer	Cutting and / or mixing of ingredients	2 Employees
Vacuum filler	Filling into casings massaging	4-6 Employees
Packaging equipment	Packaging	4 Employees
	Storage chiller	



6) DRIED MEAT

EQUIPMENT	OPERATION	EMPLOYEES
	Weighing of cure	1 Employee
	Mixing of cure	1 Employee
	Trimming of raw material	2 Employees
Pickle Injector	Application of cure	1 Employee
	Curing	
Smokehouse	Drying and / or smoking	1 Employee
	Chiller	
Slicer and packaging equipment	Slicing and packaging	6 Employees
	Storage chiller	



APPENDIX 2 : QUESTIONNAIRE FOR SURVEY OF SMALLGOODS MANUFACTURING PLANTS *

Plant No:_____

Survey of Smallgoods Manufacturing Plants

Notes for Respondents:

1. MATFA members manufacturing smallgoods have been asked to participate in this survey. We thank you for your valuable time in completing the survey and returning it to us.

2. Time Period for Study = 1993-94

Please provide best estimates of the throughput, manning and unit costs of your plant in the 1993-94 financial year.

2. Multi-purpose plants

Please make an approximate allocation of the share of general plant costs which could be attributable to the smallgoods operation.

3. Confidentiality

To facilitate confidentiality, we have allocated the above code number to your plant and will not attach your company name to your data at any time.

4. Return of Questionnaire

Please use the enclosed self-addressed and stamped Hassall's envelope.

5. Enquiries

If your require further information, please contact Karina Wood or Mike Emmery at Hassall's Canberra office on 06-273 2577.

* This questionnaire was used for a mail survey of small to medium smallgoods manufacturing in Australia. The full responses are provided in Appendix 3. These are discussed in Chapter 4.

Plant No:_____

Q3. PRODUCTION AND VALUE OF PRODUCT LINES, 1993-94

Smallgoods Product Categories		QUANTITY (Tonnes) 1993-94	VALUE ($A) [at factory value] 1993-94
WHOLE MUSCLE MEATS	**1. Ham** 1.1. Leg ham - bone-in 1.2. Leg ham - boneless 1.3. Shoulder ham - bone-in 1.4. Shoulder ham - boneless		
	2. Bacon 2.1. Middle 2.2. Belly		
	3. Cooked Meats		
MANUFACTURED MEATS	**4. Australian Smallgoods** 4.1. Frankfurters 4.2. Cooked Sausages 4.3. Knobs, Chubbies 4.4. Reformed Hams, eg., 4x4 hams **5. Salami** **6. Other Continental**		
OTHER MEATS	**7. Sausage Meat (uncooked)** 7.1. Red Meat 7.2. Pork 7.3. Chicken 7.4. Game Meat & Venison		
	8. Dried Meat		
	9. Canned Meat		

Plant No:_____

Q5. INGREDIENTS USED IN PRODUCTION

Materials Used in Production	1993-94 Quantity	1993-94 Value ($A)
Meats:		
Beef (Kg)		
Mutton & Lamb (Kg)		
Pork (Kg)		
Poultry (Kg)		
Game Meat and Venison (Kg)		
Ingredients/Packaging:		
Casings - natural (by single bundle)		
Casings - synthetic (by caddy)		
Cereal fillers (Kg)		
Soya fillers (Kg)		
Spices (Kg)		
Pickle * - (dry) (Kg)		
Preservation Packaging		
Presentation Packaging		
Transport Packaging		
Other		
TOTAL		

* Please indicate if you make your own pickle or if bought, the specification used eg. PS101

Definitions:

Preservation packaging: Includes vacuum and laminate packaging for preservation purposes

Presentation packaging: Includes all packaging for the purposes of labelling, branding, presentation trays etc.

Transport packaging: Includes all packaging for transportation such as cartons, bindings etc.

Plant No:_____

Q6. SMALLGOODS PROCESSING COSTS for 1993-94 ($)

Costs	WHOLE MUSCLE MEATS			MANUFACTURED MEATS			OTHER MEATS			TOTAL
	Ham	Bacon	Cooked Meats	Australian Smallgoods	Salami	Other Continental	Sausages	Canned Meats	Dried Meats	SMALL-GOODS
Direct Labour (loaded)										
Indirect Labour (loaded)										
Packaging Materials										
Electricity, wood, oil, steam, gas										
Water										
Quality Assurance										
Repairs & Maintenance (without labour)										
Depreciation										
Cleaning										
Admin. & Management										
Other production costs *										
TOTAL COSTS										

* = For total other production costs, please provide details of key items included.

Note:

(a) The blank spaces are provided for any additional items which should be included, but are not listed.

(b) Definitions of cost items are on the following page

Cost Allocation Method

If your firm's cost records do not contain the necessary information to complete this table, we suggest you do an approximate allocation as follows:

APPENDIX 3 : RESPONSES TO SURVEY OF SMALLGOODS MANUFACTURERS

Q1. Smallgood Plants

		Mean	Median	Standard Deviation	Number of Responses
(a) What is the age of your plant?	Years	15.2	14.0	9.7	12
(b) What was the year of your last major refit?		1991	1991	3.4	10
(c) What was your annual capital investment in the three years, 1991/92 - 1993/4?	$	109,800	43,750	172,772	12
(d) What is the floor area used for smallgoods production in your plant?	m2	556.8	232.3	788.1	11
(e) If profitable to do so, by how much could you increase throughput within the existing plant and chiller capacity?	%	47.9	50.0	32.1	12

Q2. Marketing

	Mean	Median	Standard Deviation	Number of Responses
1. Domestic market				
(a) Approximate breakdown of domestic sales by destination:				
Supermarkets:				
-your brand	21.7	15.0	24.5	12
-their brand	0.0	0.0	0.0	12
Total supermarkets	21.7	15.0	24.5	12
Butchers and delicatessens	34.0	25.0	24.5	12
Food service trade	15.2	10.0	12.4	12
Wholesalers	29.2	20.0	27.5	12
Other	0.0	0.0	0.0	12
Total	100.0	100.0	0.0	12
2. Exports				
(a) Is your plant export accredited?	No	92%	Yes	8%
(b) Proportion of sales to export markets	0.0	0.0	0.0	12

Q3. Production and Value of Production Lines, 1993-94 (con't)

	Mean	Median	Standard Deviation	Number of Responses
Salami:				
1993-94 quantity (kg)	5,475	5,900	4,357	4
Percentage of product mix (%)	0%	1%	4%	4
1993-94 value ($)	38,800	39,200	36,077	4
Other Continental:				
1993-94 quantity (kg)	65,260	40,000	79,957	5
Percentage of product mix (%)	5%	8%	41%	5
1993-94 value ($)	535,260	234,300	773,250	5
OTHER MEATS				
Sausage Meat:				
Red meat				
1993-94 quantity (kg)	177,600	4,000	348,267	4
Percentage of product mix (%)	15%	1%	47%	4
1993-94 value ($)	427,100	11,200	835,273	4
Pork				
1993-94 quantity (kg)	10,720	10,000	10,049	5
Percentage of product mix (%)	1%	2%	4%	5
1993-94 value ($)	33,920	25,000	29,637	5
Chicken				
1993-94 quantity (kg)	1,500	1,500	707	2
Percentage of product mix (%)	0%	0%	0%	2
1993-94 value ($)	10,500	10,500	3,536	2
Game meat and venison				
1993-94 quantity (kg)	0	0	0	0
Percentage of product mix (%)	0	0	0	0
1993-94 value ($)	0	0	0	0
Dried Meat:				
1993-94 quantity (kg)	NA	NA	NA	1
Percentage of product mix (%)	NA	NA	NA	1
1993-94 value ($)	NA	NA	NA	1
Canned Meat:				
1993-94 quantity (kg)	0	0	0	0
Percentage of product mix (%)	0	0	0	0
1993-94 value ($)	0	0	0	0
TOTAL (kg)	678,167	362,100	724,700	11
TOTAL PRODUCT MIX (%)	100%	100%		11
TOTAL ($)	3,272,070	1,900,000	3,683,761	11

Note: These totals are averages of the totals, not totals of the averages.

NA: Not released because produced by one firm; included in totals

Q5. Ingredients Used in Production (con't)

	Mean	Median	Standard Deviation	Number of Responses
INGREDIENTS				
Casings - natural				
1993-94 value ($)	44,462	21,000	50,479	6
Percentage of total value of materials used (%)	1%	2%	6%	6
Casings - synthetic				
1993-94 value ($)	71,901	15,000	121,050	5
Percentage of total value of materials used (%)	2%	1%	3%	5
Cereal fillers				
1993-94 quantity (kg)	8,000	8,000	9,899	2
1993-94 value ($)	55,380	22,500	77,962	6
Percentage of total value of materials used (%)	1%	2%	4%	6
Soya fillers				
1993-94 quantity (kg)	NA	NA	NA	1
1993-94 value ($)	1,100	1,100	1,273	2
Percentage of total value of materials used (%)	0%	0%	0%	2
Spices				
1993-94 quantity (kg)	593	500	253	3
1993-94 value ($)	23,640	5,000	36,901	5
Percentage of total value of materials used (%)	1%	0%	2%	5
Pickle (dry)				
1993-94 quantity (kg)	4,750	4,750	2,475	2
1993-94 value ($)	36,117	11,000	44,771	6
Percentage of total value of materials used (%)	1%	1%	1%	6
Other				
1993-94 value ($)	108,600	15,800	165,783	3
Percentage of total value of materials used (%)	3%	1%	25%	3
PACKAGING				
Preservation packaging				
1993-94 value ($)	107,376	88,500	109,885	6
Percentage of total value of materials used (%)	3%	7%	8%	6
Presentation packaging				
1993-94 value ($)	35,100	15,200	55,774	7
Percentage of total value of materials used (%)	1%	1%	2%	7
Transport packaging				
1993-94 value ($)	40,968	12,000	72,875	7
Percentage of total value of materials used (%)	1%	1%	1%	7
Total value of input materials	3,090,523	747,000	4,466,477	9

NA: Not released because produced by one firm; included in totals

Q6. Smallgoods Processing Costs for 1993-94 (con't)

	Mean	Median	Standard Deviation	Number of Responses
MANUFACTURED MEATS				
Australian Smallgoods:				
Direct labour (loaded)	288,300	288,300	402,627	2
Indirect labour (loaded)	14,050	14,050	17,324	2
Packaging materials	72,850	72,850	101,611	2
Electricity, wood, oil, steam, gas	27,050	27,050	37,830	2
Water	2,700	2,700	3,677	2
Quality assurance	NA	NA	NA	1
Inspection	0	0	0	0
Repairs and maintenance (without labour)	28,650	28,650	39,103	2
Depreciation	33,505	33,505	46,535	2
Contract cleaning	7,310	7,310	9,772	2
Administration and management	42,155	42,155	58,909	2
Other production costs	NA	NA	NA	1
Total	517,270	517,270	716,398	2
Salami:				
Direct labour (loaded)	NA	NA	NA	1
Indirect labour (loaded)	NA	NA	NA	1
Packaging materials	NA	NA	NA	1
Electricity, wood, oil, steam, gas	NA	NA	NA	1
Water	NA	NA	NA	1
Quality assurance	0	0	0	0
Inspection	0	0	0	0
Repairs and maintenance (without labour)	NA	NA	NA	1
Depreciation	NA	NA	NA	1
Contract cleaning	NA	NA	NA	1
Administration and management	NA	NA	NA	1
Other production costs	NA	NA	NA	1
Total	NA	NA	NA	1
Other Continental:				
Direct labour (loaded)	143,277	40,030	213,705	3
Indirect labour (loaded)	17,503	2,010	28,153	3
Packaging materials	65,700	10,100	104,282	3
Electricity, wood, oil, steam, gas	13,710	3,830	20,247	3
Water	1,685	1,685	1,860	2
Quality assurance	18,100	18,100	0	2
Inspection	0	0	0	0
Repairs and maintenance (without labour)	11,013	3,840	15,683	3
Depreciation	9,910	2,630	14,854	3
Contract cleaning	2,363	990	3,181	3
Administration and management	60,960	5,780	100,534	3
Other production costs	10,100	10,100	14,001	2
Total	344,360	69,580	534,183	3

APPENDIX 4

- Pork trim and mechanically deboned chicken are sold according to their lean meat content, e.g. CL42 is 42% lean and 58% fat and CL85 is 85% lean and 15% fat.
- The meat block cost at the factory is derived by taking the USDA market price, adding freight to processing factory and a small margin for better quality for some meats.

1. Hot Dogs

	Meats Used (% Total)	USDA Prices US$/cwt
Pork trim CL42	51	23
Mechanically deboned chicken	49	23
Meat block cost	100	23

A blend of 51% Pork Trim CL (chemical lean) 42 and 49% Mechanically Deboned Chicken CL 85 is used.

It is assumed that 30% water and 5% spices and extenders are added to the Meat Block.

During processing (cooking), there is a 10% loss of water; and during filling and packaging a further 3.5% overall yield loss.

The combined effect of these changes is to increase the weight of the original meat block by 18% (see Diagram).

The Meat Block cost $23/cwt and hence the Yielded Meat Cost is $23/118 or $19.49 per cwt finished product.

The cost of spices and extenders is also adjusted for meat yield. If spices/extenders cost $4 for the 5 units required for a 100 unit meat block, their Yielded Cost is $4/118 or $3.39 per cwt of finished product.

2. Pork Luncheon Loaf

	Meats Used % of Total	USDA Prices US$/Cwt
Pork trim CL42	23	23
Pork trim CL72	77	34
	100	31.47*
Quality adjustment		2.00
Freight		3.00
Meat block cost		36.47

* Weighted price

5. Smoked Ham

Purchase Cost	
(USDA price of 5 May 1995 for Ham, Skinned, Selected, 17 to 20 lbs)	46.00
+ Quality, trim, overage	3.00
+ Freight	3.00
Cost to boning	52.00
Ham Boning Cost	
Defat to blue (5 muscles) and pull outer, tenderloin and dark butt	8.00
Less Credits for:	
25% Pork Trim (72% chemical lean) @ $34	8.50
10% Bones @ $3	0.30
25% Fat @ $10	2.65
	48.55
Therefore Residual 40% yield gives Ham Muscles cost of	121.38

Processing

Assume manufacturing a Water Added Ham with 33% water and 2% cure added, i.e. 100 lbs of ham muscles have a pumped weight of 135 lbs.

A 15% loss of water in processing (cooking and chilling) would then yield 120 lbs packed weight of smoked ham per 100 lbs of boneless ham muscles.

The yielded meat cost is $\frac{\$121.38}{120} = 101.15$

APPENDIX 5:

A5.1 Differences in Product/Process Groups Between United States and Australia (see Section 5.11)

Fresh Pork Sausage

Very popular in US, both small links (breakfast), and larger flavoured links (dinner). Retail sales are largely of pre-rigour meat which gives a bright red colour to meat. Pre-rigour sausage is made by processors who can brand the product; it cannot be made by retailers.

Australia uses more red meat in sausages. Also its pork sausage is a fine ground, cereal extended sausage, or grey colour, made in retail butcher shops. Australia does not use pre-rigour meat and fresh pork sausage is generally not made by processors and sold under brand.

Cooked Small Link Sausage

Hot dogs are very popular in the United States. Poultry probably makes up half the raw material used, followed by pork (fat trim) and beef. Product has a noticeable smoke flavour and a high uniformity of shape, reflecting mass production manufacture.

In Australia, less popular product, greater range of shapes and sizes and greater use of mutton with beef and pork; no use of poultry.

Cooked Large Link Sausage

US has smoked rope sausage and number of link products (4 to 6 per lb), e.g. polish, kielbasa, bratwurst, Italian, chorizo. Generally a coarse grind textured product, with noticeable smoke colour and flavour.

Australia has large link products but these tend to be finer grind and lighter smoke colour and flavour.

Cooked Large Diameter Sausage

In the US, the presliced, prepackaged product made by processors is the dominant product while in Australia, the sale of bulk product for in-store deli slicing dominates. In-store deli slicing is important in the US but it is concentrated on ham products, beef products (roast, Italian, corned, pastrami) and turkey breast.

Australia also has a smaller diameter, 0.5 to 1 kg chubs, category which is essentially missing in the US.

Cooked Ham Products

This is the boiled ham product made with the Cook-In-Bag process. The products range from whole muscle to "ham bologna" and include dry, natural juice, water added and ham

A5.2 United States: Volume Split Between Retail and Hotel, Restaurant, Institution (HRI) Sales - by Product/Process Category and Raw Materials Used

Product/Process Category	Retail Sales	HRI Sales
Fresh pork sausage	60%: pre-rigour - raw trim - blends (cooked and frozen, blind box packaged)	40%: trim - raw trim - blends (cooked)
Cooked small link	80%: poultry blends (70%) beef (10%) pork and beef (20%)	20%: poultry blends (50%) beef (30%) pork and beef (20%)
Cooked large link	90%: pork (80%) beef (10%) poultry, and lean poultry blends (10%)	10%: pork (80%) beef (10%) poultry, and lean poultry blends (10%)
Cooked large diameter	90% - split prepkgd (70%) and bulk (20%): poultry blends (70%) beef (10%) pork and beef (20%)	10% - split ½ bulk and ½ presliced) poultry blends (50%) beef (30%) pork and beef (20%)
Cooked ham	70% - split prepkgd (20%) and bulk (80%)	30% - (split ½ bulk and ½ presliced)
Cooked beef	60% - split prepkgd <5% and bulk >95%	40% - split ½ bulk and ½ presliced
Cooked turkey breast	70% - split prepkgd (40%) and bulk (60%)	30% - split ½ bulk and ½ presliced
Smoked ham	80%	20%
Smoked bacon	60%	40% - raw (30%) and precooked (10%)
Dry sausage	10% - some presliced, some bulk sliced in deli, some sticks/chubs	90% - most as pepperoni for pizza topping

APPENDIX 6 : DIFFERENCES BETWEEN UNITED STATES AND AUSTRALIA IN RAW MATERIAL AVAILABILITY TO PROCESSORS - SPECIES, TYPES OF RAW MATERIALS, QUANTITIES, AND RELATIVE PRICING

Processing Raw Material	United States	Australia
Mechanically Deboned Chicken	readily available in quantity at very low price for lean meat	limited quality at high price
Mechanically Deboned Turkey	Readily available in quantity at very low price for lean meat	not available
Skinless, boneless Turkey breast	readily available in quantity - priced reasonably	not available
Skinless, boneless Turkey thigh meat	readily available in quantity - priced very reasonably	not available
Beef muscles - inside, outside, knuckle, eye	readily available in quantity - priced reasonably - choice fed cattle or cows	readily available in quantity - priced reasonably - limited to grass fed cattle
Boneless Ham muscles - inside, outside, knuckle, eye, butt	readily available in quantity - priced reasonably	very limited availability in quantity
Bone-in Hams	readily available in quantity - priced reasonably	limited availability in quantity
Bellies	readily available in quantity - priced reasonably - available skin-on or derind	not an Australian pork cut - not available - middles may be available in limited quantity
Pre-rigour pork trim	available, but limited sales as most slaughterers continue through next stage of making pork sausage	not available
Lean (72 CL) and Fat (42 CL) boneless pork trim	readily available in quantity - priced reasonably - and large quantities of boneless picnic trim (72 CL) for coarse grind texture products	limited availability in quantity
Lean (90 CL) and Fat (50 CL) boneless beef trim	readily available in quantity - priced reasonably - and available in other CL's (95, 85, 65, etc)	readily available in quantity - priced reasonably - and available in other CL's (95, 85, 65, etc)