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15 OCT 2002

BY:



International comparisons in the beef processing industry M.290

1993

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ISBN: 1 74036 960 2
Published: April 1993
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MEAT & LIVESTOCK
A U S T R A L I A

BACKGROUND

BACKGROUND

- In mid 1992, the Meat Research Corporation retained Booz•Allen & Hamilton to compare the costs of processing beef in Australia with the costs in the US and Argentina
- To enable in-depth comparisons between the three industries, the study adopted a methodology quite different from that typically used in such comparisons. Five representative facilities, three from Australia and one each from the US and Argentina, agreed to provide detailed information for the 91/92 season on a confidential basis. To ensure commonality of definition, data collection was supervised by a Booz•Allen professional in each country, and management of each facility was interviewed at length to help interpret the results. In addition, the results were carefully compared to other data sets, both proprietary and in the public domain, to ensure correctness
- This first report has now been extensively reviewed and discussed through a major presentation at the AMEFC Annual Meeting, a series of two-day workshops held in Brisbane, Melbourne and Sydney, in-depth reviews with the participants themselves and a number of one-on-one discussions with industry experts. In addition, the MRC formed an expert team which toured the US and Argentina to investigate first-hand the issues raised in the study
- Specifically, the industry raised five questions with regards to the study which have now been answered
 1. How do we know Australian facilities involved are really best-in-class?
 2. Previous studies suggest Australian productivity is comparable to US productivity. If so, how can there be such a gap in costs?
 3. The study says AUSBIC has processing costs of \$1.13 per kilo -- doesn't this imply processing costs of \$560 per animal, which is ridiculous?
 4. The study also says that cattle costs are very low and processing costs (vs. the US) are very high. Was the study slanted to support the view of producers that Australian processors are inefficient?
 5. Two participants have challenged some of the numbers in the report. Is it inaccurate?
- This scrutiny has resulted in a number of corrections and refinements of the original work

BACKGROUND (CONT'D)

- The initial study produced a number of major findings
 - The Australian composite facility was severely cost disadvantaged to the US facility in terms of processing, but advantaged in terms of animal cost
 - The Australian composite facility is also disadvantaged to the Argentinian facility, but primarily due to animal count
 - Much of the cost gap, 60-70%, is the result of factors such as distance to market, type of cattle processed, lack of government support, etc., and is beyond the control of processors
 - At least 30% is addressable. If realised, this would mean an additional margin of over \$50 per head. However, realising this requires significant changes in the labour environment, which means that the improvement will be difficult to realise
- These findings created considerable controversy
- For the most part, the controversy has been good -- it has created a widespread recognition but the real issue is not processor mismanagement or poor uptake of technology, but the difficulty of effecting positive change in the Australian labour environment
- To provide further insight into this problem, the MRC has now extended the study to Ireland and New Zealand, two countries with labour environments more similar to Australia's than those of the US and Argentina
- Today's objective is to discuss these latest findings and their implications for the CCA, and to answer any questions about either this effort or its predecessor

SUMMARY OF RESULTS

NOTE

- This study represents a comparison of ten meat processing plants. To the extent possible, the data are all from the 91/92 season. While it is accurate with respect to these participants during this time period, it does have a number of limitations
 - It represents a set of individual firms, not five entire industries
 - It looks in-depth only at processing cost, not transportation, animal cost, or downstream marketing. To the extent that particular facilities have chosen to incur additional expenses in the boning room or by-product areas in order to address higher price markets and improve price realisation, such expenses may well be justified by higher returns. We have not factored this in
 - Finally, costs are very sensitive to several factors
 - .. The season we selected for comparison may or may not be representative, rather it was chosen for consistency between facilities, thus it may have been a particularly good season for one facility and poor for another
 - .. Exchange rates can make a tremendous difference in cost position. The drop in the A\$/US\$ rate since the original study could already have eliminated 10¢ per kilogram of the processing performance gap
- Notwithstanding these caveats, the results of the reviews of the study, combined with the study tour conducted by the MRC and our communication with participants, support the overall conclusions of this study

WHILE VERY DIFFERENT, THE PARTICIPATING FACILITIES ARE REPRESENTATIVE OF FACILITIES IN EACH COUNTRY

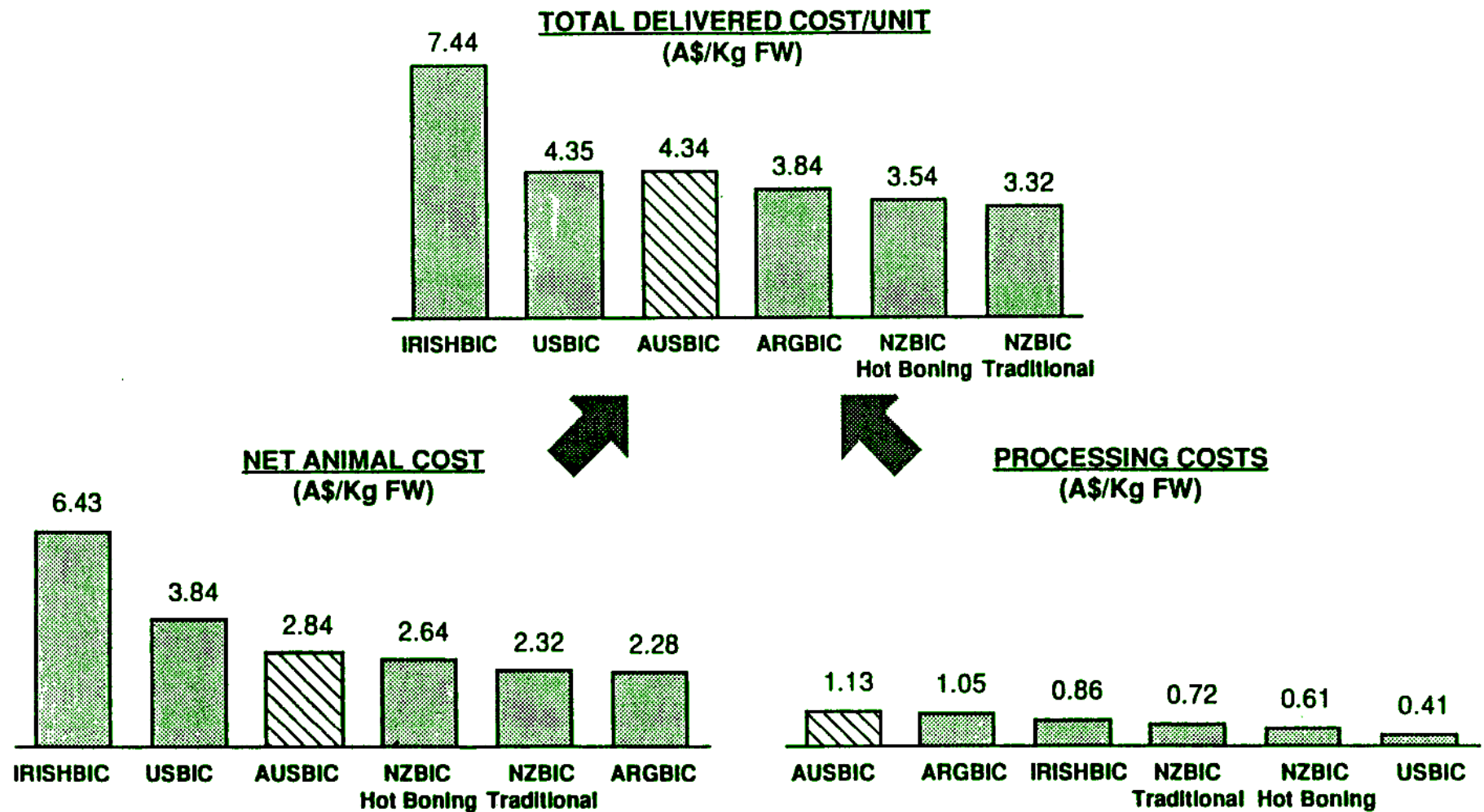
DESCRIPTION OF FACILITIES

COUNTRY	SIZE (Cattle/ Shift)	AGE OF FACILITY (Years)	LABOUR PRACTICES		TYPE OF CATTLE	PRODUCTS		LOCATION	AVERAGE CATTLE SIZE LIVEWEIGHT (Kgs)
			Award	Shifts		Per Cent Exported	Number of Cuts		
Australia (Composite)	600+	25+ years	National	1	Mostly grass fed cattle	50%+	450+	Queensland/New South Wales	>450 kgs
United States (Modified)	1,500+	20+ years	Enterprise	2	Mostly feedlot cattle	<10%	450+	Midwestern United States	>500 kgs
Argentina (Modified)	1,000+	20+ years	Enterprise	1	All grass fed cattle	20%+	150*+	Central Argentina	>450 kgs
NZBIC Traditional	400+	20+ years	Enterprise	1	Grass fed Mix of beef and dairy breeds	90%+	100+	New Zealand	>475 kgs
NZBIC Hot Boning	100+	<5 years	Enterprise	1	Grass fed High proportion dairy bulls	95%+	<50	New Zealand	>425 kgs
IRISHBIC	400+	<15 years	Enterprise	1	Grass fed Winter feed Mostly dairy breeds	80%+	300+	Central to Southern Ireland	>575 kgs

* 50% of Argentine facility's slaughtered animals are boned out; all other facilities are virtually 100% boned

24-29847BC

ALTHOUGH NOT THE HIGHEST COST PROVIDER OVERALL, AUSBIC DOES HAVE THE HIGHEST PROCESSING COST



NOTE: The difference between total delivered cost and the sum of net animal costs and processing costs is due to transportation

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DEFINITION OF FINISHED WEIGHT

Finished weight, as defined in the study includes:

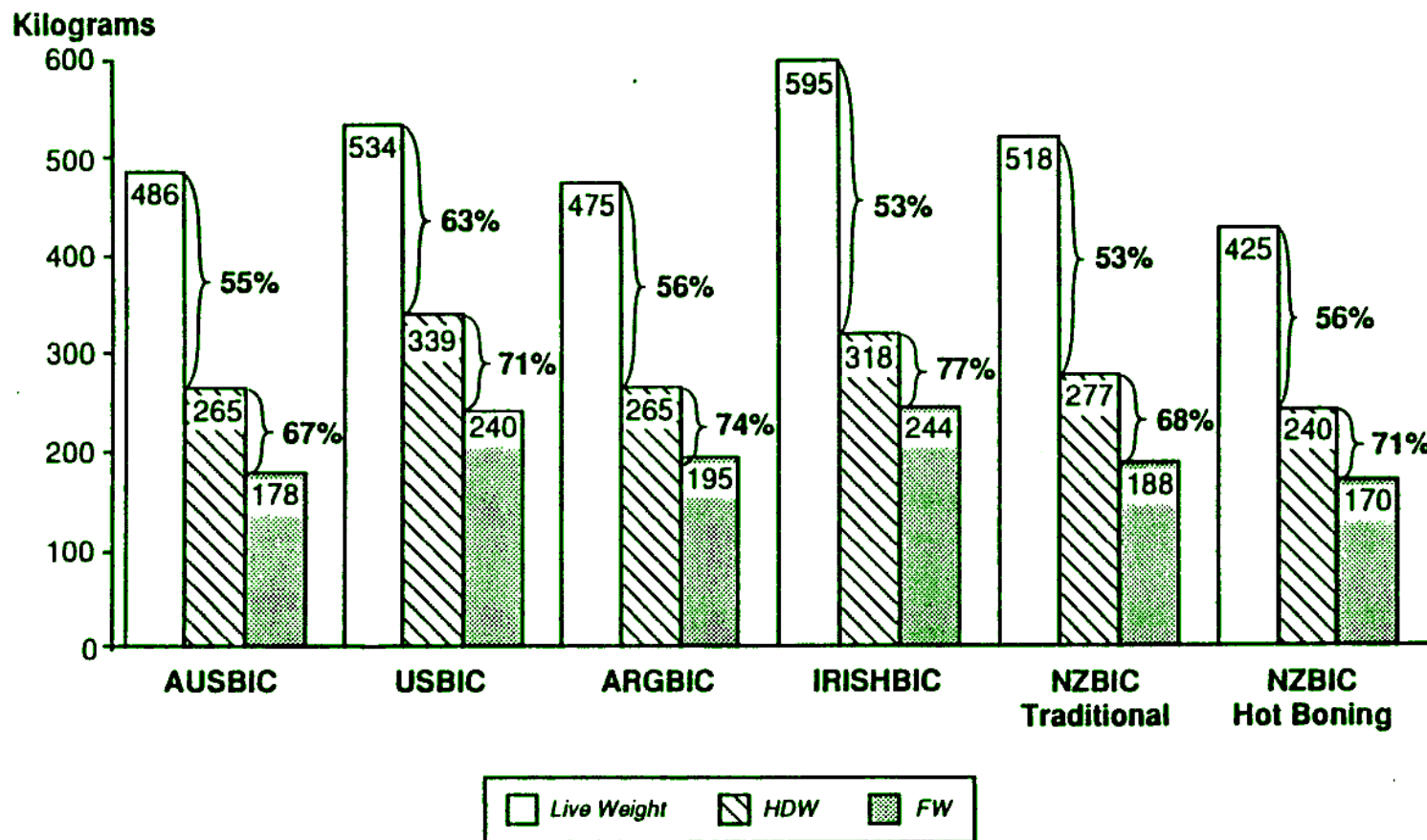
- All chilled or frozen muscle meat cuts
- Manufacturing and ground beef
- Trimmings and fat that can be sold as meat (boxed), not by-products

Finished weight does not include the sale of traditional by-products (e.g. hides, offals, tallow, meals and other)

THIS DEFINITION OF PROCESSING COST PER UNIT IS SOMEWHAT DIFFERENT FROM THAT CURRENTLY IN USE

- First, it is useful to consider by-products recovery separately from processing costs
- Second, cost per unit has been defined on the basis of finished weight, the most appropriate basis for comparisons
 - Using only per head measures hides the fact that larger beasts are more efficient, and countries with larger animals have a genuine cost advantage on the shelf
 - Using only carcass weight obscures the fact that yields differ considerably between facilities, again, which translate to a genuine advantage on the shelf (facing exhibit)
- Both of these conventions are different from those traditionally employed in the industry
- To aid understanding, the following page provides a set of comparisons expressed in more traditional terms. From then on throughout the report, the definitions of "processing" and "cost per unit" are used as defined above except where explicitly noted

LIVE WEIGHT, HDW AND FINISHED WEIGHT **(Kilograms)**



SOURCE: Participant data; BAH Analysis

24-29933AM/2

USE OF TRADITIONAL MEASURES STILL SUPPORTS THE CONCLUSION THAT AUSBIC IS COST DISADVANTAGED IN PROCESSING

RECONCILIATION OF STUDY STATISTICS WITH TRADITIONAL MEASURES

	<u>AUSBIC</u>			<u>USBIC</u>			<u>AUSTRALIAN DISADVANTAGE (ADVANTAGE)</u>		
	<u>Finished Weight Basis (¢/kg)</u>	<u>Carcass Weight Basis (¢/kg)</u>	<u>Per Head Basis (\$/hd)</u>	<u>Finished Weight Basis (¢/kg)</u>	<u>Carcass Weight Basis (¢/kg)</u>	<u>Per Head Basis (\$/hd)</u>	<u>Finished Weight Basis (¢/kg)</u>	<u>Carcass Weight Basis (¢/kg)</u>	<u>Per Head Basis (\$/hd)</u>
Gross Animal Cost	340.5	228.7	\$606.08	465.8	329.77	\$1,117.92	(125.3)	(101.6)	(\$511.83)
Processing Cost Less By-products	56.5	38.0	\$100.57	(40.8)	(28.9)	(\$97.92)	97.3	66.9	\$198.49

NOTE: • All numbers are in Australian dollars
• A similar calculation can be made for other BICs

24-29866MR/2

THE PROCESSING DISADVANTAGE IS THE CUMULATIVE RESULT OF DISADVANTAGES IN A NUMBER OF AREAS

<u>AUSTRALIAN DISADVANTAGE</u>					
(A¢/Kg FW)					
	<u>USBIC</u>	<u>ARGBIC</u>	<u>IRISHBIC</u>	<u>NZBIC</u>	<u>NZBIC</u>
				<u>Traditional</u>	<u>Hot Boning</u>
By-Product Recovery and Yields	25.8	(14.7)	38.0	2.7	9.5
Labour	30.6	21.0	12.9	20.8	27.6
Consumables and Packaging	7.1	(5.9)	(0.5)	6.3	7.7
Government Charges and Inspection	6.0	(1.2)	5.4	3.2	4.0
Services	5.6	2.7	3.8	1.7	2.0
Overhead and Depreciation	22.2	(9.0)	5.4	9.0	10.8
Total Processing Disadvantage	97.3	(7.1)	65.0	43.7	61.6

BY-PRODUCT REVENUE OFFSET DEFINITION

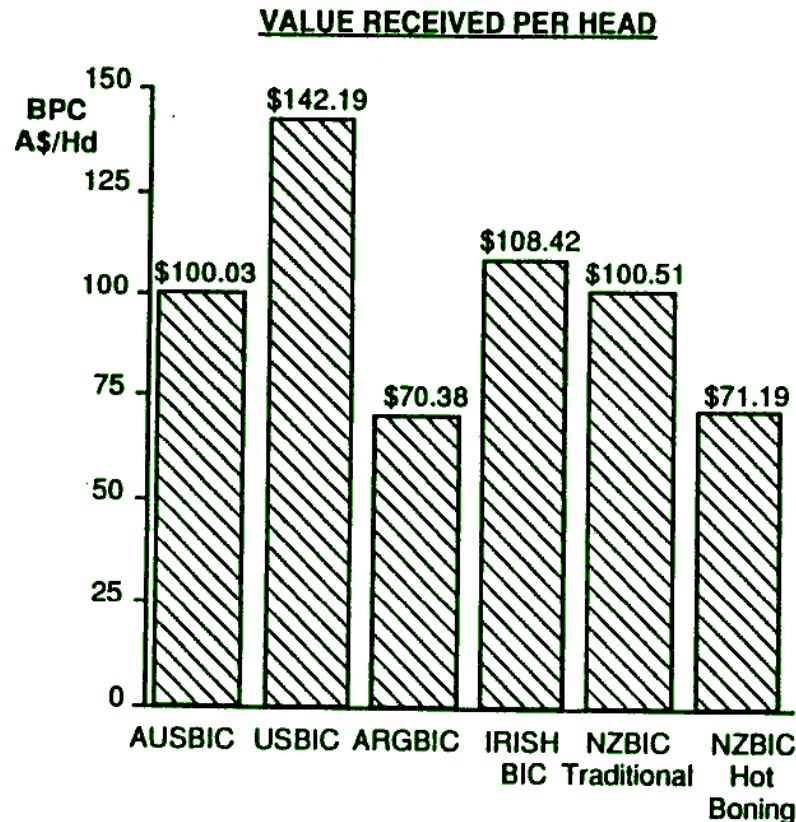
There are significant differences in the amounts of offal, fat, bone, blood and moisture loss in each country, as well as differences in how these are used. To allow analysis of these differences with the minimal amount of complication, we have combined the revenue effect of these differences into a single number, which we have termed the By-product Revenue Offset. It includes:

- The recovery and sale of traditional by-products
 - Hides
 - Offal
 - Tallow
 - Meals and other recovered products
- The differences in meat revenue created by reducing carcass moisture loss in the carcass chillers
- The differences in meat revenues due to market conditions that allow an increased fat layer to be sold on the finished muscle meat (i.e. a 10mm trim level in Australia vs. a 25mm trim level in the US)

This term is slightly different from those in common use in the industry in two ways. Firstly, it incorporates the differences in meat yield across countries. Secondly, it does not include the costs of processing by-products. Our belief is that the existing industry measures do not facilitate analysis, and that these modifications are therefore necessary

By-Products Revenue Offset . . .

MOST OF THE OTHER BIC FACILITIES GET HIGHER VOLUMES AND VALUES FROM THEIR BY-PRODUCT RECOVERY



NOTES: • USBIC processors sell these fleshed, not green
 • IRISHBIC and NZBIC Hot Boning sell raw render mix
 SOURCE: Participant Data, BAH Analysis

Volume

VOLUME PER HEAD (kg's)

	HIDES	VARIETY MEAT	TALLOW	OTHER	TOTAL*
AUSBIC	35	18	36	45	134
USBIC	28	24	69	48	169
ARGBIC	36	27	28	19	110
IRISHBIC	34	28	-	249	311
NZBIC Traditional	36	24	53	50	163
NZBIC Hot Boning	33	17	-	169	219

* Does not include Paunch material

Price

VALUE (\$/kg)

	HIDES	VARIETY MEAT	TALLOW	OTHER	TOTAL
AUSBIC	\$1.06	\$0.89	\$0.35	\$0.77	\$0.75
USBIC	2.47	1.04	0.35	0.48	0.84
ARGBIC	0.87	0.97	0.36	0.14	0.64
IRISHBIC	\$1.64	\$1.42	-	0.05	0.35
NZBIC Traditional	1.21	1.23	0.21	0.33	0.62
NZBIC Hot Boning	1.17	1.40	-	0.05	0.33

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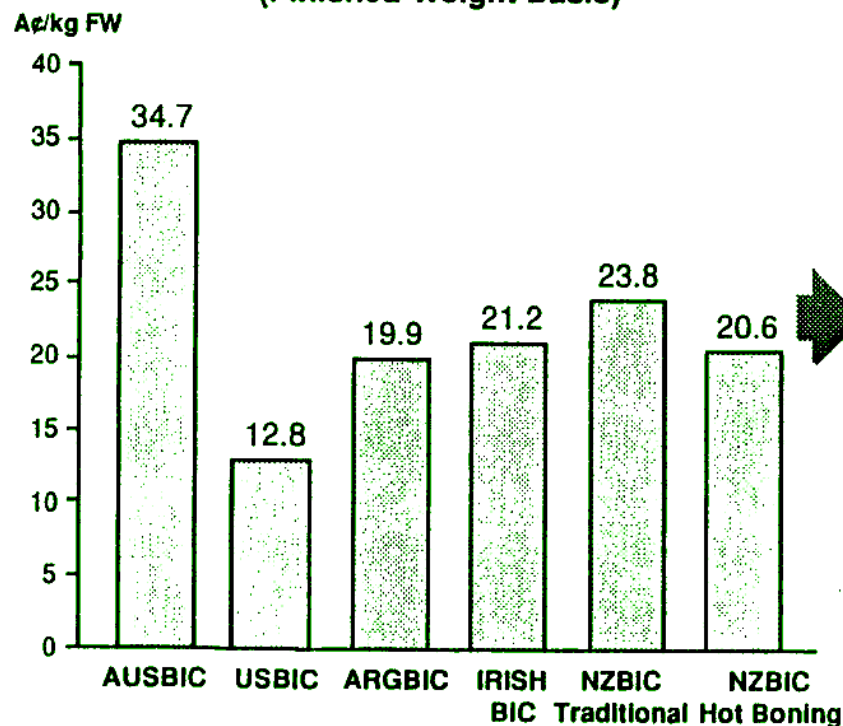
75% OF VALUE DIFFERENCE BETWEEN AUSBIC AND USBIC IS RELATED TO HIDE VALUE AS HIDES FROM YOUNGER, FEEDLOT CATTLE IN USBIC PRODUCE HIGHER QUALITY LEATHER

EXPENSE AREA DEFINITIONS

Labour:	Direct wages and on-costs (including penalty rates, holiday payments, Rostered Day Off payments etc.)
Consumables and Packaging:	Packaging, strapping, personal equipment (knives, etc.), feed, salt, additives, etc.
Services:	Fuel, electricity, gas, telephone, water charges
Government Charges and Inspection:	Inspection and veterinary costs, transaction levies, QA costs
R&M:	Labour, parts and materials, and contracts for Repair and Maintenance
Depreciation:	All depreciation expenses
Other:	Unallocated expenses, including corporate charges

IN THE SLAUGHTER AREA, LABOUR AND GOVERNMENT CHARGES AND INSPECTION REPRESENT THE MAJORITY OF AUSBIC'S PER-UNIT DISADVANTAGE TO THE OTHER FIVE "BEST-IN-CLASS" FACILITIES

SLAUGHTER COSTS PER UNIT*
(Finished Weight Basis)



SLAUGHTER COST DIFFERENCES VERSUS AUSBIC
(A\$/kg FW)

	USBIC	ARGBIC	IRISHBIC	NZBIC TRADITIONAL	NZBIC HOT BONING
Labour	12.9	10.7	7.4	5.2	9.4
Consumables And Packaging	2.7	2.0	0.9	2.3	2.8
Services	1.5	0.4	0.7	0.1	0.7
Government Charges And Inspection	5.0	4.0	4.7	3.1	3.3
R&M And Depreciation	0.7	1.0	(0.2)	0.1	1.7
Other	(0.9)	(3.3)	—	0.1	(3.8)
Total Difference	21.9	14.8	13.5	10.9	14.1

* Includes By-product processing costs, e.g. edible offal room, tripe room, etc.

NOTE: • Positive Number = AUSBIC Disadvantage

• Exchange Rate used is 0.75 (USD and Peso), 2.44 A\$/Irish£, 1.38 NZ\$/A\$

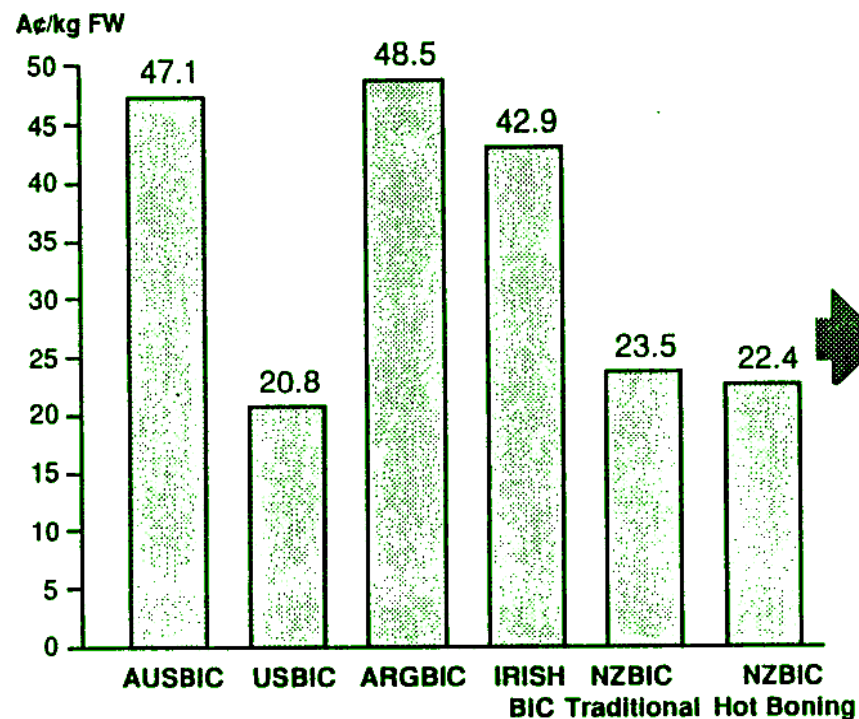
• Numbers used may not add due to rounding error

SOURCE: Participant data, BAH Analysis

24-29859MR

MOST OF THE FABRICATION COST DIFFERENTIALS ARE IN LABOUR, C&P, AND SERVICES

FABRICATION COSTS PER UNIT
(Finished Weight Basis)



FABRICATION COST DIFFERENCES VERSUS AUSBIC
(A\$/kg FW)

	USBIC	ARGBIC	IRISHBIC	NZBIC TRADITIONAL	NZBIC HOT BONING
Labour	17.6	10.3	5.5	15.5	18.2
Consumables and Packaging	4.4	(6.9)	(1.3)	4.4	4.9
Services	4.1	2.5	3.0	3.1	2.8
Government Charges and Inspection	0.3	(2.5)	(0.1)	0.2	0.2
R&M And Depreciation	0.8	(4.8)	(2.0)	0.4	(1.0)
Other	(0.9)	—	(0.9)	—	(0.4)
Total Difference	26.3	(1.4)	4.2	23.6	24.7

NOTE: • Positive Number = AUSBIC Disadvantage

• Exchange Rate used is 0.75 (USD and Peso), 2.44 A\$/Irish £, 1.38 NZ\$/A\$

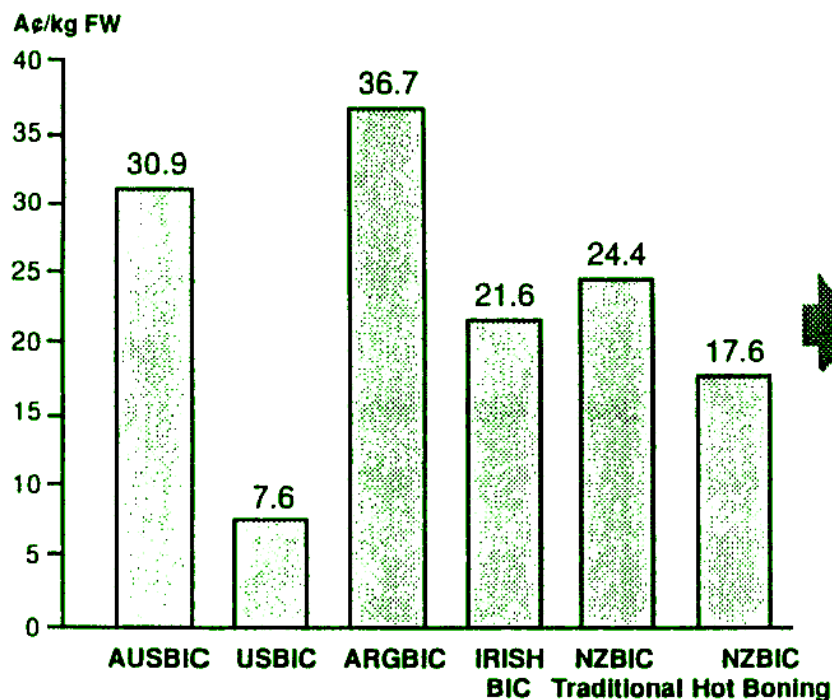
• Numbers used may not add due to rounding error

SOURCE: Participant data, BAH Analysis

24-29860MR

IN OVERHEAD, AS IN THE PREVIOUS AREAS, LABOUR COSTS ACCOUNT FOR MUCH OF THE AUSBIC OVERHEAD DISADVANTAGE -- ARGENTINA, HOWEVER, GIVES UP THIS ADVANTAGE DUE TO SIGNIFICANT GOVERNMENT FEES AND TAXES

**OVERHEAD COSTS PER UNIT
(Finished Weight Basis)**



**OVERHEAD COSTS DIFFERENCE VERSUS AUSBIC
(A¢/kg FW)**

	USBIC	ARGBIC	IRISHBIC	NZBIC TRADITIONAL	NZBIC HOT BONING
Labour	11.7	5.2	7.7	6.6	11.9
Consumables and Packaging	(0.1)	(1.0)	—	(0.4)	(0.1)
Services	—	(0.2)	—	(1.4)	(1.4)
Government Charges and Inspection	0.8	(2.7)	0.8	(0.2)	0.5
R&M And Depreciation	2.8	2.8	3.1	—	1.2
Other	8.1	(9.9)	(2.3)	1.9	1.2
Total Difference	23.3	(5.8)	9.3	6.5	13.3

- NOTE:
- Other in ARGBIC includes almost 600,000 peso/month in selling commissions, storage and government taxes
 - NZBIC Hot Boning pays head office charges to cover management and marketing services
 - Positive Number = AUSBIC Disadvantage
 - Exchange Rate used is 0.75 (USD and Peso), 2.44 A\$/Irish £, 1.38 NZ\$/A\$
 - Numbers used may not add due to rounding error

SOURCE: Participant data, BAH Analysis

24-29861MR

GIVEN THIS PERSISTENT DISADVANTAGE IN LABOUR COSTS, CONSIDERABLE ANALYSIS WAS CARRIED OUT TO BETTER UNDERSTAND IT

LABOUR COMPARISON WORKSHEET

EXAMPLE

	AUSBIC	USBIC	ARGBIC	IRISH BIC	NZBIC Traditional	NZBIC Hot Boning
Depth of Analysis ↓	• Labour cost per kg (HDW) A¢					
	– Slaughter	12.6	4.1	5.9	8.7	9.1
	– Fabrication	19.1	7.6	13.3	17.6	8.7
	• Fully loaded wage rate ⁽¹⁾ (A\$/hr)	15.22	15.75	5.01 ⁽²⁾	14.03	13.15
	• Productivity (head/employee/day)					
	– Total	1.4	2.9	1.2	1.4*	2.2
	– Direct	1.8	3.7	1.6	1.6*	2.7
	• Injury rates per year (per 100 workers)	130	22	84 ⁽³⁾	28	210
	• Unionisation					
	– % union (workers)	100	100	100	100	0
	– Awards/site	4 ⁽⁴⁾	1	1	3	1
	– Work classifications/site	66	7	6	3	12
						3

* Adjusted to reflect that IRISHBIC and NZBIC Hot Boning do not have rendering operations

NOTE: • AUSBIC – Australian "Best-in-Class" composite facility

(1) Comparable work classifications; US: Edible offal (Grade 3), AUS/ARG: Petfood worker, Ireland: Grade 3 by-product worker, New Zealand: C/D grade slaughterman

(2) ARGBIC based on 6.5hr/day paid

(3) South American injury estimation from data on absenteeism

(4) There are nearly 50 different federal and state awards across the industry

SOURCE: Participant Data, BAH Analysis

24-29846BC/2

Labour . . .

SIX FACTORS EXPLAIN MOST OF THE LABOUR COST DIFFERENCES BETWEEN AUSBIC AND THE OTHER BIC FACILITIES

TOTAL LABOUR DIFFERENCE (A¢/Kg FW)

FACTOR	USBIC	ARGBIC	IRISH BIC	NZBIC TRADITIONAL	NZBIC HOT BONING
Animal Size	5.9	(0.4)	6.6	2.0	(4.6)
Yield Differences	3.7	2.8	2.8	0	1.7
By-Product Labour	0	1.0	2.0	0	2.0
Wage Rates	0	41.0	(5.6)	(2.7)	(4.6)
Benefits (On-costs)	0.2	(11.0)	6.6	3.1	3.7
Labour Productivity	13.5	(13.8)	(6.0)	11.1	22.4
Other Factors*	7.3	1.4	6.5	7.2	7.0
Total Differences vs. AUSBIC	30.6	21.0	12.9	20.7	27.6

* Management, product mix, other unexplained factors. Estimated by-product impact
SOURCE: Participant data, BAH Analysis

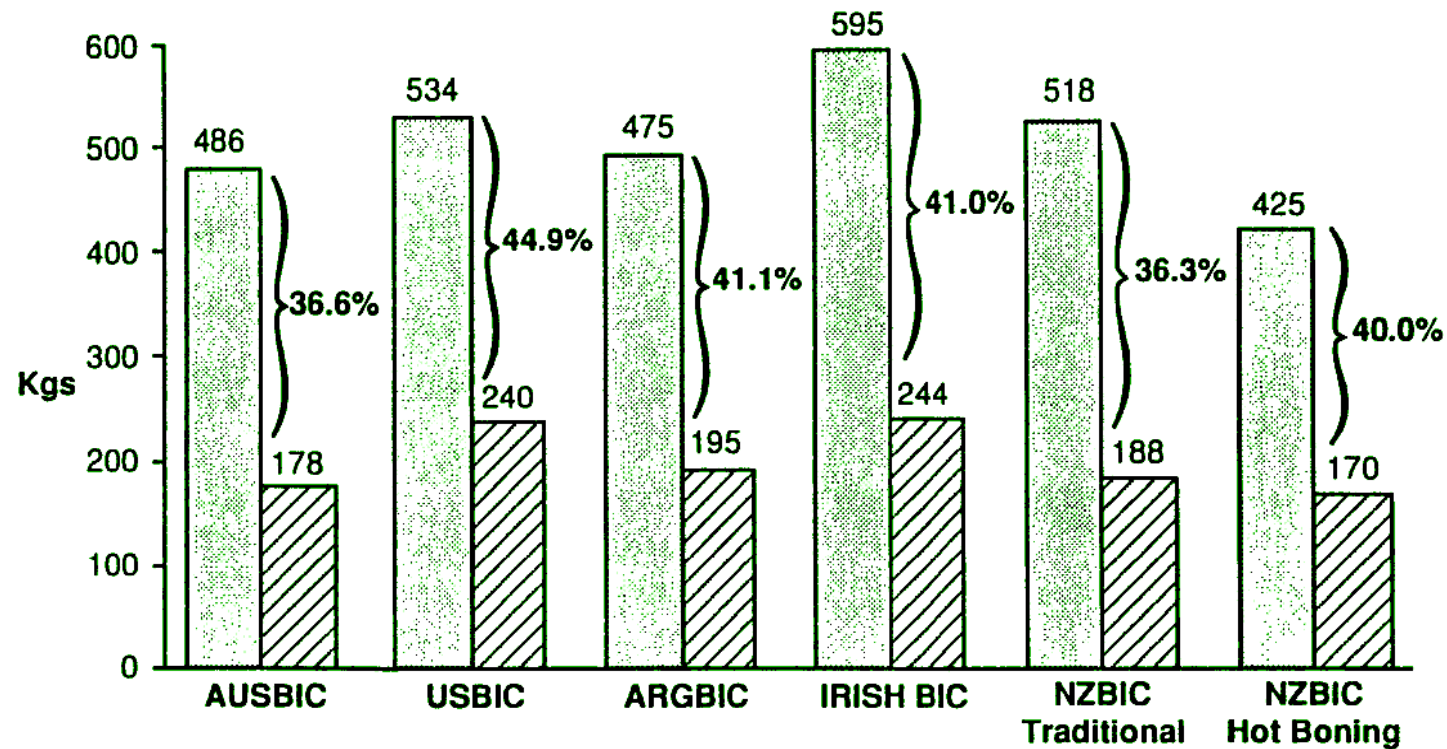
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THESE FACTORS ARE ADDRESSED IN MORE DETAIL ON THE FOLLOWING PAGES

Labour . . . Animal Size . . .

FIRST, AVERAGE LIVE WEIGHTS AND FINISHED WEIGHT YIELDS DIFFER SIGNIFICANTLY AMONG COUNTRIES -- RESULTING IN DIFFERENT OUTPUTS FOR THE SAME LEVEL OF INPUT LABOUR

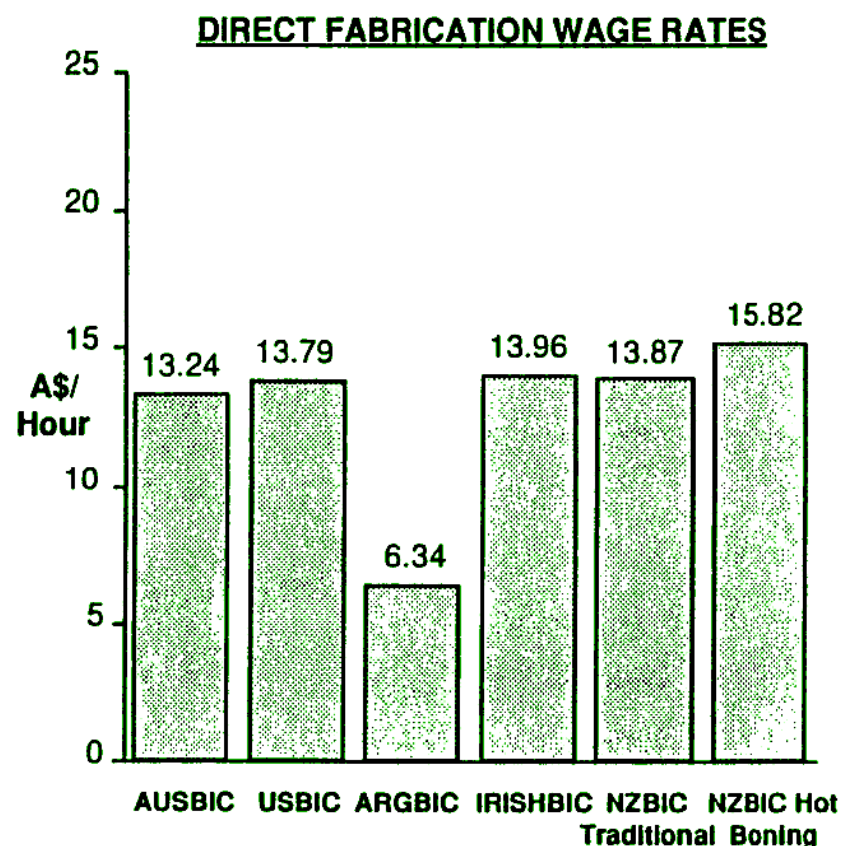
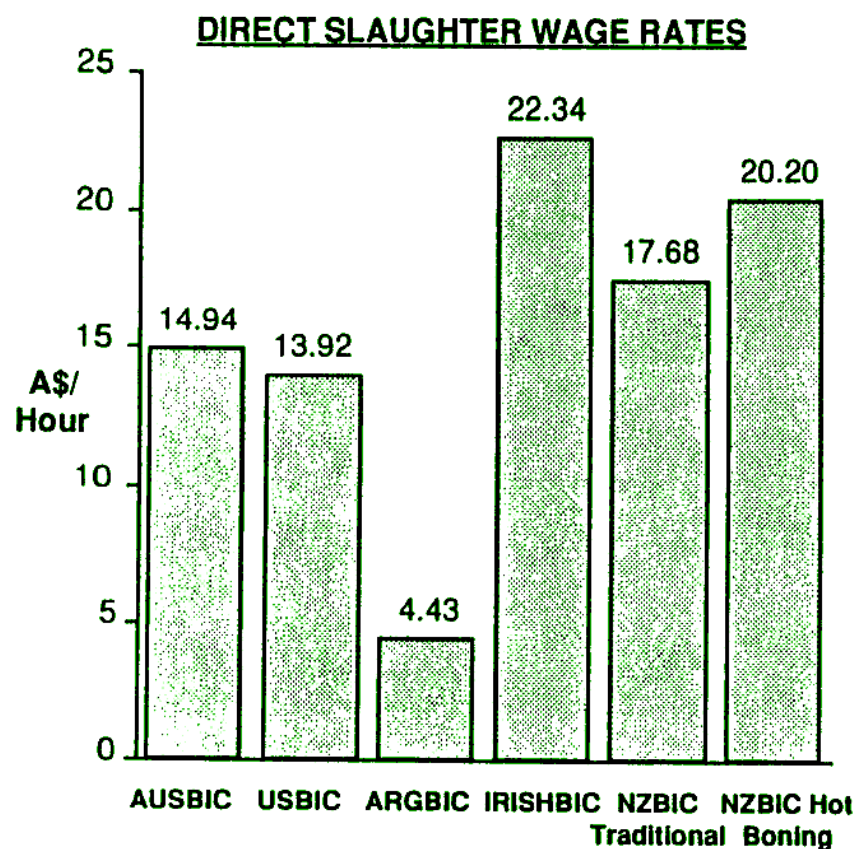
LIVEWEIGHT AND FINISHED WEIGHT BY COUNTRY



SOURCE: Participant Data

24-29883S

THERE ARE DIFFERENCES IN AVERAGE SLAUGHTER AND FABRICATION WAGE RATES AMONG THE FIVE COUNTRIES



NOTE: • Calculated as average daily labour costs + staffing + actual hours worked
 • Slaughter Area labour includes Procurement, Yards, Kill Floor, Carcass Chiller and By-product Processing
 • Fabrication area labour includes Boning, Ground Beef and chill, freeze and loadout
 • This is an average of all workers, and reflects the different mix of classifications and wage rates in each facility

SOURCE: Participant data, BAH analysis

24-29884S

BENEFITS ALSO VARY WIDELY

WAGE RATE LOADING (Benefit as a Percent of Basic Wages)

	AUSBIC	USBIC	ARGBIC	IRISHBIC ²	NZBIC Traditional	NZBIC Hot Boning
Payroll Taxes	8.5	10	14.4		—	—
Vacation, Holiday, Sick Pay	19.5 ¹	7	21.6		14.4	8.1
Workers Compensation	7	4	1.6		4.0	3.8
Insurance	—	12	4.9		—	—
Pension and Other	1.3	2	20.2		1.7	—
TOTAL	36.3	35	62.7	12.2	20.1	11.9

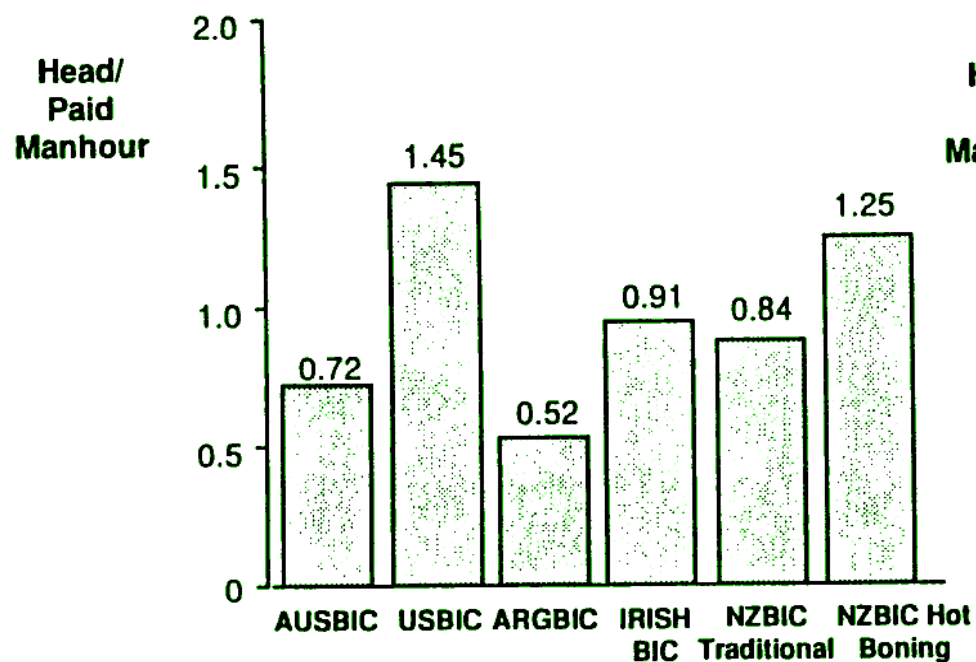
NOTE: 1. Includes RDOs

2. Processors make a single payment for social programmes to government. No specific breakout available

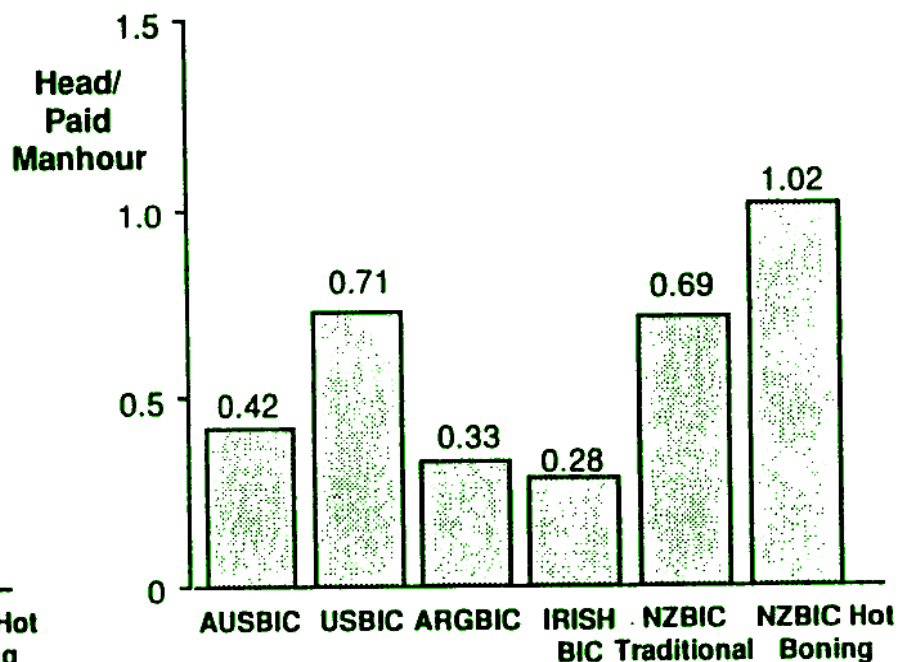
SOURCE: Participant data, BAH Analysis

24-29885S/2

DIRECT SLAUGHTER AREA LABOUR PRODUCTIVITY



DIRECT FABRICATION AREA LABOUR PRODUCTIVITY



NOTE: • Slaughter Area labour includes Procurement, Yards, Kill Floor, Carcass Chiller and By-product Processing
 • Fabrication area labour includes Boning, Ground Beef and chill, freeze and loadout

SOURCE: Participant data, BAH Analysis

24-29886S/2

THERE IS ALSO A CONSIDERABLE DIFFERENCE IN TOTAL PRODUCTIVITY IN BOTH THE SLAUGHTER AND BONING AREAS

- This study agrees with previous industry studies that show only a small difference (~10% Aus vs. US) in productivity as measured by "head processed per hour of actual direct slaughter chain labour" -- however, this productivity measure is not complete
- First, differences in animal size means although productivity is comparable when productivity is calculated using an input measure (heads), productivity per kilo of output is much lower in AUSBIC than other facilities
- Second, direct slaughter chain labour is only a small part of the overall labour force
- Finally, this is further exacerbated by the fact that Australian workers may work as hard on a per hour basis, but they work around 1 hour per day less than their US counterparts

THE CUMULATIVE RESULT OF THESE LABOUR FACTORS IS A SIGNIFICANT COST DISADVANTAGE FOR AUSBIC ACROSS THE BOARD

SLAUGHTER LABOUR DIFFERENCE
(A¢/Kg FW)

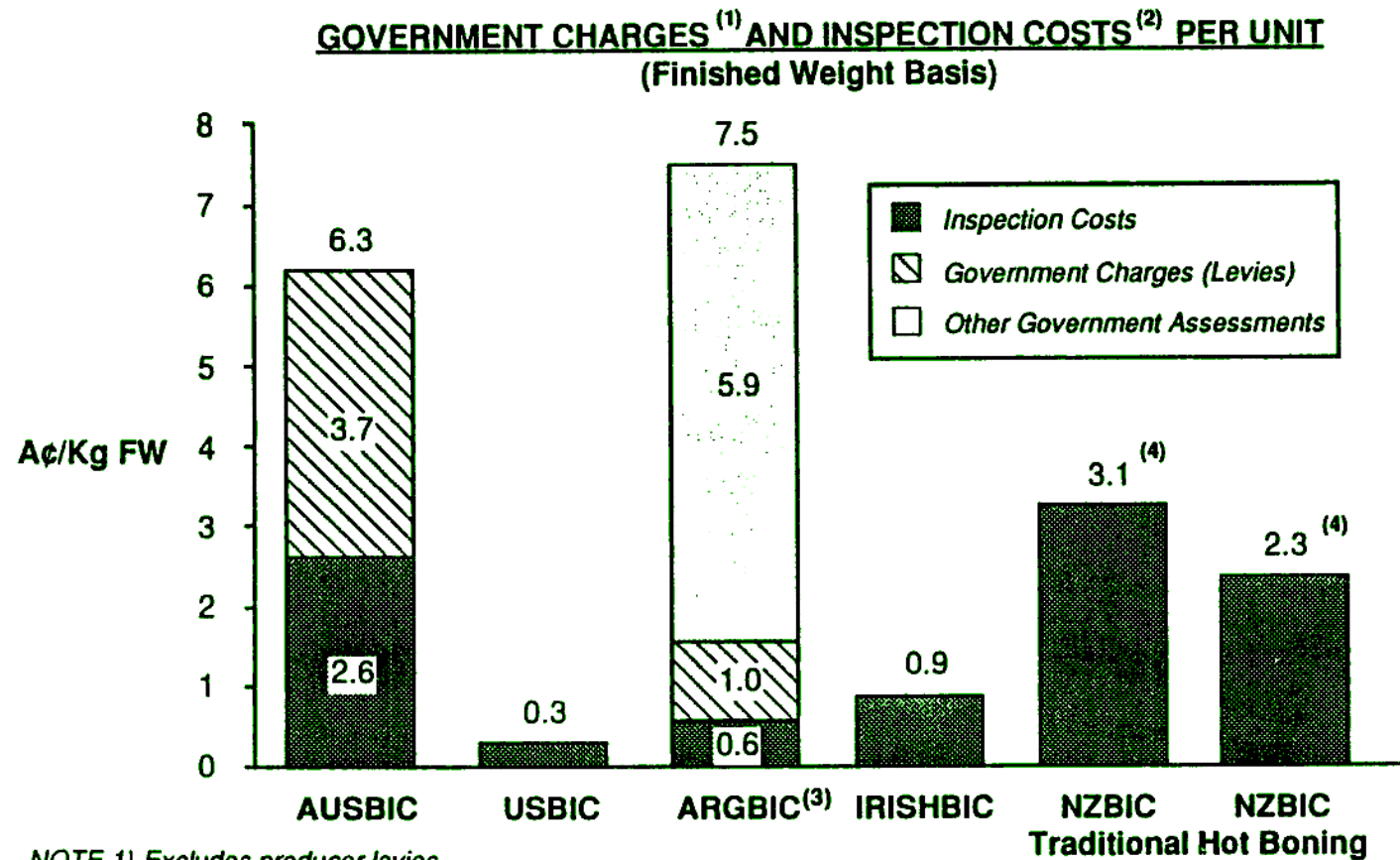
FACTOR	USBIC	ARGBIC	IRISH BIC	NZBIC TRADITIONAL	NZBIC HOT BONING
Animal Size	1.2	(0.4)	3.1	1.0	(2.2)
Yield Differences	2.3	0.4	(0.3)	(0.3)	0.5
By-Product Labour	0	1.0	2.0	0	2.0
Wage Rates	0.4	21.3	(4.4)	(2.1)	(2.9)
Benefits (On-costs)	0.1	(4.9)	1.9	1.5	1.8
Labour Productivity	6.3	(6.9)	2.8	2.2	7.5
Other Factors*	2.6	0.2	2.3	2.9	2.7
Total Differences vs. AUSBIC	12.9	10.7	7.4	5.2	9.4

FABRICATION LABOUR DIFFERENCE
(A¢/Kg FW)

FACTOR	USBIC	ARGBIC	IRISH BIC	NZBIC TRADITIONAL	NZBIC HOT BONING
Animal Size	4.7	0	3.5	1.0	(2.4)
Yield Differences	1.4	2.4	3.1	0.3	1.2
By-Product Labour	0	0	0	0	0
Wage Rates	(0.4)	19.7	(1.2)	(0.6)	(1.7)
Benefits (On-costs)	0.1	(6.1)	4.7	1.6	1.9
Labour Productivity	7.2	(6.9)	(8.8)	8.9	14.9
Other Factors*	4.7	1.2	4.2	4.3	4.3
Total Differences vs. AUSBIC	17.7	10.3	5.5	15.5	18.2

24-29939MR/2

AUSBIC IS ALSO RELATIVELY DISADVANTAGED IN GOVERNMENT CHARGES AND INSPECTION



NOTE 1) Excludes producer levies

2) Includes plant vet and QA staff

3) There is a difficulty with classification of some of the ARGBIC accounts, therefore the split of charges is approximate

4) NZ facilities recover all inspection costs from farmer

SOURCE: Participant Data, AMLC

24-29892MR/2

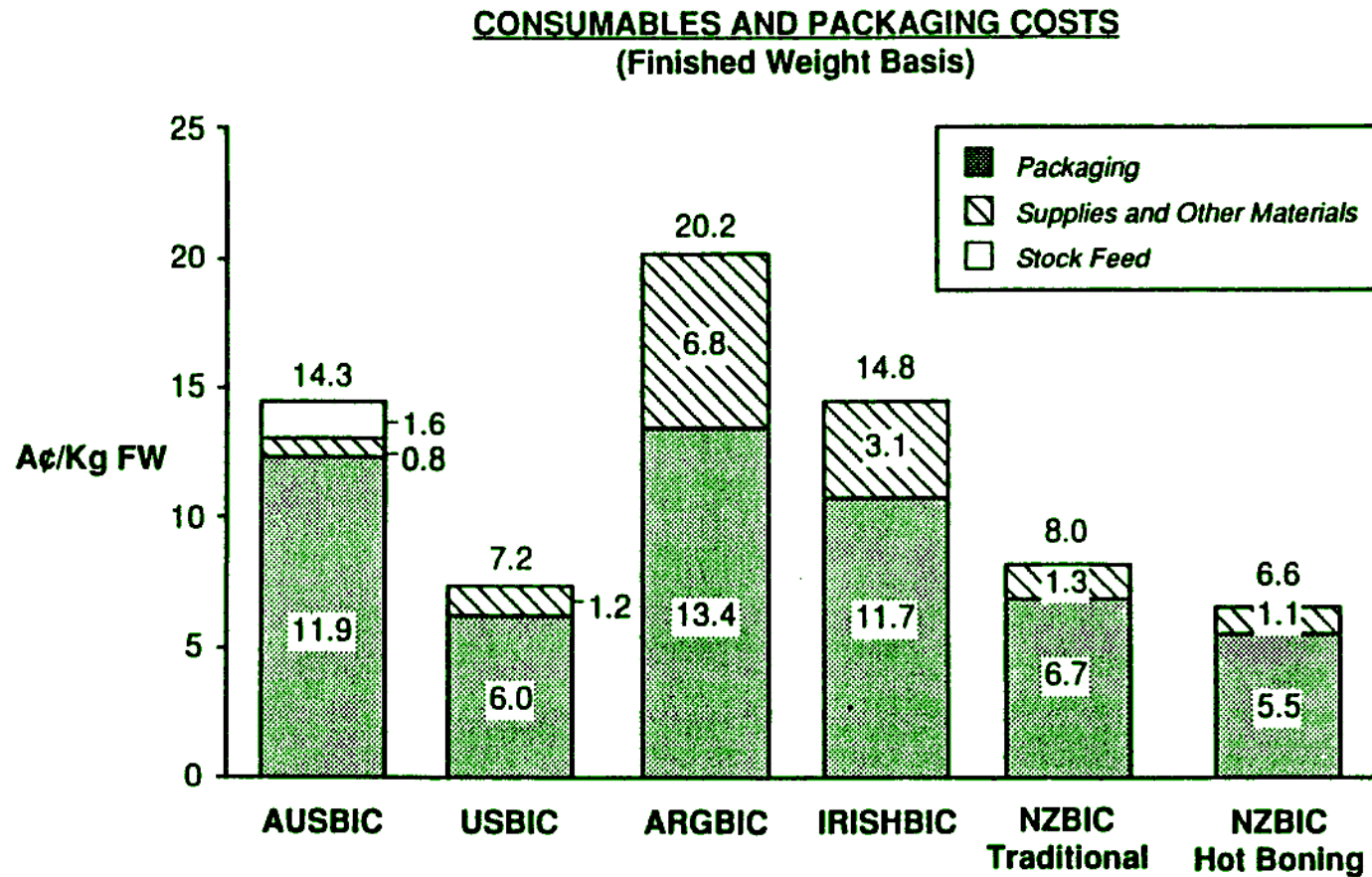
Government Charges And Inspection . . .

THIS IS MOSTLY EXPLAINED BY SIGNIFICANT DIFFERENCES IN THE MECHANISM THAT SUPPORT THE VARIOUS INSPECTION SYSTEMS AND RESEARCH EFFORTS IN EACH COUNTRY

- In the Australian industry, the processors (and farmers) pay for virtually all of the industry research and inspection cost
- By contrast, in the US, the Government pays for virtually all of the cost for inspection and industry research
 - Inspector salaries are fully covered except during overtime, which rarely happens due to the double shifting at most US facilities
 - Industry research is funded and conducted by the USDA, the universities, and the Extension Service, again at little or no cost to the individual processor
- Ireland and Argentina make payments that only partially cover industry research and inspection costs, with the government picking up the difference
- New Zealand facilities enter into an annual contract with MAF, who submit a monthly invoice for inspectors salaries and overhead costs that shows up as a production cost. However, most processors then turn around and charge the farmer a fee per head to recover these expenses
- Each country also assesses a range of levies on the farmer to help fund industry marketing and research programmes
 - Australia: A\$5.00 per head
 - US: A\$1.33 per head
 - Argentina: A\$1.67 per head
 - Ireland: A\$30.89 per head
 - New Zealand: A\$7.97 per head for cows and A\$7.71 per head for other cattle beasts

Consumables And Packaging . . .

CONSUMABLES AND PACKAGING COSTS ALSO VARY WIDELY AMONG THE SIX BIC FACILITIES, ALTHOUGH AUSBIC IS NOT SINGULARLY DISADVANTAGED



SOURCE: Participant Data, BAH Analysis

24-29894MR

REPRESENTATIVE PACKAGING MATERIAL COST (A\$)						
	AUSBIC	USBIC	ARGBIC	IRISH BIC	NZBIC TRADITIONAL	NZBIC HOT BONING
Shipping Carton • Brown, corrugated • 27 kg capacity • Chilled carton	0.89	0.75 – 0.85	1.89	1.02	0.97	1.10
Cryovac Bag • 80 Micron	0.50 – 0.94	0.15 – 0.20	0.25 – 0.27	0.35 – 0.74	0.57 – 0.70	0.37 – 0.53
Poly Bag, Liner	0.06	–	0.08	0.09	0.03	0.04

24-29895MR/2

SOURCE: Participant data

WHILE PART OF THE DIFFERENCE IS EXPLAINED BY THE RELATIVELY HIGH PRICE OF PACKAGING AMONG NON-US PROCESSORS, REMAINING DIFFERENCES ARE LIKELY THE RESULT OF PRODUCT MIX AND OTHER FACTORS SUCH AS LEVEL OF WASTAGE AND CUT SIZE (BAG SPACE UTILISATION)

PRODUCT MIX DIFFERENCES
<ul style="list-style-type: none">• AUSBIC sells 35% meat chilled (individually cryovaced), 65% frozen (set weight lined boxes)• USBIC sells all market-ready meat in individually wrapped vacuum bags except hamburger, which is sold in clipped plastic bags• Even though ARGBIC produces fewer products, ARGBIC's output ranges from carcass to consumer size "ready-to-cook" hamburger patties, which are packed three to a box• IRISHBIC sells a large percentage of its product to (frozen) intervention, which requires much less packaging than does commercial chilled beef• NZBIC Traditional has high export levels similar to AUSBIC but packs to a much more limited number of industrywide specifications (StandPack)• NZBIC Hot Boning packs most of its product as frozen manufacturing beef, therefore requiring lower-cost boxes and fewer cryovac bags (except for special cuts)

24-29929MR

NOTE: *Australian processors believe they have fewer transportation quality problems than do their US counterparts. Thus it is worth noting that the USBIC uses the same packaging for domestic/export, frozen or chilled. AUSBIC uses different packaging types for different purposes; this could explain these quality problems (if they are significant) and explain some of the cost differences as well*

SOURCE: *Participant data; BAH Analysis*

SERVICES
(A¢/kgFW)

MAJOR COMPONENTS	AUSBIC	USBIC	ARGBIC	IRISHBIC	NZBIC TRADITIONAL	NZBIC HOT BONING
Water	0.6	–	–	0.3	0.2	0.2
Electricity/Telephone	5.1	0.8	3.3	2.2	4.3	4.2
Fuel/Coal/Gas	1.4	0.7	1.1	0.8	0.9	0.7
TOTAL	7.1	1.5	4.4	3.3	5.4	5.1

SOURCE: Participant data; BAH Analysis

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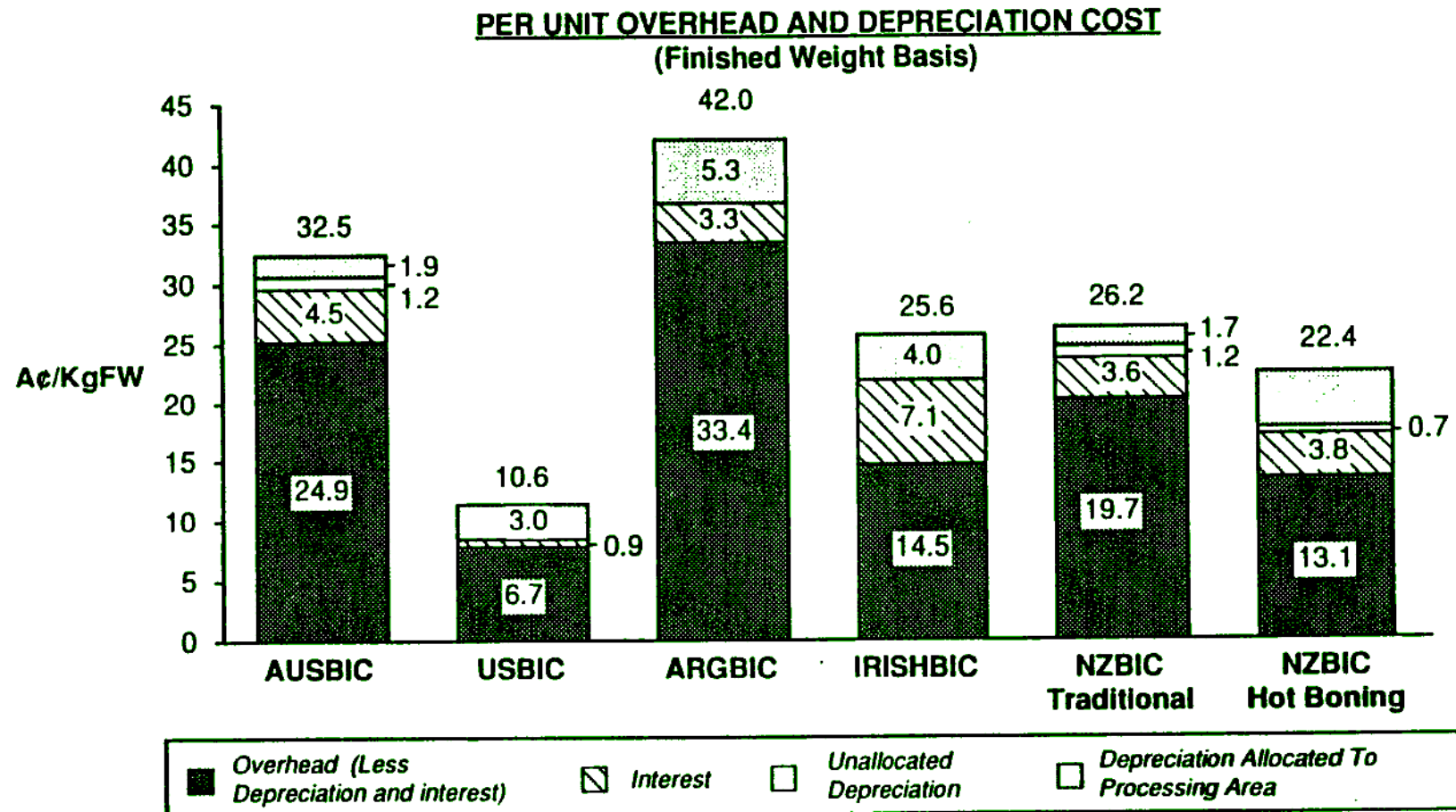
Services . . .

DIFFERENCES IN SERVICES, WHICH ARE DRIVEN PRIMARILY BY ELECTRICAL COSTS, COULD BE THE RESULT OF SEVERAL FACTORS

- **Water**
 - Most facilities use similar amounts of water per animal (AUSBIC: 2500 litres/head; USBIC: 3,100; ARGBIC: 2,700; NZBIC Hot Boning: 3,000), although NZBIC traditional and IRISHBIC use only around 1,500 litres per animal per day
 - However, AUSBIC is supplied totally from and the NZ facilities are supplied partially from town water, while the USBIC and ARGBIC have their own bores
- **Electricity**
 - AUSBIC rates are higher -- 10¢/kw-hr versus 4.5¢/kw-hr at USBIC, 6.4¢/kw-hr at IRISHBIC, and 6.5¢/kw-hr at both NZBIC's
 - More product is frozen at AUSBIC (65%) than at USBIC (0%) and ARGBIC (15%-20%)
 - IRISHBIC holds less product and incurs less cost because cost of storage on meat sold to Intervention is paid by EC
 - Product is held longer at AUSBIC compared to most facilities
 - .. AUSBIC: 2-16 days
 - .. USBIC: 1.5 days
 - .. ARGBIC: 1-7 days
 - .. IRISHBIC: 1-9 days
 - .. NZBIC Traditional: 5-16 days
 - .. NZBIC Hot Boning: 2-7 days
 - Efficient storage -- AUSBIC product is palletised and moved on forklift through large open doors, at USBIC product is conveyed into freezers through small holes in the freezer wall, while ARGBIC uses plate freezers for initial freezing and both NZBIC facilities have very modern blast freezers and efficiently designed cold storage

Overhead Costs . . .

FINALLY, THERE ARE TREMENDOUS DIFFERENCES IN OVERHEAD COSTS BETWEEN THE SIX BIC FACILITIES



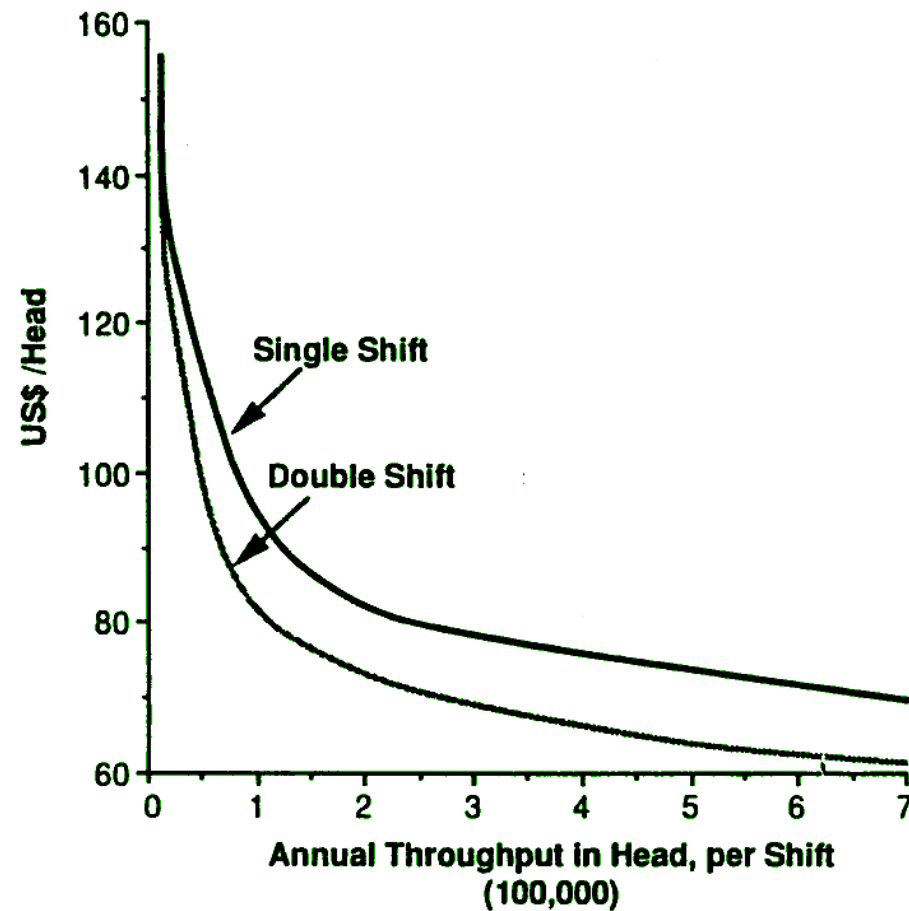
NOTE 1) Overhead includes both plant level overheads and corporate charges, including marketing costs

2) ARGBIC depreciation data may not be comparable due to Argentine economic conditions

SOURCE: Participant Data, BAH Analysis

24-29995MR

COST OF BEEF SLAUGHTER AND FABRICATION PER HEAD



SOURCE: ERS estimates from economic engineering data; USDA Model

24-29940AM/2

Overhead . . .

FOUR FACTORS EXPLAIN THE OVERHEAD DIFFERENCES BETWEEN AUSBIC, USBIC AND NZBIC TRADITIONAL

Ac/kgFW

	GAP	INTEREST DIFFERENCE	ANIMAL WEIGHT DIFFERENCE	SINGLE VS. DOUBLE SHIFT	SIZE OF FACILITY*
USBIC vs. AUSBIC	21.9	3.5	3.4	5.0	10.0
NZBIC Traditional vs. AUSBIC	6.3	0.8	1.3	0	4.2

* See scale curve facing

24-29937AM

A¢/kgFW

	ACTUAL	EXPECTED
NZBIC Hot Boning	22.4	65.7
IRISHBIC	25.6	40.2
ARGBIC	42.0	24.7

} Overhead too low

Overhead too high

SOURCE: USDA ERS, BAH Analysis

24-29938AM/2

Overhead . . .

HOWEVER, THESE FACTORS DO NOT EXPLAIN THE OTHER THREE FACILITIES. ARGBIC IS EASILY EXPLAINABLE BUT IRISHBIC AND NZBIC HOT BONING ARE NOT

- ARGBIC's per unit fixed costs are much higher than can be easily explained by scale differences -- this fits with observation and analysis during site visits, which noted far more people per facility than USBIC and AUSBIC; and also ties to the previous analysis on labour productivity, which suggested a high number of people. Our hypothesis is that the difference is genuine and fits with the common practice of overstaffing in low wage-rate countries
- **NZBIC Hot Boning's low overhead appears to be the result of excellent execution of a focused strategy, and is proof that diseconomies of scale can be overcome**
 - NZBIC Hot Boning maintains very little in overhead structure, contracting out most of its services such as rendering, accounting (to corporate), and building and ground maintenance
 - Nor does it have a standard multi-tiered organisation structure with narrowly defined jobs: supervisors can and do work on the line
- We do not understand why IRISHBIC is lower than AUSBIC

Other . . .

THERE ARE A NUMBER OF OTHER HYPOTHESES SUGGESTED IN INTERVIEWS, WHICH MAY INDEED BE TRUE, BUT DID NOT APPEAR TO BE MAJOR ISSUES FOR THE PARTICIPANTS IN THIS STUDY

- Building standards were thought to create greater costs in Australia due to need to meet demanding inspection standards from the EC and Japanese markets
 - ARGBIC, NZBIC Traditional and AUSBIC had walls (EC) separating clean from "dirty" areas in slaughter and fabrication, but it was not clear that these had much impact on overall capital costs or plant efficiencies
 - The Japanese regulations are very similar to the USDA, meaning all facilities have to meet close to the same standards
 - Most participants agreed that much of the "requirements" would remain in place even if not selling in the export market
- The number of product specifications (cuts) was thought to reduce Australian efficiency
 - AUSBIC and USBIC have approximately the same numbers of cuts -- USBIC appears to monitor adherence to specifications more precisely, yet has much higher productivity rates
 - ARGBIC has far fewer cuts, as much is sold as carcass parts; yet productivity is much lower
 - The only place in which number of cuts did appear to be a factor was NZBIC Hot Boning
 - Therefore, our conclusion is that cuts may make a difference, but only in very extreme cases
- Most interviews suggested higher levels of hygiene at Australian plants allow for much longer shelf-lives for the Australian product
 - This is difficult to test because of differing market requirements in the United States (30 days) versus Australia (90 days), so US product life is not tested
 - In fact, USBIC quality assurance programmes appear more sophisticated than those of the other facilities
 - Nonetheless, it cannot be dismissed that the AUSBIC and NZBIC Traditional need for long shelf-life could lead to greater amounts of labour to test vacuum seals, and repack loose bags -- and thus could be a contributor to lower productivity

Other . . .

THERE ARE A NUMBER OF OTHER HYPOTHESES SUGGESTED IN INTERVIEWS (CONT'D). . .

- One hypothesis offered was that Australian facilities lacked the requisite information to manage the business
 - All participants had sophisticated systems to track basic production information and monitor costs
 - The US plant was more aggressive at additional data collection (e.g. chiller shrink, tracking boning line performance to specifications), but it is difficult to place a value on this
- Most interviewees agreed that the seasonality of Australian production results in lower utilisation
 - This is undoubtedly true -- all grass fed systems tend to be seasonal. However, some NZ plants are reducing seasonality through contract grazing schemes
 - To cope with this, some of the Australian participants have built their direct labour practices to compensate, e.g. daily pay, and multiple tally levels -- presumably they pay for this in the form of higher wages and lower productivity, but this is hard to quantify
 - In terms of overhead, any seasonality effects would be buried in the numbers for scale and utilisation
 - Participants universally agreed that the last year was particularly steady due to favourable weather conditions, indicating that AUSBIC's scale and utilisation disadvantage versus USBIC may even be understated
- Another suggestion was that the temperature of the meat during cutting (warmer in AUSBIC) improves yields and reduces RSI
 - USBIC has lower RSI rates, apparently due to extensive training efforts to help workers identify and prevent RSI
 - USBIC has gone to 36 -48-hour chilling to improve yields through clearer fat definition and improved operator precision

Other . . .

THERE ARE A NUMBER OF OTHER HYPOTHESES SUGGESTED IN INTERVIEWS (CONT'D). . .

- **Finally, some sources cited older Australian facilities as an efficiency issue**
 - All five participant facilities in the original study were more than 20 years old, as was the New Zealand traditional facility. Only New Zealand Hot Boning is appreciably more recent
 - All had been upgraded over the years in the same manner-- one section at a time, leading to extra corridors and hallways joining the upgraded area to the rest of the facility.
 - There were no dramatic differences in the specific layouts of any of the participant facilities, except for Ireland, which had boning halls totally detached from the rest of the facility.
 - Again, while it may indeed be valid overall, it does not appear to be a factor in these participants
- **Irish meat quality "unacceptably" low for human consumption due to reliance on intervention**
 - Processors admit this was true in the past
 - However, a reduction in intervention beef and increased presence in commercial markets has demanded that Ireland meet worldwide standards
 - As with all countries, quality and shelf life labelling is driven by requirements of market place (e.g. 14 days for UK vs. 10 weeks for Saudi Arabia)

RELATIONSHIP OF "UNDERLYING REASONS" TO HIGHER COSTS

1. Smaller, leaner animals -- less finished weight for the same amount of labour input; lower fat levels per animal and less fat sold as meat
2. Less reliable animal supply -- need to hold animals longer and feed them
3. Greater distance from key markets -- higher transportation costs; greater percentage of product frozen, which increases energy requirements and packaging costs
4. Less government support -- the processors must pay for inspection costs, as well as supporting research and promotion
5. Higher input costs
6. Smaller, less well utilised facilities -- small facilities have less throughput over which to spread overhead costs
7. Technology/work practices -- lower productivity; single shifting which leads to lower facility utilisation
8. Other -- Interest *(Note: this could in fact be related to "greater distance from key markets" causing longer product holding times, or "higher input costs" in the form of higher interest rates. The decomposition analysis has not been carried through)*

24-32008MR

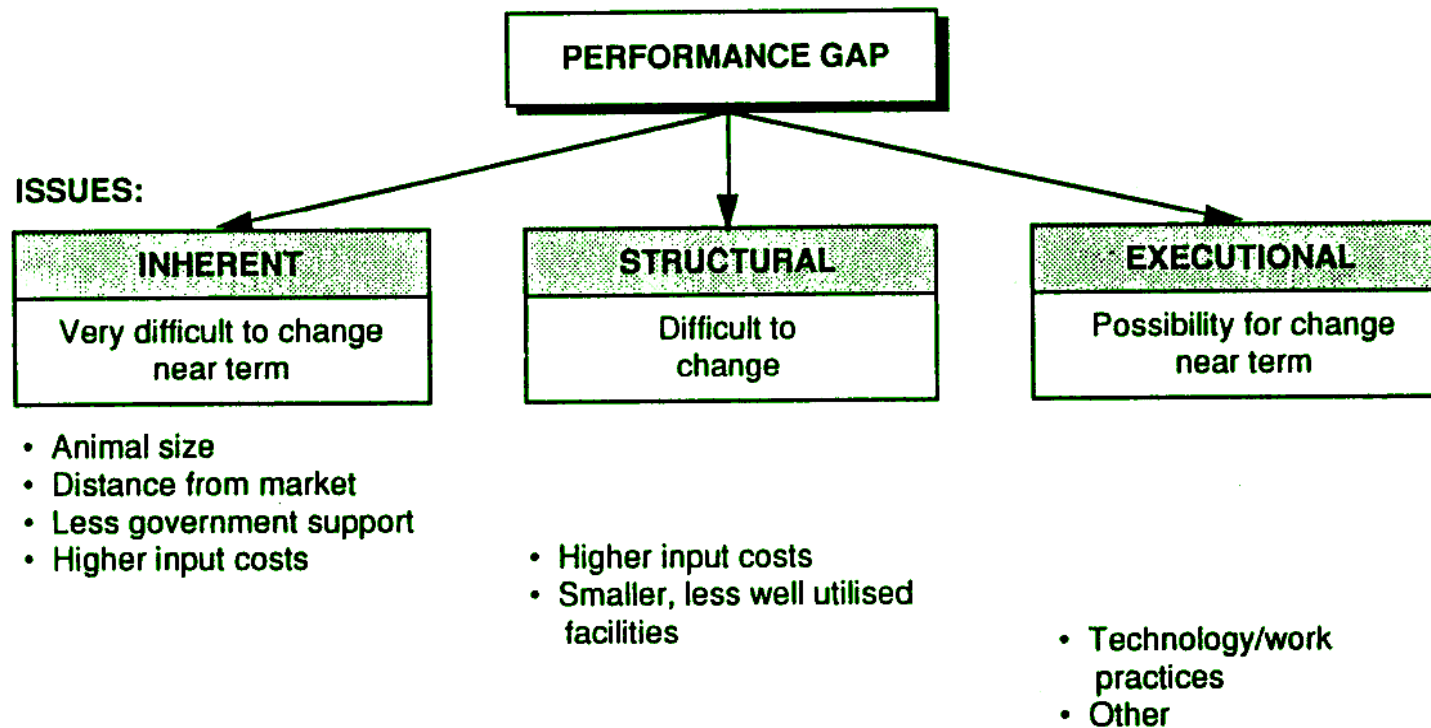
IN PHASE I, WE ESTIMATED THE IMPACT OF A NUMBER OF DIFFERENT FACTORS TO EXPLAIN THE GAP BETWEEN AUSBIC AND USBIC

PHASE I

FACTOR	APPROXIMATE PORTION OF PERFORMANCE GAP (%)
<ul style="list-style-type: none"> • Smaller, leaner animals • Less reliable animal supply • Distance from market • Less government support • Higher input costs <ul style="list-style-type: none"> – Wage rates – Electricity, water – Packaging • Smaller, less well utilised facilities • Technology/work practices • Other 	<p style="text-align: center;">22</p> <p style="text-align: center;">1</p> <p style="text-align: center;">34</p> <p style="text-align: center;">4</p> <p style="text-align: center;">4</p> <p style="text-align: center;">8</p> <p style="text-align: center;">23</p> <p style="text-align: center;">4</p>
TOTAL	100%

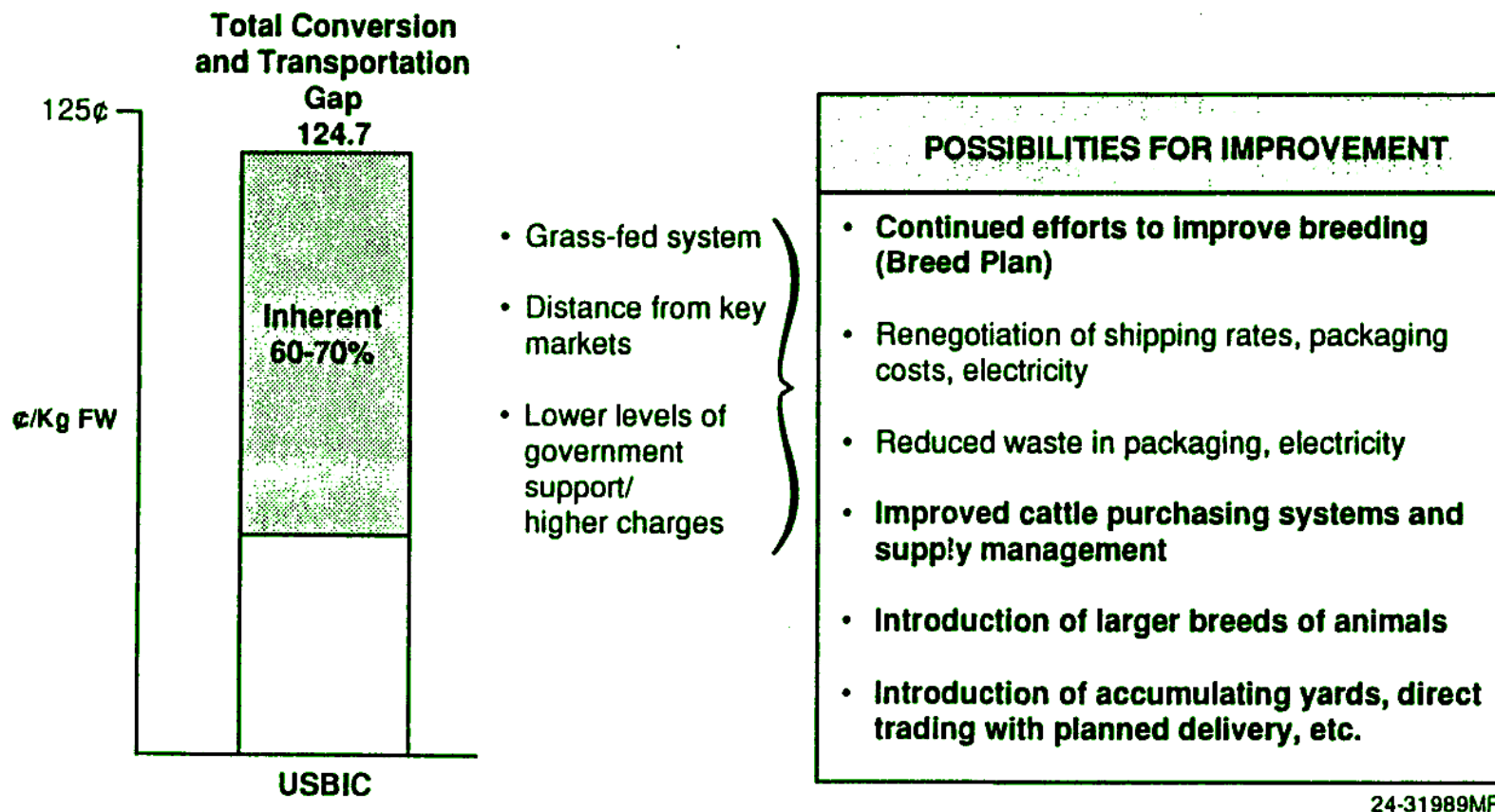
24-29942AM

THESE FACTORS WERE THEN SORTED INTO THREE CATEGORIES WHICH RECOGNISED THAT NOT ALL ISSUES WILL BE EASY TO ADDRESS IN THE NEAR TERM



24-29943MR

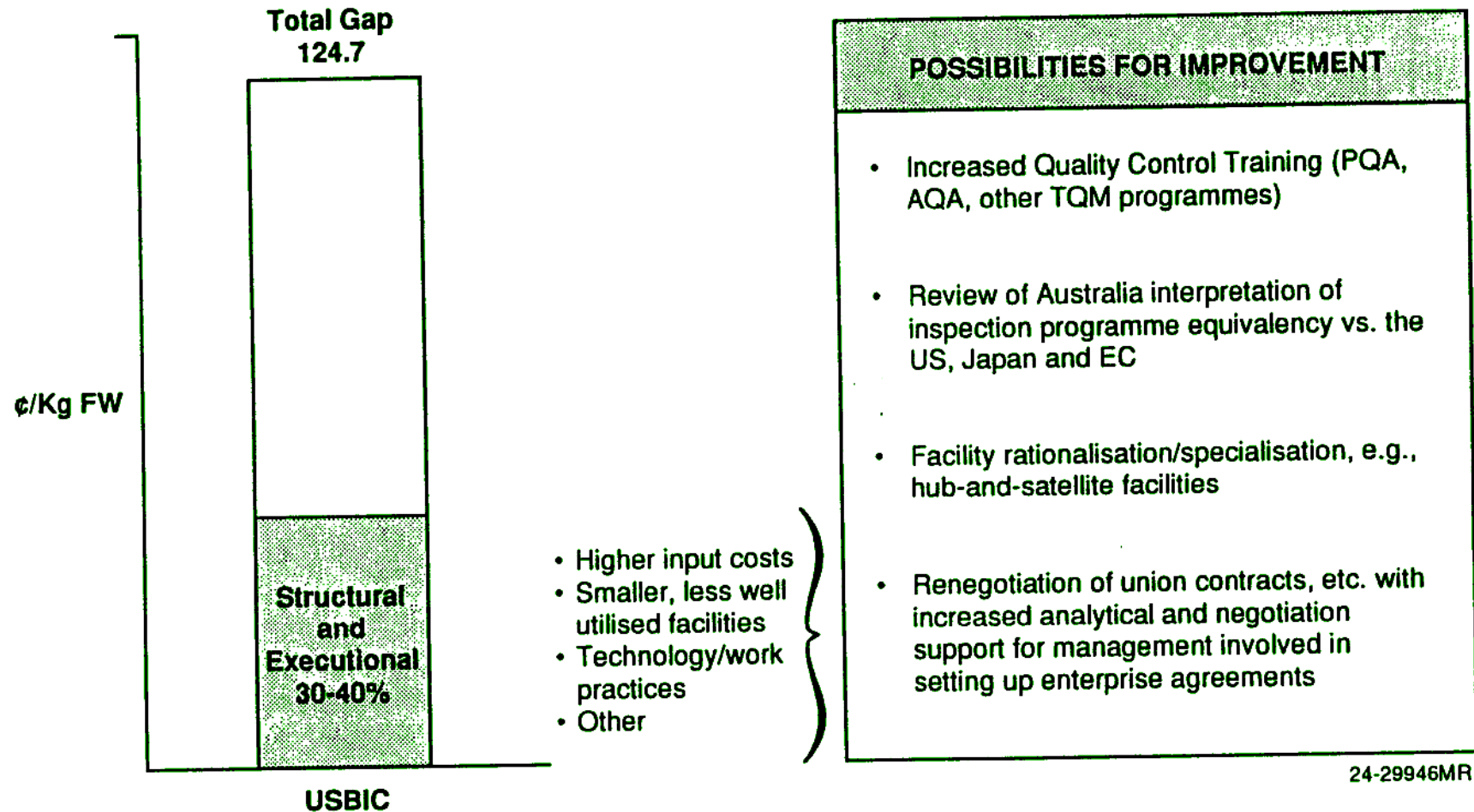
MOST OF THE GAP, IN FACT, IS THE RESULT OF THOSE FACTORS THAT ARE INHERENT TO THE AUSTRALIAN INDUSTRY -- FACTORS THAT WILL BE VERY DIFFICULT TO CHANGE SIGNIFICANTLY IN THE SHORT TERM -- ALTHOUGH ALL ARE ADDRESSABLE LONGER TERM, MANY WITH THE CO-OPERATION OF CATTLEMEN



24-31989MR

NOTE: Bold indicates those that are addressable within the cattlemen's co-operation

THE REMAINDER OF THE GAP CAN BE ADDRESSED IN THE SHORT-TERM



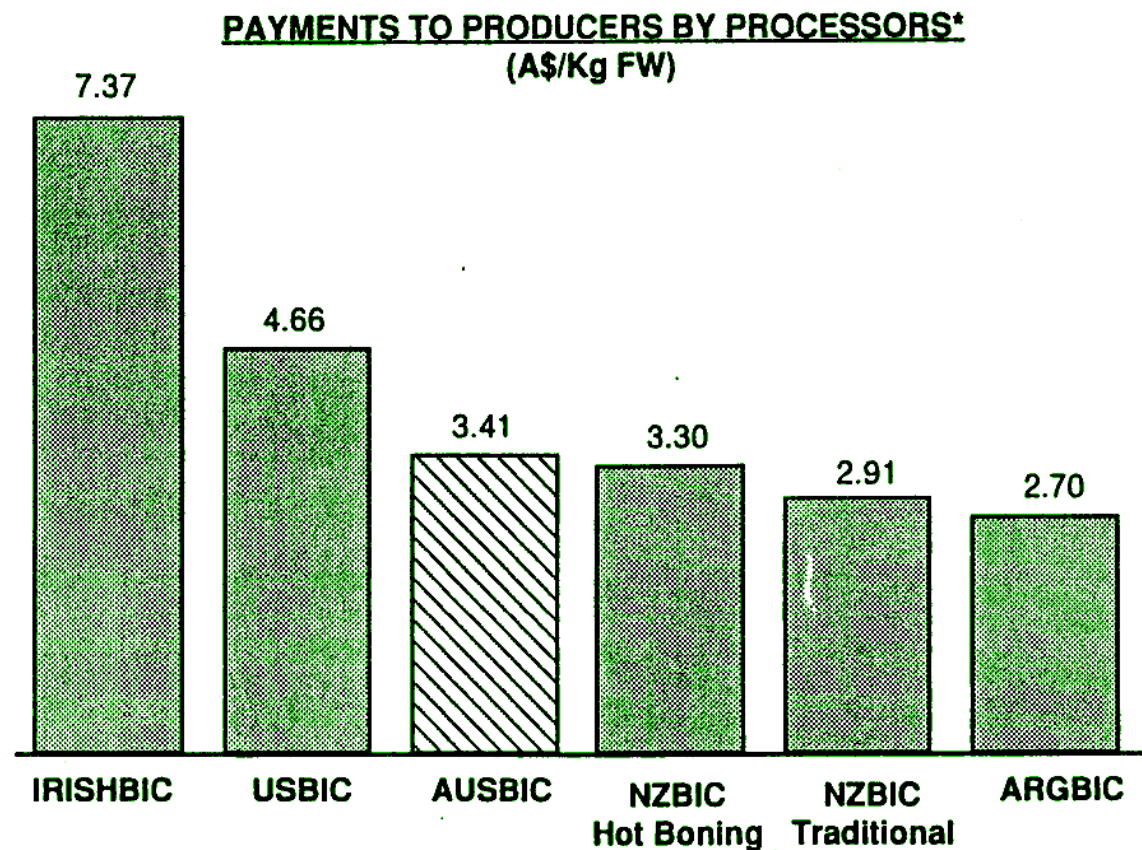
THE IRISH AND NEW ZEALAND DATA SUGGEST THE KEY TO CLOSING THE GAP IS IMPROVING THE LABOUR SITUATION

- Every one of Australia's international "Best-in-Class" competitors had greater flexibility to manage the labour force and implement productivity improvements
- In all cases, there was much greater communication and team work among the "social partners", such as labour, management, Government and farmers
- Additionally, productivity improvements have led to greater employee welfare as well
 - The application of technology in the United States appears to have allowed lines to run faster while reducing the level of injuries
 - Hot boning technology (and efficiency) in New Zealand allows more production with fewer workers, resulting in a higher average wage rate
- While technology application and productivity improvements would likely improve the industry and worker welfare, the result is that there will be significantly fewer workers

NZBIC HOT BONING, IN FACT, HAS ALREADY CLOSED 90% OF THE ADDRESSABLE GAP

**IMPLICATIONS FOR THE CATTLE COUNCIL OF
AUSTRALIA**

OBVIOUSLY, OF PRIMARY INTEREST TO CCA IS THE RETURN TO CATTLE PRODUCERS -- CURRENTLY AUSTRALIAN CATTLEMEN RECEIVE THE HIGHEST PAYMENTS AMONGST UNSUBSIDISED GRASS FED PRODUCERS, BUT MUCH LOWER RETURNS THAN US OR IRISH PRODUCERS



* Includes transportation to processing facility

24-31917S

TO THE EXTENT IT IS POSSIBLE TO REDUCE PROCESSING CHARGES IT MAY BE POSSIBLE TO GENERATE OVER \$50/HEAD IN THE SHORT-TERM WHICH COULD BE SHARED AMONGST CATTLEMEN, PROCESSORS AND MARKETERS

- Processing gap is \$198.49 per head
- Up to 70% of this is beyond the control of processors, but around 30% is addressable

HOWEVER, IT IS INCORRECT TO BELIEVE THAT PROCESSORS CAN EASILY REALISE THIS SHORT-TERM IMPROVEMENT ON THEIR OWN

- The reforms needed are to fundamental work practices
 - Elimination of demarcations
 - Increased flexibility
 - Increased worker/management co-operation
 - Freeing up of managers from IR problems -- "Let the managers manage"

- For any individual works manager, the risk of attempting fundamental reform is enormous -- a shutdown could lead not just to a short-term loss of kill but also, due to the system of assigning rights to the US market, to a loss of market access in the following year

IN NEW ZEALAND, IMPROVEMENT HAS ONLY COME WITH MAJOR CHANGES IN GOVERNMENT POLICY

- Economic hardship and lack of competitiveness prompted the government to take legislative action to enhance competitiveness for New Zealand's industry
 - Financial markets, communications, transportation have been deregulated
 - Many government businesses have been privatised
 - All MAF costs now borne by industry as opposed to the tax payers
- Labour Relations Act (1987) defined rights and accountability for companies and workers
 - Restrictions placed on strikes and lockouts
 - One company took union to newly formed labour court three times in first year, resulting in more of a "let's talk" attitude by the union
- Employment Contracts Act (1991) led unions to be more responsive to membership and provide services to retain members
 - Demarcation removed as valid cause of dispute, giving managers ability to move workers to new positions and allowing managers to perform functions on processing line
 - Compulsory union membership no longer required and individual and collective plant contracts promoted
- MAF has lost its "monopoly" on inspection services
 - In the fisheries industry, the certification division has been separated from the inspection division, and qualified third-party contractors can be certified to conduct required inspections (often retired MAF inspectors running own business)
 - The dairy industry has improved its TQM/Quality management programmes and moved to ISO 9000 standards. MAF has been flexible (or forced) in reducing the number of inspectors required for external inspection requirements

AS A RESULT, A MUCH MORE CO-OPERATIVE CULTURE HAS DEVELOPED

- Legislative actions have led to greater competition within New Zealand
- Company/work force relationships have improved significantly
 - Management and workers working together to solve problems and issues
 - Work force more flexible to improvements in mannings and productivity
 - Much less union power over the workers
 - Real TQM programmes are being successfully promoted
 - A review of the most successful companies shows they are making significant investments in technology improvements and worker welfare
- MAF has become more flexible in its approach
 - Viewed by the industry as having changed its approach from “policeman” to servicing client needs
 - MAF inspectors are seen as willing to do some complementary tasks (leads to lower labour costs elsewhere as well), such as trimming, or QA data collection
 - MAF has conducted studies of disease probabilities and has adjusted recommended manning levels accordingly
 - Mannings are based on negotiations between MAF and individual plant, particularly at new or updated facilities
 - Both sides enter into a yearly contract, and inspectors’ salary and expenses are invoiced monthly. However, if MAF and the plant cannot agree on staffing levels, MAF can still impose a contract of its own