PUBLIC BENEFITS TEST

POULTRY MEAT INDUSTRY ACT (1986)

FINAL

Prepared for

Poultry Meat Industry Act
Review Oversighting Committee

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EXECUTIVE SUMMARY

Between 1998 and 2000, a review of the NSW *Poultry Meat Industry Act 1986* (the *Act*) was undertaken by a review group consisting of poultry meat industry and State government representatives. Hassall & Associates has been commissioned to undertake a Public Benefit Test on the *Act*, as well as the Proposed Legislation as put forward by the review group and the South Australian model of collective bargaining with Authorisations from the Australian Competition Consumer Council (ACCC). In addition, benchmarking of producer and processor efficiencies has been undertaken, largely in order to determine whether the NSW industry is competitive with other States.

The application of the Public Benefits Test to the NSW Poultry Meat Industry Act 1986 and its options has shown a net gain over 25 years to the NSW community of $9.6 million for the Proposed Legislation and $10.1 million for the South Australian Model of collective bargaining with ACCC Authorisation. This is equivalent of saying that the current Act has a net public cost of between $9.6 and $10.1 million over 25 years. The net public cost over ten years is between $6.2 million and $6.4 million.

The major findings are:

- *Social welfare and equity considerations.* Both options have major distributional consequences and result in a redistribution of wealth from growers to processors/retailers and consumers of $67 million over 25 years. This gain is likely to be spread between processors, retailers and a very large number of consumers. The loss, on the other hand, will be concentrated on a smaller number of existing growers (318 individual operations) and will account for 10% of existing prices paid to growers and a large portion of annual grower profits, forcing a share of growers into unsustainable loss. Consequently the anticipated grower rationalisation that is expected to occur in 2004, when the majority of contracts expire, will be fast tracked with approximately 20% of growers being forced from the industry. Those growers that remain in the industry will benefit from increased production opportunities (additional throughput and market growth). As a result of industry restructuring there will be economic and social costs associated with displaced workers, including farm owners, who will lose their employment sooner than would have been the case under current legislation.
- *Interests of rural and regional communities*. Growing and processing of chicken meat occurs in the Far North Coast, Tamworth, Maitland, Central Coast, Western Sydney, Goulburn and Riverina region of NSW. In all cases grower employment accounts for less than one percent of total employment in the relevant Local Government Area (LGA). The exception is Griffith LGA were grower employment accounts for 4.75% of the workforce. However, Griffith-based growers are company employees and should be largely quarantined from the anticipated grower rationalisation. Hence, regional economic impacts of rationalisation are likely to be minimal. Processors are more significant employers in the regions and their decisions to invest or dis-invest are more likely to impact regional economic activity in NSW. Processor rationalisation is expected to occur, but not to be influenced by changes to current legislation. Grower employment losses have been factored into the Public Benefit Test.
- *Ecologically sustainable development.* Potential issues to do with bio-security breaches and poor environmental management practices are best addressed with other regulatory and self-regulatory tools. No net loss from changing regulations is expected to bio-diversity or the environment. There are no perceived increases in risk of exotic diseases attributable to changing regulations. It is noted that growers disagree with this finding.

- *Interests of consumers*: The cost benefit analysis has shown that consumers gain from either the Proposed Legislation or the SA Model through increased consumption of chicken meat and consumers/processors and retailers gain from a decrease in price paid for chicken meat. Should all the reductions forecast be passed through to consumers, the reductions will be less than 1% of retail price, or approximately 3c/kg. The change is insignificant to individual consumers when considered against regular movements of up to 25% in the retail price of chicken meat.
- *The competitiveness of Australian business*: Either option to change regulation will favour the competitiveness of NSW business, as it will improve the overall efficiency of both the growing and processing sectors. The changes mean that the industry is better able to compete with interstate and, if imports are eventually permitted, overseas competitors.
- *Allocation of Resources*: Changes to regulations are anticipated to result in a more efficient allocation of resources.
- *Occupational health and safety, industrial relations*: Changes to regulations will not impact these issues.

In summary, gains to economic efficiency, the competitiveness of industry and potentially to consumers need to be weighed alongside the social welfare and equity considerations of either option for changed regulations. There is a net public benefit to changing the legislation. However, experience from the deregulation of the dairy industry suggests that:

- The short term impacts of rationalisation can be severe. Anticipated longer term benefits are often overlooked;
- The flow on impacts to rural communities can be significant, where the industry is a significant contributor to local economic activity (as with dairy);
- Mergers between processor following deregulation can reduce the level of competition;
- Supermarkets hold market power over the processors, who reduced milk price to gain/maintain market share. Lower milk prices can then be forced onto growers [milk prices to growers are anticipated to recover as contracts between supermarkets and processors are renegotiated];
- Younger people can be forced off the farm and the age structure of the industry changed;
- When acting individually, difficulty can be experienced by farmers in determining what is a “fair market price”.

These lessons need to be kept in mind, however, there is a limit to which the two situations can be compared, especially given the differences in their size and characteristics.

The Public Benefits Test revealed that the differences between options for changing the regulations are not major. Both alternative options provide growers with countervailing powers through the provision of collective bargaining. It is noted that growers contend that the level of protection is not sufficient.

The benchmarking analysis has shown there are differences between growing and processing between the States and that NSW is less efficient for some of the benchmarked parameters. It needs to be remembered that minor differences in an efficiency parameter can translate into major differences in industry profit because of the large throughputs involved. It is difficult to ascribe any of the observed differences, beyond grower fee, to differences in regulation.

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ABBREVIATIONS USED IN THE REPORT

ACCC Australian Consumer and Competition Commission [ACCC Authorisations enable collectively bargaining, exempt from the provisions of the Trade Practices Act]
CPB Cents per bird
IRA Import Risk Assessments
LGA Local Government Area
M^2 Square Metre
NCP National Competition Policy
NSW New South Wales
PBT Public Benefits Test
PMIC Poultry Meat industry Committee
PNG Processor Negotiating Groups – to be established in NSW under the proposed legislation
Sq. ft Square Feet [used within the industry]
TPA Trade Practices Act

1. INTRODUCTION

1.1 Purpose of the study

In 1998/99/00 a review of the NSW *Poultry Meat Industry Act 1986* (the *Act*) was undertaken by a review group consisting of poultry meat industry and State government representatives. The review was undertaken in order to fulfil the NSW Government's commitments under the Competition Principles Agreement. The Terms of Reference for the review required an assessment of whether the public benefits of the *Act* exceed the costs, and, whether the legislative objectives can only be achieved by restricting competition.

In the review of the Act, the review group determined that the primary intent of the *Act* was the avoidance of abuse of market power by processors over growers. The primary way that the *Act* could restrict competition was determined to be the approval of agreements between growers and processors by the Poultry Meat Industry Committee (PMIC) and the determination of the standard growing fee[1].

In reviewing the *Act* the review group identified the costs and benefits of operating under a number of regimes with varying levels of regulation or deregulation. The options considered by the review group were:

Legislative Options

- Option 1 - the status quo, but with alterations to reflect the current operation of the Act and to provide exemption from the *Trade Practices Act 1974*;
- Option 2 - increased powers to the PMIC; and
- Option 3 - transferring the most competition restricting powers of the current PMIC (contract agreements and fee setting) to processor negotiating groups (PNGs).

Non-legislative Options

- Option 4 - deregulation - authorisation by the ACCC; and
- Option 5 - deregulation - other.

For each option, the review group assessed the regional industry development, employment, investment in technology and transaction cost impacts. The final report presented a qualitative discussion of the costs and benefits of each option.

The review group recommended that Option 3 provided the preferred level of regulation. This option would involve the introduction of new legislation by the NSW Government, which makes provision for the establishment of processor negotiating groups (PNGs) and an oversighting industry body of similar make-up to the current PMIC.

[1] Growers contend that the Act does not restrict competition as there are no barriers to processors being able to run their own growing operations, should they not wish to pay the industry price. Competition is more influenced by transportation barriers and dedication of facilities (difficulty of using the sheds for other purposes). There are impediments for growers to change processors, including: geography, existing contracts, (potential) processor collusion and different specifications and growing requirements. Processors contend that they operate in different markets, have different characteristics and cannot compete against each other should there be an overall industry level established for a certain cost factor. Both arguments are presented but Chapter 6 concurs with the view that competition is reduced by the *Act*.

The review, although identifying what it thought to be the least competition restricting but necessary level of regulation, did not result in consensus within the review group. Some of the findings and recommendations of the review group were rejected by growers, particularly in relation to whether the Act should address other potential forms of market failure in addition to providing countervailing powers, whether there is evidence that the current provisions are restricting competition and promoting inefficiency, and whether growers would be able to provide documentary evidence of unconscionable conduct and obtain protection from the Trade Practices Act.

As a result, Hassall & Associates has been commissioned by the Review Oversighting Committee to undertake a public benefit test on the current legislation, the preferred option as put forward by the review group and the model of collective bargaining through ACCC Authorisations.

Specifically the study's terms of reference required:

i. Completion of a Public Benefits Test cost benefit analysis for three options, taking into account, where relevant:

- Government legislation and policies relating to ecologically sustainable development;
- Social welfare and equity considerations, including community service obligations;
- Government legislation and policies relating to matters such as occupational health and safety, industrial relations, access and equity;
- Economic and regional development, including employment and investment growth;
- The interests of consumers generally or of a class of consumers;
- The competitiveness of Australian business; and
- The efficient allocation of resources.

The Public Benefit Test needs to be carried out on:

- The current legislation, the Poultry Meat Industry Act 1986;
- The proposed legislation as recommended in the Competition Policy Review; and
- The South Australian model of deregulation and the provision of ACCC Authorisation; and

ii. Benchmarking Analysis : Benchmarking of the level of (and any changes in) production and processing efficiency in the five main chicken production states (Queensland, NSW, Victoria, South Australia and Western Australia). The benchmarking analysis is to include comment on what evidence there is that differences may or may not be linked to differences in levels of regulation.

1.2 The Public Benefits Test

A key objective of the National Competition Policy (NCP) review process is to develop a more open and integrated Australian market that limits anti competitive conduct. Although increasing market place competition is likely to result in better resource use and substantial on going benefits to the community, this outcome may not always be the case. The use of the public benefits test (PBT), in ensuring thorough and meaningful analysis of the benefits and costs of alternative options is undertaken, will mean that the NCP reform is only implemented where it can be proven that it is in the public's long term interest.

In applying the Public Benefit Test to NCP reform it is further important that it be consistent with the requirements of the Competition Policy Agreement. That is, that legislation should not restrict competition unless it can be demonstrated that the benefits to the community as a whole outweigh the costs, and that the objectives of the legislation can only be achieved by restricting competition. That is, under the Competition Policy Agreement:

- The objectives of the legislation must be clear;
- The nature of the restriction must be identified;
- The likely effects of the restriction on competition and the economy generally will be analysed;
- The costs/benefits of the restriction will be assessed and balanced; and
- Alternative means for achieving the same result should be considered.

The cost benefit analysis has been undertaken within a standard economic framework which measured welfare changes for each of growers, processors and consumers. The modelling framework is inclusive of "supply response" and the impact of legislative options on industry efficiency. Environmental and social benefits and costs associated with the options are considered.

1.3 Poultry Meat Industry Act and Regulation objectives

This section draws from the final report of the NSW Review group (NSW Agriculture, 1999).

In NSW, the *Poultry Meat Industry Act 1986* (the Act) provides for the establishment of the Poultry Meat Industry Committee (PMIC) which sets guidelines and approves agreements between processors and growers of poultry meat, determines fees to be paid to growers for raising poultry and negotiates disputes between processors and growers.

The NSW Review Group clarified the objectives of the Act by reference to the preamble to the *Act* which states that it is:

> *"An Act to constitute the Poultry Meat Industry Committee and to define its functions; to regulate and control the poultry growing industry; to repeal the Chicken Meat Industry Act 1977; and for other purposes."*

This general statement was identified by the review group as being of the form traditionally used in legislation. Subsequently this statement does not reveal the intended outcome of the legislation nor what benefits the Government of the day envisaged that the people of NSW would derive from statutory intervention in the poultry growing industry.

The implied outcome can be assumed by reference to the Hansard record of the second reading speech, namely the avoidance of market power abuse:

> "*There is an imbalance in bargaining power in the industry between growers and processors… The 1977 Act was introduced to regulate the contractual obligations between growers and processors by means of the Chicken Meat Industry Committee*".

The NSW review group, therefore, determined that the primary intent of the Act was the avoidance of the abuse of market power by processors of growers. Further, the intended purpose of the Act was to provide poultry growers with countervailing power against processors.

1.4 Regulatory environments in the other states

South Australia, Queensland, Western Australia and Victoria have had, to some degree, similar legislation to New South Wales regulating poultry meat production. Tasmania, the Australian Capital Territory and the Northern Territory have no equivalent legislation. In Queensland the Act has been reviewed, the price is no longer set by a central body and growers can chose not to participate in group negotiations with processors. In South Australia the legislation governing poultry meat production is proposed to be repealed and the PMIC-equivalent has not been operating since 1997. Two processors successfully applied for ACCC Authorisations to collectively bargain with their growers. In Victoria, the Act has not been formally repealed but its status is uncertain. The PMIC-equivalent has not recently met in order to establish prices and although an ACCC Authorisation has been granted, there is currently a procedural challenge [not to the ACCC Authorisation, *per se*]. In Western Australia, their equivalent Act is still operating, by default, whilst the State Government considers its response to the review that it has conducted.

Table 1.1 shows the main regulatory features and lessons of interest from other States, and details are provided in Appendix 1.

Table 1.1 Summary of other States' regulations and reviews

	Queensland	South Australia	Victoria	Western Australia
Number of Growers	110	75	200	250
Number of Processors	4	4	8-10	2
Name of Regulation	Chicken Meat Industry Committee Act 1976	Poultry Meat Industry Act 1969	Broiler Chicken Industry Act 1978	Chicken Meat Industry Act 1977-1982
Regulation Features	Intention of the Act was to provide mechanism for discussion and negotiation on growing fee	Established the Poultry Meat Industry Committee, with contract approval, advisory, dispute resolution and production control responsibilities. PMIC has been inoperative since 1997.	• Establishment of the Victorian Broiler Industry Negotiation Committee • Facilitate agreement between processors and growers • Determine price • Ensure no exploitation of growers	Industry price set by a committee consisting of growers and processors.
Use of a grower fee model	• Operated until 1989 • Now grower fee determined through negotiation between processor and growers as a	• No. Any price setting is through ACCC authorisation.	• Yes • Variations in standard grower fee must be approved by the committee	Yes
Last review of Act, particularly NCP reviews	Last reviewed 1997 with amendments incorporated in 1998.	• Reviewed but Act has not been repealed • A public benefit test has not been undertaken.	Reviewed in 1999/00	Reviewed in 1999
Outcome of the review and miscellaneous comments	• Ruled no longer compulsory for growers to participate in group negotiation • Resulted in closer commercial relationships as efficiency is rewarded. • Some concern about contract security from smaller growers	No research into the impact of no PMIC.	Recommended the repeal of the act and replacement by ACCC authorisation of collective negotiation between growers and processors	Review outcomes are being considered. One prospective amendment, yet to be considered, is the option for producers and processors to agree on a price independently of the deliberations of CMIC.

2. PROFILE OF THE NSW POULTRY MEAT INDUSTRY

Chicken Meat Production

The National and State production of chicken meat is shown in Table 3.1. NSW accounts for approximately 37% of the national production. Over the period from 1993/94 to 2000/01, the NSW market has grown on average by 3.2%, compared to a national growth of 4.7%.

Table 3.1: Chicken Meat Production by State (Tonnes[a])

Year	NSW	Vic.	Qld	SA	WA	Australia [c]	Australia [b]
1993/94	193,137	123,529	72,000	40,671	39,386		504,000
1994/95	199,589	109,515	76,337	39,103	42,007		504,000
1995/96	199,152	127,736	71,607	37,691	44,358		525,000
1996/97	200,237	129,930	80,485	38,932	46,789		557,000
1997/98	213,587	151,329	89,459	np	np	550,461	604,000
1998/99	231,897	153,601	88,728	np	np	573,444	633,000
1999/00	221,245	168,139	95,440	np	np	592,704	660,000
2000/01	242,452	174,222	93,734	np	np	618,300	693,000
2001/02[f]							713,000
2002/03[f]							717,000
2003/04[f]							722,000
2004/05[f]							726,000

Source: Australian Bureau of Statistics (2001).

Notes:

a Tonnes carcass/dressed weight of whole birds, pieces and giblets

b ABS livestock products publication number 7215.0

c ABARE Australian Commodity Statistics 2000

f Forecast

np not provided

Poultry Grower Profile

The approximate national contract growers profile is presented in Table 3.2[2]. Contract growing refers to the outsourcing of production from day old chicks to mature bird by independently owned businesses. Processor owned production refers to bird grow operations as part of the integrated operation of a processor.

[2] Both chicken meat and duck meat.

Table 3.2: National Contract Grower Profile (June 2001)

State	No. of contract growers
NSW	320
Queensland	111
South Australia	74
Tasmania	8
Victoria	191
Western Australia	48

In NSW, at the time of the study there are 318 contract growers and four processor owned growing operations (which consist of a larger number of actual operating units). The size of contract farms ranges between 20,000 and 150,000 square feet, with the average approximately 49,000 square feet (1,860; 13,935; and 4,550 m^2 respectively). Most farms are between 30,000 and 80,000 square feet.

Contract growing accounts for about 72% of bird production. This has risen slightly since 1996 when contract growing was 66% of production. The number of contract growers has decreased from 461 in 1981 and from 390 in 1991, with offsetting increases in the size of operations.

Processor Profile

The national processor profile is presented in Table 3.3. The 2 large processors operate across most of the States.

Table 3.3: National Processor Profile

State	Small	Medium	Large	Total
NSW	2	3	2	7
Queensland	2	0	2	4
South Australia	2	0	2	4
Tasmania	-	-	-	1
Victoria	2	2	2	6
Western Australia	0	0	2	2

Industry location

NSW has seven regions with businesses that grow and/or process chicken meat. These are: Far North Coast, Tamworth, Newcastle/Hunter, Central Coast, Western Sydney, Southern Highlands/Southern Tablelands and Riverina.

Central Coast and Southern Highlands/Southern Tablelands regions do not have processing facilities – the chickens are delivered to processing facilities in Newcastle/Hunter and Western Sydney. Far North Coast, Tamworth and Riverina regions have one processor. In the Riverina region, the processor also owns the farms. Newcastle/Hunter region has two processors whilst Western Sydney has five separate processors.

3. PRODUCTION AND PROCESSING BENCHMARK ANALYSIS

Data has been collected from Australian Chicken Growers Council (ACGC) and NSW Processors. Three NSW processors supplied data pertinent to their interstate operations. It has been necessary to use data for a mix of periods, predominately June 2001 snapshot, 2000-01 financial year or the six month period 7/00-12/00. These time periods have been indicated where relevant and care should be taken that different time periods are not confused.

The benchmarking covers the five main States (NSW, Queensland, South Australia, Victoria and Western Australia). For certain benchmarking parameters, the data is grouped into NSW and 'other' States – this is to aggregate the data to a sufficient level to avoid identification of individual enterprises. In addition, to prevent identification of individual enterprises, certain results have been rounded or shown within a range. For example, a single result of 157 c/year might be shown as the range 150-165 c/year.

The benchmarking in this report covers two issues:

1) Production and processing efficiency; and
2) The extent that differing regulations contribute to differences in efficiency.

3.1 Production and processing efficiency

Growing fees

The growing fees are shown in both cents per bird (cpb) and cents per kg in Table 4.1.

Table 4.1: Growing fees

Item	NSW	Qld	SA	Vic	WA
Unweighted growing fee cpb; 7/00-12/00	50.6	49.5	47.8	48.7	51
Growing fee c/kg livewieght; 7/00-12/00	20	22	20	21	24

Source Australian Chicken Growers Council, Benchmarking for 7/00-12/00, unpublished data.
Note that Inghams throughput was abnormally low for this period.

The unweighted NSW growing fee for the period 1/01-6/01 was 51.73 cpb, an increase from the previous period of 1.1cpb. When the grower fee is weighted, according to processor throughput, the growing fee for the period 1/01-6/01 is 52.04 cpb. The results show that NSW has the highest grower fee apart from WA, in terms of cpb. Processors state that grower fee per bird is the key driver of investment decisions rather than c/kg. The c/kg grower fee data places NSW within the range of other States, largely due to NSW growers producing a larger bird.

Time trend data indicates that grower fees in NSW have increased over recent years, whereas they have stayed constant in Western Australia and fluctuated in Victoria. Grower fees in South Australia has fluctuated but decreased slightly. No reliable conclusions can be drawn from this.

Gross and net income/square meter/year

The main measure used is gross income per square foot (Table 4.2).

Table 4.2: Grower gross income

Item	NSW	Qld	SA	Vic	WA
Gross income per square foot 07/00-12/00	$4.08	$4.04	$4.51	$5.05	$4.56
Gross income per square metre 07/00-12/00	$43.92	$43.49	$48.55	$54.36	$49.08

Source ACGC (2000) Benchmarking for 7/00-12/00, unpublished report.

The gross income is affected by the size of farm and annual production. A range of factors influence production, including: density, mortality and number of batches. These factors are included in the "productivity level" benchmarks, developed below.

Net incomes have not been estimated due to the difficulty of obtaining rigorous data on actual costs of production. For NSW, additional data has been sourced from eight growers, in three regions, who volunteered their Profit & Loss statements and other financial data. In aggregate, to protect confidentiality, the data shows:

- Of the gross revenue attributable to contract poultry operations:
  - Variable costs = 70%.
  - Administrative & fixed costs = 9%.
  - This leaves 21% for owner's salary/drawings, interest payments, tax and reinvestment in business.
  - The actual average in the sample for salary/drawings, interest, tax and reinvestment was 22%, which leaves a loss. However, these costs actually ranged between 3% and 40%. The latter is clearly unsustainable.

The main observation from the data supplied is that there is a large difference in physical characteristics (size of shed, etc) as well as their financial costs. This result supports the findings of NSW Farmers who conducted a benchmarking exercise in one region in 2001. These findings show a variation in costs of production of up to 250%.

NSW Farmers has recently proposed that an independent review of growing costs be conducted. This proposal has merit to the extent that it would be likely to demonstrate the differences implied through this study and allow the estimation of net income. The proposal by NSW Farmers, however, links the results of the review to price determination. The appropriateness of this is outside of the scope of this benchmarking exercise and considered further in the Public Benefits Test.

Productivity levels per farm per year

Important productivity parameters include (Table 4.3):

- Yearly Production;
- Size of operation;
- Weight at pick-up;
- Yearly No. of Batches;
- Density; and
- Cycle time (days).

Table 4.3: Farm productivity levels

Item	NSW	Qld	SA	Vic	WA
Production birds/yr 7/00-12/00	385,341	419,861	483,481	525,373	772,839
Production facility size (sq. ft) 7/00-12/00	47,036	51,449	50,847	50,608	83,101
Weight at pick-up (kg/bird)	2.48	-	2.42	2.30	~2.1 (est.)
Batches/yr 7/00-12/00	5.47	5.42	5.53	5.38	5.83
Density (sq. ft per bird) 7/00-12/00	0.70	0.66	0.58	0.52	0.54
Cycle time (days) 7/00-12/00	67	68	66	68	61

The figures show that NSW growers generally have smaller sizes of farm, lower annual production, higher weights at pickup and higher sq. ft per bird, but are within the range of other States for batches and cycle time. The first two factors suggest there may be economies of scale possible in NSW, which would lead to lower costs. Significant improvements in farm productivity may be possible by enhancing density levels relative to other States (need to allow for the higher space requirements of heavier birds).

Differences in feed conversion

The major parameter used is the Feed Conversion Ratio (FCR), which is calculated as the kg liveweight produced per kg feed (Table 4.4).

Table 4.4 Feed Conversion Ratios

Item	NSW	Qld	SA	Vic	WA
Feed conversion ratio 7/00-12/00	1.917	N/a	1.89	1.959	N/a (1/01-6/01 is 1.78)

Feed conversion is influenced by type of feed, age and weight at pick-up, which are controlled by the processors and type of technology used (minimum temperature fluctuations, lighting levels, etc) and other factors under the grower's control. There is also a marked seasonal effect for feed conversion, especially over the hotter months.

An absolute comparison may be misleading due to the influences described. NSW is within the range of that achieved by other States.

FCR is a major determinant of the price paid within a pool. It has not been possible to obtain data as to the spreads of FCR within NSW.

Differences in shed technology

Sheds differ due to age, maintenance, layout and a range of other factors. The main parameter of interest here is the proportion of growers using tunnel ventilation sheds as compared to conventional sheds. Some growers have a mix of both types of sheds, whilst some of the newer entrants with farms of a larger size appear to be predominately tunnel ventilation.

One NSW processor provided details of the proportion of tunnel sheds within their operations in various States. NSW has a low proportion of tunnel sheds, although currently increasing, amongst their contract operations compared to other States. Direct data on proportions of growers with tunnel ventilation sheds are not available from other processors.

The Review Oversighting Committee provided assertions that:

- In general the current housing and equipment used in poultry meat production in NSW is lacking in terms of current technology and is behind that used in other states.
- Throughput of chickens in NSW is below that of other states and results in a lower return to growers. Throughput comparable to other states is not feasible in NSW from a physical or economic viewpoint with current shedding and equipment.
- Most processors and growers accept that the standard of shedding and equipment in NSW must be upgraded in order to ensure that chicken production in this state is competitive with other states (and with potential imports of chicken meat).
- Upgrading of all current shedding and equipment in NSW would expand production capacity well beyond anticipated demand for poultry meat. Estimated excess is 20 to 30 percent.
- It would be more cost effective to construct new 'tunnel' ventilated sheds than to upgrade existing 'conventional' sheds but it is generally agreed by all parties that the most preferred and acceptable course of action is to upgrade existing sheds.
- In order to reduce grower and processor costs of production increased economies of scale are required and it is necessary that growers have an incentive to increase their farm size.
- It is not possible to achieve the necessary upgrades and economies of scale with the present number of farms or sheds in NSW. A significant reduction in both is necessary.
- The PMIC is not in a position to resist a move to 'tunnel' ventilation in NSW as to stick with a 'conventional' model would be delaying what appears to be inevitable, would be a disservice to growers and would not be in keeping with the requirement of 'encouraging industry efficiency'.
- The reduction of farm numbers must be managed in a manner which provides growers with a clear and timely indication of requirements for the future so they are able to make decisions on the most appropriate course of action on an individual basis.
- Timing of the transition is important to all parties and will require close cooperation and management between growers and their processor.
- It is expected that a reasonable proportion of the reduction in numbers of farms will result from 'natural attrition' such as retirement, sale due to urban encroachment etc.

- It is not clear whether all processors will require 'tunnel' type shedding as some of the smaller plants may prefer to remain with smaller 'conventional' sheds or a mixture. This may provided an outlet for some non-converting growers.
- No funding will be available from industry to assist growers unable to remain in production.
- Growers making a transition to 'tunnel' sheds will be dependent on an appropriate level of throughput to remain economically viable. Financial institutions will also be watchful of the reliability of cashflows and returns. Fee adjustments based on throughput, if remaining in the revised model may need to operate in both directions.
- Not all on-going farms will convert to 'tunnel' shedding and some processors have indicated a willingness to contract for up to eight years from the time of conversion.
- While line items in the 'model' are important indicators for individual growers when gauging their economic situation, it is the financial outcome of the production cycles as a whole that is the significant figure. Lower growing fees per chicken may be tolerated if there is assurance as to levels of throughputs and levels of gross income that provide an acceptable net farm income result.
- A transition to 'tunnel' shedding requires that proper attention be given to animal welfare issues.
- Improved performance from a transition to 'tunnel' shedding must be shared equitably by growers and processors.

These assertions appear reasonable. Some additional assertions made by growers are that some are not capable of upgrading, in some case due to local government restrictions (especially noise). Some growers also do not have an ability to raise the finance required, whilst some are uncertain of the returns on conversion, in part due to an inability to obtain the throughput needed (processor controlled).

Differences in processing costs

The major parameter used is processing costs per processed weight (Table 4.5).

Table 4.5: Processing costs

Item	National value from Instate and Heilbron (1997)	NSW	Other States
Processing costs (c/kg dressed)	57.29	53-79c, depending on product mix. Further processing costs not included.	60-62

There was a large range reported in processing costs within NSW, however differences in types of product is one of the major contributors. Processors note that higher value products may require higher processing costs, which can be 2 or 3 times as high, so it is meaningless to look at this cost in isolation. Data has been collected regarding the level of processing and relative yields (the dressed product compared to the liveweight), however, cannot be aggregated to give a simple measure. Differences in processing make it difficult to draw comparisons between different States, especially given that not all interstate processors provided data.

Throughput and plant age are two factors that would normally be expected to contribute to differences in processing costs. Data collected indicates that there is a large range in these factors within NSW, from 100,000 to 580,000 birds/week and 10 to 40 years age, however, no data is available to compare NSW with other States.

In addition to the actual processing of live birds into processed products, the costs of which are shown above, processors also incur other production costs within the "Live bird model" (Instate and Heilbron 1997). These costs include: chick, feed, transport and veterinary services. Benchmarking of the live bird costs is shown below (Table 4.6).

Table 4.6: Live Bird costs

Item	National value from Instate and Heilbron (1997)	NSW	Other States
Live bird costs (c/kg liveweight)	112.62	Ranged from 90 to 150, with an average of 120 c/kg.	Vic 105-113. Other States < 100.

The same caveats apply, in that not all interstate operators provided data, however, it suggests that live bird costs are higher in NSW than other States. Grower fee accounts for between 15% and 20% of live bird costs, which would not be sufficient on its own to account for all the differences. This implies that there may be differences in the other components of cost. The cost that is most logical to investigate is the cost of feed, as it accounts for over 50% of total live bird costs.

Grower and processor profitability in each State

Instate and Heilbron (1997) suggest there are large ranges in grower and processor efficiencies, between operations, which would be expected to lead to a large range of profitability. Their benchmarking data is not available on a State by State basis. Processors claim that interstate operations are more efficient and hence more profitable. However, it is likely that there is a range of profitability of operations within a State, due to a range of market and infrastructure issues, and hence it is difficult to confirm that any particular State has a higher or lower profitability than another. A full benchmarking study would be needed in order to determine grower and processor profitability levels [and then to go one step further in order to try to explain why those differences occurred].

Employment

Employment attributable to poultry growing, which includes both contract and processor owned operations, is presented in Table 4.7 (Larkin and Heilbron, 2001). NSW is the major employer, but this is not surprising given it has the highest number of growers and processors.

The employment includes both direct and indirect employment. ABS indicates that in 1996, the direct employment in NSW was 1,021 for the growing sector and 4,116 for the processing sector. The ABS figures have been used in the public benefit test.

Table 4.7: Employment in the poultry industry

State	Growing	Processing	Other	Total
NSW	2,939	15,203	25,916	44,058
Queensland	1,437	6,849	14,135	22,421
South Australia	659	3,240	6,070	9,969
Victoria	2,019	10,587	18,600	31,206
Western Australia	847	4,028	7,411	12,286
Total	7,900	39,907	72,134	119,941

Source: Larkin and Heilbron (2001)

Investment levels

Processors indicated that their current investment in NSW was generally static (maintaining capital infrastructure at present levels) or decreasing. One processor indicated that they had chosen to invest substantially in other States to either build new plants or to upgrade existing facilities. Other processors did not comment on the relative investment levels between States.

Growers indicated that they were being forced to invest in new farm technology – please refer to the previous discussion on the status of farm technology.

Contract growers and processor owned farms

As previously mentioned, in NSW contract growing accounts for 72% of production. Data collected during the benchmarking indicates that the average growing costs for company farms in NSW was about 41 cpb or 18 c/kg. There was a range around this, with lower and higher costs (not quoted to protect data sources). These are actual costs and not directly comparable to the grower fee. The equivalent grower fee is higher than the reported costs when it is calculated according to the parameters of the PMIC model, but still much lower than the weighted average growing fee (gazetted). The equivalent grower fee is in the range of the assumed price reductions under the changed regulation scenarios (see Chapter 5).

Movements in production between States

The two major processors report an increase in production in other States relative to NSW, as shown also by investment levels and growth in operations. One NSW company has merged with a Victorian company, which increases the potential to transfer production between States[3]. The differences in State production (Table 3.1) shows that the growth in NSW is less than the national growth.

[3] This NSW firm has transferred up to 8% of its production interstate. There are many reasons for transferring production not explored here, apart from lower costs in the other State (which has been claimed), including business structures, throughput levels, etc.

3.2 Impacts of regulation on profile and benchmarked parameters

The key concern is whether the differences in the benchmarked parameters are linked to differences in levels of regulation. The true comparison that is needed to ascribe differences is the parameter in a certain regulatory environment compared to that expected in a competitive/contestable market. This by necessity calls for some speculation, as both market conditions are unlikely to be apparent at the same time. Estimates of grower fees for NSW used in the PBT (Chapter 5) indicate that they are higher under the current regulatory state than otherwise would be the case, based on consultations with both growers and processors.

Since changes to regulations, fees in South Australia have varied and decreased slightly. This is a mild indicator that some difference may be attributable to the regulation. This is further moderated because there are some corresponding throughput and market variations which would have gone towards keeping prices higher than expected.

As a weak surrogate, differences in fees between States that have different regulations can indicate whether they are broadly increased or decreased by the regulations. This surrogate needs to be used with care as there are a lot of legitimate production and market-based reasons why fees vary in different regions (e.g. annual production/throughput and numbers of processors and growers).

The grower fee is determined centrally through regulations (cost of production models) in NSW and Western Australia, as well as, until recently, in Victoria and Queensland. The data from Queensland does not adequately reflect changes in regulations as these changes have only recently occurred. In the period 7/00 to 12/00, NSW had the higher grower fee per bird except for Western Australia, even if the grower fee in c/kg was roughly equivalent. The grower fee increased sharply in NSW in the following period, which further accentuates the differences. The two States with substantially different regulatory environments are Tasmania and SA South Australia. Tasmania is not relevant due to its small size (one processor and ten contract growers). South Australia has partially been discussed, but some further comments are made.

The grower fee in South Australia was 2 cents per bird lower than in NSW for the period 7/00 to 12/00. Historically, this has not always been the case (e.g. South Australia had the higher fees in the period between 1991 and 1996). This turnaround suggests changes due to either improvements in efficiency or changes in regulation. South Australia has attracted recent investment from one of the major processors relative to NSW, which is likely to increase throughput and decrease costs over time. However, these impacts are not yet likely to be evident. There is thus little extra information that can be obtained from this "weak surrogate" information.

The information between States is even less reliable for other indicators of investment, employment and shed technology. Other differences that can be quite minor on a per bird basis can translate into major costs over the high throughputs in the industry.

The processor survey indicated that in a less regulated environment, they would maintain commitment towards using contract growers. However, should regulations continue in NSW then they would review this and consider expansion of company owned farms. Data is not available to confirm whether there was any corresponding increase or decrease of company farms in South Australia, even if this could be separated from what would have happened there without deregulation.

Processors claim that changes to regulations means additional flexibility in their operations. This is likely to flow through to the benchmarked parameters, in time, and accentuate even more any "natural" cost and production differences between States.

In summary, the comparison with and without regulations is difficult due to differences in time period. Comparisons between States with different regulations do not necessarily pick up differences in operating environments. The best comparison appears to be with South Australia, which showed a small reduction in grower fee after changing regulation, relative to what otherwise might have been expected.

4. DESCRIPTION OF THE THREE REGULATORY OPTIONS

The primary intent of the *Act* was determined by the review group to be the avoidance of abuse of market power by processors of growers. The primary way that the *Act* could restrict competition has been determined to be the approval of agreements between growers and processors by the Poultry Meat Industry Committee (PMIC) and the determination of the standard growing fee. Alternative options for achieving the identified objective, identified in the Terms of Reference and analysed here include:

- *Continuation of the current legislation*, taking account of proposed amendments to this legislation (referred to as the *current legislation*). Amendments relate to the need for exemption from section 51 of the Trade Practices Act in order to facilitate processor and grower negotiation to determine a model price;
- *The proposed legislation recommended* in the competition Policy Review of the Poultry Meat Industry Act 1986 (referred to as the *proposed legislation*). That is, that new legislation be introduced by the NSW Government which makes provision for the establishment of processor negotiating groups (PNGs) and an oversighting industry body of similar make up to the current PMIC; and
- *The South Australian model* of deregulation and the provision of ACCC Authorisation (referred to as the *SA model*). This option involves deregulation of the industry with authorisation from ACCC for their contract growers to collectively negotiate their growing agreements. More detail on ACCC Authorisations can be found in NSW Agriculture (1999).

4.1 Formulation of the base case

The benefits and costs (Chapter 5) are assessed relative to a base case. In this study, the base case consists of the current regulation option, along with all of its operational features. The final price that a grower receives consists of:

- The PMIC model price, which is then negotiated within each processor-grower group to determine discounts attributable to market forces and throughput [then published as the "gazetted price", which in effect becomes the "pool price" or average price across the respective processor-grower group]; and
- An efficiency adjustment on the 'pool price", which means that more efficient growers receive a higher price that less efficient growers. Efficiency is predominately based on feed conversion ratios that are achieved[4]. The actual "band" of payment varies between processor groups from 0% to 17.5%, i.e. more efficient growers obtain up to 8.75% more than the average prices paid to the pool.

4.2 Impacts of changing the *Act*

Table 4.1 shows the main features of regulatory options.

[4] There is ability for processors to terminate grower [contracts] on the basis of efficiency. These limits are set very tightly: if 3% inefficiency for more than x batches, then it can be terminated; and if 5% inefficiency, then it can be terminated immediately. As feed efficiency increases, then 3% becomes a proportionately smaller limit.

Table 4.1 Features of Regulatory Options

Regulatory Feature	Base Case – Current Legislation, with amendments	Proposed Legislation (similarities with the Queensland model)	South Australian Model
Price Setting	Yes – through PMIC followed by throughput discount, market force allowance and pooling. (Price setting capacity can address other issues like bird disposal)	No – price set through PNG negotiations, in turn governed by Code of Practice	No. Collective negotiation allowed. Independent advice and external negotiators allowed (but cannot be shared across groups)
Collective Negotiation	Compulsory and centrally determined	-Decentralised to processor negotiation groups -Growers would have the ability to opt out and this is covered by Code of Practice. -Price being offered by other processors would not be available to growers[5]	Can be collective negotiation with ACCC Authorisation
Equal treatment of growers for the supply of birds	Within a pool, the same number of birds will be provided to all growers[6], except for adjustments on the basis of farm size and equipment.	This could be negotiated by PNGs	No
Arbitration of price disputes	Yes – tool is PMIC	Yes, with third party arbitration procedures established via the PMIC replacement	No – may be specified in contracts, but otherwise arbitration will be through litigation (save on PMIC costs but increase litigation costs)
Negotiation on non price disputes (negligence, deaths, etc)	Referred to PMIC and dealt with case by case. PMIC negotiates	Sets out more comprehensive procedures	No
Contract guidelines	Yes, Legislative requirement for a contract. PMIC sets content	Yes, Set by PMIC replacement. A contract is mandatory although content is negotiable	Authorisation includes minimum contract guidelines[7]. Some precedents for contracts already established

[5] It is uncertain whether growers can belong to more than one PNG, although this will need definition.

[6] The main cost is that inefficient growers must be supplied, but they would then be penalised on price within the pool.

[7] Minimum contract guidelines can vary in their potency.

Regulatory Feature	Base Case – Current Legislation, with amendments	Proposed Legislation (similarities with the Queensland model)	South Australian Model
Requirement for a contract of a fixed term	Five year duration, or adjusted to end at 2004, but price is variable according to Price Setting Model	Depends on minimum contract guidelines, unspecified at the current time.	No
Contract Fee	Paid to PMIC on every contract ($122 per contract)	Unknown	No
Transaction Costs	- PMIC costs (arbitration/negotiation, information, etc). - Negotiation following between growers and processors re discounts (market style negotiation)	- PMIC price setting cost avoided (ie model negotiation) but remaining costs of PMIC replacement. - PNG operation costs (market style negotiation).	- Market style negotiation. - Litigation costs
Information costs i.e. cost of finding out what other growers are receiving	Low because centrally provided.	Higher than base case and central information is not available	Higher than base case and central information is not available

In order to model the costs and benefits, processors and growers were asked what would be the central changes from different options (Table 4.2). The main aspects were grower fee being established at a processor rather than industry level and increased ability to distinguish between efficient and inefficient growers. The base case also acknowledges that there is substantial rationalisation in the grower sector expected when the majority of contracts expire in 2004. The rationalisation is expected to occur more quickly under the other two regulatory options[8]. Processor rationalisation is also expected to occur but not be impacted by changing the regulation.

In general, there is not a great difference seen between the two regulatory options, depending on the degree of power and intervention that the PMIC-equivalent body holds.

[8] Processors indicate that they are committed to honouring all contracts until 2004. However, under changes to the regulation, particularly price-setting, some growers may wish to opt out before the expiry date and others will renegotiate contracts. This assumption is subject to a sensitivity test (Chapter 5).

Table 4.2 Impacts of changes to regulations

Item	Current situation continues (Base case)	Grower views of impacts of changes to regulation	Processor views of impacts of changes to regulation
Prices to consumers	Increasing?	Nil, captured by retailers	Stabilise or more flexible
Payments to growers	Increasing	Decrease	Stabilise or reduced prices (but higher throughput)
Growing costs	As above	Increase	As above
Live bird costs	Increasing	Decrease	Nil
Processing costs	Increasing	Nil	Nil
Level of competition	Restricted	Nil (because not currently restricted)	Increase
Processing locations & quantity	No changes in locations but throughput to increase	Nil	Nil
Farm Employment	Decreasing	Faster decrease	-
Processing employment	More contractors	-	Nil
Level of investment	Static	Reduce	Increase
Growing locations	Away from West Sydney to Central Coast and Goulburn	N/a	Faster rate of move
Grower numbers and size	Slow change	Reduced numbers and larger farms	Reduced numbers and larger farms (new technology)
Level of contract vs company farms	Reviewed or decrease	More contract farms (because below costs of production)	Remain at similar levels rather than decrease
Technologies used	Slow change (faster change anticipated when contracts expire)	Forced to change faster than desirable	Faster change to Tunnel Ventilation
Efficiency gains -Feed Conversion Ratio -Density -No. of batches	Slow increase due to genetics	Small increase, but depends on processor	Improvements due to Tunnel Ventilation sheds
Grower standards	Static	Reduce – may be forced to cut corners	Some or rapid improvement
Transactions costs	Increasing	Increase	Stabilise or reduce (less external input)
No. of disputes	Not significant	Increase	Reduce
Ability to counter imports	Imports expected at some stage	-	Improved

5. PUBLIC BENEFITS TEST

5.1 Introduction

The quantitative public benefit test must be undertaken in a manner that is consistent with the requirements of the Competition Principles Agreement. Under this Agreement, legislation should not restrict competition unless it can be demonstrated that the benefits to the community as a whole outweigh the costs, and that the objectives of the legislation can only be achieved by restricting competition.

5.2 Identification of benefits and costs

The conceptual base for providing an understanding of economic costs and benefits to the community from changed regulatory options is the supply and demand, or market, model. Such a model is relevant even though grower operations exhibit a number of uncompetitive characteristics.

Such a conceptual model can be developed for the current intermediate production of chickens by growers[9]. The supply curve or marginal cost curve is upward sloping indicating that the higher the price received for grown out chickens the greater quantity that will be supplied as more growers find it profitable to sell.

The demand curve indicates the maximum amount that consumers are willing to pay (and further down the production chain, processors are willing to pay growers) for incremental increases in the quantity of grown out birds. Generally, people consume more of a good as the price decreases hence consumer demand (and by inference processor demand) for chickens increases as price decreases. Since consumers do not directly demand grown out birds, the demand curve for grower birds can be considered a derived demand. An important implication of the supply and demand model developed at the grower level is that demand for grown out chickens is likely to be more inelastic than wholesale or retail demand. This has implications for the quantitative analysis and will be discussed in greater detail later in the report.

In a competitive market for intermediate goods the interaction of supply and demand determines the market price and the quantity produced.

The market price of a good is often mistakenly assumed to be its economic value. However, the market price for a good or service only reflects the minimum amount that people who purchase the good are willing to pay for it. These purchasers will only purchase the good if their willingness to pay for the good is equal or greater than the market price. Many people are actually willing to pay more than the market price for a good. This amount that people are willing to pay above what they actually pay is the correct **measure** of the value of a good or service to consumers and is referred to as consumer's surplus. In the demand and supply model it is the area below the demand curve but above the price line.

[9] The conceptual model has been developed at the grower level rather than the processor level because of the focus of the legislation on growers and absence of processor cost of production and price information.

For growers, the market price represents the price actually received while the supply curve represents the minimum payment that growers would be willing to receive for the chickens they provide. If growers receive a higher price than the minimum price they would sell chickens for, they receive a benefit from the sale i.e. producer surplus.

It is these changes in producer's (grower's) surplus and consumer's surplus that are of interest when examining the net public benefits/costs of deregulation options.

In a competitive market the interaction of supply and demand determines the market price (Pm) and the quantity produced (Qm) for chickens (Figure 5.1).

However, in NSW the price that processors pay to growers is determined outside the market by the PMIC. It is based on an industry model farm that sets price sufficiently high to allow the least efficient growers to remain in business. Consequently, this allows the more efficient operators to accrue rents that would not accrue under a more competitive pricing arrangement. The average price paid to growers is considered to be higher than would prevail in a competitive market. This is represented by Pr in Figure 5.1 and results in a lower level of production, Qr, than would prevail in a competitive market.

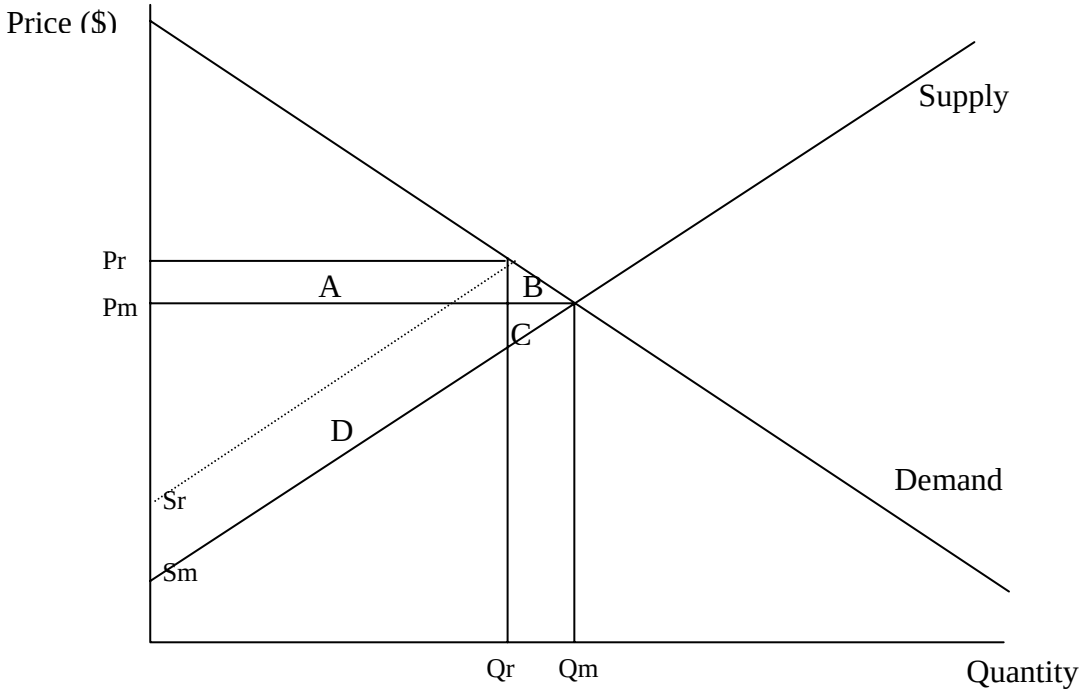
The result is that at current production levels, Qr, growers receive a higher price than they would otherwise receive[10]. This increased grower surplus is represented by the rectangle A in Figure 5.1. This increased grower surplus is at the expense of end consumers i.e. it has the effect of increasing the price of chicken at retail[11].

A further effect of the regulation is that lack of competitive pressure on the cost profiles of growers results in inefficiencies in production and hence the cost of supplying birds is higher than might otherwise be the case i.e. Sr instead of Sm. Hence the producer's surplus that could be generated by growers at the current output levels, Pr, is reduced by area D in Figure 5.1.

[10] This conclusion is borne out by discussions with grower and processor representatives, comparison of prices between States and the results of economic analyses in other States.

[11] In a competitive processing and retailing market it can be assumed that the increased cost of chicken is passed through to the consumer. In a less competitive environment the increased costs may be borne between processors, retailers and consumers.

Figure 5.1 Conceptual Supply and Demand Model



Under a competitive market situation, the conceptual market model of supply and demand predicts that the price paid to growers per bird would reduce from the current level of Pr to Pm and quantity of birds grown out would increase from Qr to Qm. The impact on producer's surplus and consumer's surplus is predicted as follows:

- Loss in producer's surplus to growers equivalent to area A. This would drive producers with higher costs i.e. inefficient growers, out of production;
- Gain in consumer's surplus equivalent to area A as the reduced price paid to growers gets passed on to consumers;
- Growers remaining in production and being subjected to competitive pressures would actively seek ways to minimize the costs of production including adopting cost saving technologies and expanding production in order to obtain economies of scale benefits. At current production levels this would result in a reduction in costs and hence increase in producer' surplus to remaining growers equivalent to the area D (competition/technology effect).
- At lower prices paid for birds there would be an increase in demand and supply of birds equivalent to Qm minus Qr. Associated with this increased output would be producer's surplus gains to remaining growers (output effect for producers equivalent to Area C) and consumer's surplus gains to consumers (output effect for consumers equivalent to Area B).

In addition to these purely market effects there would potentially be a number of other costs associated with moving to deregulation. These include:

- Changes in transaction costs i.e. those costs associated with negotiating supply and price contracts between growers and processors;
- Economic and social costs of unemployment that may arise as more inefficient growers go out of business; and
- Any environmental consequences of competitive grower markets.

The potential economic costs and benefits of moving to a more deregulated price setting model are summarised in Table 5.1.

Table 5.1 Summary of economic costs and benefits of moving to a more deregulated price setting model

Costs	Benefits
Loss in producers' surplus to growers from price decrease	Gain in consumers' surplus to consumers from price decrease
Increase in transaction costs	Increase in consumers' surplus from increased output
Social and economic impacts of unemployment	Increase in producers' surplus from increased output
Any environmental impacts from deregulation	Increase in producers' surplus from cost efficiencies

Conversely, the economic benefits and costs of continuing the current regulation compared to a more deregulated prices setting model are simply the opposite and shown in Table 5.2.

Table 5.2 Summary of economic costs and benefits of continuing with the existing regulation compared to changed regulations

Benefits	Costs
Gain in producers' surplus to growers from price increase	Loss in consumers' surplus to consumers from price increase
Decrease in transaction costs	Decrease in consumers' surplus from decreased output
Social and economic benefits of employment	Decrease in producers' surplus from decreased output
Any environmental benefits from regulation	Decrease in producers' surplus from cost inefficiencies

However, because the regulated situation is currently in place and readily observable, this has been used as the base case to which the two more deregulated options are compared. That is, the analysis in this report is based on Table 5.1.

5.3 Valuation of benefits and costs

Loss in producer's surplus to growers/Gain in consumer's surplus, from a price decrease (price effect)

The current average price per bird at pick up is estimated at in the order of 52.04. cents. With continuation of the current regulatory environment it has been assumed that this would remain relatively stable in real terms over time. Annual production levels of in the order of 120M contract grown birds in 2001 (i.e. 318 growers times by 380,000 birds per grower) are assumed to continue to grow at a conservative rate of 2% per annum, even though historical growth has averaged over 3% growth per annum (see Table 3.1).

Under changes to regulation, both growers and processors consider that prices paid to growers would decrease: growers by 6c and processors by 3c. A figure of 4c was used in the analysis. This potential decrease is supported by the cost of production information obtained for processor farms as well as some of the cost of production information obtained from contract growers. The suggested orders of magnitude of reductions in grower fees are also not inconsistent with projections in other States.

Some processors considered that even higher decreases may result from changed regulations relative to the status quo, with suggestion of a 5c to 10c reduction in prices per bird, because they forecast that prices under PMIC will increase markedly.

The use of static benchmarking to make predictions about the price implications of the different regulation options is fraught with difficulty because of among other things and absence of a line of causation and the many potential confounding influences between States. Nevertheless, on face value the benchmarking analysis undertaken in this report does tend to support the proposition that lower prices are paid to growers in States where a more deregulated pricing framework prevails.

For the purpose of the analysis it has been conservatively assumed that under a changed regulated situation, the price paid per bird to contract growers over the State would reduce by on average 4c, and remain relatively stable in real terms over time. This is shown diagrammatically in Figure 1, Appendix 2. In keeping with the views expressed by both growers and processors, the proposed option and the SA model would most likely lead to the same outcome in terms of price paid to contract growers.

The loss in producer's surplus to growers from such a price reduction is equal to 4c per bird times by the annual production by contract growers. At 2001 production levels, i.e. 120 million birds, this is equivalent to $4.8 M dollars.

This loss to growers is a straight transfer to processors, retailers and/or consumers. Because of the largely competitive market for processors and competitive market for retailers it is considered that the majority of cost savings would be passed on to consumers. Nevertheless, changes in this assumption are of no relevance to the results of the public benefit test.

Increased producer's surplus to growers from cost efficiencies (competition/technology effect)

Under industry restructuring and rationalisation, improvements in average grower productivity, i.e. per bird costs of production, will occur as:

- inefficient growers leave the industry with an associated redistribution of output from high cost growers to lower cost growers;
- remaining growers who have not yet invested in more efficient technology, do so; and
- remaining growers increase their throughput and hence improve economies of scale[12].

The potential magnitude for productivity improvements is difficult to determine with any certainty. The current per bird costs of production, estimated from the PIMC model, are 55.30 cents (including an allowance for a 7% return on investment as indicated in the model) or 40.5c if just the direct fixed and variable costs are included (i.e. excluding the 7% return on investment). Following the same approach as the PIMC model (i.e. including a 7% return on investment) some processor farms indicated costs in the order of 40c per bird. This suggests potential productivity savings of up to 15 cents or 27% for some farms, although on average across all farms such productivity improvements are unlikely.

The Queensland Government's (1997) NCP Review suggested that productivity savings of between 3% and 5% were possible[13] (i.e. 1.3 to 2.2c per bird), while the Victorian NCP review referred to potential 8% productivity savings i.e. 3.23 c per bird (but used a more conservative estimation of 5% or 2c per bird). Hassall & Associates has assumed a very conservative average 4% potential productivity improvement per bird is possible under industry restructuring and rationalisation.

When the productivity improvements are applied to the conservative cost of production of 40.5c[14] per bird this equates to 1.6c.[15] At existing annual production levels by contract farmers this equates to in the order of $1.9M.

However, some productivity improvements associated with industry restructuring and rationalisation is likely to occur under continuation of the existing regulation. These benefits will arise because in the order of 90% of grower contracts are up for renewal in 2004 and many will not be renewed. However, even with industry rationalisation under the continuation of the existing regulation, the full potential efficiency benefits are unlikely to be

[12] NSW Farmer's Contract Poultry Group contend some of the remaining growers may already be at full capacity and hence unable to increase their throughput, as well as some growers not being in a financial position to be able to invest in new technology to be able to enhance productivity.

[13] NSW Farmer's Contract Poultry Group contend that these productivity improvements have not been achieved in other States. Processors claim that there are further productivity benefits that accrue to the processors and would be passed on to consumers, arising from higher feed conversion efficiency and lower mortalities, as acknowledged in the Victorian analysis. These further productivity benefits are included in the sensitivity analysis (see Section 5.5).

[14] Because projected costs and benefits are projected over time and discounted using a central discount rate of 7% it is not appropriate when estimating the costs of production to include a 7% return on capital. To do so would result in double counting.

[15] Applying a 4% productivity saving to a higher cost of production would yield a greater cents per bird productivity saving.

achieved. This is because a lower price is a key driver of efficiency improvements and with a continuation of price setting by the PIMC this incentive will be absent.

For the purpose of the analysis it is assumed that 75% of the potential 4% productivity improvement will be achieved from 2004 onwards as a result of industry rationalisation from selective contract renewal.

A more deregulated pricing environment is likely to bring forward this industry rationalisation and associated cost efficiencies as well as lead to the achievement of full potential productivity gains. This analysis assumes that adoption of the alternative regulation options results in average 4% productivity gains from 2002.

Increase in producer's surplus and consumers surplus from increased output (output effect)

Under the continuation of the existing regulation and the consequential maintenance of prices paid to growers at around 52.04 cents per bird, output is assumed to continue to grow at a conservative rate of around 2% per annum.

However, under the changed regulatory options it is predicted that compared to the production levels assumed with continuation of the existing regulation there would be a modest increase in output of contract grown birds. This is a result of the lower price paid to growers and hence the increased demand for birds. This increased output has been determined from base price per bird of 52.04c, the assumed production of birds each year at this price (i.e. 120M in 2001 growing at 2% pa), the assumed new price paid for birds of 48.04 cents (i.e. 4c per bird less) and the elasticity of demand for contract grown chickens of –0.32[16]. This output effect is equivalent to a 2.5% increase in production for each year relative to the projected yearly production levels under continuation of the regulation.

This increase output relative to the base case scenario has both producer's surplus and consumer's surplus benefits to the community. The consumer's surplus benefits have been calculated from the estimated incremental increase in quantity compared to the continuation of the regulation scenario and the difference in price between the with and without regulation scenarios, i.e. the area of the triangle B in Figure 5.1. The producer's surplus benefit has been calculated from the estimated incremental increase in quantity together with estimated market price and productivity improved cost of production i.e. the area of the triangle C in Figure 5.1.

[16] This derived demand elasticity for contract grown chickens is based on an estimated demand elasticity for wholesale chicken meat of –0.77 (used by ABARE). However, while demand for contract grown chicken is derived from demand for chicken at the retail and wholesale levels, economic theory suggests that derived demand will be more inelastic than wholesale or retail demand. An estimate of derived demand elasticity has been derived from the following formula Ed = Ew(Pd/Pw), where:

* Ed = derived demand (contract grower) elasticity;
* Ew = wholesale demand elasticity;
* Pd = derived market (contract grower) price; and
* Pw = wholesale price.

Economic and Social Costs of Unemployment

Under the continuation of the existing regulatory regime and associated contract renewals in 2004, both processors and growers anticipate some restructuring as inefficient growers leave the industry. In the order of 20% of contract growers may leave the industry given the industry's current surplus capacity. This can be equated to the loss of in the order of 146 jobs (i.e. 20% of current grower employment, estimated at 729[17]).

This is an overestimate of the net employment impacts since with expansion of production of the remaining growers this employment loss would be offset to some extent. At the same level of production the net employment loss would depend on the difference between the average employment coefficient for growers that would leave the industry (estimated for contract growers at 6.1 jobs per million birds) and the marginal employment coefficient associated with those growers that expand production (estimated here at half of the average employment coefficient). Based on these assumptions, with the loss of 20% of contract growers, but holding industry output level constant, there would be a net loss of in the order of 73 contract growing jobs. This estimated net job loss would be further offset by marginal job growth associated with expansion in production from lower prices i.e. the output effect. However, erring on the side of caution the full 73 jobs is assumed to be lost from the contract grower industry.

Under the continuation of the existing regulation this restructuring/rationalisation is assumed to occur in 2004 when contract renewals are considered. Under the other options, such industry restructuring/rationalisation is assumed to be fast tracked to 2002 and driven by lower prices paid to growers as well as increasing requirements for greater levels of investment, quality controls etc.

The economic and social cost of restructuring can be estimated in a number of ways. Economic and social costs of a rationalisation in the grower industry occur if displaced labour resources are not employed in equally productive alternative uses elsewhere in the economy (Streeting and Hamilton, 1991). In practice, it is likely that some displaced labour would readily move to alternative employment; others would find employment in a matter of weeks or months; and there would be still others that would join the pool of long-term unemployed.

A full assessment of the reemployment prospects for displaced workers was beyond the scope of this study. Although many permutations are possible, for the purpose of this analysis it has been assumed that 50% of net lost workers (i.e. 36 workers) would join the unemployment pool in 2004, with the proposed option and SA model seeing this impact brought forward to 2002.

The labour market model outlined in Appendix 3, implies that the ***economic*** cost of unemployment per displaced worker that joins the unemployment pool can be measured by the level of unemployment benefits together with personal income tax imputed for the average employee. Based on the wage used in the PIMC pricing model of $47,680, this is equivalent to $21,540 per person per annum that they remain unemployed.

[17] 1996 ABS statistics suggest 1021 employed in poultry meat growing. An estimated 71% of this is associated with contract growing.

"However, if those who are made unemployed suffer some form of trauma, or cause others in the community to suffer, because of their unemployed status, an analysis of economic efficiency would need to go beyond the producer surplus loss as a measure of the cost of unemployment. This extension would involve the estimation of people's willingness to pay to avoid the trauma created. These are non-market values" (Bennett 1996, p.16).

An alternative approach used by Streeting and Hamilton (1991) to account for the economic and social costs of unemployment was to include in the economic analysis the costs of a well-structured structural adjustment package for displaced workers. The rationale being that when structural adjustment packages are developed they are aimed at ameliorating both the economic and social impacts of job displacement by offering income payments, retraining, relocation subsidies and seed funding for new industries etc. The cost of such a package may therefore provide a proxy for the economic and social costs of unemployment. A recent example of a generous structural adjustment package for displaced workers is that provided in relation to the NSW native hardwood timber industry[18]. This package included:

- Special redundancy payments of 3 weeks wage for every year of employment;
- $5,000 training assistances;
- $7,800 apprenticeship allowance (over 78 weeks) for those taking up apprenticeships in other industries; and
- $20,000 relocation assistance.

For a worker earning an average wage of $47,680 and having been in the industry for 10 years, this is equivalent to $60,000. This figure has been used as proxy for the *economic* and ***social*** cost of unemployment and is likely to be an overestimate given that the forestry industry experience suggests that only in the order of 10% to 20% of displaced workers took up the full amount available.

Consistent with earlier discussions, the changed regulatory options are assumed to bring forward, by two years, the economic and social costs of unemployment.

Transaction costs

Under each of the three proposed regulatory options transaction and information costs will be incurred. Transaction costs include time, administration and travel costs associated with grower/processor contracting, operation of "third party bodies" such as the PMIC or PNGs, mediation and other dispute resolution activities, collection and tabulation of industry data, secretariat costs and so on. Not all costs are relevant for all regulatory options. Details of the economic resource costs associated with Current Legislation and estimated costs associated with the Proposed Legislation and the South Australian Model are contained in Appendix 4 and summarised in Table 5.3.

[18] A costing approach such as this in no way implies any NSW Government requirement or intention to provide a Structural Adjustment Package to the chicken meat industry. It is simply a means of including an estimate of the social cost of unemployment within the public benefit test.

Table 5.3 Transaction Cost Summary ($)

	Current Legislation	Proposed Legislation	SA Model
Year 1	84,000	274,000	283,000
Each Year Thereafter	84,000	262,000	218,000

Under a continuance of the current regulation, it is assumed that the existing cost of the PMIC and associated activities remain constant over the life of the legislation. For both the Proposed and the SA Model it is assumed that there is a "spike" in industry disputes following a change in the status quo which reduces over time.

5.4 Public Benefit Test results

At a central discount rate of 7% over 25 years the results of the public benefit test for each option is summarised below (Table 5.4).

Table 5.4 Public Benefits Test Results ($Million Present Value over 25 years)

	Current Legislation	Proposed Legislation	SA Model
Costs			
Loss in producer's surplus to growers from price decrease	67.0	-67.0	-67.0
Increase in transaction costs	1.6 to 2.1	-2.1	-1.6
Economic and social costs of unemployment	0.3	-0.3	-0.3
Total Costs	***68.9 to 69.3***	***-69.3***	***-68.9***
Benefits			
Gain in consumer's surplus to consumers/processors/retailers from price decrease	-67.0	67.0	67.0
Increase in consumer's surplus from increased output	-0.8	0.8	0.8
Increase in producer's surplus from increased output	-1.7	1.7	1.7
Increase in producer's surplus from cost efficiencies	-9.4	9.4	9.4
Total Benefits	***-78.9***	***78.9***	***78.9***
Net Benefits	***-9.6 to -10.1***	***9.6***	***10.1***

In summary, it is estimated that there is likely to be in the order of $9.6 million to $10.1 million in net public benefits over 25 years from moving to the Proposed Legislation and SA Model options, respectively. There is little to distinguish these options, with the SA Model option outperforming the Preferred Legislation option simply because of assumptions of slightly lower ongoing transaction costs. Conversely, continuation of the current legislation would result in net public costs of $9.6M to $10.1M over 25 years compared to a more deregulated price setting approach. The net public cost over ten years is between $6.2 million and $6.4 million.

5.5 Sensitivity testing

The analysis results provided above are based on a number of assumptions regarding the physical consequence of options as well as assumptions relating to the value of economic impacts. Physical assumptions include:

- 2% growth in chicken production over time;
- changing regulations brings forward the economic and social costs of unemployment by 2 years;
- changing regulations brings forward productivity gains to growers by 2 years and ensures that 100% of gains are achieved, compared to only 75% of these gains under continuation of the regulation;
- Wholesale elasticity of demand of –0.77 with a more inelastic demand for contract grown chickens of –0.32;
- Direct contract grower employment of 729 full time equivalents;
- Net employment loss under changed regulatory options of 73.
- 50% of net displaced workforce would remain unemployed for a more than temporary a time period.

Economic value assumptions include:

- average price of 52.04c per bird under the existing regulation:
- average price of 4c lower under changed regulatory options;
- average cost of production at 40.49c per bird under regulation (excluding normal return on investment);
- productivity improvements of 4% possible within the industry with 75% of the potential 4% productivity improvement after 2004 achieved as a result of industry rationalization from selective contracting;
- economic and social cost of unemployment of $60,000 per person;
- additional transaction costs under proposed option of $274,000 in year 1 followed by $262,000 pa thereafter;
- additional transaction costs under the SA model of $283,000 in year 1 followed by $218,000 pa thereafter.

Sensitivity analysis was undertaken making 50% changes in individual assumptions. The results are reported in Table 5.5.

Table 5.5 Sensitivity Testing for 50% change in major parameters used in the Public Benefits Test ($M Present Value over 25 years)

Assumptions	Net Public Benefit (Cost) ($M)		
	Current legislation	Proposed Legislation	SA Model
4% discount rate	-12.6 to -13.3	12.6	13.3
10% discount rate	-7.8 to -8.0	7.6	8.0
1% annual growth in demand	-8.8 to -9.2	8.8	9.2
3% annual growth in demand	-10.5 to –11.0	10.5	11.0
Derived elasticity of demand of –0.16	-8.4 to –8.8	8.4	8.8
Derived elasticity of demand of –0.48	-10.9 to -11.3	10.9	11.3
Employment loss of 109	-9.5 to –9.9	9.5	9.9
Employment loss of 36	-9.7 to –10.2	9.7	10.2
75% of those who lose jobs remain unemployed	-8.7 to –9.1	8.7	9.1
25% of those who lose jobs remain unemployed	-10.5 to –11.0	10.5	11.0
Price per bird reduces by 2c	-8.3 to –8.8	8.3	8.8
Price per bird reduces by 6c	-10.9 to –11.3	10.9	11.3
2% productivity improvement with 75% of productivity improvement after 2004 attributable to contract renewal process	-4.8 to –5.3	4.8	5.3
6% productivity improvement with 75% of productivity improvement after 2004 attributable to contract renewal process	-14.4 to –14.8	14.4	14.8
Social and economic costs of unemployment equal $90,000 per person	-9.5 to –9.9	9.5	9.9
Social and economic costs of unemployment equal $30,000 per person	-9.7 to –10.2	9.7	10.2
Transaction costs increase by 50%	-6.5 to –7.5	6.5	7.5
Transaction costs decrease by 50%	-11.1 to –11.4	11.1	11.4

In addition, the Review Oversighting Committee requested sensitivity analysis of a number of additional scenarios put forward by grower or processor representatives, including:

- average price per bird increasing to 57c under the continuation of the existing regulation with average price under changed regulations options of 48.04c;
- productivity improvements of 6% possible within the industry, due to higher feed conversion, higher consistency of product, less mortalities and so on, with 50% of the potential 6% productivity improvement after 2004 achieved as a result of industry rationalisation from selective contracting;
- a price inelastic demand for chickens leading to no output effect;
- average price 6c per bird lower in the initial year of changed regulation options, with price rebounding to 4 c lower on average from year 1 onwards;
- An extra 5% reduction in contract grower numbers as a result of the changed regulation options;
- Industry rationalisation and associated productivity improvements that does not occur until 2004 i.e. price deregulation does not bring forward industry rationalisation;
- Changed transaction cost assumptions. Refer to Appendix 4.

Results for these additional sensitivity tests are summarized in Table 5.6.

Table 5.6 Additional Sensitivity Testing of Parameters ($Million Present Value over 25 years)

Assumption	Net Public Benefit (cost) ($M)		
	Current Legislation	Proposed Legislation	SA Model
57c per bird price under the base case with 9c price reduction under changed regulation options	-13.8 to -14.3	13.8	14.3
6% productivity improvement with 50% of productivity improvement after 2004 attributable to the price reduction	-23.3 to –23.7	23.3	23.7
No output effect	-7.1 to –7.6	7.1	7.6
Average price per bird 6c lower in the initial year of deregulation rebounding to 4c lower in from year 1 onwards	-9.7 to –10.2	9.7	10.2
An extra 5% reduction in the grower industry size	-9.5 to -10.0	9.5	10.0
Industry rationalization and associated productivity improvements don't occur until 2004 i.e. price deregulation does not bring forward industry rationalization	-6.3 to –6.8	6.3	6.8
Pessimistic transaction cost assumptions	-9.7 to –10.1	9.7	10.1
Optimistic transaction cost assumptions	-9.2 to –10.0	9.2	10.0

The sensitivity analysis indicated that both changed regulatory options had positive net present values under all sensitivity analysis scenarios. Indeed the results of the analysis were insensitive to radical changes in individual assumptions such as zero underlying growth in chicken production, no output effects (i.e. inelastic demand) and doubling of social and economic costs of employment. The variable that the results are most sensitive to is changes to assumed productivity improvements. Potential grower productivity improvements assumed in the analysis are considered by Hassall & Associates to be quite conservative. Nevertheless, leaving all other assumptions the same, even the assumption of no productivity gains to growers results in the proposed and SA model options having a positive net present value.

5.6 Social welfare and equity considerations, including community service obligations

While there are likely to be net benefits from the proposed and SA model options, compared to continuation of the existing regulation, it is important to note the very large distributional implications.

One of the major impacts that will result from deregulation is a redistribution of wealth between growers and end consumers of in the order of $67.0 million net present value, or more than $4.8 million per annum. While there are numerous consumers of chicken with this gain in consumer surplus representing in the order of 4c per chicken (liveweight) i.e. 12% of the retail price of chicken, the loss in producer's surplus to growers will be focused on the existing 318 growers and represents 10% of existing prices paid to growers and a large slice of annual grower profits, forcing a share of growers from profit to loss.

Grower rationalisation will be fast tracked with in the order of 20% of growers being forced from the industry while those growers that remain in the industry will benefit from increased production levels (from both a redistribution of output from those growers that leave the industry as well as the output effect from a decrease in price), economies of scale and hence lower average production costs per bird.

Associated with fast tracking of industry restructuring will be economic and social costs associated with displaced workers. However, these costs borne by some workers can be considered to be a change in timing rather than impacts that would not otherwise occur.

Moves to deregulation would benefit government to some extent since it would obtain cost savings associated with reduced transaction costs. Growers and processors may have additional transaction costs as a result of the alternative regulatory options.

Community service obligations are not relevant under the Act.

5.7 Government legislation and policies relating to ecologically sustainable development

The four central tenants of Ecologically Sustainable Development (ESD) are the Precautionary Principle, Intergenerational Equity, Conservation of Biological Diversity, Ecological Integrity and Improved Evaluation/Pricing of Environmental Resources. Of potential relevance to this study is conservation of biological diversity and ecological integrity. Historically, outbreaks of emergency diseases such as Newcastle Disease and Avian Influenza have been confined to strains that have not effected native birds and wildlife. Therefore, there seems little risk to ESD. However, it is possible that mutations or imported strains of these diseases may result in risks to native birds and wildlife in the future and therefore pose a threat to biological diversity and ecological integrity. The following discussion expands on this scenario, even though there is no evidence for it thus far.

The argument has been advanced by growers that changes to regulation will reduce prices paid to growers and grower incomes, and force growers to find cost of production savings. One avenue of cost of production savings might well be measures that effect farm hygiene and the industry's bio-security. On-farm cost cutting might include failure to maintain farm hygiene and quarantine ie use of foot-baths, appropriate fencing and chlorination of the birds water supply. Under these conditions more regular outbreaks of endemic diseases such as E coli and Hepatitis and emergency diseases such as Newcastle Disease and Avian Influenza may occur.

Furthermore, the existing Legislation ensures that there is a current and effective list of growers and their production conditions to facilitate management in the event of an emergency disease outbreak.

The parallel argument is about environmental "pollution" or impacts. This argument relates mainly to the disposal of litter and dead birds. Once again, it could be argued by growers that following deregulation (or weak legislation) the cost of dead bird and/or litter disposal would not explicitly be covered in the contract price and this would encourage marginal growers to cut corners and implement something less than best practice environmental management.

The arguments to counter these claims are that:

(i) There are marginal operators who cut corners under any of the legislation scenarios and the industry (including grower representatives) can point to a number of substandard operations within the industry at the current time;

(ii) More significantly, the economic analysis of options is predicated on the understanding that changes to regulation will drive high cost and substandard operators from the industry more quickly than under a continuation of the status quo. That is, there will be a lessening in the number of sub standard operations rather than an increase;

(iii) Processors have a very high stake in securing a consistent supply of disease free birds and insist as a condition of grower supply that contracts include adherence to animal health guidelines – self regulation based on self interest. It is not in the processors' interest to have either supply interruptions caused by disease or regulatory disruptions caused by grower infringement of environmental law. As such, processors have introduced contractual obligations for farm hygiene practices and bio-security; and

(iv) Finally, it is likely that over time EPA and local government regulation of environmental practice, especially in peri-urban areas will continue to tighten and sub standard disposal of litter and birds will not be tolerated.

On balance it would seem that there are other regulatory mechanisms whose primary objective is the maintenance of bird health, bio-security, bio-diversity and pollution control and that movement to either the Preferred option or the South Australian model will not result in a dramatic change to risks to wildlife and avian disease or environmental contamination[19]. The retention of an up-to-date list of growers, their location and practices for management of disease outbreaks is good practice. It is recommended that under whatever Legislative environment is finally adopted that this list be maintained by either a PMIC style body or NSW Agriculture.

5.8 Government legislation and policies relating to matters such as occupational health and safety, industrial relations, access and equity

Government legislation and policies relating to matters such as occupational health and safety and industrial relation remain unchanged under either of the regulatory options. Access and equity issues have been addressed under the Public Benefits Test.

[19] NSW Farmers' Contract Poultry Growers contend that the risks of emergency diseases will increase because of lowered health hygiene, that results from cost cutting in response to a lower price. Reduced hygiene would result from reduced cleansing and disinfection (due to reduced labour or reduced chemical applications), lower water treatment, lower vaccination, or from an improper disposal of dead birds. Higher disease risks would comprise of an increased frequency, increased mortality and loss of production. Further, there could be significant time lags between changing regulation and disease events. Processors reject these assertions and propose that it is in everyone's economic interests to maintain bird health.

5.9 Interests of rural and regional communities, regional development, employment and investment

The poultry farming (meat) and poultry processing industries are located in a number of regions within NSW, most notably the Far North Coast, Tamworth, Maitland Central Coast, Western Sydney, Goulburn and Riverina (Table 5.7, Figure 5.2).

The location of this economic activity is largely determined by siting of processing facilities with farming activity located in reasonably close proximity, essentially within 100kms of a processing facility. Processors report a general move away from Western Sydney towards Central Coast and Southern Highlands/Goulburn regions.

Poultry farming (meat) and poultry processing industries contribute to regional economic activity with this economic activity normally measured in terms of direct and indirect output, value-added, income and employment.

In the absence of undertaking specific economic modelling of the different regional economies, the only readily available data on the regional economic contribution of the poultry farming (meat) and poultry processing industries is direct employment. Based on 1996 census data sourced from the Australian Bureau of Statistics, the following employment profile by region was developed.

Table 5.7 Employment by Region

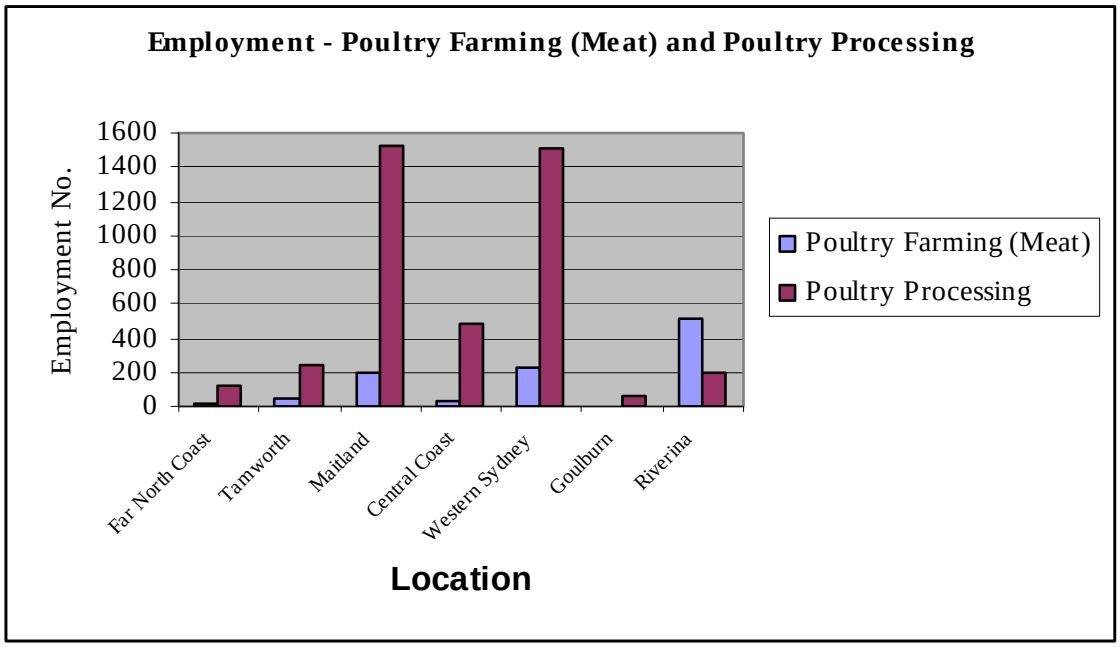
Region	Poultry Farming (Meat)	Poultry Processing
Far North Coast	11	117
Tamworth	42	237
Maitland	194	1523
Central Coast	25	482
Western Sydney	224	1512
Goulburn	6	53
Riverina	519	192
TOTAL	**1021**	**4116**

The most notable features of this data are that:

- of the 7 regional locations of the industry, Central Coast/Maitland[20], Western Sydney, and to a lesser extent Riverina are the main hubs of activity;
- Regional employment in poultry processing was in the order of 4 times that of employment in poultry farming (meat);

[20] Central Coast and Maitland have been joined together since there are no processing facilities actually located on the Central Coast. Employment in poultry farming (meat) and poultry processing in the Central Coast most likely service Maitland processors.

Figure 5.2: Employment by region



Based on productivity and employment ratios in the 1996/97 National Input Output Table for the poultry farming sector and meat processing sector[21] this direct employment data can be used to provide an indication of the contribution the industry makes to direct regional output, value-added and income. This is reported in Tables 5.8 and 5.9.

Table 5.8 Poultry Farming Contribution to Regional Economic Activity

	Empl. No.	Output ($M 1996)	Value added ($M 1996)	Income ($M 1996)
Far North Coast	11	1.628	0.561	0.209
Tamworth	42	6.216	2.142	0.798
Maitland	194	28.712	9.894	3.686
Central Coast	25	3.700	1.275	0.475
Western Sydney	224	33.152	11.424	4.256
Goulburn	6	0.888	0.306	0.114
Riverina	519	76.812	26.469	9.861
TOTAL	**1021**	**151.108**	**52.071**	**19.399**

Poultry processing is a more significant contributor to regional economies in terms of direct employment, output, value added and income than poultry meat farming.

The size of flow-on effects as measured by regional multipliers is a function of among other things the structure and size of a regional economy. The greater the size of an economy and the more diverse its structure the greater the prospect for industries and their employees to purchase required goods and services within the region and hence the greater the regional multipliers.

[21] These estimates are indicative only since the poultry farming sector includes both eggs and meat while the meat processing sector includes other meat processing.

Table 5.9 Poultry Processing Contribution to Regional Economic Activity

	Empl. No.	Output ($M 1996)	Value added ($M 1996)	Income ($M 1996)
Far North Coast	117	25.974	5.031	3.276
Tamworth	237	52.614	10.191	6.636
Maitland	1523	338.106	65.489	42.644
Central Coast	482	107.004	20.726	13.496
Western Sydney	1512	335.664	65.016	42.336
Goulburn	53	11.766	2.279	1.484
Riverina	192	42.624	8.256	5.376
TOTAL	**4116**	**913.752**	**176.988**	**115.248**

An upper limit on potential regional flow-on effects for the poultry farming (meat) and poultry processing industries are the NSW multipliers for the parent sectors within which these industries are located. Type 11A output, value added, income and employment multipliers for the NSW poultry farming (meat and eggs) and meat and meat products processing sectors are provided in Table 5.10[22]. However, regional multipliers are likely to be in the order of half or less of the size of these based on previous studies. This is because smaller regions have more expenditure leakages to other regions resulting in weaker intra-regional linkages and hence multipliers.

Table 5.10 Multiplier Impacts Associated with Growing and Processing Activities

	Poultry Farming (Meat and Eggs) Type 11A Ratio Multiplier	Meat Processing Type 11A Ratio Multiplier (inclusive of poultry farming sector)
Output	2.7	2.9
Value added	3.2	3.9
Income	3.8	4.6
Employment	2.6	5.6

Moves towards a more deregulated environment for the poultry meat industry are likely to speed up rationalisation of growers. Given estimates of the surplus capacity in the grower sector rationalisation may involve in the order of 20% of growers.

However, offsetting the rationalisation of growers i.e. closure of grower farms and associated loss of output, value-added, income and employment, will be expansion of remaining contract grower output.

This expansion of the economic activity of remaining growers is likely to have a mixed effect on measures of regional economic activity:

- Output levels of remaining growers would expand to at least the same output levels that prevailed prior to rationalisation, and probably to greater output levels (refer to output effect discussed in Section 5.2).

[22] These multipliers have been generated from an actual input-output table for NSW that was in turn generated from the ABS 1996/97 national input table.

- The pre-deregulation output level would be achieved with lower levels of employment (and hence income) since the marginal employment ratio associated with expansion of remaining growers would be lower than the average employment ratio associated with growers who cease production. However, this employment (income) reduction (at the same levels of output) may be offset to some extent by employment (income) associated with increased levels of production (i.e. output effect discussed on Section 5.2).
- There would be an indeterminate effect on value-add (as measured via profit plus income paid to labour) as profitability decreases then increases with adoption of new technology and economies of scale and with an indeterminate net effects on labour income (depending on marginal versus average employment ratios and the size of the output effect).

While the net regional effects of grower rationalisation is difficult to determine, the economic model used in this analysis, and the above rationale, tends to suggest that with offsetting output effects there may be only small negative regional effects. With these mainly relating to direct employment effects (together with associated income effects and contribution to value added effects).

The regional economies most susceptible to any reductions in grower employment numbers will be those where grower employment make up the largest relative contribution to the workforce. Based on 1996 ABS employment data, grower employment was found to be a relatively minor contributor to employment in all the LGAs within which grower employment is located i.e. contributing less than 1% of employment. The exception is Griffith SLA where grower employment contributed in the order of 4.75% of the workforce. However, this employment is not contract grower employment but part of the processors own grower operations and hence is largely quarantined from the grower rationalisation that will result under a more deregulated environment and instead subject to internal firm policy.

Given that on a regional scale changes in grower employment levels are at most likely to be in the order of between 0% to 30% of less than 1% of regional employment levels, regional economic impacts of rationalisation are likely to be minimal. In addition, the regulatory options are only predicted to bring forward rationalisation by two years rather than actually increase the impacts.

If a processor, for whatever reasons, perceive opportunities in NSW to be less desirable than other States where there are different regulations, the outcome may be processor rationalisation. Any processor rationalisation is likely to have a much greater impact on regional economic activity than grower rationalisation, since processor rationalisation would involve losses of processor employment (which is four times that of grower employment) as well as grower employment[23].

[23] The general trend being observed by processors, which may be masked by the above analysis, is an increase to using contractors rather than employed staff. However, changing regulations is not likely to influence this trend.

With regards to investment, under changes in the regulations in NSW, processors claim that they would invest more in plant upgrades, presumably to increase throughput and efficiency. This is probably attributed to a perceived increase in throughput as well as flexibility. There could be an argument made that flexibility under the changed regulations to processors could in turn stimulate investment in the growing sector (fewer and larger farms). Growers indicated that they were being forced to invest in new technology (mainly Tunnel Ventilation sheds) and that there was an issue of being able to afford to do so should their prices fall. However, the growers that cannot afford such investment are likely to be the ones that leave the industry during rationalisation.

5.10 Imbalance of power

The primary intent of the *Act* was determined by the review group to be the avoidance of abuse of market power by processors of growers. The primary way that the Act would restrict competition was determined to be the approval of agreements between growers and processors by the PMIC and the determination of the standard growing fee.

However, imbalance of market power between growers and processors is not market failure in the sense referred to in the NCP guidelines. That is, this imbalance does not reduce the efficiency of the operation of the market. This is discussed below in the context of monopoly and monopsony markets.

Many stakeholders mistakenly refer to the relationship between processors and growers as one where the processor has a regional monopoly power. The follow-on from this is that the processors are able to exert market power in their relationship with growers which results in some form of market distortion or market failure that needs to be remedied via legislation.

However, a monopoly is a type of market structure characterised by:

- a single ***supplier*** selling to many buyers;
- there being no close substitutes for the monopolist's products; and
- barriers to entry and hence it is not possible for a new firm to enter the market.

As a result of this unique situation:

- monopoly price exceeds the competitive market price; and
- monopoly output is less than the competitive output.

Consequently, monopolists are able to secure above normal profits and these market distortions/failures result in economic efficiency losses.

However the situation for poultry meat industry is very different to that of a monopoly. Instead of the monopoly situation of a single ***supplier*** selling to many buyers, we have the situation where in any particular region there may be many suppliers/growers that are selling to a single buyer/processor. That is, there is a ***buyer*** concentration in intermediate production rather than a seller concentration at the final market. This is referred to as a monopsony.

In the retail or wholesale poultry meat market, price is set by the interaction of supply and demand and this price is essentially one prevailing in a competitive market. That is, there are a number of processors/suppliers responding to market demand.

A characteristic of monopsonists, however, is that they will attempt to bid down the price paid to its suppliers to the minimum they are willing to accept. Minimum willingness to accept will generally equate to covering of fixed and variable costs together with a normal return on investment. Anything lower will lead to growers leaving the industry. This is essentially the same outcome that prevails in a competitive market. Hence there are no market distortions as a result of monopsony behaviour and unlike a monopolist, above normal profits can not be made by processors since they themselves compete with other processors to supply wholesale and retail markets. Processors rely on a secure supply of grown chicken; and growers located near their plants possess the skill and capital infrastructure to provide growing services. This indicates some interdependence that provides a basis for reasonable contract terms and conditions.

While monopsony power does not lead to market distortion but instead drives efficiency in the production of suppliers, any monopsony power is reduced where suppliers have more than one potential buyer for their produce. For contract growers, more than one potential buyers exists in all but two of the regions where the poultry meat industry is located i.e. Tamworth and North Coast[24]. In all other locations, growers potentially have at least two potential buyers for their produce. The consequence is that there is potential for these growers to earn greater than normal profits because of diminished monopsony power of processors. This potential may be diminished where facilities are dedicated and processors have different processing requirements.

This conclusion is similar to the Victorian review, i.e., *"imbalances in negotiating strength between parties to commercial relationships are not uncommon. Also, the outsourcing of specific manufacturing functions to smaller businesses, which are essentially dependent on a particular manufacturer for financial viability, is not an uncommon commercial situation. Many outsourcing relationships exhibit these characteristics and remain viable without special statutory intervention. The protection afforded by the TPA against anti-competitive or unconscionable conduct by processors further reduces the need for legislated contract terms"* (KPMG 1999). Consequently the presence of regional monopsonies or duopsonies is not considered sufficient argument for regulatory intervention in price setting.

5.11 The interests of consumers generally or of a class of consumers

The cost benefit analysis has shown that consumers gain from either the Proposed Regulation or the SA Model through increased consumption of chicken meat and consumers/processors and retailers gain from a decrease in price paid for chicken meat. The extent to which consumers rather than processors and retailers capture the gain from lower chicken meat prices is unclear. Estimates in other States of the proportion captured by consumers fluctuate between 50% and 100%. Regardless of how the gain is split between consumers and processors/retailers, it is fair to say that the savings to individual consumers will be relatively small. Growing fees currently account for 5-10% of the retail price, and reductions forecast under either of the deregulation options are in the order of 12%. This means that should all of the lower price be passed through to consumers, that reductions will be less than 1% of retail price. In retail terms, reductions are approximately 3c/kg. The change is insignificant to individual consumers when considered against regular movements of up to 25% in the retail price of chicken meat.

[24] In Griffith, where there is only one processor, growing is not contracted.

5.12 The competitiveness of Australian business

Under current World Trade Organisation (WTO) agreements, counties who have sanitary and phytosanitary barriers to trade in agricultural commodities are being asked to justify these barriers with Import Risk Assessments (IRA). Where barriers to the import of agricultural produce can not be justified objectively on quarantine grounds the WTO is ruling that the barrier be removed.

With these rules in place and IRA's being conducted for a wide range of Australian agricultural industries, it is conceivable that within the next three to five years that an IRA might show that importation of chicken meat is a low risk to Australian quarantine. Importation of chicken meat may then occur from countries with a low cost of production. Thailand, Brazil and the USA are possible sources of supply. This is likely to exert downward force on prices.

At the current time, international benchmarking of chicken meat production (Instate and Heilbron, 1997) indicates that Australia is in the middle range of international competitiveness and hence would not be able to resist imports on a price basis. It is essential that constant gains in productivity be made. While the grower cost of chicken meat production is a relatively small percentage of final product cost, all costs need to be controlled. Improvements in growing management and technology need to be encouraged and immediately adopted. Processors argue that the current laborious and artificial process of price and condition setting does not auger well for the long term competitiveness of the chicken meat production business in NSW, especially in the context of imports.

5.13 The efficient allocation of resources

Issues in relation to the efficient allocation of resources are covered through the core Public Benefit Test.

5.14 Summary of findings from the Public Benefit Test

Application of the Public Benefits Test to the NSW Poultry Meat Industry Act 1996 has shown a net gain to the NSW community of present value $9.6 million for the Proposed Legislation and $10.1 million for the SA Model. Conversely, continuation of the current legislation would result in net public costs of $9.6M to $10.1M compared to a more deregulated price setting approach. Other significant PBT considerations are summarised in Table 5.11.

Gains to economic efficiency, the competitiveness of industry and potentially to consumers need to be weighed alongside the social welfare and equity considerations of either changed regulatory option. The differences between regulatory options are not considered to be major.

Table 5.11 Public Benefit Test considerations and findings

Public Benefit Test Consideration	Finding
Social welfare and equity considerations	Significant and adverse consequences for wealth distribution away from NSW contract growers.
Interests of rural and regional communities	Insignificant for loss of grower employment, significant if processors decide to dis-invest.
Ecologically sustainable development	No net loss to bio-security or the environment.
Interest of consumers	Very small, positive impact for individual consumers. Large aggregate impacts.
Competitiveness of Australian business	Improves industry efficiency and its capacity to compete with other states and imports.
Allocation of resources	More efficient outcome.
Occupational Health and Safety, industrial relations	No impacts.

6. DISCUSSION

6.1 Alternatives to achieving the objectives of the Act

The five options contained in the initial review by the NSW Agriculture (1999) appear comprehensive. Reviews in other States have not identified any additional options to provide countervailing powers to the growers, the main objective of the *Act*.

Both the options considered in this review are transitional arrangements to deregulation, by allowing collective bargaining in some form (and hence provide some countervailing powers to growers). Further protection is offered by the options in the form of standards of behaviour and contract conditions that can provide a basis for effective management of relationships within the industry. Under either option, growers should have an ability to act independently of any authorised collective arrangement if they choose to do so.

Growers contend that their ability to prevent market power abuse (or unconscionable conduct) under the Trade Practices Act will be diminished, compared to the current situation, because the onus of proof will be on the grower and he/she does not have access to market information nor the legal resources of processors. It is already seen as difficult to counter charges of "negligence" made by processors against growers. In addition, "coercion" is claimed to happen easily – by processors delaying bird placement, withholding or delaying of funds for batches, or manipulating inputs provided to growers. For these reasons, growers argue for an increase in Regulation to better define arbitrative and dispute resolution procedures.

Growers also contend that the Act could or does address other forms of market failure, such as provision of market information, negotiation of disputes and addressing externalities such as biosecurity[25]. However, should the Act want to address these issues then it would be appropriate to use other mechanisms than to rely on a price setting or contract approval mechanism.

NSW Agriculture (1999) suggest the NSW Government fund, for a three year period, independent consultants to assess the growing costs for growers in each of the processor negotiating groups. This would provide growers with a reference point from which they may wish to negotiate. This would address the supposed market failure in accessing information.

In addition, a coherent argument can be mounted that growers need to improve skills, especially in relation to negotiation and business planning, under all the regulatory options. Growers already have access to training through FarmBis which can be considered to be a sufficient incentive.

[25] Regardless of whether the Act is retained or not, for biosecurity reasons grower lists should be maintained by a PMIC style body or NSW Agriculture.

PMIC agree with the desirability or inevitability of reducing numbers of growers, increasing farm size and converting to tunnel sheds[26]. Some reduction of numbers will occur by natural attrition (retirement, etc) and other reductions when contracts expire in 2004. An industry restructuring grant has originally been ruled out by PMIC, however, a different incentive that might be considered are grants to upgrade technology. A strong case would need to be mounted for this because it would distort financial markets as well as penalise those growers that have already converted.

A different non-regulatory option that processors and growers can pursue is through the processors "share-leasing" of growing facilities. This is likely to suit some growers but not others. The option is not suited to regulation.

[26] Not all processors will insist on tunnel sheds.

7. CONCLUSIONS

The application of the Public Benefits Test to the NSW Poultry Meat Industry Act 1986 and its options has shown a net gain over 25 years to the NSW community of $9.6 million for the Proposed Legislation and $10.1 million for the South Australian Model of collective bargaining with ACCC Authorisation. This is equivalent of saying that the current Act has a net public cost of between $9.6 and $10.1 Million over 25 years. The net public cost over ten years is between $6.2 million and $6.4 million.

The major findings are:

- *Social welfare and equity considerations.* Both options have major distributional consequences and result in a redistribution of wealth from growers to processors/retailers and consumers of $67 million. This gain is likely to be spread between processors, retailers and a very large number of consumers. The loss, on the other hand, will be concentrated on a smaller number of existing growers (318 individual operations) and will account for 10% of existing prices paid to growers and a large portion of annual grower profits, forcing a share of growers into unsustainable loss. Consequently the anticipated grower rationalisation that is expected to occur in 2004, when the majority of contracts expire, will be fast tracked with approximately 20% of growers being forced from the industry. Those growers that remain in the industry will benefit from increased production opportunities (additional throughput and market growth). As a result of industry restructuring there will be economic and social costs associated with displaced workers, including farm owners, who will lose their employment sooner than would have been the case under current legislation.
- *Interests of rural and regional communities*. Growing and processing of chicken meat occurs in the Far North Coast, Tamworth, Maitland, Central Coast, Western Sydney, Goulburn and Riverina region of NSW. In all cases grower employment accounts for less than one percent of total employment in the relevant Local Government Area (LGA). The exception is Griffith LGA were grower employment accounts for 4.75% of the workforce. However, Griffith-based growers are company employees and should be largely quarantined from the anticipated grower rationalisation. Hence, regional economic impacts of rationalisation are likely to be minimal. Processors are more significant employers in the regions and their decisions to invest or dis-invest are more likely to impact regional economic activity in NSW. Processor rationalisation is expected to occur, but not to be influenced by changes to current legislation. Grower employment losses have been factored into the Public Benefit Test.
- *Ecologically sustainable development.* Potential issues to do with bio-security breaches and poor environmental management practices are best addressed with other regulatory and self-regulatory tools. No net loss from changing regulations is expected to bio-diversity or the environment. There are no perceived increases in risk of exotic diseases attributable to changing regulations. It is noted that growers disagree with this finding.
- *Interests of consumers*: The cost benefit analysis has shown that consumers gain from either the Proposed Legislation or the SA Model through increased consumption of chicken meat and consumers/processors and retailers gain from a decrease in price paid for chicken meat. Should all the reductions forecast be passed through to consumers, the reductions will be less than 1% of retail price, or approximately 3c/kg. The change is

insignificant to individual consumers when considered against regular movements of up to 25% in the retail price of chicken meat.

- *The competitiveness of Australian business*: Either option to change regulation will favour the competitiveness of NSW business, as it will improve the overall efficiency of both the growing and processing sectors. The changes mean that the industry is better able to compete with interstate and, if imports are eventually permitted, overseas competitors.
- *Allocation of Resources*: Changes to regulations are anticipated to result in a more efficient allocation of resources.
- *Occupational health and safety, industrial relations*: Changes to regulations will not impact these issues.

In summary, gains to economic efficiency, the competitiveness of industry and potentially to consumers need to be weighed alongside the social welfare and equity considerations of either option for changed regulations. There is a net public benefit to changing the legislation. However, experience from the deregulation of the dairy industry suggests that:

- The short term impacts of rationalisation can be severe. Anticipated longer term benefits are often overlooked;
- The flow on impacts to rural communities can be significant, where the industry is a significant contributor to local economic activity (as with dairy);
- Mergers between processor following deregulation can reduce the level of competition;
- Supermarkets hold market power over the processors, who reduced milk price to gain/maintain market share. Lower milk prices can then be forced onto growers [milk prices to growers are anticipated to recover as contracts between supermarkets and processors are renegotiated];
- Younger people can be forced off the farm and the age structure of the industry changed;
- When acting individually, difficulty can be experienced by farmers in determining what is a “fair market price”.

These lessons need to be kept in mind, however, there is a limit to which the two situations can be compared, especially given the differences in their size and characteristics.

The Public Benefits Test revealed that the differences between options for changing the regulations are not major. Both alternative options provide growers with countervailing powers through the provision of collective bargaining. It is noted that growers contend that the level of protection is not sufficient.

The benchmarking analysis has shown there are differences between growing and processing between the States and that NSW is less efficient for some of the benchmarked parameters. It needs to be remembered that minor differences in an efficiency parameter can translate into major differences in industry profit because of the large throughputs involved. It is difficult to ascribe any of the observed differences, beyond grower fee, to differences in regulation.

8. STUDY REFERENCES AND CONTACTS

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8.2 Persons contacted as part of the study

NSW
Gerry Bolla, Secretary Poultry Meat Industry Committee NSW Agriculture Poultry Officer
Dr Joanne Sillince, Director Poultry Meat Industries NSW Farmers Executive Officer, Australian Chicken Growers Council Ltd
John Cordina, Cordina Farms Chicken P/L
John Camilleri, Baiada Poultry P/L
Ian Dunn, Penrith Poultry
Ashley Ethington, Bartter Enterprises P/L
Mark Fitzgerald, Sunnybrand
John Hexton, Inghams Enterprises P/L
John Velcich, Red Lea P/L
Growers (names witheld)
Other States
Ed O'Loughlin, Economist, Agriculture WA
Stewart Clarke Project Manager, Trade and Development, Agriculture WA
Bill Giles, Principle Industry Consultant, Meat PIRSA
Matthew Rintoul, Qld DPI
Terry Truscott Vic NRE
Andrew Cooney and Craig Purcell, Regulatory and Business Environment, Tasmanian DPIEW
John Clarke Victorian Farmers Federation
Malcom Taylor, Chairman, Vic Broiler Industry Negotiating Committee
Terry Packard WA Broiler Association
Peter Halloran Qld Chicken Growers Assoc
Laura Fell, South Australian Growers Group Representative

APPENDIX 1: REGULATORY ENVIRONMENTS IN OTHER STATES

South Australia

The following notes were developed with discussion and review by Bill Giles Principle Industry Consultant , Meat at Primary Industries and Resources South Australia (PIRSA).

The South Australian poultry meat industry consists of 75 growers and 4 processors of significant size. In 1994 Primary Industries South Australia released the *Review of the Poultry Meat Industry Act, White Paper*. This paper outlined the South Australian Government's intention to deregulate the chicken processing industry by repealing the *Poultry Meat Industry Act 1969* (PMIA).

The PMIA established the Poultry Meat Industry Committee (PMIC). The PMIC has advisory, problem resolving and production control responsibilities. Its specific functions are the approval of chicken growing farms and agreements (contracts) between growers and processors, resolving disputes between growers and processors and providing a Ministerial referral advisory service. Processors with no contract growers and growers who produce less than 10,000 chickens a year are not subject to the legislation.

The *Poultry Meat Industry Act 1969 Repeal Bill* was passed by the Lower House of the South Australian Parliament, however, because the Bill was delayed in the Upper House, it has not been repealed. The PMIC and the Poultry Meat Industry Act has been inoperative since early 1997 when concerns of contravention of the Trade Practices legislation became apparent.

Processors were in favour of deregulation and the major concern of the growers was that if legislation were repealed they would be in a weaker bargaining position with processors when negotiating growing fees and contracts.

Following several discussions and at the request of growers the Minister appointed Mr Des Cain, a former Ingham general manager in WA, to review the relationship between growers and processors in SA and to identify options for maintaining equitable arrangements between growers and processors following review of the Act. His conclusion was that a Code of Practice be developed it was suggested this could include an Authorisation from the Australian Competition and Consumer Commission (ACCC).

With the announcement of the move towards deregulation, both Inghams and Steggles lodged applications with the ACCC seeking authorisation concerning possible breaches of section 45 of the *Trade Practices Act 1974*. Both applications relate to the collective negotiation of contracts and were authorised because it was satisfied that the anti-competitive effects of the proposed arrangements were outweighed by the public benefits and that the arrangements facilitated the transition from a regulated industry to a deregulated scheme.

The Code of Practice proposes a two-tiered industry structure consisting of:

- Tier 1 - a Statewide PMIC supporting…
- Tier 2 - individual Processor Negotiating Groups convened and operating under the Code.

The roles and responsibilities of the proposed PMIC includes the following:

- Act as a convening body for establishing processor negotiating groups
- Recommend standard criteria for drawing up processor to grower agreements
- Set non-financial standards on matters as the Committee believes are in the best interests of the industry
- Recommend non-binding financial standards on such matters as the Committee believes are in the best interest of the industry but excluding growing fees.
- If requested, mediate in disputes arising out of the Processor Negotiating Groups.
- Advise the Minister on any matter related to the poultry meat industry.
- Act as an industry forum for collection and dissemination of information
- Review and make recommendations to the Minister on matters pertaining to the operation of the regulations/act.

The proposed Code insists that there is an agreement between a grower and a processor for the supply and receiving of broiler chickens for processing and that the processor notifies the PMIC of the existence of all such agreements within 2 months.

There has been more action in the last 12 months when the growers became concerned that 2002 was approaching rapidly and there was no action to put something permanent in place. In addition, under the Competition Principles Agreement (CPA) the existing Act had to undergo a Public Benefits Test or be repealed. It was agreed to defer the PBT review until it was resolved whether a new Act was to be initiated.

Currently the PMIC-equivalent is inoperative and any price regulation is through the ACCC authorisation. In the case of the smaller companies, that do not have authorisations, it is understood that there are no formal arrangements nor an operating grower fee model.

No formal research has been undertaken to assess the impact of the lack of the PMIC on cost of production or the price paid per bird.

Queensland

The following notes were compiled with the assistance and review by Matthew Rintoul, Queensland Department of Primary Industries (DPI).

The Queensland chicken meat industry consists of approximately 110 growers and 4 processors and is regulated by the *Chicken Meat Industry Committee Act 1976.* This Act was last reviewed in 1997 with amendments to legislation incorporated in 1998.

Prior to 1997 review, the Act provided for arrangements between processors and growers for the growing of meat chickens from day old chickens to marketable age for processing. The intention of the Act was to provide the industry with a mechanism for discussion and negotiation on the growing fee in an orderly manner while leaving the industry as unfettered as possible.

The 1997 review ruled that it was no longer compulsory for growers to participate in group negotiations with processors in order to establish a set price authorised by the Chicken Meat Industry Committee. The new legislative arrangements authorised the collective negotiation of contracts at the individual processor negotiating group level.

The 1997 review has resulted in the development of a closer commercial relationship between growers and processors where processors have the ability to reward efficient growers whilst obtaining a more consistent product. There is however, some anecdotal evidence to suggest that smaller growers have had their contract renewal threatened since the outcomes of the review.

The current situation is similar to the proposed option detailed in NSW Agriculture (1999). There has not been any data collected in order to assess whether price paid and cost of production has changed since deregulation.

A grower fee is determined by grower negotiating groups every 6 months. This negotiation takes place without a formalised or standardised mode but does take into account costs such as electricity, litter and labour (Pers Comm Peter Halloran, Qld Chicken Growers Association).

Western Australia

Notes on the Western Australian experience have been prepared with the assistance and review of Stewart Clarke and Ed O'Laughlin (Agriculture Western Australia).

The chicken meat industry in Western Australia is regulated by the *Chicken Meat Industry Act (1977-82).* The Act was introduced in order to countervail a perceived source of imbalance in market power between growers and processors.

The Western Australian Industry supports two main processors and approximately 50 growers. An industry price for growers is set by The Chicken Meat Industry Committee (established under the Act, consisting of 7 members: independent chair, 2 processor representatives, 2 grower representatives and 2 independent people) with a growing fee established by a grower fee model.

In July 1996 the Minister for Primary Industry established a Review Committee to examine the Act. The Committee submitted a report to the Minister in November 1996. The report concluded that changes to the existing Act should not be substantial. This resulted in the Committee recommending that the Act be extended by regulation pending another report specifically designed to address National Competition Policy.

A National Competition Policy review of the Act commenced in 1997 and was submitted prior to the end of 1998. Amendments to the Act through the Acts Amendment and Repeal (Competition Policy) Bill are yet to be finalised and therefore the final report is not yet public. Further, Western Australian growers have requested that all growers be in contracts before amendments are signed off. The Minister has agreed to this request.

As of today, the Act and Regulation are continuing and no decisions have been taken on the recommendations of the review. Any changes in Regulations will not impact on existing contracts. One prospective amendment, yet to be considered, is the option for producers and processors to agree on a price independently of the deliberations of CMIC. The Committee under this amendment will still have a general negotiating role but not stipulate price. All other aspects are expected to closely resemble the current arrangements.

Victoria

Notes on the Victorian experience have been developed with input and review by Terry Truscott, Victorian Natural Resource and Environment (Vic NRE)

The chicken meat industry in Victoria consists of approximately 200 growers and 8 to 10 processors. The Victorian industry is regulated by the *Broiler Chicken Industry Act 1978*. Under this Act, the Negotiation Committee makes recommendations to the Minister with respect to the terms and conditions which should be included in contracts; determines disputes between growers and processors; and determines the price which is to be the standard price for broiler chickens to be paid by processors to growers. The legislation provides for a variation in the standard growing fee provided the proposed variations are approved by the Committee.

A National Competition Policy review of the Act was completed in 1999/00. The review concluded that the Broiler Chicken Industry Act 1978:

- Does not address market failure in the relevant market;
- Has the implicit objective of changing power relations between growers and processors and redistributing income to growers;
- Creates restrictions on competition that are not necessary to achieve the stated objectives; and
- Imposes costs on the community that are likely to exceed the benefits.

The review concluded that restrictions on competition cost the Victorian public $2.8 million per annum. The review recommended the repeal of the Act and its replacement by ACCC authorisation of collective negotiation between individual processors and their growers rather than processors and all growers (price determination related to specific groups rather than average of all growers). In order to facilitate a smooth transition to a less regulated market with ACCC authorisation the standard 6 month notification period regarding a processors intention to roll over a grower contract has been extended to 12 months.

The Victorian Chicken Meat Committee (VCMC) and the growers' organisation, the Victorian Farmers Federation (VFF) submitted directly opposed views on the costs and benefits of the restrictions. The VCMC quantified the costs as far exceeding the benefits. The VFF did not acknowledge any restrictions existed, argued that there were no costs and that the benefits of the legislation were substantial.

Since the review recommendations were released, processors have sought ACCC authorisation (requested on 28th June 2001 and ratified on the 24th July 2001) however growers have requested that the old legislation be retained with an exemption from Section 51 of the Trade Practices Act. Further, the Victorian Farmers Federation Chicken Industry Group has taken action in the Federal Court regarding the ACCC authorisation. In an attempt to maintain stability in the industry, the Victorian Government has proposed that the current legislation stay in place to underpin the industry.

As many of the structural changes related to the review are currently occurring, there is no way of making conclusions on the long term advantages and disadvantages to growers or processors.

Costs and benefits of regulation and deregulation options

The VCMC and the growers' organisation, the Victorian Farmers Federation (VFF) submitted directly opposed views on the costs and benefits of the restrictions. The VCMC quantified the costs as far exceeding the benefits. The VFF did not acknowledge any restrictions existed, argued that there were no costs and that the benefits of the legislation were substantial. It did not provide a quantification of the claimed benefits.

Consumers are estimated to 'lose' from the current arrangements due to a transfer to growers of the order of $8.5 million. In the context of annual wholesale sales revenue for Victorian chicken processors of over $500 million, this is relatively minor. In the context of the value of total retail sales it is also minor.

Growers obtain a significant *private* benefit as recipients of a transfer estimated to be around $7 million, thus representing about 17 per cent of their combined gross fee income of $42 million.

The losses through lower productivity that may be engendered by the current system drive the estimation results. The productivity assumptions incorporated in the model account for an estimated loss to processors of about $1.3 million. This amount is not significant in the context of processors' current total production costs of the order of $330 million per annum. The estimated reduction in output resulting from the SGF being higher than a competitive market fee is about 58,000 birds per annum. This represents less than one per cent of the annual contract bird grow-out.

Balancing these impacts, and taking into account the assumed benefits of lower transaction costs, the net cost to the community is estimated to be of the order of $2.8 million per annum. The sensitivity of the estimates to certain assumptions was also tested. Alternative assumptions involving elimination of productivity gains, a lower economic rent value or a more inelastic demand for chicken meat were made. The assumed improvements to productivity are critical to the quantification of the public costs of the present arrangements. Other variables appear to make little difference to the analysis, except to alter the transfer between consumers and growers.

Tasmania

Tasmania has a unique industry with only 10 growers and 1 processor (Inghams) (NSW Agriculture (1999). Tasmania, Australian Capital Territory and the Northern Territory do not have an equivalent Poultry Meat Industry legislation to NSW, WA, Qld and Victoria. In Tasmania there never has been legislation which regulates the contractual obligations between growers and processors. However, recently Inghams have applied for ACCC authorisation to undertake collective negotiations with Tasmanian contract growers.

APPENDIX 2: DIAGRAMMATIC REPRESENTATION OF KEY ASSUMPTIONS

Figure 1 Prices Paid to Growers

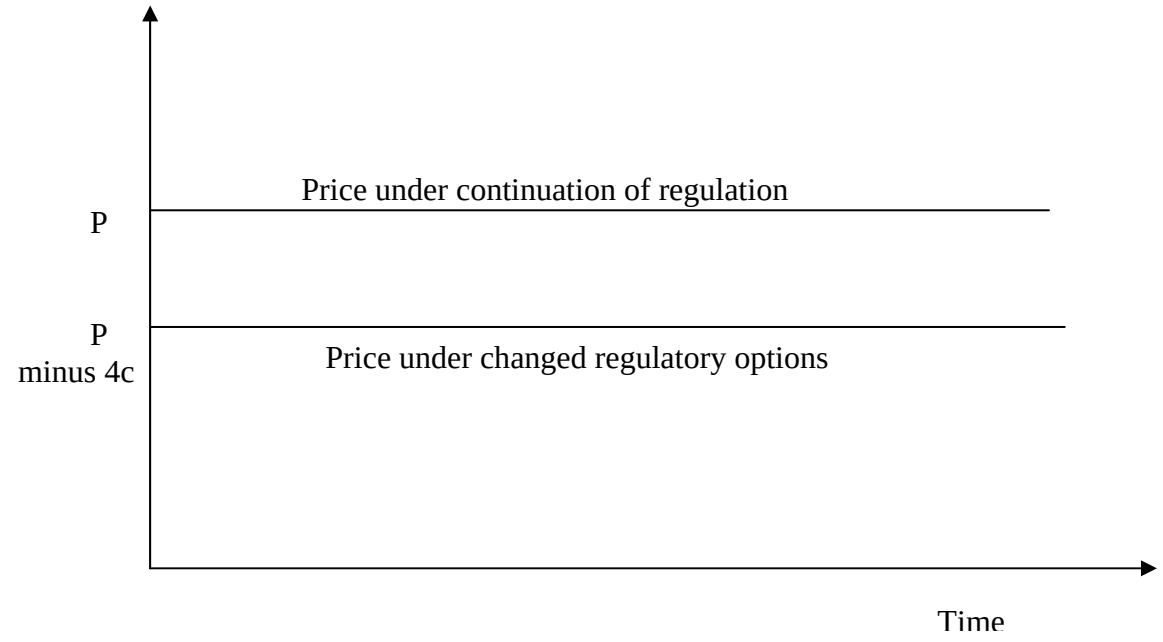


Figure 2 Industry Rationalisation and Grower numbers

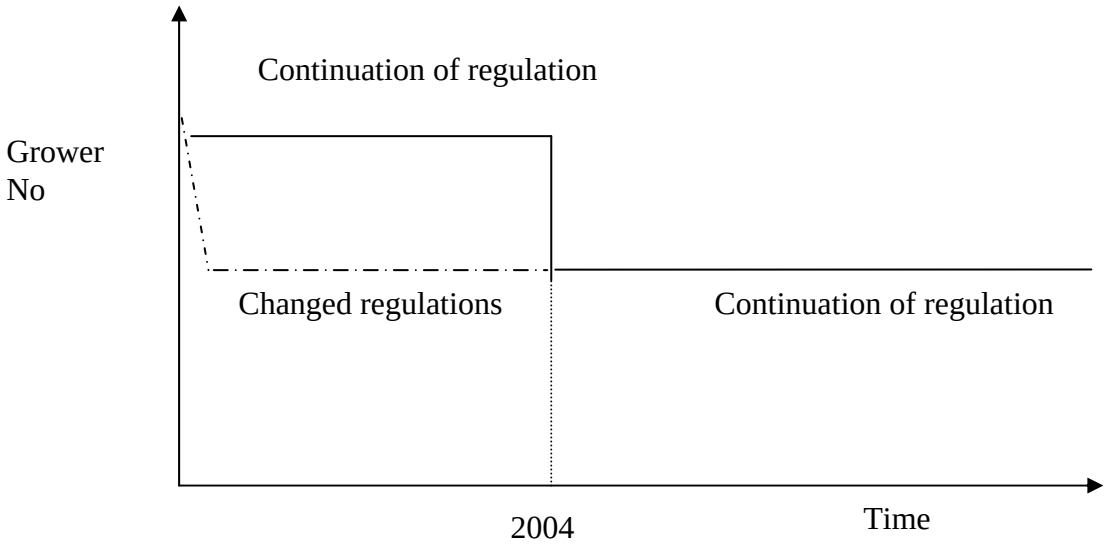


Figure 3 Productivity Improvement

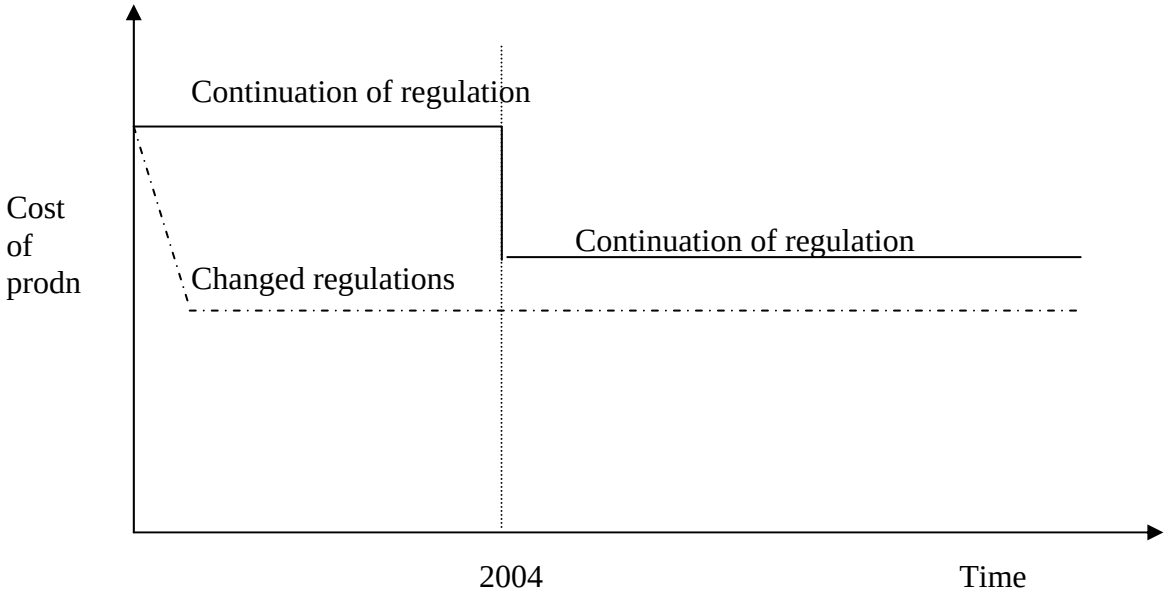
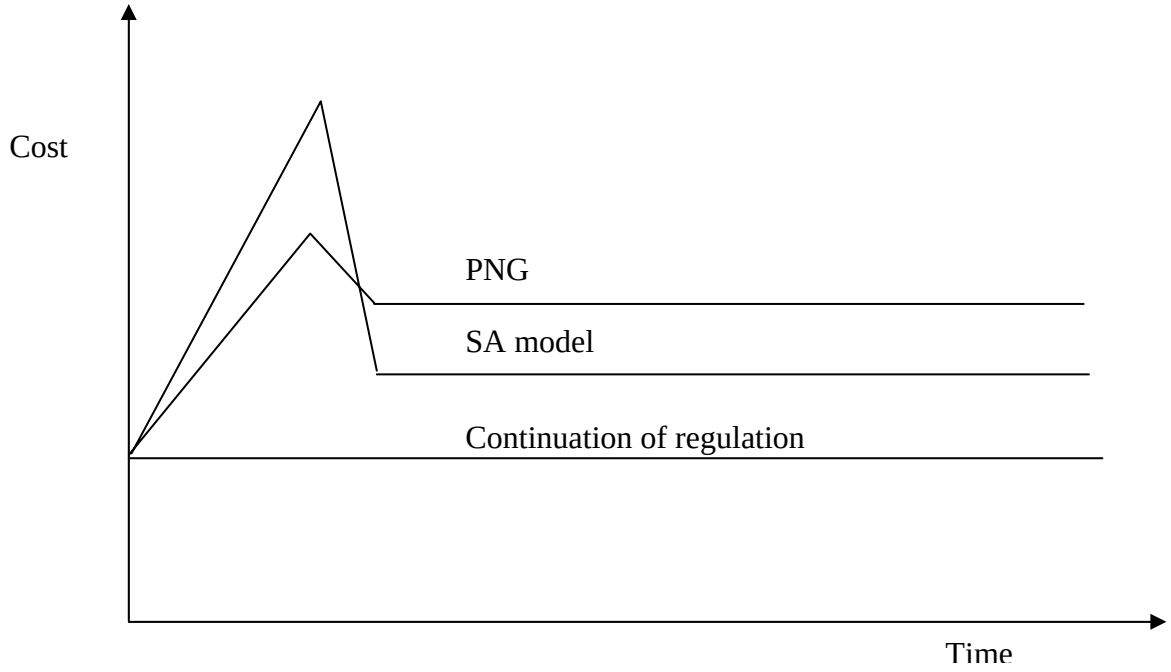


Figure 4 Transaction costs



APPENDIX 3: SHADOW PRICING OTHERWISE UNEMPLOYED RESOURCES

The opportunity cost of otherwise unemployed labour is the value of that labour's next best activity. This is usually leisure activity. The value of that leisure activity can be determined using the simple model of wage determination set out by Streeting and Hamilton (1991). Given that the wage rate (w) paid must be sufficient to compensate workers for their foregone leisure (l), the social security payments foregone (d) and tax payments (t), then:

$$w = l + d + t$$

A simple rearrangement of this equation enables us to conclude that:

$$l = w - d - t$$

This implies that the opportunity cost of employing a worker who would otherwise be unemployed is the wage rate less income tax paid on that wage and any foregone social security payments.

Hence, the cost to the community from a resource re-allocation that involves the shutting down of a productive activity is equal to the producer surplus that was derived from the employment of that input, given that the costs of production are adjusted downward to reflect that the proportion of wages paid to otherwise unemployed people is net of taxes and social security payments.

It is critical to note here that social security payments made to the unemployed and foregone tax revenues are in themselves NOT costs of the resource re-allocation. This is because they are transfer payments made within the community and are not reflections of real resource use costs to the community. They do not represent any increase or decrease in the community's well-being in total. They are included in the calculation of producer surplus foregone only because they enable the calculation of the value of foregone leisure.

Some studies (for example, Streeting and Hamilton, 1991) separate out the "unemployment factor" from the other components of the producer surplus. That is, the difference between the wage rate and the value of leisure foregone for those that would be otherwise unemployed, ie $[w - (w - d - t)] = - (d + t)$, is taken to be the contribution to the producer surplus made through the employment of labour.

Source: Bennett (1996: p15).

APPENDIX 4: TRANSACTION COST ESTIMATES

Information on current transaction and information costs was compiled with the assistance of Gerry Bolla, Secretary of the NSW PMIC. Costs are an attempt to recognise the economic values of resources employed, including the non paid time contributed by grower and processor interests. Therefore, costs associated with grower and processor members are included at the opportunity costs of their time ($30/hr[27] or $250 day) rather than their annual sitting fee ($1,200 pa). The PMIC consists of fifteen members, including an independent chairman, two independent members, six processor members and six grower representatives. In addition, the PMIC includes a part time Secretary whose position is funded by NSW Agriculture. The costs of the PMIC are met by the industry through a levy on compulsory contracts ($122 per contract). The PMIC deals with all facets of the administration of the Act including:

- Setting guidelines for the drawing up of agreements between processors and growers;
- Approving the forms of agreement (contracts);
- Determining prices to be paid for designated poultry;
- Settling disputes between processors and growers; and
- Making reports or recommendations to the Minister on matters relating to the poultry meat industry (Poultry Meat Industry Act 1986).

Table 1 provides an estimate of transaction and information costs under the Current Legislation. Estimates are thought to be average but may be more consistent with a more active year for the PMIC.

Table 1: Current Legislation - Transaction and Information Economic Costs

Stakeholder	$ per annum
Growers	
PMIC Meetings – Full Committee ie 6 Growers	
Four to six Full Committee meetings pa (say 5), of 1 day (including preparation and travel time) @$250 per day (opportunity cost of time) by 6 growers	$7,500
Travel cost to full committee meetings ($133 per meeting, 6 growers, 5 meetings pa)[28]	$3,990
Sub Committee Meetings	
Two to six Sub Committee meetings (say 4), of 1 day (including preparation and travel time) @$250 per day (opportunity cost of time) by 2 grower members	$2,000
Travel cost to sub committee meetings ($133 per meeting, 2 growers, 4 meeting pa)	$1,064
Dispute Resolution Sub-Committee	
Two meetings pa of the Dispute Resolution sub committee, say days(incl. preparation and travel) @$250 per day (opportunity cost of time), 2 grower representatives.	$1,000
Travel cost to meetings ($133 per meeting, 2 growers, 4 meeting days pa)	$1,064
Miscellaneous communications with Growers regarding PMIC deliberations	
Say $200 (written communication NSW Farmers contract poultry group)_	$200
Total cost of grower participation	$16,818

[27] NSW Farmers Contract Poultry Group suggest $14/hr for grower's time. This seems low for processors, however, and the same rate is applied for both growers and processors.

[28] NSW Farmers Contract Poultry Group suggest growers share vehicles and this in turn would lower the travel costs presented here.

Table 1: Current Legislation - Transaction Costs (Cont.)

Processors	
Processors attend the same meetings, in the same numbers as growers to ensure equity in representation. There costs are therefore estimated on the same basis as growers.	
PMIC Meetings – Full Committee ie 6 Processor Representatives	$11,490
Sub Committee Meetings	$3,064
Dispute Resolution Sub-Committee	$2,064
Miscellaneous communications with Processors regarding PMIC deliberations	$200
Total cost of processor participation	$16,818
Independents	
Chairman costs – attendance at Full Meetings, Special Meetings and Dispute Resolution Meetings, including sitting fees and preparation costs ($10,000) plus travel costs (5 Full Committee meetings, 4 Sub Committee meetings and 2 Dispute Resolution meetings (11 meetings at $133 per meeting)	$11,463
Two Independent Members attending Full Meetings, Sub Committee Meetings and Dispute Resolution meetings, including sitting fees and preparation costs (two by $5,000) plus travel costs (5 Full Committee Meetings, 4 Sub Committee Meetings and 2 Dispute Resolution Meetings (11 meetings at $133 per meeting by two independent members)	$12,926
Total cost of independents	$24,389
Secretariat, Administration and Legal Costs	
NSW Agriculture Employee time (assumes approximately one quarter of total employee activities and includes an allowance for on costs)	$20,000
Elections of Grower Representatives – payments made to the State Electoral office ($1,000 every two years), cost of advertising for six processor representatives for the PMIC ($500 every two years)	$750
Administration costs including mail, telephone/fax, morning teas/lunches, databases, etc	$2,000
Legal Branch NSW Agriculture advice various issues and gazettal of grower fees (4 half days at $1,500/day)	$3,000
Total cost of secretariat, administration and legal	$25,750
Total Transaction and Information Costs – Current Legislation	**$83,775**

Estimated total transaction and information costs under the Current Regulation are therefore approximately $84,000 per annum. These costs are assumed to remain constant throughout the analysis period.

Transaction and Information Costs – Proposed Legislation

Under the Proposed Legislation transaction and information costs will include:

- Operation of the PMIC under a new terms of reference, excluding price setting;
- The operation of Processor Negotiating Groups to oversee contract agreements and fee setting;
- Contracting costs for growers and processors;
- Dispute resolution costs; and
- Additional information generation and dissemination costs.

Indicative costs for these items are developed below, along with necessary assumptions due to the uncertainty of how the Proposed Legislation will impact the cost items.

PMIC Costs

The revised PMIC would deal with:

- Preparation of a code of practice and contract guidelines;
- Establishing third party arbitration procedures;
- Appeals for cancellation of contracts; and
- As a referral point for non price disputes.

In order to analyse these costs the following assumptions are made, the revised PMIC would:

- Have the same membership as currently convened ie 6 growers, 6 processors and 3 independents (it is noted that this assumption appears excessive, but used so ass not to underestimate transaction costs);
- Retain a NSW Agriculture funded Secretary with similar time and administration cost commitments; and
- Meets a total of 6 times per year, down from an average of 12 at the current time (NSW Farmers Contract Poultry Group indicate more than 6 meetings likely in the first year).

The PMIC cost under the Proposed Legislation is therefore:

- Meeting cost of 15 people by 1 day (including preparation and travel) at $250 per day by 6 meetings is $22,500 plus travel costs ($133 per meeting by 15 people by 6 meetings) which is $11,970. A total meeting cost of $34,470; and
- Secretariat and administration costs $24,389.

Processor Negotiating Group Assumptions

Under the proposed Legislation PNG's deal with price setting, throughput negotiations and other bird supply determination arrangements. The following assumptions are made:

- Price negotiation is undertaken once every 12 months;
- 11 PNGs are established (NSW Farmers Contract Poultry Group estimate based on separate negotiating groups for geographic regions and tunnel shed growers);
- PNG consists of between 23 and 29 growers (population of between 256 and 320 divided into 11 groups) and 1 processor representative;
- Negotiations take 1 day including preparation, meeting and travel time;
- PNG meeting cost is therefore, say 40 growers/processors by 1 day by $250/day by 11 groups, a total of $110,000 per annum; and
- PNG travel cost is estimated at 40 growers/processors by 1 day by $133/day by 11 groups or $58,520.

Contracting costs

Contracting would no longer be covered under the PMIC. It is assumed that existing contracts together with PMIC guidelines are used as the basis of new contracts. The following assumptions are made:

- Contracts have a duration of 5 years (NSW Farmers Contract Poultry Group suggest contract length could vary anywhere between 1 batch and 8 years);
- The current contract is used with relatively minor variations that necessitate review by an external solicitor;

- Contracting costs for growers are 320[29] contracts by one hours legal time at $200 hour every 5 years or $12,800 per annum[30]; and
- Contracting costs for processors are determined on the basis of a relatively homogenous[31] contract for each of the 11 processing groups requiring one hours legal time for checking, approximately $440 per annum.

Dispute Resolution Costs

Under the Current Legislation, price and non-price disputes are solved through the PMIC with reference to third party arbitration if necessary. Third party arbitration is rarely used and the Proposed Legislation makes provision for arbitration. At the current time the Dispute Resolution Sub-Committee of the PMIC deals with an average of two disputes (NSW Farmers Contract Poultry Group written advice). For the purposes of this analysis it is assumed that the number of disputes increases from two to four under the proposed legislation. Disputes increase in this way in the first year of the Proposed Legislation's operation, as growers and processors become accustomed to the new operating environment, and then return to current levels thereafter (ie 2 per annum)[32]. The cost per dispute is equivalent to the resources used to settle a dispute in the current PMIC ($5,745 per dispute ie 1 day for the equivalent of 15 PMIC members at $250/day plus travel costs for 15 people at $133 each). The total cost of dispute resolution is therefore $22,980 in the first year of the Proposed Legislation's operation before falling to $11,490 thereafter.

Information Gathering and Dissemination

While it is proposed that the PMIC will retain a secretariat under this option, collation and dissemination of industry information will be more difficult. Information on price will not rest with the PMIC and PMIC members together with the relevant Minister will need to remain informed. The NSW Farmers Poultry Meat Group (July 1998) suggest an annual additional cost of $10,000 and this amount is adopted for the analysis[33]. It is in addition to costs incurred by the PMIC. The cost is incurred by the industry.

These costs are summarised in Table 2.

[29] Upper limit estimate of grower numbers, not adjusted for those who will leave the industry. This assumption has been used so as not to underestimate transaction costs.

[30] NSW Farmers Contract Poultry Group suggest that the first contract will be more expensive to negotiate.

[31] While NSW Farmers Contract Poultry Group suggest that a homogenous contract would be evidence of collusion and contrary to the provisions of the Trade Practices Act, similar contracts are suggested given that existing standard contracts would be the logical starting point for new documents.

[32] Processor representatives on the Project Steering Committee reject the assertion that disputes will increase under the Proposed Regulation and point to a lack of disputes in other deregulated States. The assumption is tested with sensitivity analysis.

[33] NSW Farmers Contract Growers Steering Committee suggest this figure could be double this allowance.

Table 2: Proposed Legislation - Transaction and Information Economic Costs

Item	$ per annum Year 1	$ per annum Subsequent Years
PMIC		
PMIC Meetings including travel	34,470	34,470
Secretariat and administration	24,389	24,389
Processor Negotiating Groups		
PNG Meetings including travel	168,520	168,520
Contracting Costs		
Contracting costs for both growers and processors	13,240	13,240
Dispute Resolution Costs		
Arbitration of disputes	22,980	11,490
Information Gathering and Dissemination		
Industry costs- growers and processors	10,000	10,000
Total Transaction and Information Costs – Proposed Legislation	**273,599**	**262,109**

Estimated total transaction and information costs under the Proposed Regulation are therefore approximately $274,000 in year 1 and $262,000 per annum thereafter.

Transaction and Information Costs – South Australian Model

Under the South Australian model the following assumptions and estimations are made in relation to transaction and information costs:

- Costs are not incurred in relation to a PMIC;
- Costs are not incurred in relation to PNGs, processors are able to negotiate on price either individually with growers or collectively through ACCC exemptions. Given the willingness of processors to seek ACCC exemptions for collective bargaining in South Australia, it is assumed that this would also occur in NSW under the same regulatory environment. Costs of negotiating price agreements under deregulation and a system of voluntary collective bargaining arrangements are therefore the same as assumed for negotiating through formalised PNGs.
- Contracting costs for growers and processors are incurred as per the Proposed Legislation.
- A new cost, employment of negotiators/advisors to work with growers and processors to negotiate commercial arrangements (prices, throughputs, etc) is incurred. It is assumed that the same number of negotiating groups (11 groups) are formed as under the Proposed Legislation and each negotiation takes 1 day at $1,500 per day, a total of $16,500 per annum.

- Dispute resolution costs change under this option. The absence of a PMIC, established in part to solve disputes, it is argued, encourages growers and processors to seek external intervention and incur resource costs in dispute resolution. In the absence of an established body for resolving disputes, it is argued, growers and processors negotiate a consensus agreement between themselves. However, as with the Proposed Legislation, there is an initial adjustment period where growers and processors become accustomed to the new operating environment. In this first year following deregulation there are the same number of disagreements as with the Current Legislation (ie 2 disputes) but their cost to settle is much higher. One dispute is settled through a Department of Fair Trading Action ($25,000 per dispute, see NSW Farmers Poultry Meat Group, 1999) and the remaining dispute is solved through litigation ($40,000 per dispute, see NSW Farmers Poultry Meat Group, 1999). Under this option the total cost of dispute resolution is $65,000 in the first year. Following the first year disputation subsides and, rather than being an additional cost with third party involvement, becomes part of the cost of normal price and condition setting negotiations in the absence of PNG and PMIC arrangements.
- Additional information generation and dissemination costs are incurred as per the Proposed Legislation plus the costs of information collection and dissemination previously undertaken by the PMIC under the Proposed Legislation. A total annual allowance of $20,000 is made.

From the above assumptions, transaction and information costs under deregulation are summarised in Table 3.

Table 3: SA Model - Transaction and Information Economic Costs

Item	$ per annum Year 1	$ per annum Subsequent Years
PMIC	0	0
Price Setting Negotiations in the absence of a PNG *PNG Meetings including travel*	168,520	168,520
Contracting Costs *Contracting costs for both growers and processors*	13,240	13,240
Employment of Negotiators/Advisors Use of external negotiators	16,500	16,500
Dispute Resolution Costs *Arbitration of disputes*	65,000	0
Information Gathering and Dissemination *Industry costs - growers and processors plus functions previously undertaken by the PMIC*	20,000	20,000
Total Transaction and Information Costs – SA Model	**283,260**	**218,260**

Estimated total transaction and information costs under the Deregulation proposal are therefore approximately $283,000 in the first year and 218,000 per annum thereafter.

It is worth noting that the Queensland Review Report (page 55) estimated that in a deregulated state total transaction and information costs would increase by between $230,000 and $340,000 per annum, the equivalent of $2,090 to $3,090 for each of the 110 growers in Queensland. The increase in transaction and information costs estimated here for NSW under the South Australia Model in Year 1 $283,000 or $880 per grower.

Sensitivity Testing of Transaction Costs

The cost estimate with the highest level of uncertainty is dispute resolution. It is not possible to estimate with any real accuracy how negotiations will pan out under either of the two analysed legislation options. Processors argue that disputes will decrease due to the closer relationships and greater reliance on negotiating a contract. NSW Farmers' Contract Poultry Group argue that disputes may increase due to the lack of certainty offered by the changed environment and absence of the PMIC role and that they would become more expensive to settle. The lack of certainty prompts the construction of sensitivity testing to be focused on "optimistic" and "pessimistic" scenarios for dispute resolution costs. Critical assumptions regarding the number and cost of disputes under the three options analysed are summarised in Tables 4 and 5.

Table 4: Sensitivity Test Assumptions – Dispute Resolution (Dispute Numbers)

	"Pessimistic" Assumption	Core Assumptions	"Optimistic" Assumption
Proposed Regulation • All disputes cost $5,745 when settled through the PMIC	Year 1: 7 Year 2 on: 7	Year 1: 4 Year 2 on: 2	Year 1: 2 Year 2 on: 1
South Australian Model • One dispute needs to go to litigation at $40,000, others to Fair Trading at $25,000	Year 1: 4 Year 2 on: 0	Year 1: 2 Year 2 on: 0	Year 1: Year 2 on: 0

Table 5: Transaction Costs under Optimistic and Pessimistic Scenarios

	"Pessimistic" Assumption	Core Assumptions	"Optimistic" Assumption
Proposed Regulation	Year 1: $291,000 Year 2 on: $291,000	Year 1: $274,000 Year 2 on: $262,000	Year 1: $262,000 Year 2 on: $256,000
South Australian Model	Year 1: $333,000 Year 2 on: $218,000	Year 1: $283,000 Year 2 on: $218,000	Year 1: $243,000 Year 2 on: $218,000