AUSTRALIAN PORK LIMITED

Submission #3

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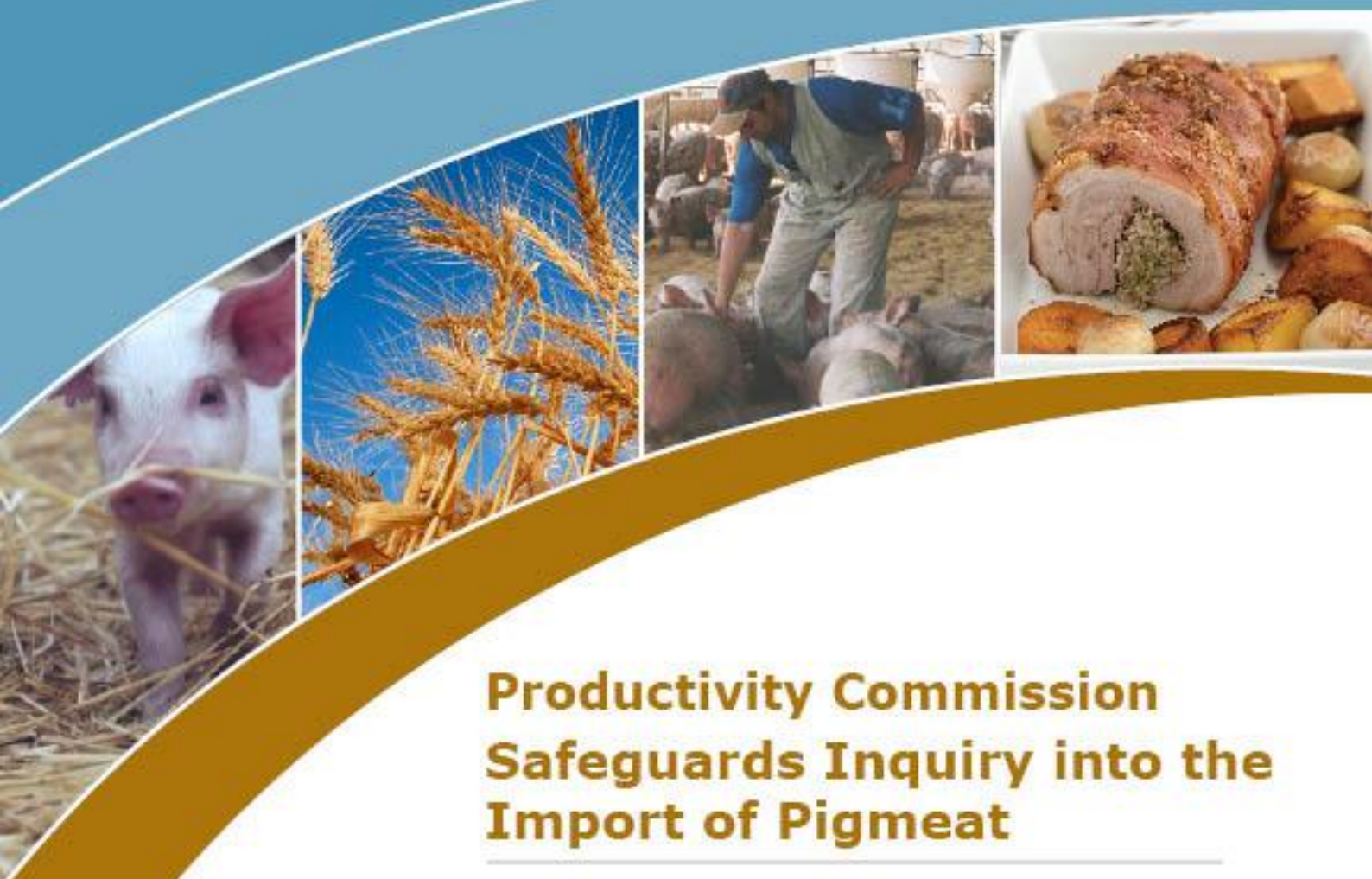


Productivity Commission Safeguards Inquiry into the Import of Pigmeat 2007

Australian Pork

Australian Government Productivity Commission

Australian Pork Limited Submission #3

Contents

Glossary

ABARE	Australian Bureau of Agricultural and Resource Economics
ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
AI	Avian Influenza
AMIC	Australia Meat Industry Council
ASCO	Australian Standard Classification of Occupation
ASEAN	Association of Southeast Asian Nations. Member states are Brunei, Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam.
AWBI	Australian Wheat Board International
BSE	Bovine Spongiform Encephalitis
CBOT	Chicago Board of Trade
CoOL	Country of Origin Labelling
CWE	Carcase Weight Equivalent
DAFF	Department of Agriculture, Fisheries and Forrestry
DE	Digestible Energy
DEST	Department of Education, Science and Training
EC	European Commission
EU	European Union
FE	Feed Efficiency
FMD	Foot and Mouth Disease
FOB	Free On Board
FREPA	Free Range Pork Farmers Association
FSANZ	Food Standards Australia New Zealand
FTA	Free Trade Agreement
GATT	General Agreement on Tariffs and Trade 1994
GM	Genetically modified
GRDC	Grains Research and Development Corporation
GVP	Gross Value of Production
HFC	Herd Feed Conversion
HFE	Herd Feed Efficiency
IWG	Implementation Working Group
IRA	Import Risk Analysis
MAT	Moving Annual Total
MT	Metric Tons
MDC	Market Development Committee
mn	million
NEPC	National Environment Protection Council
NPI	National Pollution Inventory
NRS	National Residue Survey
NVD	National Vendor Declaration
NZ	New Zealand
OH&S	Occupational Health and Safety
Paterson	Submission to the Productivity Commission Inquiry by NT & TM Paterson 23/11/2007
PMIP	Pork Market Improvement Program

PMWS	Post Weaning Multisystemic Wasting Syndrome
PC	Productivity Commission
Pork CRC	Pork Cooperative Research Centre
PRRS	Porcine Reproductive and Respiratory Syndrome
PST	Porcine Somatotropine
QA	Quality Assurance
RSPCA	Royal Society for the Prevention of Cruelty to Animals
SA	South Australia
SVD	Swine Vesicular Disease
SIV	Swine Influenza Virus
SOP	Standard Operating Procedure
US	United States
USA	United States of America
VACP	Value of Agricultural Commodities Produced
Windridge	Windridge Farms Submission to the Productivity Commission Inquiry by Windridge Farms 30/11/2007
WTO	World Trade Organisation

1 Executive Summary

While the PC's Accelerated Report made numerous positive findings including defining the domestic industry to comprise pig producers, concluding that this particular industry suffered serious injury, that there was sufficient evidence of increased imports and that the circumstances were unforeseen, it most notably rejected the provisional measures on the basis of a lack of causation.

However, the arguments raised by the PC with respect to lack of causation were worrying, unsatisfactory and at best mediocre. In brief, the PC produced a technically inadequate report. It was wrong in terms of its evidentiary standard in several key respects, in particular that imports had to be the only cause of injury, and not directly considering other forms of causation. It did not examine whether any part of the injury might have been caused by imports and too readily ascribed all injury to feed costs. APL's argument was that import prices did not cover feed cost increases, but *suppressed* domestic prices from passing on such costs. Logically, imports can serve to depress prices below what they otherwise would have been without depressing them in absolute terms relative to any particular time period.

Of further and significant concern to APL, and an essential factor which the PC failed to address, is that the Australian pig meat sector's foreign competitors are not attempting to pass on their own admitted significant feed grain prices, which in turn suppresses Australian domestic prices. The PC had evidence that foreign producers were reporting record cost increases and unprofitable sales. The PC did not ask why foreign producers could continue to sell at a loss.

The PC too simply ascribes the injury to increased Australian domestic feed costs without analysing foreign feed cost increases. Similarly, even on the PC's view as to the direction of causation, a conscious decision to retain market share unprofitably by foreigners, must be a causal factor and a relevant question under causation analysis.

The PC was made aware of the actual and potential foreign subsidies, yet failed to explore this in terms of a reason why the increases are not passed on by foreigners, which must be a relevant question under a causation analysis.

Importantly a provisional safeguard should address the *threat* from known government policy changes. The evidence before the PC was that some of these measures had already come into play. Foreign producers who know of a future subsidy, could easily factor that into price decisions now, temporarily bearing more of the grain cost increases to keep market share.

APL is concerned that the PC's legal test was inappropriate, unduly restrictive in terms of WTO jurisprudence, unduly restrictive in terms of the likely policy behind Article XIX, and also in terms of the practice of foreign authorities such as the US. Having said this, it is vital to reiterate that APL's concerns are not dependent on proving that the PC applied the wrong test; rather they simply did not apply it to the facts before it.

The PC revealed a position in principle which indicates it does not agree that restrictions on trade should be imposed in the manner provided for in the WTO Agreement on Safeguards. While failing to make a determination, it nevertheless drew conclusions which can be used by others to challenge any determination by the Government of the evidence of serious injury, thus arguably impeding the Government's capacity to exercise legal rights available to it under the WTO Agreement on Safeguards. While the Commission remains to complete the second part of its commissioned task, which is to see if the circumstances warrant imposition of normal safeguards, there is no reason to suppose it will, given that it has stated it does not accept the rationales behind the Agreement.

There is no doubt that the industry continues to suffer and forecasts show that this will not alleviate. APL's November 2007 Production Survey predicts that the total sow herd will be 240,000 in mid 2008. A figure such as this is consistent with the "overshoot" scenario since it will put pressure on fresh pork supply assuming export volumes remain stable. The reductions in the breeding herd and productive capacity of the industry will be permanently undermined as the critical mass of the industry required to rebuild and regain market share will be decimated.

Despite claims made in some submissions to the PC before the Accelerated Report relating to how import volumes should "normalise" over time down, the import volumes for November and December have risen continuing the trend upwards for moving annual total imports. Present pig prices received by producers continue to fail to cover costs of production by a significant margin, and a change to this with a supply reduction seems unlikely before May or June 2008. No significant relief for pig producers from grain prices is expected in this time.

Since 2004, the industry has worked to reshape itself, driving change where we have competitive advantages and strategically repositioning itself. However these efforts have been ameliorated by external events contributing to increased cost of production and rising imports. They do not reflect the integral improvements made via improved genetics, breeding, risk management and feed supply security.

As the PC is unlikely to support use of normal safeguards in its March report on this precedent, the Government will have to use other measures to support restructuring in the pork industry. One way or another, our government should seek to "level the playing field" if it is seriously concerned and wishes to help the industry.

The Pork CRC's programs target those variables which will provide the greatest return to investment to improve the global competitiveness of the Australian pork industry. To secure more reliable and consistent supplies of feed grain and energy for pigs, and thereby enhance the competitiveness of the Australian pork industry, the Pork CRC is seeking $2 million per annum over five years for targeted projects. Australia's research in this area is unique to the Pork CRC and additional funding would help ensure the outcomes of the research are further enhanced and made available to producers in all regions of Australia.

However research and development, by its nature is long term, and cannot be expected to offset the marked deterioration in margins experienced by Australian pork producers over

the last several months. Therefore APL is seeking, on behalf of the industry, additional industry assistance to facilitate and manage industry restructure so as to minimise the impact of the poor and deteriorating market conditions resulting from increasing capture of the processed market by imports. To be relevant and effective, it is critical that these measures:

I. Allow those who have or will exit the industry due to the present profitability crisis to do so without financial ruin and with dignity;
II. Do not unduly interfere with reasonable longer term market forces by giving life to pig production enterprises that are not competitively sustainable;
III. Support those in the industry who can have a longer term successful future and are competitively sustainable, but may not be able to survive in the shorter term due to the crisis;
IV. Are equitable and non discriminatory (regardless of the size of the farming entity and structure) recognising the unique structure and operations of the pork industry within the rural environment.

In addition to the Pork CRC, APL is seeking some $80million for a range of industry assistance measures. However these proposed measures and funding estimates are in no way definitive and should be viewed as a guide to further discussions with Government. Nevertheless, the industry is in no doubt that the competitiveness and future sustainability of the industry is closely tied to additional funding for the Pork CRC and animal welfare and environmental stewardship, particularly in those areas where government regulation is a growing burden on producer efficiency and competitiveness.

Finally, APL has not altered its view that the provision of safeguards is fundamental requirement for the stabilisation and the future development of the pork industry in Australia. Imports have surged and caused damage to the industry that warranted provisional safeguards. It remains APL's view, which has not been changed by the deeply flawed Accelerated Report produced by the PC, that safeguards are fully justified to remedy damage caused to the pork industry from imports, are an entirely lawful measure under the WTO Safeguards Agreement, and not protection for its own sake but form an integral part of a process of adjustment by the pork industry.

2 Review of PC Accelerated Report

Overview of Critical Issues

The PC's Accelerated report made some positive findings in relation to APL's submissions. Notably it accepted the thrust of APL's case for safeguards on all key points except that imports cause the injury being experienced:

- Australian produced pork is like or directly competitive with imported pigmeat;
- Australian pork producers and primary processors produce products that are like or directly competitive with imports;
- Import quantities have increased in both absolute and relative terms and the increase in imports has been recent, significant, sharp and sudden enough consistent with WTO legal requirements for safeguards;
- Import growth has been due to developments which could not possibly have been foreseen;
- Overall the domestic industry is suffering, or is under threat of, serious injury.

The PC then abruptly finds that imports did not cause the injury to the industry. The arguments raised by the PC with respect to lack of causation were worrying, unsatisfactory and at best mediocre. They are incomplete, contrary to evidence and possibly incorrect in law.

In response to the PC Accelerated report, APL has sought further econometric and legal advice and further econometric critique. Following is a brief analysis of these key points.

2.1 Critique of PC's Economic Analysis

1. The PC assertion that imports are not a cause of serious injury lacks credulity

The PC accepted that imports limit the capacity of pork producers and processors to pass on increases in the costs of grain and that imports have increased substantially, in absolute and relative terms, over the last eight years.

The Commission considered that the "principal cause" of the serious injury to the industry "has been triggered by extraordinary increases in feed grain prices in Australia since the middle of 2007, not by increased imports significantly undercutting and pushing down domestic prices".

This lacks credulity. Imports have been rising steadily for eight years, and dramatically in the last two, increasing their share of pork production in Australia from 33 to 50 per cent in the last year. Grain prices have risen and fallen over that period and have risen rapidly only in the last year.

Remarkably (on p49), the PC states that "*moreover, pig producers worldwide are facing a similar cost- price squeeze (although probably not to the same extent as Australian*

producers), and higher global production costs can be expected to affect world pig meat prices as production cuts come into effect."

Yet the PC fails to explain why foreign producers are not suffering to the same degree if they are facing a "similar cost price squeeze" and trying to pass on costs as Australian producers are trying to do. If higher global production costs can be expected to affect future prices, why have they already not done so over the last year when EU and North American cost increases have already been in the order of 35 per cent and 26 per cent respectively? The PC's analysis was not taken to its next logical step.

While failing to make a determination, it nevertheless drew conclusions which are likely to be used by others to challenge any determination by the Government of the evidence of serious injury, thus arguably impeding the Government's capacity to exercise legal rights available to it under the WTO Agreement on Safeguards.

Under the Safeguards Agreement, imports must be a clear cause of damage to the industry, but they do not have to be the only cause. The logic of the PC analysis is that imports are a causal factor; it simply could not or would not say how much.

2. The PC contradicts itself by claiming it is unclear that imports cause injury while accepting that imports cap domestic prices and have increased rapidly

The PC argues that because domestic prices are within normal cyclical bounds while import unit values have risen since 2002, other factors beside imports are responsible for the current profit squeeze. It finds that "*There is not clear evidence that increased imports have caused or are threatening to cause serious injury to the domestic industry*", and that the "principal cause" would appear to be higher domestic feed prices.

Yet the PC also accepts that imports place a ceiling on the ability of domestic producers to pass on higher costs (Box 2.5). Logically imports can serve to depress prices below what they otherwise would have been without depressing them in absolute terms relative to any particular time period. In analytical terms, analysing the impact of a variable entails comparing the situation with and without that variable, not before and after a particular time period.

APL clearly stated in its submission on pages 48ff that the impact of imports is to ensure prices are lower than they otherwise would be. A logical extension of this argument is that import price that did not reflect respective feed cost increases suppressed domestic prices from passing on such costs. However while the PC argues that prices have not fallen sufficiently, it fails to ask the flipside of the same question: at what volume of imports are producers prevented from recovering their costs of production and achieving break even or close to it?

The PC's assertion that other factors beside imports are responsible for injury because domestic prices are within normal bounds whilst import values have risen over a particular period is logically flawed.

3. The PC wrongly asserts domestic prices have been steady and therefore other factors besides imports are responsible for the current profit squeeze and the cause of injury

The PC states "*That imports have increased significantly while average producer prices have remained fairly steady suggest that there have been other drivers of both increased imports and injury*."

The PC report asserts that sharp increases in domestic prices have preceded increases in import volumes i.e. when domestic prices increase significantly as they did in late 2006, manufacturers respond by importing pigmeat (page 39). The PC asserts this to counter APL's argument that increased imports are linked with lower domestic prices for pigmeat. This argument is misleading. If imports have kept producer prices lower than they otherwise would have been, then the steadiness or otherwise of producer prices over a particular period is irrelevant.

Domestic prices have not been "fairly steady". Data on average monthly porker prices over the past 5 years indicates that far from being "fairly steady", prices have varied significantly, both within years and between years. In the most recent year 2007, prices in the first half of the year were generally at their highest levels since 2002, for reasons explained above, but then following a surge of imports, in the second half of the year, prices have been generally well below previous years' levels. In the final months of the year they have been some 10 per cent below last year's level; August to November 2007 saw the lowest prices for porker weight pigs in six years.

But more importantly, the Commission appeared to disregard the simple fact that many producers were able to make a modest profit in 2006/ 2007 financial year, despite some periods of high feed grain costs, due to the high pig prices received in late 2006 and early 2007. These high prices were the result of global factors – Brazilian pork being locked out of Russia due to a Foot & Mouth Disease outbreak there, and thus US and Canadian pork filling Russian orders. At the same time, thousands of weaners were being sent into Germany from Denmark due to a specific short term demand there. These factors restricted supply and pushed up prices of imported pork, leading to greater demand for the domestic pig. Of course since this time, Brazil has re-entered the Russian market and global forces have returned to a more normal level, and imports have, as we know, flooded into Australia, depressing prices and leading to greater losses as extreme feed prices also hit profit and loss sheets from August onwards. The full extent of the losses in the industry will be felt from the second quarter or later in the 2007/ 2008 year. This is supported by APL's November 2007 Producer Survey (see Section 3)

4. The PC did not systematically assess the causal relationship between imports and industry losses and blames injury solely on feed prices

The PC concludes that the serious injury being experienced by the industry is a situation that "*has been triggered by extraordinary increases in feed grain prices in Australia since the middle of 2007, not by increased imports significantly undercutting and pushing down domestic prices*".

The PC is claiming here that imports have had nothing whatsoever to do with the injury faced. This is counter intuitive and verges on idealistic. Given that the PC itself accepts that

imports serve to cap domestic prices, and points out that "*The annual moving share of imports to domestic production has increased from a little over one-third to just under one half in the last year*" (page 19, para 1), the PC's conclusion simply defies logic. How could such a rise not have caused any injury whatsoever, whatever had happened to other factors such as feed prices?

The very next sentence seems to qualify the PC's unequivocal statement by saying "*Because the Commission considers that clear evidence of causation from serious injury is wanting*…." This begs the obvious question of whether the injury is not caused at all or whether there is evidence of some cause but it is "unclear". Which is it? If it is the latter, then the same questions prevail apply as to those raised in Part 2 above.

The PC compounds the poor credibility of its conclusion by not demonstrating any method to assess the role of imports. The PC says it cannot make a determination in relation to this. Yet in a nearly identical Productivity Commission Inquiry in 1998, Professor Richard Snape, an eminent economist, presiding over that enquiry, determined that "*Any rise in pig prices due to a rise in feed or other costs of growing pigs will be moderated by the availability of imports — more of the adjustment will occur through a reduction in domestic supply than without imports*". He set out a methodology to determine causation and concluded that he was "*unable to find any other factor capable of explaining the large fall in demand for local pigmeat and consequent fall in pigmeat prices since October 1997*." [1]

There is no indication that the PC considered and/or rejected the same causation and methodology as employed by Professor Snaper in 1998. This is both incredible and disappointing given the urgency of the industry's situation as indicated by its request to Government in September 2007 for a Provisional Safeguard measure due to the substantial injury from record volumes of imports; injury which continues today.

5. The PC's analysis of the industry failed to grasp the economic structure of the Australian pork industry

The PC's analysis of the impact of changes in the industry did not reflect an expert understanding of the economic structure of the industry. In particular and critically, the PC failed to indicate how Australian producers could undertake profitable business by diverting their products from the processed market, which imports were taking over, to the fresh market and remain profitable given the way the industry is currently structured.

Instead the PC ignores the structure of the pork industry and the dynamics between the fresh pork and processed pork market, and the limitation this imposes on Australian pork producers.

6. The PC rejected the rationale of the WTO Safeguards Agreement

The PC effectively stated it did not accept the rationale of the Safeguards Agreement. It observed that if tariffs were justified on the grounds that import competition was causing cost disability among domestic producers (i.e. they could not match prices of imports) this

[1] For the record the Commission chose not to recommend imposition of tariffs.

would represent a rationale "*which, in the Commission's view, is not, and should not be, the rationale for emergency action under the WTO."*

The drafters of the WTO Agreement did intend that it should provide opportunities for redress from the impact of lower import price in circumstances where there was an unanticipated and prolonged increase in imports.

The PC has revealed a position suggesting it disagrees in principle that restrictions on trade be imposed in the manner provided for in the WTO Agreement on Safeguards. Therefore any conclusions drawn from the PC's Accelerated Report need to thoroughly consider this inclination.

Future implications extend beyond the pork industry and agriculture sector because it is the PC which is required to undertake the required a prior evaluation before Government can consider and impose measures under the Agreement. It also begs the question as to whether it continues to be the appropriate body to undertake the required analysis of the conditions and thereby present to the Government a balanced report to enable the Government to then act to implement the provisions of the Agreement, if required.

Further detail is provided in Global ITS report (The crisis in the pig meat industry: The Productivity Commission Report on use of WTO Safeguards), Annexure C.

2.2 Legal Assessment

The Productivity Commission (PC) Accelerated Report's findings were consistent with Australian Pork Limited's (APL) views for the case for provisional safeguards, but it then rejects the provisional safeguard measures on the basis of a lack of causation.

Of concern to APL is that the PC's conclusions are fundamentally incomplete for it did not address the argument presented by APL and/or essentially misunderstood it. Importantly the PC did not appear to understand and address APL's central concern that our foreign competitors are not attempting to pass on their own admitted significant feed grain prices for one reason or another and that this suppresses Australian domestic prices in a directional sense. APL was not and would never argue that every time an Australian producer naturally loses some comparative advantage, the resultant import growth "causes" the injury.

In addition, APL is concerned that the PC's legal test was unduly restrictive in terms of WTO jurisprudence, unduly restrictive in terms of the likely policy behind Article XIX and also in terms of the practice of foreign authorities such as the US. Indeed the question arises as to whether the PC applied to the appropriate legal test.

In response to the PC's Accelerated Report, APL sought further legal advice from Professor Jeff Waincymer from Monash University in Melbourne. These issues are expanded on below.

The PC's conclusions were fundamentally incomplete as it did not address the argument presented by APL and/or essentially misunderstood it.

The PC failed to deal with APL's key argument as to causation, (even accepting that the PC applied the proper legal test, which alluded to the failure of import prices to rise to fully reflect increases in *foreign* grain prices. It was not in dispute that all pig producers worldwide were facing significant increased feed costs. It is the comparative response that matters, not simply Australian cost increases.

The Commission purported to deal with APL's argument, but must have fundamentally misunderstood it, given the comments it made. It concluded that it:

> "does not accept the logic that such 'price capping' is the *cause* of serious injury – that is, a view that without imports, or with fewer imports, prices would be higher and, therefore, imports are *causing* serious injury. It is always the case that import competition constrains or suppresses domestic prices (that is the main source of the gains from trade); but it does not follow that imports must consequently be the cause of serious injury. In the present case, this would be akin to blaming domestic competition for suppressing cost-driven price increases in a protected domestic market. Acceptance of this logic would lead to import protection being based on domestic cost disability which, in the Commission's view, is not, and should not be, the rationale for emergency action under the WTO."

This response does not address APL's arguments about foreign producers' responses to their own grain price increases. APL's second submission argues that exporters are not building in their own increased costs into their export prices. These points were made in paragraphs 200, 201 and 203-6. The PC also does not address APL's provision of evidence that cost of feed in the EU has jumped some 35 per cent in the 12 months to September 2007. (APL's second submission; para 205)

At page 45, the PC notes that Australian producers are being disadvantaged more than foreign competitors (especially the US and Canada) who can use other crops. No attention is given to the Danish situation which seems a crucial methodological flaw. Furthermore, where the US and Canada are concerned, even if all producers use yellow corn the PC has still noted a 26 per cent price increase. If imports are not passing on their 26 per cent price increase for whatever reason, then causation should be satisfied to that extent at least. There was simply no indication by the PC about what it did with its finding of a 26 per cent price increase in North America. The recent report of the Ontario/ Canadian Weekly Hog Comments is noteworthy on this issue:

> "*The U.S. losses had not occurred long enough for the December hogs and pigs number to be changed but the Canadians supposedly lost money most of last year. Canada has income stabilization programs for farmers. This data supports the possibility that Canadian producers are making decisions as to how many hogs to produce on income from the government rather than hog sale.*[2]"

[2] Weekly Hog Market Facts & Comments - February 25 2008

A provisional safeguard should address the *threat* from known government policy changes. The PC's fundamental methodological flaw is its conclusion at p49 that, "*since the commencement of the inquiry, policy changes have been announced by some foreign governments which could, directly or indirectly, affect prices of their exports to Australia and which, in turn, could directly impact upon competitive conditions in the Australian market."* The evidence before the PC was that some of these measures had already come into play. Foreign producers who know of a future subsidy, could easily factor that into price decisions now, temporarily bearing more of the grain increases to keep market share. The PC has failed to address this essential factor.

An essential flaw in the PC's conclusions was that it simply ascribed the injury to increased Australian domestic feed costs without analysing foreign feed cost increases. The PC provided no analysis of, or answers to, APL's argument that foreign producers did not aim to pass on those costs, hence constraining Australian producers from the natural need to increase their pricing to cover production cost increases. Similarly, the PC had evidence that foreign producers were reporting record cost increases and unprofitable sales. The PC did not ask why foreign producers could continue to sell at a loss. Even on the PC's view as to the direction of causation, a conscious decision to retain market share unprofitably by foreigners, must be a causal factor. In terms of the reasons for the failure to pass on all cost increases, the PC was made aware of the actual and potential foreign subsidies, yet failed to explore this in terms of a reason why the increases are not passed on by foreigners, which must be a relevant question under a causation analysis.

Did the PC apply the appropriate legal test?

As noted above, APL's primary argument is that there was ample evidence to support a positive finding under the PC's view on the law. In addition however, the PC's legal test was arguably unduly restrictive in terms of WTO jurisprudence, unduly restrictive in terms of the likely policy behind Article XIX and also in terms of the practice of foreign authorities such as the US.

A question arises as to whether it was right for the PC to say there is a need to show more than correlation between imports and injury. The PC suggested that imports need to cause injury in a directional sense. As noted above, APL believes it presented sufficient evidence to allow such a conclusion.

Additionally however, if the PC is wrong on this issue, it also failed to address the appropriate test and complete an analysis under it. At the very least, the PC failed to explain why it did not follow the same causation methodology as employed by Professor Snape in 1998.

At p 33, the PC addresses the methodology for identifying causation. Here there are two broad methodological possibilities, although neither is expressly addressed as such by the PC. The first would be to follow causation analysis as postulated by economic theory such as through the utilisation of Grainger or Sims tests. An alternative, although not necessarily mutually exclusive approach, would be to follow the jurisprudence in WTO case law based on the wording in the Safeguards Agreement and GATT Article XIX. It is not absolutely clear which methodology the PC has utilised. It begins by taking "guidance" (p33) from WTO jurisprudence to the effect "*that there should be a 'coincidence of trends' between higher*

imports and serious injury." This suggests that what needs to be observed is statistical correlation. If the PC had simply applied this standard, it would have found causation. However it seems that the PC did not pass judgment on whether there was at least significant correlation.

It is also arguable that the PC's directional theory undermines the intent and policy behind safeguards protection. The safeguards regime is about providing temporary adjustment assistance to domestic industries hurt by unforeseen substantial increases in imports, where the latter are presumed to be fair. The political rationale is presumably that the previous concession was more generous than would have been the case if the unforeseen circumstances were known. Even here the party taking action cannot renege on its concession, but can at most take temporary action and even then be faced with retaliatory withdrawals of concessions.

Furthermore, the jurisprudence tends against the PC position rather than supports it. In analysing the WTO jurisprudence, Sykes notes that the language of the Appellate Body in *Argentina-Footwear* seems to endorse the correlation approach. A coincidence between an increase in imports and a decline in the relevant injury factors would "normally" occur if causation is present (para 144). After considering the decisions, Sykes concludes as follows:

> "In sum, the Appellate Body decisions to date on the causal analysis required by the Safeguards Agreement suggest the following principles:
>
> (a) correlation is typically the best evidence of causation;
>
> (b) the 'other factors' considered by national authorities during the course of their investigations will be accepted uncritically without any reflection as to their logical relevance; and
>
> (c) the Appellate Body will not tell nations how to conduct their 'non-attribution analysis', but will insist that it contain 'reasoned and adequate explanation', which has so far been lacking in every case."

As noted above, the PC quoted these observations yet did not conclude as to correlation. At the very least, the PC's directional causation test departs from this jurisprudence. That is not itself illegal as a member would be entitled to employ a more appropriate economic measure of a treaty requirement if it was correct in that assessment. In addition, the government could decide to only apply safeguards when the narrower form of causation is present. At the least however, the PC was not justified in concluding as it did by the jurisprudence it appeared to be following. Furthermore, it should have outlined both options and left it to the government to decide. It should have completed a correlation analysis for that purpose. In addition, the PC did not raise the problems alluded to by Sykes and has not briefed the government on the policy choices available to it, or given it the economic findings should the government wish to follow the WTO and US experiences.

Having said this, it is vital to reiterate that APL's concerns are not dependent on proving that the PC applied the wrong test. As noted above, even if they correctly articulated the test, they simply did not apply it to the facts before it.

Whatever the ultimate view on this aspect of the legal test, the PC also made a crucial and flawed suggestion that "(*t)he key mechanism through which imports cause injury to a domestic industry…is by driving down the market price*". (p 33). It then concludes:

> "*The Commission's preliminary analysis suggests that, despite increased imports, import prices (as measured by unit values) have not changed much in recent years. … Indeed, fitting a trend suggests that import unit values have increased on average over the past five years, and are not out of line with unit values over the past decade …. Furthermore, domestic producer prices, which are heavily influenced by import prices …, have remained within normal annual cyclical bounds*".

The PC is wrong if it purports to set up a test which would *only* find causation where there is price undercutting that drives down domestic prices. Even if that is not what it intended to say, it erred in not directly considering other forms of causation. As noted above, APL's argument was that import prices did not cover feed cost increases, but *suppressed* domestic prices from passing on such costs.

What approach should the PC take to the next stage?

The PC should also give careful consideration to other legal measures available to government. As noted above, the PC ought to have found that foreign suppliers have consciously chosen not to pass on all of their own significant costs increases. The PC was also fully aware of actual and proposed foreign government subsidies that were likely to explain all or part of this behaviour. This raises possible anti-dumping and countervailing concerns. At the outset, the PC should try and explore the evidence of differential pricing of foreign product here and in home markets, showing dumping and the details of the subsidies. The PC should also report to government as to the action-ability of those subsidies and the benefits of each option and at the very least call on government to negotiate their removal in the Doha Round negotiations. One way or another, our government should seek to "level the playing field" if it is seriously concerned to help the industry.

Conclusion

The PC failed to address APL's central argument, failed to expressly consider other evidence before it, and arguably erred in law on a number of key tests. These issues need to be urgently addressed lest the final safeguards determination be equally flawed and allowing an important industry found to be suffering serious injury, to continue to so suffer without fair and reasonable government assistance. It is vital that these issues are taken up in the final report.

2.3 Revised Econometric Modelling and Analysis

In response to the PC's criticisms in its Accelerated Report and at the request of APL, Stuart Mounter and Albert Wijeweera (University of New England) revised the original econometric modelling undertaken in November 2007 and which was referenced in APL's first submission. The revised econometric analysis provided in Annex G takes into consideration the Productivity Commission's critique of the initial report as well as the comments and recommendations of an independent reviewer Dr Rambaldi. Dr Rambaldi identified five main areas where the modelling could be strengthened.

One of the PC's issues of concern with the original econometric report was the omission of potentially important explanatory variables. These were retail prices for substitute meats and production input prices. The econometric analysis in this report includes retail prices for pigmeat and retail prices for substitute meats, beef, lamb and poultry[3]. Feed grain prices are also included in the analysis as a proxy for production input prices[4]. The PC also suggested the choice of exchange rate as a shortcoming of the initial analysis. The bilateral exchange rates between Australia and the two major suppliers of pigmeat imports to Australia have been included in this analysis. As with the data on retail meat prices, data on feed grain prices for the relevant sample periods were not available for inclusion in the model prior to the November 2007 submission deadline.

The PC identified not examining the reverse implications of an increase in domestic prices on import volumes as a limitation of the initial econometric analysis. Therefore, additional analyses are undertaken in the current study to examine the effects from a variety of different shocks, including the impact on import levels from an increase in domestic prices.

The PC also made a number of other criticisms, key of which are briefly addressed here:

- The PC expressed concern that the Granger and Sims causality tests conducted in the analysis give contradictory results as to the direction of causality between variables, and no indication is given as to which test results should be preferred. However, issues of contradictory directional causalities are accounted for in the Vector Autoregressive (VAR) framework. Simple tests such as the Granger and Sims tests are used to establish the existence of pairwise causality between variables. In VAR the endogenous feedback effects between all variables are captured. In her assessment of the econometric analysis, Dr Rambaldi agreed that a VAR model was the correct approach to use as it allows feedback effects among all the endogenously specified variables in the system.
- The PC also queries why the impact of an increase in import volumes on domestic prices is considered in the analysis but the reverse effect of an increase in domestic prices on imports is not. The PC states: "*In their analysis, the authors assume that only imports affect prices (not vice-versa)".* Dr. Rambaldi points out that it not correct to state that modellers' assume that only imports affect prices and not vice-versa. The statement implies that imports are exogenous rather than endogenous. The VAR framework captures the feedback effects between all the endogenous variables (eg. from imports to domestic prices and vice-versa).
- The PC makes the following confusing statement "*a one per cent increase in baconer prices results in a 0.85 per cent increase in import volumes after one month (a much larger result than for the opposite causality). There is also a contradictory result where an increase in the Sydney wholesale carcass price leads to a decrease in import volumes after one month."(Box 2.6 p41).* These results were never stated in the initial

[3] As with the data on retail meat prices, data on feed grain prices for the relevant sample periods were not available for inclusion in the model prior to the November 2007 submission deadline.

[4] Note that the model was also specified to Rambaldi's recommendation that feed grain prices should be an exogenous variable in the model. Because feed grain prices are exogenous it was not possible to model the scenario of an increase in feed grain prices since only the endogenously specified variables can be shocked. Nevertheless the influence of feed grain prices is controlled for in the model.

econometric analysis nor do the results imply these conclusions. Rambaldi also agrees that the results do not imply these conclusions.

Detailed responses to the PC's assessment of the initial analysis as well as responses to the comments and suggestions provided by Dr Rambaldi's independent review of the initial econometric analysis are included in Appendix G of this submission.
Key findings of the revised modelling are:

i. The revised analysis confirms clearly that pigmeat imports do have a statistically significant and negative impact on the domestic contract price for baconers and the Sydney wholesale price for baconers as well as on domestic production. Increased import volumes were also found to negatively influence domestic production of pigmeat. In general, retail prices for pigmeat remain unaffected by increased pigmeat volumes. Over the sample period of 1999:1 to 2007:11, an increase in the level of pigmeat imports is shown, statistically, to negatively affect the contract baconer price and the Sydney wholesale price. The impact on the contract price of baconers is immediate with negative responses reported for the first three months. The impact on the Sydney wholesale price is a little less pronounced with a statistically significant response occurring two months after the initial shock. A similar period of time elapses before the statistically negative influence on domestic production.

ii. There were no noticeable differences in the size of the responses between singly including the Canada/Australian exchange rate and including both bilateral exchange rates in the analysis. However the negative impacts on the domestic pigmeat prices were shown to be larger in magnitude when the Denmark/Australian bilateral exchange was singly included in the model with the responses being much larger and more long lasting.

iii. The PC argued that higher grain costs resulting in higher pork prices were the cause of damage to the industry and actually led to imports, not the other way around. In theory it would be expected that import volumes would increase in response to an increase in domestic production costs, if the cost increases translate into higher domestic prices downstream. The modelling found that an increase in the national baconer contract price translates into an increase in the wholesale pigmeat price and the retail pigmeat price.

iv. However while there is a statistically significant and positive import response to an increase in the contract baconer price, there is no evidence to suggest that import volumes increase as a result of an increase in the Sydney wholesale baconer price or an increase in the domestic retail price of pigmeat (i.e. while imports go up when baconer prices go up, when wholesale and retail prices go up imports do not increase). This is being investigated further.

In summary, the analysis finds evidence that imports of pigmeat have a significant negative impact on the contract baconer price, the Sydney wholesale baconer price and domestic production of pigmeat. There is also evidence that pigmeat imports respond positively to an increase in the contract price of baconers. There is no evidence to suggest that import

volumes are influenced by changes in the Sydney wholesale baconer price or changes in the retail pigmeat price.

Conclusion

In consideration of the preceding analyses and the critical issues raised, APL has not altered its view that the provision of safeguards is fundamental requirement for the stabilisation and then future development of the pork industry in Australia. Imports have surged and caused damage to the industry that warranted provisional safeguards. The hurdles placed in the path of obtaining provisional safeguards by the manner in which the WTO Safeguards Agreement was introduced into Australian law make the burden of proof required almost indistinguishable from that required for full safeguards. It remains APL's view, which has not been changed by the deeply flawed Accelerated Report produced by the PC, that:

- Safeguards are fully justified to remedy damage caused to the pork industry clearly attributable to a surge in imports
- Safeguards for the pork industry are an entirely lawful measure under the WTO Safeguards Agreement
- Safeguards are not protection for its own sake but form an integral part of a process of adjustment by the pork industry.

3 Outlook 2008

Industry data based on APL's October 2007 Interim Producer's Survey[5] and presented to the PC in both of APL's previous submissions emphasized the critical conditions confronting the industry. The survey covered current sows on hand and expected breeding sows at November 2007 and then again at June 2008; pigs weaned and sold per litter and current farrowing and to February 2008.

APL's November 2007 Production Survey[6] predicts that breeding sow numbers will drop by 22,000 between November 2007 and July 2008. The survey previous to this in July 2007 did not predict any particular drop in breeding sow numbers to November 2007 since the industry profitability crisis had not taken hold at this time. However, to our knowledge and according to market sources, there was an unpredicted drop in sow numbers which occurred before the November 2007 survey and was estimated to be between 15,000 and 20,000 sows. On this basis, the total sow herd is projected to be 240,000 in mid 2008, rather than the 255,000 indicated by the November 2007 Production Survey.

A figure such as this is consistent with the "overshoot scenario" as reported in APL's first submission since it will put pressure on fresh pork supply assuming export volumes remain stable i.e. reductions in breeding and productive capacity to such an extent that the long term capacity of the industry will be permanently undermined. The critical mass of the industry required to rebuild and regain market share will be decimated.

Despite claims made in some submissions to the PC as to how import volumes should "normalise" over time down from the highs in the first half of 2007, the import volumes for November and December have risen to 9,251 and 9,725 tonnes respectively (records for the respective months). This is well up on the August to October 2007 months where imports had dropped to around 6,000 – 7,000 tonnes (leading to the above statements) and is also higher than the equivalent months in 2006, thus continuing the trend upwards for moving annual total imports.

This increase in imports will still not have an impact on whether the overshoot scenario comes to pass or not as the assumptions behind this happening account for only a very small amount of domestic pig meat making it into the processing market. A drop in the sow herd to a level of 240,000 would be expected to have a significant impact on the prices for pigs, but only once this drop impacts on the number of pigs making it to market (some 10 to 11 months after the sow is withdrawn from production). By this time, the majority of the damage to the industry would have already been incurred.

Present pig prices received by producers continue to fail to cover costs of production by a significant margin, and a change to this with a supply reduction does not seem likely before May or June, 2008.

[5] APL conducts a quarterly survey of pig producers to assess change in the pig slaughter numbers or breeding herd as of the end of July. Due to the poor operating and deteriorating environment an interim survey was undertaken.

[6] The results of the (regular) quarterly November survey would not be available until mid December after the PC had finalised its Accelerated Report.

In the meantime, on the costs side of the income statement, grain prices continue to remain high, with wheat futures prices close to all time highs covering the next 12 months or more (refer to Section 5 for details). No significant relief for pig producers from grain prices is expected in this time.

4 Restructuring for Consolidation, Competitiveness & Sustainability

4.1 Pork CRC

The Global Competitiveness of the Australian Pork Industry: Investment in research and development to enhance Australia's Competitive Position

Background

The Federal government and industry participants including producers, universities, State Government agencies, APL and product and technical supply companies have invested some $84 million in cash and in kind over seven years in the Pork CRC. The Pork CRC was established in June 2005 with the objective to improve the global competitiveness of the Australian pork industry.

The Federal Government through DEST agreed to provide $25.75 mn in cash over the life of the Pork CRC. The core and supporting participants of the Pork CRC have agreed to provide $8.401mn and $ 2.295 million respectively in cash and some $47 million in kind over the seven year life of the Pork CRC. The cash contribution from participants and other organizations has been increased by some $1.5 mn since the inception of the CRC and the total in kind contributions from participants is likely to exceed the original budget. Market conditions however, could affect the ability of participants to continue to meet their cash and/or in kind contributions and a number of projects have already been adversely affected by the closure of pork production units initially involved in Pork CRC research projects.

The Pork CRC core participants include two of the largest pork production businesses in Australia namely Australian Pork Farms (South Australia) and Cameron, Hall and McLean (Queensland). The two businesses combined control some 40,000 sows and produce approximately 17 per cent of total pork produced in Australia.

The other core participants are:

- Australian Pork Limited
- The University of Adelaide
- Murdoch University
- The South Australian Research and Development Institute
- The New Zealand Pork Board.

The supporting participants include QAF Meat Industries who have production and processing businesses in NSW and Victoria and are the largest producer of pork in Australia with their share of the market approaching 20 per cent in 2006.

The other supporting participants are:

- Ridley Agriproducts Pty Ltd
- The University of Sydney
- The University of Queensland

- Massey University
- WA Agricultural Produce Commission Pork Producers Committee
- Alltech Biotechnology
- Australian Pig Science Association
- Elanco Animal Health
- Kemin Industries (ASIA) PTE LTD
- Feedworks Pty Ltd
- Grains Research and Development Corporation
- Grainsearch Pty Ltd
- Betterblend Stockfeeds Pty Ltd
- The Department of Primary Industries for and on behalf of :
- The State of New South Wales
- The State of Queensland through The Department of Primary Industries and Fisheries
- The State Of Western Australia represented by the Director General of Agriculture
- Department of Primary Industries (Victoria)

Since the inception of the Pork CRC, three other organizations have joined as supporting participants: The new participants are:

- Nutreco Nedland BV
- The Australian Barley Board
- Charles Sturt University.

The Pork CRC Programs: Future Investment in R&D to Enhance Australia's Competitiveness

The Pork CRC's programs target those variables which will provide the greatest return to investment to improve the global competitiveness of the Australian pork industry.

Using government and participants funds, the Pork CRC identifies , contracts and manages research projects to deliver better/cheaper feed on an energy basis, improve whole herd feed efficiency, sow productivity and provide better pork (increased price) to Australian pork producers. The outcomes are delivered through new knowledge, products and services.

The four program areas are:

- **Program 1:** Securing more reliable and consistent supplies of protein and energy for pig diets
- **Program 2:** Improving Whole Herd Feed Efficiency
- **Program 3:** Enhancing capacity to deliver nutrients promoting health and well-being through pork
- **Program 4:** Education and communications.

These programs and their associated improvement targets are described in Table 1 below. Details of all the status progress of each program are available in Annex A. This sector features the immediate and mid-/long term assistance which can assist with the improvement of the supply chain for pigmeat, the ability to meet consumer needs and the

implementation of risk management measures leading to an overall improvement of the industry's competitiveness.

Table 1. Current Research Programs of the Pork CRC

Program	Target	Key Deliverables
Program 1: Securing more reliable and consistent supplies of protein and energy for pig diets	I. Reduce diets costs by 10per cent by 2012 II. Improve the DE content of grains by 1.0 MJ/kg by 2012	Securing more reliable and more consistent protein and energy supplies for pig diets via innovative grain and pulse production, supply chain arrangements, quality assessment and co-production utilisation will result in: • Reduced variation in the annual costs of pig feed • Reduced total cost of pig feed • A wider range of feed ingredients available to more producers • A closer match of diet specifications to pig requirements.
Sub Program 1A: Innovative grain production for the pig industry		• Commercial quantities of cereals (triticale and barley) and pulses (peas and lupins) that grow close to pork producing regions and have a high yield, cost effective agronomy and enhanced nutritional characteristics for pigs.
Sub Program 1B: Quality assessment of feed ingredients		• Adoption, implementation, enhancement and maintenance of near infrared spectroscopy (NIRS) calibrations for the rapid measurement of the nutritional quality of cereals for pigs • Rapid and objective analytical methods for the measurement of nutritional quality in pig feed ingredients (other than cereals) • Processing methods to increase the nutrient yield from target grains (e.g.; enzyme applications).
Sub Program 1C: Identification and characterization of a wider range of available feed ingredients for the pig industry.		• Identified potential for production of non traditional alternative protein and energy sources within existing grain production systems across Australia • Assessment of the nutritional potential of novel protein and energy sources • The production and delivery of non-traditional and/or alternative protein and energy sources for the pork industry.
Program 2: Improving Whole Herd Feed Efficiency (HFE)	Reduce HFC from 4.3 to 3.6 over the life of the Pork CRC	Improving HFC reduces feed/ grain usage and will optimise efficiency through improved health, metabolic efficiency and reproductive capacity and will result in: • The capacity to routinely and accurately measure feed intake in individual animals and groups • Products and management strategies that allow manipulation of feed intake/feeding efficiency in pigs

Program	Target	Key Deliverables
		• Reduced reliance on antibiotics in production systems; • Cost effective nutritional and/or prophylactic treatments for the prevention of disease • Products and/or strategies to improve production efficiency • Reduction in sow culling rates • Reduced overall costs of production through improved pigs/sow/year, reduced sow turnover and more efficient reproductive performance.
Program 3: Enhancing capacity to deliver nutrients promoting health and well-being through pork.	I. Increase export and domestic sales volumes by 10 per cent by 2012 II. To achieve a $1.00/ kg increase in returns for 10 per cent of the product sold into the higher value markets by 2012	Enhancing capacity to deliver nutrients promoting health and well-being through pork will increase the value and versatility of pork products resulting in: • An increase range of viable pork products and market opportunities for the Australian industry • Demonstrated benefits from consumption of pork products by consumers. **Key Deliverables:** • Fresh pork products, desired by consumers, which can provide a significant proportion of the daily Omega 3 fatty acid requirements of consumers • Fresh pork products, ready for retail, with specific nutritional attributes relative to the daily requirements of consumers (e.g.; selenium, iron, bioactives) • Assessment of these fortified pork and conventional pork products for health claims using accepted models.
Program 4: Education and communications	I. Recruitment of students and completion of 12 post graduate degrees in pork related projects by 2012. II. Recruitment of three postdoctoral researchers into Pork CRC projects by 2012.	• New scientists and skilled technical staff for the pork industry. • An effective communications channel with Australian pork producers.

Program	Target	Key Deliverables
	III. Development of a course work masters degree and lifelong learning courses for piggery staff and school students. IV. Development of an effective communication strategy and plan for the Pork CRC.	

Maximum Potential Benefit of Pork CRC Projects to Australian Pork Industry

For each project the Pork CRC calculates a Maximum Potential Benefit to the Australian pork industry. The MPB reflects the potential improvement in margin per kg carcass weight and is based on the potential impact of the project on cost of production and/or price. The latter is adjusted based on the chance of success and the timeliness and likely adoption of the outcomes across the Australian pork industry. Both latter factors are rated as proportions and the chance of success is updated every six months based on progress reports and/or reviews of each project and the MPB adjusted accordingly.

The MPB values given for each sub program are not necessarily additive and are used to evaluate proposals, the risks associated with the allocation of funds and for reviewing the progress of projects and where funds might be increased or reduced based on changes in the MPB. These values are shown in Table 2 below.

Table 2. Maximum Potential Benefits (MPB) from Pork CRC Funded Projects within Each Sub Program

Sub program	Name of Program	$ funded*	MPB (C/kg carcass weight)
1A	Innovative grain production for the pig industry	1,421,852	8.1
1B	Quality assessment of feed ingredients	1,667,418 ($600,000 provided by GRDC)	11.2
1C	Identification and characterization of a wider range of available feed ingredients for the pig industry.	86,870	1.0
2A	Measuring feed use and pig weight under commercial situations.	907,997	6.3
2B	Improving the feed intake and performance of pigs immediately after weaning	1,497,275	12.1
2C	Improving animal health and reducing antibiotic use.	871,765	9.8
2D	Improving sow reproduction and longevity.	1,838,841	17.9
2E	Advanced reproductive technologies	970,397	9.2
2F	Physiology and manipulation of growth	921,613	6.7
2G	Nutritional strategies for sows and grower/finisher pigs	267,800	2.8
3	Enhancing capacity to deliver nutrients promoting health and well-being through pork.	172,907	1.1

* Cash funding from the Pork CRC only for projects up to the end of last financial year

Program 1: Immediate and medium/long term assistance targeted to enhance industry competitiveness

To continue its research and enhance the competitiveness of the Australian pork industry, the Pork CRC is seeking $2 million per annum over five years for the following targeted projects.

Immediate Assistance

1) Full time employment of both a Project Manager for Program 1 and Extension Officer to better coordinate projects within sub program 1A with GRDC to ensure that the release of new grain varieties for the Australian pork industry are fast tracked and to coordinate projects across the three sub programs. The positions would help ensure producers and growers are informed about the advantages of new feed varieties and that they are tested and implemented at the commercial level. The cost over the life time of the Pork CRC would total some $1.4 mn comprising $800,000 for the Project Manager and $600,000 for the Extension Officer. The individuals would also be responsible for the development of grower/producer supply chain systems.

2) Provide funding for the commercialization of the NIRS calibrations. The successful commercialization of the NIRS calibrations will require the development of a detailed business plan and market surveys, both in Australia and overseas, and the implementation and management of an operational plan involving the coordination of researchers, the GRDC and its partners in the technology as well as national and international customers. Commercialization of the technology could be achieved through a separate company or by employment of a specialist in the field. The cost is estimated at $250,000/year for two years. It is anticipated that the "business" would be self funding after 3 to 4 years, though this would depend on the successful commercialization of the technology overseas which would not commence until the second year of the "project".

3) In terms of feed cost savings (assuming $5.00/tonne) the technology, if made available to all Australian feed mills and pork producers (directly and/or through feed test laboratories), would improve producer returns by some $7,500,000 annually and have the potential to produce an annual income stream of $100,000-$ 200,000 after the second year of implementation. Neither opportunity will be fully exploited without the successful commercialization of the technology.

4) The NIRS technology developed through GRDC and the Pork CRC is unique to Australia and provides an excellent opportunity for Australia to exploit this technology to enhance the global competitiveness of the Australian pork industry and the efficiency of other intensive livestock industries, since the calibrations to be licensed from GRDC also cover poultry and ruminants.

Medium to longer term assistance

1) Increased funding for grains research to extend the influence the Pork CRC and Australian pork industry of the breeding on pig specific feed grains and to extend the projects to all pork production regions of Australia. The Pork CRC currently funded projects are concentrated on Queensland and Northern NSW, for both pulses and barley, and on central NSW for triticale. The objective would be to extend the projects to pork producing areas on Southern NSW, Victoria/SA and Western Australia. Additional funding would also enable the Pork CRC and APL redirect funds to alternative projects through the Feed Grain Partnership Initiative which principally includes GRDC, APL, the Pork CRC, Dairy Australia and MLA. The partners have recommended funding of projects with potential benefits to Australia's intensive animal industries and support by the Pork CRC would be an excellent leverage of funds for the Australian pork industry
2) Based on the costs of funding the current projects the additional funding required would be in the order of $850,000 annually or $3.4 million over the life of the Pork CRC.
3) Based on wheat at $250/tonne and the potential savings indicated by the current projects in this area the maximum potential return on investment is in the order of $30mn annually. The marginal improvement in return on investment (excluding current projects) would be the order of $15mn annually. The latter reflects the extent the Australian pork industry's competitive position is affected by the price and availability of grain.
4) Australia's research in this area is unique to the Pork CRC and additional funding would help ensure the outcomes of the research are further enhanced and made available to producers in all regions of Australia.
5) Innovation will continue to play a major role in improving the efficiency and profitability of the Australian pork industry into the future and while the Pork CRC programs have reinvigorated the Australian research community the industry is faced with a decline in research facilities and general support for pork research particularly by State Governments. The Pork CRC has developed a research alliance with the Queensland Department of Primary Industries and Fisheries to develop and improve and utilize their research facilities at Wacol for grain and nutrition research with pigs. The Pork CRC has also funded the installation of automatic feeding systems in Western Australia and Queensland to attempt to address the decline in facilities for pig research. The medium and longer term efforts of the Pork CRC grain research projects would be assisted if additional research facilities were available in Queensland, while Program 2 projects would be enhanced if other facilities were made available in another State or within a commercial research establishment. The availability of capital for such projects would markedly enhance the Pork CRC research efforts and outputs and provide the industry with much needed facilities for future research. The expansion of facilities within Queensland would cost in the vicinity of $500,000 while the development of additional research facilities in SA and/or NSW would cost between $1.5mn and $2mn.

4.2 Essential Industry Assistance Measures

Research and development, by its nature is long term and can't be expected to offset the marked deterioration in margins experienced by Australian pork producers over the last several months. Therefore APL is seeking, on behalf of the industry, additional industry assistance to facilitate and manage industry restructure so as to minimise the impact of the poor and deteriorating market conditions resulting from increasing capture of the processed market by imports. To be relevant and effective, it is critical that these measures:

I. Allows those who have or will exit the industry due to the present profitability crisis to do so without financial ruin and with dignity;
II. Do not unduly interfere with reasonable longer term market forces by giving life to pig production enterprises that are not competitively sustainable;
III. Support those in the industry who can have a longer term successful future and are competitively sustainable, but may not be able to survive in the shorter term due to the crisis; and
IV. Are equitable and non discriminatory recognizing the unique structure and operations of the pork industry within the rural environment, being composed of:
    - A variety of different production styles within the industry from the very large production units and businesses alongside more traditional smaller family run enterprises
    - Varying private and corporate structures under which the production enterprises are run, in many cases also with outside interests"

In addition to the Pork CRC, APL is seeking some $80million for a range of industry assistance measures covering:

- Animal Welfare Stewardship
- Producer Exit and Retirement Assistance
- Producer Sustainability Assistance
- Environmental Sustainability
- Labelling, Compliance and Verification of Imported and Domestic Pork Products
- Australian Grown Pork Consumer Education Campaign
- Sustaining our Competitive Advantage in Animal Health
- Improving Supply Chain Management and Efficiency
- Levy Mix Restructure

However it should be noted these proposed measures and funding estimates are in no way definitive and should be viewed as a guide to further discussions with Government. Nevertheless, the industry is in no doubt that the competitiveness and future sustainability of the industry is closely tied to additional funding for the Pork CRC and animal welfare and environmental stewardship, particularly in those areas where government regulation is a growing burden on producer efficiency and competitiveness.

Table 3 provides a summary of these measures and the following section provides the background and rationale for the measures and their selection.

Table 3. Industry Assistance Measures (Indicative Only)

Type of Program	Program Description	Producer Competitiveness	Industry Competitiveness	Timeframe	Estimated Funds (guide only)
Animal Welfare Stewardship	New Sow Housing Construction	**X**	**X**	36 months per farm, 5 years for the project	$187,500,000 per herd, per site; $9,375,000 million total program allocation
	Conversion of Existing Housing to Dry Sow Housing	**X**	**X**		
	Building of Additional Group Housing Indoors or Outdoors for Growing Pigs	**X**	**X**		
	Retro Fitting Group Housing to Ensure Space Allowances Meet Required Standards	**X**	**X**		
	Supplementary Payments for Group Housing	**X**	**X**		$20,000 cap per herd, per site, total of $900,000
	Environmental Impact Assessment	**X**	**X**		$10,000 cap per site, total $500,000
	Training and Competency Assessment Program	**X**	**X**	2 years[7]	$150,000
				Subtotal	**$10.925million**
Producer Exit / Retirement Assistance	Retirement Exit Assistance	**X**		3 years	$150k per farmer averaged, total $13.5million
	Producer Exit Assistance	**X**		3 years	$100k per farm, total $13.5million
	Professional Advice Grant	**X**		2 years	$5,500 per farm, total of $1.32million
				Subtotal	**28.32 million**
Producer Sustainability Assistance	Farm Restructure Loans	**X**		2 years	$105,000 per farm for farms that uptake in 07/08 + $55,000 per farm or farms that uptake in 0809 Total of $6.4 million
	Competitiveness Audit Grant	**X**		2 years	$5,500 per farm, total of $10,700,000
				Subtotal	**17.1 million**
Environmental Stewardship	EnviroCheck		**X**	3 years	$400 per audit, total $120,000
	Nutrient Management Plan	**X**	**X**	3 years	$4,000 per audit, total $1.2million

[7] According to the Model Code of Practice (2007) all staff needs to be trained by 2010.

	Laboratory Analysis Farm , Manure Soil and Effluent	**X**		3 years	$3,000 per audit, total $900,000
	Life Cycle Inventory Data on Nitrous Oxide Emissions		**X**	3 years	$450,000
	Housing – Climate Change Adoption	**X**	**X**	5 years	$100,000
	Bio-Energy & Mitigation of Greenhouse Gas Emissions		**X**	5 years	$7,500,000
	Water Sustainability & Management – Irrigation Practices	**X**	**X**	3 years	$30,000 cap per farm, total $3million
	Water Sustainability & Management – Catchment	**X**	**X**	3 years	$20,000 cap per farm, total $2million
				Subtotal	**$15.27million**
Consumer Education	Product Labelling Campaign based on the Australian Grown Campaign	**X**	**X**	2 years	$4,000,000
Levy Reform	Consolidation of Marketing Levy and R&D Levy		**X**		-
Animal Health	2 Projects on Disease Control		**X**	3 years	$800,000
Supply Chain Management	Development of Standard Operating Procedures (SOPS)		**X**	3 years	$750,000
	Conversion of AUSPIG Program		**X**	2 years	$200,000
Product Quality Improvement	Development of a Quality Standard for Australian Pork Carcasses and Pork Cuts	**X**	**X**	3 years	$1,500,000
				Subtotal	**$7.25million**
			APL INDUSTRY ASSISTANCE	**TOTAL**	**$78.86**
Pork CRC Programs	Feed Grain Competitiveness	**X**	**X**	5 years	$2 million per year = total $10 million
			PORK CRC ASSISTANCE	**Subtotal**	**$10 million**
			TOTAL INDUSTRY ASSISTANCE (PORK CRC & APL)		**$88.86 million**

Animal Welfare Stewardship

Animal Welfare stewardship includes support for adjustment of farm infrastructure to support animal welfare standards and regulations.
Animal welfare stewardship is also an important function of environmental sustainability as required changes to production practices made necessary under the new welfare requirements of the Model Code of Practice (2007) have an impact on environmental management systems. For example, changing pig housing systems is likely to impact on effluent management - moving from conventional indoor housing to deep litter systems means changing from a system designed primarily for liquid waste disposal to one mainly based on solid waste. Furthermore, different territorial local authorities have different rules and regulations that may apply to farmers making building changes and in some cases such applications require an automatic review of effluent discharge consents. All these factors must be considered also in relation to overall Environmental Protection Agency (EPA) requirements and guidelines.

Model Code: Mandatory animal welfare production changes & impact on producer business

The revised Model Code of Practice for the Welfare of Animals (the Pig) (the MCOP), approved by PIMC in April 2007, demands several mandatory changes to the way that producers run their businesses[8].

The Standards in the new Code will be in force immediately from the date it is ratified in each State or Territory (expected in mid 2008), apart from the following provisions with lead-in times, or related criteria:

- Sow stalls are only to be used for 6 weeks of the sow's gestation period from 2017;
- New stalls will need to be of the new Code dimensions if constructed from 2007 onwards;
- New farrowing crates will need to comply with specified minimum dimensions outlined in the new Code if constructed from 2007 onwards;
- Space allowances for all other stock must comply with specified minimum dimensions outlined in the new Code from 2012 onwards; and
- All stockpersons must be signed off (by management) as 'competent' for their role, or otherwise working under the direct supervision of a person who is deemed to be 'competent' from 2010.

There are a number of underlying key issues for farmers involved in making the required changes:

- The first is the matter of practical implications of trying to change dimensions of pig housing enclosures inside existing buildings. These facilities are literally "set in

[8] The revised Model Code of Practice improves standards of animal care and contains approximately 25 main changes from the previous Code, which dates back to 1998. Most of the changes broadly reflect current industry practice, therefore should not be of concern to the majority of producers. However, an important change to the structure of the Code is the incorporation of explicitly stated Standards. It is current government thinking that these will be directly enforceable in law in future and binding on all owners or persons in charge of pigs.

concrete" and also are supported by purpose built feeding, watering and drainage systems positioned very precisely to cater efficiently to the animals' requirements.

- The other key issue is the level of indebtedness and the stage in the business lifecycle of the farm. Those farms that have recently made major investments in expansion, and have higher debt levels, are most vulnerable to a serious compromise of their financial viability by further changes being forced upon them in short time frames, notwithstanding the fact that they may be very good operations. Current industry conditions, which could not be foreseen when APL agreed to the revised Code on behalf of Australian pig farmers, have severely exacerbated this vulnerability. Current and future competitiveness is also adversely impacted by the fact that none of these animal welfare requirements are made of imports giving imports a competitive advantage

Therefore producers have limited capacity to fund animal welfare changes as required by Primary Industry Ministerial Council and to be regulated by state governments. As reported by APL in its previous submissions to the Productivity Commission, a growing number of producers are extending their debt facilities due to loss of income in order to keep their business viable. 73 per cent of producers reported in APL's Producer Impact Survey (November 2007) that they have had to extend their debt facilities in order to keep their business viable. Some 61 per cent of small producers and almost all large (84 per cent) and medium sized (86 per cent) producers had to extend their debt facilities. (39 per cent of producers - of which 43 and 42 per cent were small and medium producers respectively - had taken on off-farm work to supplement their income.)

Pig farming is a complex businesses operating on small margins and therefore there is a limited ability to pay for any costs or disruptions that do not add direct value to their businesses. These proposed changes to the Code will not secure a price premium from consumers nor will there by an increase in productivity which would provide the funds to make these infrastructure changes. It must be noted that pig farming operations need flexibility to accommodate animal welfare requirements via an outcome-focused model that allows them a range of methods to comply depending on the individual freedoms and constraints of their operations

International Equity Issues: the lack of a level playing field

The Code places specific requirements for pig welfare on to all Australian producers that are not necessarily required for imported pork entering Australia. Currently, imported pork mainly comes from North America and Denmark. As Denmark is an EU member state, under the EU Directive producers in that country will be subject to similar animal welfare requirements as those in Australia. However, there are no legal restrictions on the use of gestation stalls in North America at present and the USA in particular has very limited animal protection legislation in place for production animals.

This creates a problem of reduced competitiveness for the Australian industry in relation to competing with imported pork from North America as the new Code requirements will create extra costs for Australian producers in that will not be borne by their North American counterparts.

Europe is often held us as a benchmark in animal welfare standards by animal activist groups, however even in Europe, it may be seen that countries do not necessarily keep in

step with each other in this area, and therefore their producers do not have a fair chance of competing in that market. Continental Europe in general has taken a more measured approach to the promotion and adoption of more costly animal welfare measures that have been applied in the UK. As a result, the UK pig industry has been largely decimated by lower cost imports from the continent over recent years[9]. This has occurred despite aggressive promotion and labelling of local product to consumers as more "welfare-friendly", reinforcing the thinking that there is little or no willingness to pay by pork consumers for more costly animal welfare standards.

Unless or until producers in the Americas (where sow stalls are routinely used) are forced to comply with tighter animal welfare standards than they currently do, it is a major article of faith for the Australian pork industry to embrace standards, and must be seen as increasing the risk of losing business competitiveness. Under the revised Code the Australian industry has committed to do this, but only with the full support and understanding from the Government that in doing so the costs imposed on businesses accordingly must be kept to an absolute minimum.

In 06/07 it is estimated that approximately 65% of the imported pork into Australia is attributed to Canada and USA, so therefore 43.3% of the total processed pork sold in Australia (06/07) is manufactured under production systems that are of lesser welfare standing than Australian standards, leading to an equivalence problem.

Cross-Jurisdictional Impacts: Environmental impacts and regulatory requirements

It is also essential to understand the cross-jurisdictional effects of state and local Government planning requirements as well as environmental legislation has a major potential to limit some farms from being able to otherwise comply with animal welfare requirements affordably.

A case in point is the draft environmental regulatory changes proposed in Queensland which foreshadow huge increases in Environmental Protection Agency (EPA) fees. This has significant consequences for producers making 'material change of use' alterations to their piggeries as a result of the Code revisions

Intensive farming operations face massive increases in State Government environmental charges under the review of the Environmental Protection Regulation released in February 2008. The review proposes to replace the current schedule of EPA fees (set in 1994) with a new set of fees based on environmental risk profiles. The new fee structure also aims to achieve full cost recovery for the EPA's environmental compliance functions including a massive 30 per cent increase in compliance function costs. The Environmental Protection Regulation 1998, which provides the main legislative tools for assessing and managing activities that cause point source pollution (including industrial, commercial, mining, intensive animal and municipal operations) is due to expire in August 2008. The EPA has taken the opportunity to look at changing the way these activities are regulated, to support the Government's priority of protecting the environment for a sustainable future. The fee schedules apply to all major emitters of pollution in industry (noise, air, waste, waste etc.). Only the most intensive agricultural producers are affected (e.g. feedlots, aquaculture farms, piggeries, chicken farms etc.) QLD pig farmers with more than 5,000 SPU (Standard

[9] Sloyan, M. (2006) An analysis of pork and pork products imported into the United Kingdom. British Pig Executive, April 2006. http://www.bpex.org/technical/tech2/practical_advice/freePublications.asp

Pig Units) current fee is proposed to increase to $,9800 an increase of some 20 per cent while pig farmer keeping 375 to 5000 SPUs can expect an increase of $5,600 in fees.

Animal Welfare Assistance Measures

Producer financial assistance for infrastructure changes to piggeries as required by new Code

APL proposes that Government assistance be provided to producers to assist with the initial cost involved in introducing these new welfare systems as required under the new Code[10]. This would facilitate industry adjustment as farmers move to upgrade their systems to take into account the requirements imposed under the new Code. APL views this assistance as a high priority

Using international precedence, suggestions for the scheme include:

i. Government financial assistance provided to farmers includes:
   - construction of new dry sow housing
   - conversion of existing housing[11] to accommodate dry/group sow housing combinations as per Model Code time requirements. Conversion of existing structures will only be eligible provided the estimated costs of conversion to the relevant specification do not exceed 70% of the cost of an equivalent new structure. Where conversion is the only feasible solution (for example because of space constraints), a conversion must not exceed the cost of a new structure.
   - building of group housing indoors or outdoors for growing pigs if additional accommodation is required due to the increase in space allowances for growing pigs under the Model Code.
   - retro-fitting group housing to ensure space allowances meet the standards set out in the revised Model Code.

ii. Payment will be made on a per sow basis, at a rate of $125 per sow. The maximum grant payable is $187,500 per herd / site. Multi-site properties would be eligible for payment for each site.

iii. The funding will be granted on a matching dollar for dollar basis, following provision of receipts for approved works and purchases. In addition, a sliding scale will be applied over and above the proposed program. Calculations have not yet been determined.

iv. Contract growers are eligible for this program. While all other eligibility criteria apply, calculation method will differ for contract growers, and methodology for

[10] The revision of the MCOP was a long and drawn out process, starting in 2003 and getting PIMC sign off in 2007. When the changes in the MCOP were agreed to by industry, market conditions were quite different. It could not be foreseen that these effects would occur or accounted for when the industry agreed to make these adjustments which require significant investment but with no return (i.e. price premium or increase in productivity.)

[11] From the Model Code of Practice for the Welfare of Animals – Pigs (revised) 2007: Pigs are currently raised under systems falling into two main categories - Indoor (including single and group housing on solid or slatted floors); deep litter (groups on deep litter in shelters or sheds); and outdoor (free range in paddocks with shelter such as arks or huts).

calculation has yet to be developed and therefore payments to contract growers have not been accounted for in financial calculations for this program.

v. The total financial allocation of the program is $9.375 million. This will allow $18.75 million of work to be completed based on a dollar for dollar matching funding. It will be closed for new applications when the allocation of $9.375 million has been committed. APL estimates that the total cost to industry to move all dry sows currently housed in stalls into alternative dry sow housing would be in excess of $22 million.

vi. Assistance will not cover any increase in sow herd size.

vii. Producers who make animal welfare commitments on a voluntary basis which go beyond the mandatory standards associated with the Code may receive supplementary payments. This applies to producers who prefer to move their entire herd to group housing because it better suits their production system, labour skills and availability and environmental requirements, bypassing the use of sow stalls, will be entitled to an additional payment of $50 per sow. The maximum amount eligible for each herd under this supplementary scheme is $20,000. This additional payment will be closed when the allocation of $900,000 has been committed. Again assistance will not cover any increase in sow herd size. In addition, a sliding scale on a per sow basis will be applied over and above the proposed program. The methodology calculations for contract growers have not yet been developed, and therefore payments under the sliding scale have not been accounted for in financial calculations above.

viii. To tie in environmental changes (and Government policy platform in this area), APL recommends an additional payment to assist in preparation of a farm Environmental Impact Assessment and Statement (EIS)[12]. This will assist producers in identifying those specific changes required to meet state environmental requirements in order to meet the changes required under the new Code. The rate of grant for the preparation of an EIA will be 10 per cent of standard costs based on receipt, up to a maximum payable of $10,000 per herd/site.

ix. All work must be completed within 36 months from date of issue of approval of the funding[13].

[12] An Environmental Impact Assessment (EIA) is a tool used to identify the environmental, social and economic impacts of a project prior to decision-making. It aims to predict environmental impacts at an early stage in project planning and design, find ways and means to reduce adverse impacts, shape projects to suit the local environment and present the predictions and options to decision-makers.

[13] Survey results from MCOP survey in 2006 showed that approval from EPA and local government for changes to shed or material change of use can take between 6 months and 36 months in all areas of Australia.

Type of Investment	Per SowRate
New Dry Sow Housing Conversion of Existing Housing to Dry Sow Housing	$125 $125
Supplementary payment for movement straight to group housing	$50
Environmental Impact Assessment/ Environmental Impact Statement	Flat rate of 10% costs, up to a maximum payable of $10,000 per herd / site

Table 4. Summary of Proposed Animal Welfare Measures

Program	Outcome	Eligibility Criteria	Assistance $
New sow housing construction	• Infrastructure development to house dry sows in a manner meeting the requirements of the new Model Code	• Entities are defined as an individual producer, family company, limited company, partnership, joint venture, etc. • Multi-site operations are eligible on a per site basis. • Entity must be a current participant of APL's Australian Pork Industry Quality Assurance Program (APIQ)	• Payment will be made on a per sow basis, at a rate of $125 per sow. The maximum grant payable is $187,500 per herd under the Animal Welfare Assistance program. • In addition, a sliding scale on a per sow basis will be applied over and above the proposed program. Calculations have not yet been determined. • Multi-site properties would be eligible for payment per herd. • The funding will be granted on a matching dollar for dollar basis, following provision of receipts for approved works and purchases. • Assistance will not cover increase in herd size • Work must be completed within 36 months from date of issue of approval of the funding
Conversion of existing housing to dry sow housing	• Conversion of existing infrastructure to house dry sows after the 6 weeks permitted in stalls under the requirements of the new Model Code	• Entities are defined as an individual producer, family company, limited company, partnership, joint venture, etc. • Multi-site operations are eligible on a per site basis . • Costs of conversion to the relevant specification do not exceed 70% of the cost of an equivalent new structure. • Entity must be a current participant of APL's Australian Pork Industry Quality Assurance Program (APIQ)	• Payment will be made on a per sow basis, at a rate of $125 per sow. The maximum grant payable is $187,500 per herd under the Animal Welfare Assistance program. • In addition, a sliding scale on a per sow basis will be applied over and above the proposed program. Calculations have not yet been determined. • Multi-site properties would be eligible for payment per herd. • The funding will be granted on a matching dollar for dollar basis, following provision of receipts for approved works and purchases • Assistance will not cover increase in herd size • Work must be completed within 36 months from date of issue of approval of the funding

Building of additional group housing indoors or outdoors for growing pigs	• Construction of additional Infrastructure to house growing pigs under the space allowance requirements of the New Model Code	• Entities are defined as an individual producer, family company, limited company, partnership, joint venture, etc. • Contract growers are also eligible for this program. While all other eligibility criteria apply, calculation method will differ for contract growers, and methodology for calculation has yet to be developed. • Multi-site operations are eligible on a per site basis • Entity must be a current participant of APL's Australian Pork Industry Quality Assurance Program (APIQ)	• Payment will be made on a per sow basis, at a rate of $125 per sow. The maximum grant payable is $187,500 per herd under the Animal Welfare Assistance program. • Multi-site properties would be eligible for payment per herd / site. • The funding will be granted on a matching dollar for dollar basis, following provision of receipts for approved works and purchases. • Assistance will not cover increase in herd size • Work must be completed within 36 months from date of issue of approval of the funding
Retro fitting group housing to ensure space allowances meet required standards	• Conversion of existing infrastructure to house growing pigs in the space allowances permitted under the requirements of the the new Model Code	• Entities are defined as an individual producer, family company, limited company, partnership, joint venture, etc. • Contract growers are also eligible for this program. While all other eligibility criteria apply, calculation method will differ for contract growers, and methodology for calculation has yet to be developed. • Multi-site operations are eligible and will apply separately for each site. • Entity must be a current participant of APL's Australian Pork Industry Quality Assurance Program (APIQ)	• Payment will be made on a per sow basis, at a rate of $125 per sow. The maximum grant payable is $187,500 per herd under the Animal Welfare Assistance program. • Multi-site properties would be eligible for payment per herd / site. • The funding will be granted on a matching dollar for dollar basis, following provision of receipts for approved works and purchases. • Assistance will not cover increase in herd size • Work must be completed within 36 months from date of issue of approval of the funding

Supplementary Payments for Group Housing	• Producers may prefer to move their entire herd to group housing because it better suits their production system, labour skills and availability and environmental requirements, with no use of sow stalls	• Entities are defined as an individual producer, family company, limited company, partnership, joint venture, etc. • Multi-site operations are eligible. • Evidence that the facility/housing infrastructure of a specified production system within the farming enterprise will be used for the group housing of animals from birth to grow out i.e. the entire life of the animal. (Any purpose built stalls may only be used for the treatment of sick or injured animals) • Entity must be a current participant of APL's Australian Pork Industry Quality Assurance Program (APIQ) • Producers who move their entire herd straight to group housing, bypassing the use of sow stalls altogether, will be entitled to an additional payment of $50 per sow	• Supplementary payment of $50 per sow place • The maximum supplementary payment is $20,000 per herd. • Assistance will not cover increase in herd size • Work must be completed within 36 months from date of issue of approval of the funding
Environmental Impact Assessment	• Environmental Impact Assessment and Statement (EIS) to assist producers identify specific changes driven by new Code and which are affected by state environmental and planning regulations	• Entities are defined as an individual producer, family company, limited company, partnership, joint venture, etc. • Contract growers are also eligible for this program. While all other eligibility criteria apply, calculation method will differ for contract growers, and methodology for calculation has yet to be developed. • Multi-site operations are eligible and will apply separately for each site.	• The rate of grant for the preparation of an EIA will be 10% of standard costs based on receipt. • A maximum payable of $10,000 per herd/site.

Industry capacity building & producer/stockperson training

The Model Code of Practice (2007) requires all stockpersons to be signed off (by management) as 'competent' for their role, or otherwise working under the direct supervision of a person who is deemed to be 'competent' from 2010. Therefore, in addition to assistance to help producers cope with the cost of physical changes on their piggeries, assistance with capacity building in the industry – to build knowledge, technology, management skills and market access – is a high priority.

Specifically, the development of a training and competency assessment program of $150,000 which could be delivered through the National Training Centre would enable the producers to meet this mandatory requirement.

The program would involve development of a training scheme and materials, as well as the delivery of the training (both face to face and web based) to producers. Funds that would be required by APL to deliver this capacity and training to producers could subsequently be redirected and invested in other areas if government assistance was made available for this program. The benefit of this measure is largely focused at the medium to smaller produce; it is likely to be of limited benefit to larger commercial piggeries other than to provide a training resource that can be readily integrated into existing in-house training programs.

Producer Exit Assistance & Producer Sustainability Assistance

Producers and primary processors (abattoirs and boning rooms) are facing mounting losses. In November 2007, in the first submission to the Productivity Commission, APL reported that many producers were losing an estimated $40 per pig, which equates to $800 per sow per year. If applied across the whole industry on an annualised basis would be $182 million. These losses continue with little relief from pig or grain prices.

The magnitude and direction of losses has caused many producers to exit or are consider exiting. This is confirmed by industry surveys of producers. The damage is occurring to such an extent that it will be severe and lasting. Primary processors are similarly being forced to reduce output and cut employment. The industry's facilities have limited or no alternative uses. The proposed producer assistance measures have been designed to enable the maximum number of producers to exit with dignity addressing the serious gaps and inadequacies of current assistance measures which tend to discriminate against pig producers

Uptake of current assistance measures such as Exceptional Circumstance Relief Payments, Drought Assistance, Interest Rate Subsidies by pig producers has been very small[14]. They have not addressed specific pig industry concerns. There are feed supply difficulties for both intensive and extensive industries during a drought, and intensive livestock industries are affected by high grain prices even if they are not located in a "drought declared" area. Furthermore, the specialised nature of pig production has rendered producers ineligible for current schemes. The investment by producers in sheds and other infrastructure is specific to piggeries only, and cannot be used for any other farm enterprise, so an exit payment needs to be unencumbered and unrelated to income or assets. The industry needs specific measures to assist competitive producers or encourage industry exit.

[14] See Annex F: State Drought Assistance and Federal Exceptional Circumstances: Pig Industry Status for more information.

In light of the current industry crisis and its continuing impact on producer viability, producer assistance measures should provide producers with options to either:

- Exit /retire from pig production, including retrospective payments to those producers who have ceased production since 1 September 2007 or
- Provide breathing space to manage the cost impediments attributable to the current industry crisis, while they restructure their business.

Two different types of assistance are therefore proposed:

I. **Assisting Producer Viability**: Entities who are competitive the long run and can establish that short-term cost impediments can be managed with financial assistance from the government may apply for a Farm Restructure Loan. (Producers must undertake a **Competitiveness Audit** for eligibility for Viability Assistance.)[15]

II. **Exit /Retirement Assistance**: Producers who are retiring and/or are deemed uncompetitive can avail from two types of assistance: Retirement Exit Assistance or Producer Exit Assistance

Assisting Producer Viability

Losses to the industry have been documented for some time. Pig farming entities[16] who are competitive in the long run and can establish that short-term cost impediments can be managed with financial assistance. It will retain the industry's competitive producers and assists with future competitiveness of the Australian pig industry. It is likely to have the most effect on medium sized entities with niche market supply arrangements.

Farm Restructure Loans

This loan[17] provides financial assistance for pig farming entities with income shortfalls to meet the interest charges on their loans while they restructure their business. It is available to producers assessed as competitive in the long term, and wish not to, or cannot avail of existing government schemes. Entities must undertake a Competitiveness Audit for eligibility for a Farm Restructure Loan. Farm Restructure Loans are described below in Table 5.

A Competitiveness Audit is for eligibility purposes for the Farm Restructure Loan and Producer Exit Assistance. It can also enable other producers to proactively take control of their business, including assistance with:

- analysing the sustainability of their business

[15] The Competitiveness Audit Assessment can be conducted upon a producer's private financial advice and benchmarked to Australian Pig Check statistics or equivalent.

[16] Entities carry on the business of breeding or growing pigs in Australia for sale, pay the pig slaughter levy (other than as an intermediary) during the financial years ending 2007 & 2008. They can be include but are not limited to: producer, company, joint venture, partnership.

[17] Existing Farm Exit Loans under Exceptional Circumstances Assistance has tended to discriminate against the Australian pig producers due to the prohibitive asset requirements. For example, the Farm Help grant of $150,000 for farmers who decided to leave the land has an asset limit of $350 000. This asset limit is too low for an intensive industry with major capital investment in infrastructure.

- anticipating potential problems so as to solve them before they become profit limiting
- aligning with producers' business aspirations and
- where necessary, in developing exit strategies.

Competitiveness Audit

The Competitiveness Audit should be made available to all producers in our industry. The Competitiveness Audit should be a uniform program that can be applied across industry.

The Competitiveness Audit can be used by the producer to seek professional business advice, depending on their assessment outcome. The producer can then avail of the $5,500 grant available to them if applying for the Farm Restructure Loan and deemed viable long term, or the Producer Exit Assistance if deemed unviable long term.

The Competitiveness Audit will not impact on Retirement Exit Assistance, where a different $5,500 grant can be used for Retirement Advice.

For the first 12 months, producers who do not avail of government assistance can apply to use the Competitiveness Audit for their own business can claim the $5,500 grant.

Table 5. Summary of Proposed Producer Sustainability Measures

Program	Outcomes	Eligibility Criteria	Assistance $
Farm Restructure Loans	• Financial assistance for pig farming entities with income shortfalls to meet the interest charges on their loans • Provides necessary breathing space for pig farming entities while they restructure their business • Administered by Centrelink • No loan fees charged on the Farm Restructure Loans • Loans are indexed each year to reflect changes in the Consumer Price Index (CPI) but are otherwise interest free. • Loan amount payable is listed separately in annual Tax Return Statements with 15% discount on repayments made over $5000 • No minimum amount payable in the first 12 months after loan approval	• Entities carry on the business of breeding or growing pigs in Australia for sale, pay the pig slaughter levy. • Multi-site operators can apply for payment, on per site basis. • Complete Competitiveness Audit and deemed viable in the long-term • If competitiveness test is completed and deemed unviable entity, can opt for **Exit/Retirement Assistance.** • Entity needs to have 75 % of their gross income coming from pig production in the 2007/2008 financial year. • Entity contributed more than 75% of business capital to pig production • Entity must be a current participant of APL's Australian Pork Industry Quality Assurance Program (APIQ) or must agree to sign up to PigPass QA and EnviroCheck • Cannot extend existing financial arrangements or arrange new finance • Not involved in involuntary bankruptcy proceedings, an involuntary mortgagee in possession arrangement, have not been issued with an eviction order, or have not in any other ways lost management control of your pig production. • Entities that apply for the Farm Restructure Loans are ineligible for the Exit/Retirement Assistance	• Payment paid in two instalments up until allocated amount. • Loan amount calculated retrospectively from 1 September 2007, $400/sow basis. Where entities can apply for up to $100,000 per site. • If applied for the 2007/2008 financial year, entities can apply up to $50,000 per site. • Up to $50,000 per site – a reduction on interest charges or rebate of interest charges on loans which exceed more than $50,000 per site. • An advice grant of up to $5500 (GST inclusive) by approved professional advice of the financial position of the farm, to help improve long-term financial prospects and planning and to determine long term viability. • In addition, a sliding scale on a per sow basis will be applied over and above the proposed program. Calculations have not yet been determined.

Producer Exit/Retirement Assistance

If the exit of pig producers from the pork industry is not managed it may result in increased environmental damage via unused facilities (pest infestation), effluent lagoons, financial hardship and debt and poor income in retirement. There is also the requirement that our producers are availed of the opportunity to exit with dignity. Further the industry age profile, typical of an agricultural sector, shows an aging producer profile close to retirement age and are now considering or being forced to exit during difficult production conditions with their equity greatly reduced. Consideration must also be given to these farmers and what assistance can be provided.

Retirement Exit Assistance

Retirement Exit Assistance encourages producers of retirement age working in the industry to avail themselves of income support via additional superannuation funding. Producers who are granted Retirement Exit Assistance are not eligible for Producer Exit Assistance.

Table 6. Summary of Proposed Producer Exit Measures

Program	Outcomes	Eligibility Criteria	Assistance $
Retirement Exit Assistance	• Producers at or close to retirement age profile, and now considering or being forced to exit during difficult production conditions with their equity greatly reduced. • Encourages producers of retirement age to avail themselves of income support via additional superannuation funding. • Administered by Centrelink. • Superannuation top-up payment paid quarterly up until allocated amount and is tax free. • Producers are of retirement age i.e. 55 or over and are extending their retirement to cover lost income in the financial year ending 2007 and 2008 • Payment deposited into a producer's selected superannuation fund. Funds can only be released upon official retirement from the industry. • Producers will be able to use the 'transition to retirement' strategy and claim flexibility for 'preservation age'. • Existing superannuation funds will be able to offer administration. Efficiency and access will be achieved as this would be similar to existing superannuation funds.	• Entities carry on the business of breeding or growing pigs in Australia for sale, pay the pig slaughter levy, with the exception of contract growers • Payment is income and assets tested (EBITDA) • Entity must show reduced equity/farm loss, following the sale of their farm business. • Multi-site operations are eligible • 75% or more was invested in pig production in the 2007/2008 financial year • Farmers must agree not to reopen or own a piggery operation indefinitely • Must surrender their Standard Pig Unit (SPU) License(s) • A Retirement Advice grant of up to $5500 (GST inclusive) for approved professional advice and planning • Not involved in involuntary bankruptcy proceedings, an involuntary mortgagee in possession arrangement, have not been issued with an eviction order, or have not in any other ways lost management control of your pig production.	• Those who plan to retire within 18 to 36 months from end financial year 2008/2009 will have up to $100,000 per site to lost production based on a $800/sow • Those who plan to retire within 18 to 36 months from end financial year 2007/2008 will have up to $200,000 , per site, to lost production based on a $800/sow • An additional 50% to the **Remote Area** Allowance[18] payment for those who avail of **Retirement Exit Assistance** for the first 12 months

[18] If you live in a nominated Remote Tax Zone you may qualify for a **Remote Area Allowance**. You do not need to make a claim for this allowance. If you receive income support, such as an Age Pension, from Centrelink you will automatically receive it in your fortnightly payment.

Producer Exit Assistance	• Producers are availed of the opportunity to exit with dignity. • Payment paid quarterly up until allocated amount. • Entities will be deemed uncompetitive by completing a **Competitiveness Audit**	• Entities carry on the business of breeding or growing pigs in Australia for sale, pay the pig slaughter levy, with the exception of contract growers. • Producers granted **Retirement Exit Assistance** are not eligible for **Producer Exit Assistance** • All payments are income and assets tested (EBITDA) • Must complete a **Competitiveness Audit** to demonstrate that the business is no longer viable. • Farmers must agree not to reopen a piggery operation in indefinitely • Multi-site operations are eligible. • Must have been in pig production for at least two years prior to an application. • 75% or more was invested in pig production in the 2007/2008 financial year • Must surrender their Standard Pig Unit (SPU) licence(s). • Not involved in involuntary bankruptcy proceedings, an involuntary mortgagee in possession arrangement, have not been issued with an eviction order, or have not in any other ways lost management control of your pig production.	• An advice grant of up to $5500 (GST inclusive) for approved professional advice of the financial position of the farm, to help improve long term financial prospects and planning and to determine long term viability. • Payment calculated retrospectively from the 2007/2008 financial year, per site, on an $800/sow basis. • A tax free payment of up to $100,000 per site will be made to those producers • Payments will be limited to $200,000 in assets following the sale of their farm and will be reduced by $2 for every $3 in excess of $200,000. • An additional payment can be made for the demolition of existing infrastructure which has been deemed uncompetitive under a **Competitiveness Audit**. Such payments would be made per sq/m of the facility.

Site Rehabilitation Assistance

For those pig producers exiting the industry and which are eligible for an additional payment under the Producer Exit Assistance Package would also be eligible for Site Rehabilitation Assistance. The effluent lagoons are one area that poses a threat to the environment if they are not rehabilitated. Assistance could be provided to help producers clean out the old lagoons and either converts them for fresh water storage or habitat for water birds. This measure fits with Government's environmental policy platform. Payment or up to $100,000[19] would be conditional on proof of exit and site approval.

Environmental Sustainability Assistance Measures

Industry conditions have deteriorated to the extent that assistance to remaining producers to alleviate the impact of these changes is vital, it is also important for the industry to continue its progress in the major environmental challenges in relation to soil degradation, water conservation, greenhouse gas emission and climate change. These challenges also reflect the Australian Government's Rural Research and Development (R&D) Priorities[20] for the next 5-10 years focussing on the following topics:

- boosting productivity and adding value to rural production;
- effective operation of supply chains and markets for existing and new products;
- supporting effective natural resource management;
- building resilience to climate variability and climate change; and
- protecting Australia from biosecurity threats.

From an environmental perspective the Australian pig industry's focus rests on Natural Resource Management, Climate Variability and Climate Change to ensure that the industry is both economically and environmentally sustainable. APL proposes that Government assistance be provided to producers to assist with the initial cost involved in introducing measures with ongoing environmental benefits. This would also assist with industry adjustment to impending environmental measures necessary to meet the requirements of the Kyoto protocol. APL views this assistance as a high priority.

Using international precedence, suggestions for the scheme include:

i. Government financial assistance provided to farmers includes:
    - performing environmental audits for pig farms (EnviroCheck),
    - developing Nutrient Management Plans,
    - preparing laboratory analysis of farm effluents,
    - collecting life cycle inventory data on nitrous oxide emissions,
    - modifying housing systems in regard to climate change,
    - using bioenergy to mitigate greenhouse gas emissions, and
    - improving water sustainability.

ii. To be eligible for any measure producers need to have an EnviroCheck plan i.e. it provides entry level to be eligible to undertake other environmental initiatives. (Shows suitability of farms fit/or changes required for environmental management and demonstrates environmental practice).

[19] The cost of rehabilitating a 1000 sow birth to bacon farm at today's cost is estimated at $180.000.
[20] Source: http://www.daff.gov.au/agriculture-food/innovation/priorities

iii. All measures eligible for financial support need to be in line with the Government's environmental initiatives.

Table 7 below lists possible environmental industry programs. APL estimates that these programs require approximately $15.3 million over five years.

Table 7. Summary of Proposed Environmental Sustainability & Stewardship Programs

Program	Outcomes	Eligibility criteria	Assistance $
EnviroCheck Previously funded under Fed Govt EMS programme for 2 years (good participation but no longer term uptake) APL funded 2007/08 – no uptake (partly industry conditions)	• Provides information about the current environmental performance of the pork industry and could provide data on its delivery of additional environmental benefits (e.g. habitat provision or Green House Gas Emission mitigation). • Provides producer's with a confidential feedback on farming practices and potential improvement. • Enables benchmarking of industry performance. • Provides a communication and training tool for producers. • A key component of any environmental stewardship/sustainability programmes and associated marketing opportunities.	• Minimum of 50% of income from piggery over the last 2 years • Audit costs fully refundable (but conditional)	• 3 year program. • $400/audit if combined with PigPass QA audit. Required only every 3 years for small sites and sample audit for multi-site operators e.g. QAF, APF. • Audit costs fully refundable; condition that copies sent to APL to enable monitor industry progress and provide a pool of data for future benchmarking and performance of industry.
EMS Nutrient Management Plans	• N2O (Nitrous Oxide) emissions from soils, mainly due to nitrogen fertilisation and soil water logging. Soil N2O accounts for some 3% of Australia's Green House Gas (GHG) emissions. • Nutrient Management Plans to ensure more efficient fertiliser applications to reduce overall use. • Good Agricultural Practices followed to improve soil structure and avoid water logging (no till cropping, gypsum application, no stubble burning, no flood irrigation).	• EnviroCheck	• Flat rate ($4,000 for NMP and audit). • Then paid per hectare each year if monitoring data is submitted for desk audit
Laboratory Analysis Farm Manure Soil and Effluent	• N2O (Nitrous Oxide) emissions from soils, mainly due to nitrogen fertilisation is a GHG emission. • Ensure more efficient fertiliser applications to reduce overall use i.e. nutrient management of piggeries.	• EnviroCheck • Nutrient Management Plan	• Paid per site $3,000

	• Assist in the sale of manure off site as fertiliser is a potential reduction agriculture's GHG emission and increasing the productivity of Australian agricultural soils (reducing greenhouse intensity of crops). • Laboratory analysis of effluent including stockpiles will provide data for industry data base (including critical information for carbon footprinting) as well as on farm nutrient reuse, land application, and improving the sale of solids management plans.		
Life Cycle Inventory Data on Nitrous Oxide Emissions	• Provide data in relation to information gaps concerning nitrous oxide emissions from deep litter sheds and uncovered lagoons and paddocks.	• APL project – one off	• $450,000
Housing – Climate Change Adoption	• Appropriateness of different housing systems in relation to climate change. In particular will deep-litter housing become less productive as temperatures increase? • The cost and environmental effectiveness , (including greenhouse gas emissions and water use) of forced ventilated sheds versus well insulated sheds using primarily natural ventilation versus deep-litter housing. • There is a need for further research to fully understand the cycling of greenhouse gases through each production/housing system including research to identify technologies and management systems that will mitigate or abate greenhouse gas emissions and research to identify and develop greenhouse Best-Management Practice standards.	• APL project – one off	• $100,000
Bioenergy & Mitigation of Greenhouse Gas Emissions	• APL has been working with the federal Govt through the Methane to Markets in	• EnviroCheck • Site audit report	• $3,000 per sow capped at $150,000 • ROI for Govt in terms of $ per tonne CO2

	Agriculture program to help commercialise bio-energy systems. • By the late 2008 there should be sufficient information collated to fully understand the economics and the technicalities of building and managing these systems. • The potential exists for a national roll out of 30-100 installations at piggeries. These could be installed by one or two teams working sequentially – which each site taking around 2 weeks to install. • Such an approach could halve the installation costs by bulk ordering and increasing efficiency of project management and installation. It would provide critical mass to an industry supporting the gen sets and equipment associated with them.		mitigated
Water Sustainability & Management – Irrigation Practices	• Funding to help pig producers move away from flood irrigation – install pivots or travelling irrigators. • Changes to irrigation practices such as this can also help avoid N2O emissions. • Capital works project.	• EnviroCheck required • Nutrient Management Plan	• 50% subsidy capped at maximum amount • Maximum amount of $30,000 per farm.
Water Sustainability & Management – Catchment	• Funds to assist in the construction of terminal dams down-slope from irrigation areas. These dams can capture nutrient enriched run off protecting water ways and provide water for irrigating crop/pasture increasing profitability. • Potential for additional payment based on incorporating a wetland feature to improve native habitat and wildlife.	• EnviroCheck • Nutrient Management Plan	• 50% subsidy capped at maximum amount • Maximum amount of $20,000 per farm.

Labelling, Compliance and Verification of Imported and Domestic Pork Products

Country of Origin Labelling (CoOL) laws exist for fresh and processed pork products through the FSANZ Food Standards Code (Standard 1.2.11), which is implemented via state based laws and the Trade Practices Act. This labelling requirement has been in place since December 2005. Proper Country of Origin Labelling based on the current Standard 1.2.11 is consistent with maintaining an efficient and internationally competitive food industry that addresses public health and safety concerns, provides consumers with information on which to make informed decisions, facilitates trade and avoids misleading labelling.

These laws are applied differently according to the product type – e.g. fresh pork (meat cabinet), packaged processed pork products (meat and dairy cabinets), bulk processed pork products (deli cabinet).

The labelling requirements for unpackaged processed products are presently under review by FSANZ. Application 583 for the Australian Meat Industry Council (AMIC) seeks to remove the CoOL requirement for unpackaged processed pork products from the current Standard 1.2.11. AMIC has argued (on behalf of smallgoods manufacturers who are the major importers) that it is too difficult and costly to track where these products have come from to enable the correct labelling to be used in the deli cabinet.

The Trade Practices Act, administered by the Australian Competition and Consumer Commission (ACCC), defines 'Product of Australia' and 'Made in Australia'. To qualify for the premium claim 'Product of Australia', two rigorous criteria must be met:

- each significant component (or ingredient) of the good must originate from the country of the claim; and
- all, or virtually all, of the production or manufacturing processes must take place in that country.

The intent is that the 'Product of Australia' tag be reserved for products that have no, or virtually no, imported content. However, small goods processed in Australia from 100% Australian pork are currently unable to use this label as brine, an essential ingredient in curing pork, includes imported chemicals that are unavailable locally.

In comparison to this, products claiming to be 'Made in Australia' need to meet the following criteria:

- the goods must have been substantially transformed in the country claimed to be the origin; and
- 50 per cent or more of the costs of production or manufacture must have been incurred in that country.

The "Made in Australia" claim is therefore the highest theoretical claim for Australian sourced pig meat in processed form, and also a possible claim for imported pig meat in packaged processed products if the local value-add is high enough. The result of this is that "Made in Australia" has not necessarily anything to do with Country of Origin when relating to the meat itself.

Standard 1.2.11 has been drafted to be consistent with the requirements of the Trades Practices Act (the Act). This applies to the whole Code, including the Standards concerned with labelling unpackaged foods. According to the Act, for a food to qualify for a 'made in' claim for a particular country, it must be substantially transformed in that country, and more than 50% of the cost of production or manufacture must be incurred in that country.

If a ham or bacon product has had more than 50 per cent of its value added in Australia, and has been substantially transformed in Australia, it may qualify to claim to be 'Made in Australia'.

Ham or bacon made in Australia from imported fresh pork may have been substantially transformed and more than 50% of the value of manufacturing process may have been added in Australia. We must distinguish if the product will be sold packaged (in the dairy cabinet of the supermarket) or unpackaged (in the deli cabinet of the supermarket) as the labelling requirements are slightly different. If this product is packaged, it may be labelled "Made in Australia" or can identify place where food is made/manufactured or packaged and origin of ingredients as imported or local, rather than where made. For example, 'Made in Australia from local and imported ingredients'. If the product is unpackaged, it will require signage that identifies country or countries of origin. For example 'Product of Australia' or 'Product of Denmark'; NOT 'imported product'.

Despite the use of imported brine in all hams and bacons, "Product of Australia" claims are used in packaged and bulk pork products which use all Australian sourced pig meat, and the industry/ APL feels no motivation to correct this, as it is at least one mechanism for enabling consumers to choose Australian product if they so desire.

As a result, current COOL regulations increase consumer confusion and work against the original intention of giving consumers real choice when it comes to processed pork products. There will be added confusion by consumers and weaker regulation should the changes to the Food Standards Code requested by AMIC be accepted. The current Federal Government recognises the problems with current food labelling - the ALP's Election 2007 Policy Document - Labor's Plan for Primary Industries, states:

> *"Food labelling is confusing*
> *Food labelling is regulated by the Trade Practices Act, which sets out requirements for use of 'Made in' or 'Product of' labels for both food and non-food products. Research has found that for packaged foods, consumers are often confused and do not understand what is meant by 'Made in' and 'Product of' labels. For example, fruit juice sold as 'Made in Australia' can contain 100 per cent imported juice."*

Potential for "Australian Grown Pork" Consumer Education Campaign

The low likelihood of the Australian pork industry having the support of the necessary stakeholders to change the country of origin labelling regulation away from the two TPA definitions of "Product of" and "Made in" has led to the preferred strategy of the industry evolving towards a market based consumer brand/ certification system for Australian pork. The Government supported "Australian Grown" campaign could be a relevant vehicle for this to be delivered to the consuming public.

Given the inadequacy of the present TPA and CoOL definitions and regulation to provide sufficient information to enable consumer choice, we believe that there is a substantive case for such a campaign to be conducted in the interests of public good, and thus funded by Government. Consumers need to be given real choice and this system is, for the foreseeable future, the only recognisable way for this to happen. An "Australian Grown Pork" based campaign would not only educate consumers on how to find domestically produced pork products but also promote the whole concept of "Australian Grown" which is still a relatively new one for Australian consumers.

There is alignment with the primary industry policy of the Government – to quote from the ALP Primary Industries Policy Document "Labor's Plan for Primary Industries":

> "*There is also a need to assist smaller sectors of the Australian food industry to organise collective effort to respond to the challenge of increasing food imports. This is particularly the case for fruit and vegetable producers, pork producers and the seafood industry."*
>
> Later the document states "*A Rudd Labor Government will invest $5 million to create a Promoting Australian Produce initiative to assist Australian producers develop and implement initiatives that raise awareness of the premium quality of Australian produce, including home grown fruit and vegetables, pork and seafood products. Promoting Australian Produce will be directed at sectors which are prepared to invest in industry wide programs to assist producers in differentiating their produce through improved promotions and marketing."*

The proposal of a Government funded consumer education campaign built around Australian pork and the Australian Grown campaign is thus underpinned by the following observations and perceptions:

- The extremely rapid penetration of the processed pork sector by imported product has caught consumers unaware. APL observations and anecdotal evidence indicates that the vast majority of consumers believe that they are purchasing an "Australian" product whenever they buy bacon or ham. This is despite the fact that around 70% of bacon and ham sold in Australia is sourced from overseas pigmeat.
- The problems with the "Product of…" and "Made in…" label claims is that they do not allow consumer choice of which sets the point of reference for Country of Origin labelling for processed pork products. There is no incentive for processors to provide additional information particularly given processed pork products are in around 70 per cent of cases comprised of imported pigmeat. Consumers are left with the impression that they are consuming an Australian product when purchasing "Made in Australia" (as discussed above). There are also problems of the imported components in brine which further prevents the labelling of 100% Australian sourced pork as "Product of Australia." This situation is not an issue for the horticultural or seafood industries and is thus unique to the pork industry.
- Far from providing consumer choice on Country of Origin, the current laws in fact suppress meaningful consumer information. This is no fault of the pork industry, but does result in damage to the industry and it needs to be corrected.

- An education campaign using the Australian Grown logo as the vehicle would have the spin-off benefits of promoting the Australian Grown concept which is still in its infancy and not completely understood by consumers.
- Our realistic ability to change the present CoOL laws as and for the pork industry in the short or medium term is nil.
- The use of the Australian Grown logo for processed pork products would add another level of assurance as to the correct and compliant claims for Country of Origin and Made in Australia.
- Due to the present profitability crisis within the pork industry and the resulting diminishing of production volumes resulting from the ever increasing volumes of imports, the income of APL is decreasing, reducing our ability to effectively carry out such promotions using levy payer funds.
- The diminishing amount of marketing funds coming through the levy system is used to attempt to continue to increase the demand for fresh pork which is the only part of the market still exclusively supplied through domestic production, and upon which the majority of the industry depends for its future survival.
- Such a campaign would motivate processed pork manufacturers to sign up to the Australian Grown campaign, increasing income to the campaign, and building dedicated markets for Australian produced pork.

The proposed campaign would have the following objectives:

- To educate consumers as to the attributes and limitations of the CoOL laws and Made In Australia label as they pertain to processed pork products
- To offer consumers the alternative choice of CoOL and Made in Australia recognition through the Australian Grown logo
- To inform consumers broadly as to the Australian Grown campaign and what it means
- To motivate pork manufacturing companies to sign up to the Australian Grown campaign

APL estimates that to achieve a meaningful level of success for the above objectives, a budget of $4 million over two years would be necessary. This would enable a reasonable level of exposure for the campaign through traditional print and electronic media. Some of this cost would be offset through increased income for the Australian Grown campaign.

Compliance and Verification associated with CoOL laws

APL has had concerns for some time relating to suspicions of mislabelled imported pork products being sold as Australian. These concerns have been based on:

- Industry experts expressing doubt as to the labelling of certain products based on their experience of what an Australian product would look like compared to an imported one (e.g. “short cut” bacon)
- Industry rumours of illegal processor/ manufacturer behaviour allegedly sourced through former employees for example
- A perceived mismatch of the potential markets for imported pork products but much higher imported pork volumes

- More recently, brands originating from foreign slaughter establishments being found on rind-on bacon products sold under the “Product of Australia” claim

Late in 2007, APL discovered a spiral cut ham product being marketed as "ham on the bone" in supermarkets, which actually combined imported pig meat with the bone of an Australian pig. The product was withdrawn from sale by the manufacturer. In this case, no labelling regulations were proven to be broken, but it was a clear case of misleading consumers.

In early 2008, an individual contacted the NSW Government complaining about imported pork being processed locally and sold as “Product of Australia” bacon. We believe that this has resulted in an investigation by the NSW Food Authority on a particular processor which is still underway.

THIS INFORMATION IS PROVIDED IN CONFIDENCE

Producers require a national approach to assured compliance with CoOL laws through much more robust structures and systems than exist today, and efforts in this regard could be

significantly beneficial to the pork industry, in particular considering the potential improvements in domestic pig prices being passed onto producers.

Any action in this direction would be heartily embraced by the pork industry, and likely other industries where potential mislabelling of imported produce exists (for example honey, seafood, and horticulture). APL predicts that actions to ensure compliance would be actively supported by consumer groups.

One such action that could be beneficial would be to empower the Australian Quarantine and Inspection Service (AQIS) to be able to carry out full reconciliations i.e. "mass balances" of comparing imported and fresh pork volumes entering pork manufacturing establishments with those volumes leaving and in what product form. This could ensure that the outgoing product either labelled as Australian or using pork that could not have met the time/ temperature quarantine protocols criteria is not greater than the domestically produced pig meat entering the facility. Presently AQIS does not have the power to request the domestic volumes as a part of this equation.

Return on Investment & Levy Structure

Levy Restructure: Improving producer return on investment

The present profitability crisis within the pork industry and the resulting diminishing of production volumes (due to the ever increasing volumes of import) will reduce APL's major source of income via reduced levy payers funds[21] and thereby our ability to undertake targeted programs via R&D and Marketing to improve producer and industry productivity, competitiveness and sustainability. There is wide spread industry support for a change in the current levy structure and mix and potential amendments to the levy split between marketing and R&D in order to maximize the return on investment for levy payers[22].

The second major source of APL funding is from the Commonwealth Government through the Rural R&D Corporations matching claims model. Like other rural industries, APL is fortunate to be supported by the Commonwealth through the reimbursement of 50% of eligible R&D expenditure.[23] Until the year 2005/06, APL had been operating under the GVP cap (0.5 per cent) limiting the total amount of claimable funding. During that year APL

[21] The majority of APL's funding comes from pork industry levies per carcase of $2.525. Funds are collected by the Levy Management Unit at Department of Agriculture, Fisheries and Forestry (DAFF), $0.175 is retained and held in the National Residue Survey (NRS) Reserve, which operates under the National Residue Survey Administration Act 1992, and $2.35 is paid to APL. Of the $2.35 per carcase received by APL $1.65 is made up of marketing levy and $0.70 R&D levy.

[22] Full industry consultation took place during the months February to November 2006 through media, telephone calls and road-shows. Information was provided through all these avenues with details of the proposed change and its implications, with a voting form attached for completion and return to APL. APL has met the requirements of the Australian Government's Levy Principles and Guidelines in supporting the case for change in the levy structure with a full submission made available to the Department of Agriculture, Fisheries and Forestry.

[23] The amount of Government funding support for R&D is limited by the lesser of three "caps": 0.5 per cent Gross Value of Production (GVP) of the pork industry calculated at the end of each financial year as an average of the last three years; or, 50 per cent of the amount spent on the eligible R&D activities in a financial year, where unmatched amounts can be carried over and claimed in the next financial year; or, The cumulative R&D levy income received by the Commonwealth since APL began in July 2001.

reached the Accumulated R & D Levies cap ($0.70/carcase since inception of APL). This had the effect of reducing the government R&D contribution by around $0.8 million per annum, or claimable R&D activities by $1.6 million. APL's planning has largely been done on the basis of the GVP cap being the limitation on our matching funds claims.

Since the pig industry levy was last changed in 1994 the Australian pig industry has undergone significant changes in its operating environment and also key industry structural changes driven particularly by market forces.

The most significant changes over the past decade have been the dramatic reduction in the number of producers (down by 59 per cent), sow numbers remaining basically unchanged and the increase in average slaughter weight (up nine per cent). The levy income is based on a per carcase rate. Despite the industry becoming more efficient and achieving an increase in carcase weight this does not help levy revenues because of the per carcase criterion.

In addition the levy revenue is not subject to inflation corrections yet levy fund expenditure is diluted by inflation rates. The levy funding and expenditure inconsistencies and anomalies need to be resolved to effectively continue to move the industry to being one that is competitive in both domestic and export markets.

APL believes the $0.70 per carcase R & D levy amount is arbitrary, out of date and does not track inflation. Firstly APL is obliged to spend the entire R&D levy on R&D pursuits, as opposed to items such as marketing, policy, administration and communication. Secondly the R&D levy amount has implications for the amount of matching funds from the Commonwealth that APL can claim. This is having a negative impact on APL's ability to spend industry funds in a flexible manner enabling the maximum return on investment for levy payers. In addition APL's ability to gain government support at a level consistent with other rural industries is being compromised through 0.5% of an average carcase value being well above $0.70. APL would like to bring the pig industry into line with other rural industries and have the GVP cap only limiting funding and R&D spend (alongside the permanent "cap" being that we can only claim matching funding on expenditure actually made).

The mechanism to achieve this would be to remove the arbitrary split in levies collected between R&D and marketing in the pig industry, and have one "Industry Levy". In doing this, there would be no change in the total levies payable by pig producers, APL would have the flexibility to choose the "right" amount of R&D to invest in on behalf of the industry, and there would be potentially a higher level of government R&D support available in line with that from other rural industries. Combining the two levies into one could increase APL's R&D and marketing effectiveness by giving APL more flexibility in allocating funds between R&D and marketing as priorities change.

The Australian pork industry recommends to the Minister that the split in the Pig Slaughter Levy be removed (i.e. that the Marketing Levy and R&D Levy, as defined in the Pig Industry Act 2001, be consolidated into a single levy, with no change in the total levies payable). The crisis facing the industry necessitates this as a matter of urgency and high priority.

Animal Health – sustaining our competitive advantage

Australia could gain significant advantage over our competitors in the area of disease control. As discussed previously Australia doesn't have any of the more devastating pig diseases (PRRS, SIV, PMWS/CVRD,FMD,SFV) that affect almost all other pork producing countries and as such has the potential to export genetic technologies in the form of semen and/or frozen embryos worldwide. We are also always in the ready to take advantage of export opportunities for pork when our competitors are adversely affected by one or other of these diseases.

Australia also has an opportunity to enhance its efficiency and competitiveness by better managing the diseases which do affect pigs in this country. The main diseases that adversely affect pork production in Australia and for which there is no effective vaccines are *Actinobacillus pleuro pneumonia* (APP) and Swine dysentery SD). Both diseases cause serious mortality and morbidity when active in a production unit and are endemic to the Australian pig population. Currently both diseases are "controlled" by the routine and strategic use of antibiotics.

APL has funded some projects on both diseases but a more concerted effort based on more recent advances in biotechnology relating to the causative organisms that might lead to the development of vaccines and/or alternative control mechanisms, particularly for SD for which nutritional manipulations have been shown to be beneficial. Additional funding for research into the control of disease and in particular APP and SD under Australian housing and production systems is required. The funding would be targeted at vaccine development for both and possibly other diseases and to investigate alternative control measures for SD. Based on previous discussions with researchers in the area it is anticipated up to $400,000 would be required annually to fund two projects each with duration of three years, requiring a total of $800,000 over three years to be managed by APL.

Improving Supply Chain Management and Efficiency

Development of Standard Operating Procedures (SOPS)

Another increasing constraint on the efficiency of the Australian pork industry is the availability of skilled labour. The latter is particularly pertinent to the area of reproduction where management especially around the time of mating is crucial to achieving good reproduction. APL has identified the development of Standard Operating Procedures (SOPS) as an important factor in improving reproduction in the Australian industry. The successful implementation of SOPS, however, requires tools to inform managers when a particular indicator is outside the upper or lower level required for success and these have yet to be identified or developed for the industry.

An alternative approach is to minimize the need for skilled labour in the process or to simplify the process as much as possible. For example, the Pork CRC is currently funding a project designed to remove the necessity for managers to identify when sows are in oestrus and which offers the potential for set time mating using only one dose of semen rather than the two-three doses used at present. The potential of projects of these types is to move towards systems where the more mundane tasks are reduced and managers are better

informed when critical parameters fall outside the limits required for successful outcomes. It is an area that APL has identified which warrants further consideration and additional funding.

There is significant opportunity to build on APL's current pilot Supply Chain Project to develop a real time Pig Production Critical Control Point system. This system will integrate electronic feedback on carcass suitability and quality between the processor and producer. The latter would enable producers to take remedial action if necessary to modify the lean content, fat distribution and carcass weights required to maximize returns. A project along these lines would be another step towards precision farming and ideally would incorporate remote weighing and carcass composition measurements/estimates on farm required to identify key opportunities to reduce the cost of production of pork.

Additional funding of research into the development of SOPS and the tools needed to allow producers to identify when critical procedures/events are outside the limits for success. This would build on an existing pilot supply chain project currently being funded by APL. The project is estimated to cost $250,000 annually and would be of three years duration i.e. a total of $750,000 over three years to be administered by AOL. The potential benefit to producers if the project enabled producers to sell just one more pig/year would be approximately six cents/kg carcass weight improvement in profit or $4.32/pig sold. If adopted by 50per cent of the industry the annual return would be $10.8 million.

AUSPIG Conversion to web based real time system and industry benchmarking

Additional funding of research into the conversion of AUSPIG, a decision support software systems for pig producers to a web based 'real-time' system that assists producers make informed decisions on formulation of pig diets, implementation of different feed levels, the use of capital, labour and other resources, marketing pigs for maximum profit, and modification of climate conditions inside buildings for maximum productivity.

The use of AUSPIG will make a significant contribution in minimising the input costs associated with pig farms. Its use has largely been limited to the larger corporate farms, consultants and feed companies, with cost being cited as the most common reason for its non-use. Additionally, some nutritionists and consultants have resisted in using AUSPIG citing insufficient confidence in the quality of feed and growth data supplied by the farms for an accurate AUSPIG simulation.

APL has co-invested in an AUSPIG coordinator with the Pork CRC to enhance the information collation and training for producer groups to enhance adoption of this technology. However, the AUSPIG adoption strategy needs to be revamped and relaunched perhaps as a web-based system which will allow producers to use this technology at minimal cost, ensuring increased adoption by producers. Equally, the system needs to be simplified in its use, again to enhance adoption. This new web-based real-time AUSPIG system will also fulfil another role in that it will provide a comprehensive industry performance dataset that is required to benchmark the Australian pork industry against global best practice. The project is estimated to cost $100,000 annually and would be of two years duration i.e. totalling $200,000 over two years to be administered by APL. The potential benefit for producers could represent a reduction in feed cost in excess of $24/tonne. This is a

significant saving given that current feed prices around Australia will remain above $400/tonne.

Product Quality

APL has invested significantly in the Eating Quality Program similar to that by the beef and sheep meat industry. The next logical step is the development of a quality standard for Australian pork carcasses and pork cuts to ensure consumers have access to only high quality pork and increase returns to producers. The proposed project would be along the lines of the Meats Standards Australia (MSA) developed by the Australian beef industry.

At present there is little guarantee that pork purchased by consumers will be of the highest quality or free defects such as toughness or even boar taint. We know, the factors affecting the desirability of Australian pork, but there is no incentive for producers and/or processors to implement strategies to ensure a consistent high quality product. The development/implementation and promotion of an Australian Pork Quality Standard would help ensure continuing and growing demand for fresh pork and that quality is rewarded. The proposed project would involve producers, processors, scientists and retailers and would require considerable funding and time to develop the standards and to conduct the necessary consumer taste/desirability tests, but it is something that would help ensure the growth of the domestic market and increase the price received by producers. The project estimated cost would likely to be in the order of $1 million to $1.5 million over three years . On the other hand, an increase in the price received for carcasses of only 5 cents/kg would result in an annual improvement in the revenue for the industry of $18.750 million.

5 Competitiveness of the Australian Pork Industry

5.1 Value and Structure of the Industry

The estimated Gross Value of Production (GVP), for Australian pig production was $906 million for the period 2004-05[24] declining to $889 million in 2005-06[25]. This compares with $944 million for the period 2006-07[26]. Pork currently represents approximately 2.38 per cent of total Australian farm production[27]. This figure has remained relatively consistent since 2005.

The Australian pork industry provides a significant positive impact to local, regional, state and national economies through substantial income generation and employment. In 2004, the pig production sector generated $3.2 billion in output, $967 million in value added and 15,074 full time jobs when flow on effects are taken into account.[28] This compares with an estimated $2.9 billion in generated output, $840 million in value added product and 7,928 full time jobs in 2006/07.[29]

APL provided evidence in its first submission to the PC (page 34) that around 56 per cent of the pigs killed in the Australian industry today are part of an integrated supply chain that includes primary processing and production. Of the total 5 million pigs slaughtered, some 3 million are part of an integrated enterprise including production and primary procession, and that the remaining pigs sold for slaughter are sourced either through saleyards (5 per cent), spot market or forward and general contracts.

The ongoing industry consolidation and rationalisation has seen the less resilient pig producers leave the industry; and the remaining pig producers making significant changes to improve productivity and cost control within their operations. These remaining tend to actively use pig destocking and restocking procedures and cost of production based decision making tools to improve their business performance.

There has also been some consolidation in the slaughtering sector. In general, abattoirs have increased in size and become more specialised. However, in the current industry crisis the competitiveness of abattoirs and boning rooms will decline and their costs will rise as capacity utilisation falls to match the reduced volume of throughput and ultimately will lead to heavy job losses. (APL Submission #1 page 61 and #2 page 37).

Pig and Pig Producer Numbers

According to the ABS (see Table 8) the number of pigs in Australia at 30 June 2005 was 2.5 million. Queensland reported the biggest state herd with 696,000 pigs, followed by New

[24] Australian Bureau of Statistics (ABS): Value of Principal Agricultural Commodities Produced 7501.0 2004-05
[25] Australian Bureau of Statistics (ABS): Value of Principal Agricultural Commodities Produced 7501.0 2005-06
[26] Australian Bureau of Statistics (ABS): Value of Principal Agricultural Commodities Produced 7501.0 2006-07
[27] ABARE: Email conversation. Figures based on 2005-06 data
[28] Western Research Institute: Socio-Economic Impacts of the Australian Pork Industry (April 2005)
[29] Western Research Institute; Socio-Economic Impacts of the Australian Pork Industry - preliminary report, Feb 2008

South Wales with 653,000 pigs[30]. At 30 June 2007 ABS recorded a total of 2.6 million pigs in Australia with biggest state herds in New South Wales (741,000 pigs) and Queensland (669,000 pigs)[31]. ABS data indicates that the national breeding herd in 2005-06 consisted of 302,000 sows (excluding gilts), declining by 8.6 per cent to 278,000 sows in 2006-07[32].

Table 8. Total Pig Numbers in Australia per State 2003-04 to 2006-07 (in '000)

State	2003-04	2004-05	2005-06	2006-07
NSW	683	653	660	741
Vic	541	545	605	536
Qld	667	696	715	669
SA	357	358	427	347
WA	270	274	277	304
Tas	14	14	16	20
NT	3	3	2	na
ACT	na	na	na	na
Australia total	2533	2543	2702	2617

Source ABS Principal Agricultural Commodities 7111.0

As at January 2008 Australian Pork Limited (APL) the peak national body, had 464 members representing 92 per cent of Australian pig production. Many large and mid-size producers are destocking their breeding herds and closing sites in an attempt to remain viable, whereas many smaller producers leave the industry. In 2006 there was an estimated 1,500 producers compared to 1,923 in 2005. The average herd size was 159 sows[33]. It is estimated that the top 50 producers in Australia account for some 54 percent of production.

Producers currently are experiencing significant cost pressures. This cost squeeze is affecting all farm sizes, with exits in the small to medium sized category due to ongoing financial losses and the unpredictable future of production. Mid-size and large producers attempting to remain viable increase their debt facilities, decrease their breeding herd, and/or extend personal or family members' work hours (see APL PC Submission #1).

Production and Consumption of Pigmeat

As noted in APL's first submission to the PC, the production of pigmeat in Australia between 2004-05 and 2006-07 remained relatively stable at a level of 388,000 tonnes carcase weight equivalent (see Table 9 below). During the same period of time the apparent domestic consumption of pigmeat (= Imports + Domestic Production – Exports) increased by 6.8 per cent from 455,000 tonnes CWE to 486,000 tonnes CWE. Per capita consumption of pigmeat in Australia rose from 21.7kg in 2004-05 to 23.1kg in 2006-07, driven by a 15.5 per cent increase in fresh pork consumption from 9.7kg in 2004-05 to 11.2kg in 2006-07. This increase was achieved by aggressive marketing initiatives of the Australian pork industry.

[30] Australian Bureau of Statistics (ABS): Principal Agricultural Commodities 7111.0 2004-05
[31] Australian Bureau of Statistics (ABS): Principal Agricultural Commodities 7111.0 2006-07
[32] Australian Bureau of Statistics (ABS): Principal Agricultural Commodities 7111.0 2006-07
[33] APL Australian Pig Annual 2005

Table 9. Import Penetration of the Australian Pork Market, 2002-2007 (000 tonnes CWE)

Year	Imports (A)	Domestic production (B)	Exports (C)	Apparent consumption (A+B-C)	Imports % production	Imports % apparent consumption
2002-03	73	418	83	408	17	18
2003-04	90	405	69	426	22	21
2004-05	128	388	61	455	33	28
2005-06	112	388	63	437	29	26
2006-07	165	381	60	486	43	34

Source: APL

APL has taken exception to a small number of submissions made to the PC which stated or intimated that APL's own policy of focussing promotional activities towards the fresh pork market substantially contributed to the increase in imported pig meat for use in the processing sector. APL strongly refutes this as "back to front" logic in making the following points:

- The decision to focus on the fresh pork market was in fact in response to the increasing level of imports whereby there had to be a market found for the pigs who would normally have been used in the manufacturing sector, but that were now forced into the fresh market due to import displacement.
- Global benchmarks in pork consumption showed that Australia's consumption of smallgoods was at the higher end of global trends but fresh consumption was clearly at the lower end, allowing scope for improvement and return on investment in increasing fresh pork consumption much more attractive to the industry.
- The smallgoods sector is driven by private companies with well defined and supported brands, and there was and remains no "market failure" motivating the promotion of smallgoods as a strategic objective for the industry.
- Logically, return on investment for Australian pig producer levy payers is higher in supporting the market where their own product still has an exclusive share, rather than the smallgoods sector where for those specific products that can be manufactured from imported pig meat, the market share for domestic product is very low".

However, as APL has previously stated, Australian producers are not benefiting from the increase in domestic consumption. In fact there was a decline in domestic production due to the availability of relatively cheap imported pigmeat. Imports have taken an increasing share in the growth of the Australian pork market relative to production and consumption.

Table 10 outlines major production costs in 2004 and 2007. Comparing the calendar year 2007 with the 2004 calendar year, producers were receiving an average of 2 per cent higher prices for baconer pigs, but paying 69 per cent more for feed grain. In 2007, assuming the cost of production was approximately $2.64 per kilogram (feed grain price at $311 per

tonne), at current pricing of $2.34 per kilogram, producers lost 30 cents per kilogram (approximately $22 per pig[34]). This compares with a profit of 4 cents per kilogram in 2004.

Table 10. Pig & Feed Grain Pricing, Cost of Production & Profit estimates, 2004 and 2007

Time Period (Calendar Year)	Average Baconer Pig Price*	Average Feed Grain**	Cost of Production***	Net Result (Profit)
2004	$2.29/kg	$184/t	2.25/kg	0.04/kg
2007	$2.34/kg	$311/t	2.64/kg	-0.30/kg
Percentage change	+2.18%	+69.0%	+17.3%	

Source APL

* NOTE: Pig prices are Eastern seaboard, (VIC, QLD, NSW, SA)

** Yearly average taken from monthly averages of total feed grain, consisting of wheat, barley and sorghum.

*** Assumes COP to be $2.60/kg with feed grain prices at $300/t. Assumes COP to be $3.00/kg with feed grain prices at $400/t

Imports and Exports

Before the change of import policies to the current quarantine requirements on 10 May 2004, import of uncanned, uncooked pigmeat was restricted to Canada, Denmark and the south island of New Zealand. The current import policy is based on an Import Risk Analysis (IRA) conducted by Biosecurity Australia which recommended that imports of pigmeat be permitted subject to conditions depending on the health status of the export country. The following countries have requested market access since the establishment of the new import policy: Brazil, Canada, Chile, Republic of Korea, South Africa, Taiwan, Mexico, New Zealand, Hungary, some EU member states (e.g. Sweden, Finland, Italy and Spain) and the United States of America.

The following countries currently have permission to export deboned pigmeat to Australia:

- Canada (Cooked and uncooked for further processing);
- Denmark (Cooked and uncooked for further processing);
- United States of America (Cooked and uncooked for further processing);
- Finland (Uncooked for further processing);
- Sweden (Uncooked for further processing);
- Spain (Dry cured Serrano type ham); and
- Italy (Dry cured Parma type ham).

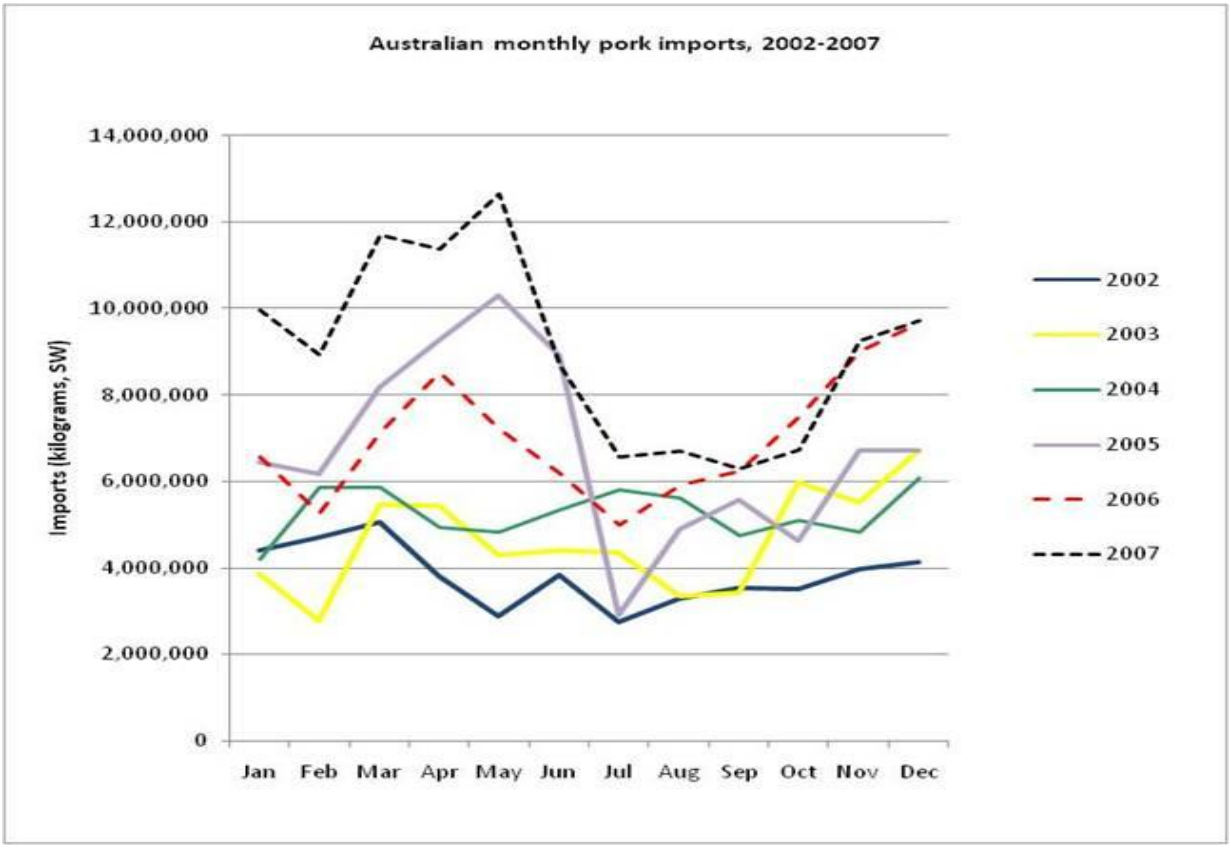
In 2004-05 imports from Canada, Denmark and the U.S. amounted to approximately 128,000 tonnes CWE. Pork imports in 2006-07 moving annual total (MAT) volume has increased by 48 per cent from 2005-06 and the value of these imports increased by 61 per cent during the last financial year. Import volumes have dramatically increased, acquiring 59 per cent of total domestically produced volume, 2006-07. Import volumes now contribute to 67 per cent of total processed pork, 2006-07. ABS data[35] show that for the first six months of financial year 2007-08 imports amounted to 45,216 tonnes slaughter weight (SW)

[34] 73 kilogram carcase weight (84 per cent of total slaughtered pigs)

[35] ABS data (February 2007)

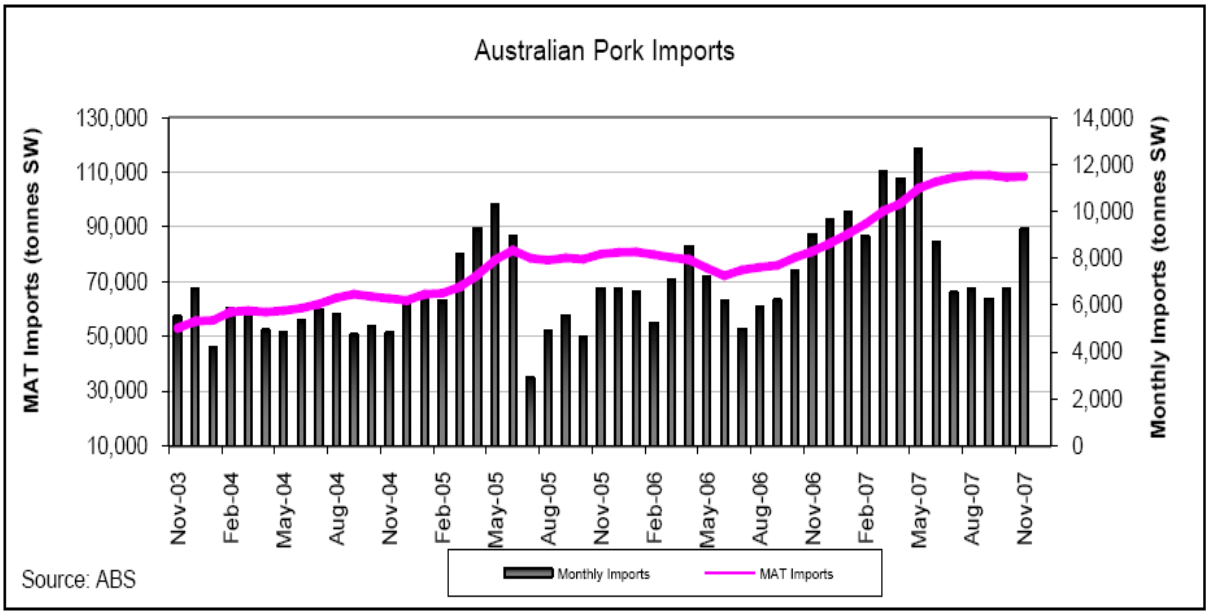
with a maximum of 9,725 tonnes SW in December 2007. Chart 1 and 2 below outline the development of average monthly import volumes from 2002 to 2007.

Chart 1. Australian Monthly Pork Imports, 2002-2007



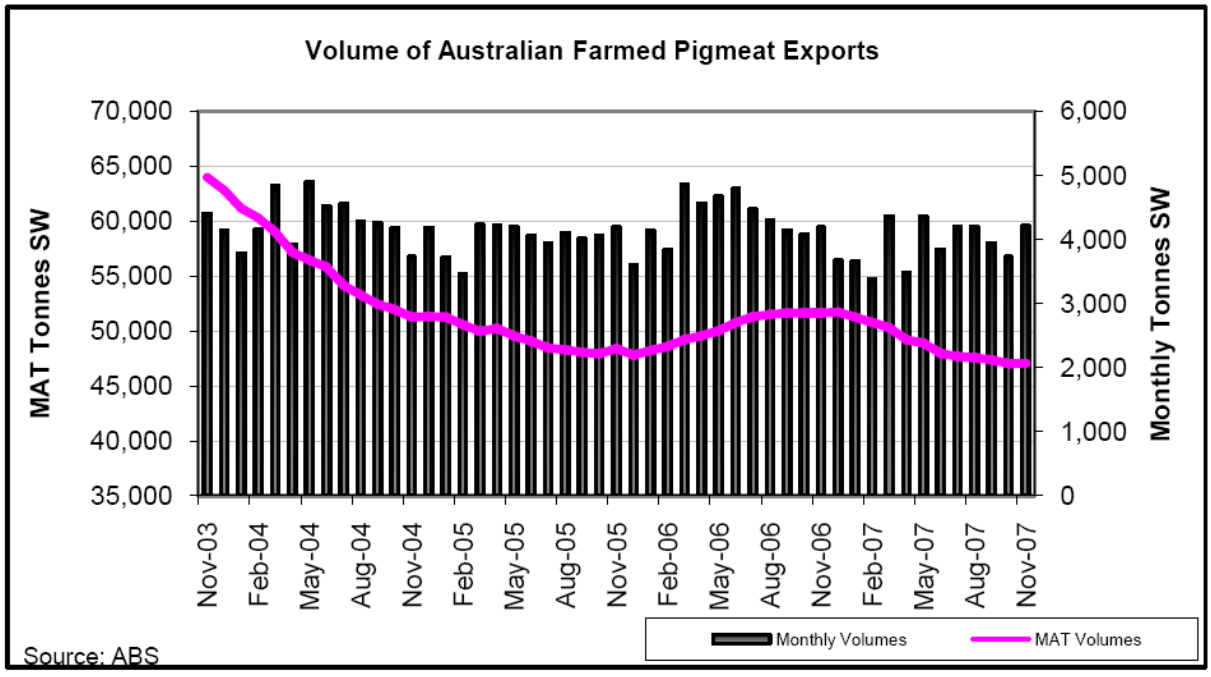
Source: APL from ABS data

Chart 2. Australian Monthly Pork Imports and MAT, Nov 03 to Nov 07



Australia's pork exports are primarily built around the market of Singapore, New Zealand and Japan representing 49 per cent, 20 per cent and 4 per cent of Australia's total pork exports for 2006-07 respectively[36]. These key markets cover 73 per cent of Australia's pork exports with an additional 11 per cent going to Hong Kong, Philippines and South Korea. In total, these countries constitute 84 per cent of Australia's total pigmeat export volumes, 2006-07. APL's focus is on access to Asian markets. Chart 3 below outlines the development of Australian pork export volumes since November 2003.

Chart 3. Volume of Australian Farmed Pigmeat Exports, Nov 03 to Nov 07



[36] APL from ABS Statistics (2007)

Pigmeat export volumes were 48,017 tonnes for 2006-07, a decrease by 6 per cent on 2005-06, due to a significant decrease in export volumes to Japan and South Korea. Total farmed pigmeat exports for 2006-07 were valued at $156.5 million which is equivalent to $3.26 per kilogram. Exports to Singapore and Japan provide income of $77 million and $54 million per year respectively (2006-07). Of major significance is the fact that both of these markets place a particularly high level of importance on food safety and animal health issues. An appreciating dollar has significantly undermined exports.

Competitiveness of the Industry

The Australian pork industry is technically proficient and has advantages over its international competitors largely in terms of health and disease. For example whilst Australia has the more common pig diseases such as Mycoplasma pneumonia, swine dysentery, pleuro pneumonia and ileitis, it is free of the more devastating diseases such as Post-weaning Multi-systemic Wasting Syndrome (PMWS), Swine Influenza Virus and Circo Virus Related Diseases, which have had marked adverse effects on animal mortality and the efficiency of production in virtually all other countries over the last 5-10 years. Australia is also free of the exotic diseases such as Foot and Mouth and Swine Fever both of which affect global export opportunities.

In October 2007 persistently low pork prices and high grain costs resulted in a sharp deterioration in profitability. With the cost of production at approximately $2.74 per kilogram (feed grain price at $336 per tonne) and average price of $2.19/kg pigmeat, producers were making a loss of 55 cents per kilogram or approximately $40 per pig (73 kg carcase weight). This compares with a loss of only 5 cents per kilogram a year earlier[37] and represents a substantial deterioration in industry profitability.

The cost of feed grain amounts to approximately 60 per cent of the cost of producing pigs. High feed grain cost is a key competitive disadvantage for Australian pork producers. Due to the ongoing drought, average costs for feed grain in Australia (Wheat, Barley and Sorghum) in December 2004 compared to December 2007 show a dramatic 122 per cent increase from $162 per tonne to $344 per tonne respectively[38]. Grain prices peaked in October 2007 at over $410 per tonne for wheat and barley.[39] As at February 2008, feed grain prices are approximately $390 per tonne for Wheat, $350 per tonne for Barley and $260 per tonne for Sorghum[40].

In pork production, feed costs on a per kg carcass weight basis can be calculated from the price of feed (cents/kg) by the whole herd feed conversion value (kg feed used per kg of carcass weight produced/sold) for an industry or an individual enterprise. The effects of both factors on the break even carcass price are shown in Table 11. The original feed cost for Australian pork producers used by the Pork CRC (2005) as part of its business indicators was $280/tonne. The original HFE was 4.2. Both values were based on inputs from Pork CRC producer participants and on APL's Pig Check benching marking project. Due to a focus on

[37] APL: Productivity Commission Inquiry 2007 Submission #1
[38] Source: ProFarmer
[39] Source: ProFarmer
[40] Source: ProFarmer

HFC and the publication by both organisations on means of improving the efficiency of production, the HFC value in Pig Check has fallen to 4.13 (2006), whilst the results of a Pork CRC bench marking project shows that the value for Australia's larger producers is 4.05.

From Table 11 it can be seen that based on the original business indicators the average carcass price required to break even was $2.18/kg. However, with feed at $400/tonne and HFE at 4.2 the breakeven price is $2.68/kg, an increase of 50c/kg. With average feed cost currently at $450/tonne and HFC at 4.13 the average breakeven price is $2.85, an increase of $0.67/kg over 2005/2006. The prime price for pig meat in Australia in the second week of February was only $2.40.

Table 11. Effects of feed costs and whole Herd Feed Efficiency (HFC) on the average pork price ($/kg carcass weight) required to break even

Feed cost ($/tonne) /HFC	3.2	3.4	3.6	3.8	4.0	4.2
280	1.90	1.95	2.00	2.06	2.12	2.18
320	2.02	2.09	2.15	2.22	2.28	2.34
360	2.15	2.22	2.30	2.37	2.44	2.51
400	2.28	2.36	2.44	2.52	2.60	2.68
440	2.41	2.50	2.58	2.67	2.76	2.85
480	2.54	2.63	2.73	2.82	2.92	3.02

Note: Industry average and industry best practice for HFC

It is difficult to predict the period of time grain and feed prices are likely to remain high. The supply and demand situations for wheat and other grains show global grain costs will remain high through 2008 whilst 2009 prices will depend on global stocks, changes in demand and the size of the 2008 harvests. The USA energy security policy is fuelling ethanol production largely from corn and the use of corn for ethanol production is predicted to increase from 84 million tonne in 2007 to 140 million tonne in 2008 (Navlika 2008). The Chicago Board of Trade (CBOT) corn futures suggest corn will trade between 100-110 per cent of its long term price in 2008 and probably into 2009.

Similarly world wheat and course grain stocks for 2007/2008 and 2008/2009 are estimated and forecasted respectively to be at historically low levels though only marginally below the levels for 2004/2005. The COB futures for wheat indicate the grain will trade at 90-100 per cent of long term prices during 07/08 and 08/09. In Europe the January 2008 FOB prices for USA and French wheat were both approximately AUS$350/tonne. The FOB price for USA corn was $227/tonne. The corresponding cost of wheat in Australia was around $400/tonne.

It is unlikely that the current feed /price situation faced by Australian producers will alter Australia's global competitiveness since similar cost increases are being experienced by our international competitors, although unlike some of our competitors these cost increases have been ameliorated through subsidy arrangements. A comparison of 2006 and current feed costs for Australia, Denmark, The Netherlands and the USA and Canada are shown in Table 12.

Table 12. Feed costs for selected pork producing countries in 2006 and late 2007 (British Pig Executive 2006 Pig Cost of Production in Selected Countries 2007)

Country Feed Cost (Aus$/tonne)	2006	Oct/Nov 2007	% increase
Australia	280	450	
USA	216	345	
Canada	208	343	65%
The Netherlands	275	396	44%
Denmark	265	437	65%

Source: Pork CRCand Tony Fowler, MLC December 2007 (Pig cost of production in selected countries)

Feed prices in Oct/Nov 2007 were on average 58 % higher than 2006.

Australia's competitive position against the USA, Canada and selected European pork producing countries in 2006 is shown in Table 13. The results have to be interpreted carefully since cost comparisons are affected by exchange rates between the different currencies and the Australian dollar has risen against most other currencies during the last 12 months. The Australian cost data is also based on a limited number of herds.

Table 13. Business Indicators and Costs for Selected EU Countries, the USA and Canada (2006)

Indicator/Country	Denmark	USA*	NL*	Australia+	Canada*
COP ($Aus/kg carcass weight)	2.07	1.52	1.98	2.35	1.41
Pigs weaned/sow/year	25.9	22.3	25.1	21.1	21.8
Pigs sold/sow/year	24.0	20.7	23.9	20.2	21.9
Carcass weight (kg)	80.5	91.9	88.4	75	90
Carcass/sow/year (kg)	1935	1905	2118	1515	1971
Feed cost ($Aus/tonne)	265	216	275	302	208
Average Diet DE (MJ/kg)	14	14.8	14.2	13.3	12.8
Diet cost (Cents/MJ DE)	1.89	1.45	1.9	2.27	1.63
HFC (Carcass weight basis)	3.75	4.03	3.56	4.13	3.84
HFC (MJ DE/kg carcass weight)	52.5	59.6	50.6	54.9	49.2

NL The Netherlands

** based on British Pig Executive -2006 Pig Cost of Production in Selected Countries (December 2007), + based on Australian Pork Limited's Australian Pork Annual (2006).*

The USA and Canada have a comparative advantage in feed costs largely because they both have access to feed grains (namely corn in both countries and feed wheats and barleys in Canada). Even though the cost of corn has increased almost 100 per cent over the last year it remains at a 50 per cent discount to milling and even feed wheats in Europe and the USA. Because of quarantine restrictions, imported feed is not available at competitive prices to Australian pork producers. Indeed, with the exception of Sorghum, Australian pork producers have limited access to feed grains, but the potential of developing a feed grain industry is best illustrated by the fact that the current price of sorghum in Queensland and Northern NSW is some $170/tonne below that of wheat. Because feed cost is a driver of the

profitability of pork production and a major constraint on the competitiveness of the Australian industry, the Pork CRC has established substantial programs to develop feed grains specific for pigs, enhancement of nutrient availability from current grains with an emphasis on sorghum and the development of alternative ingredients.

Based on the respective HFC values shown in Table 3 Australian pork production is more energetically efficient than the USA, similar to that for Denmark and within 10 per cent on an energy basis of Canada and The Netherlands. The differences tend to reflect differences in volume between countries. Because of the much heavier carcass weights in Canada, the Netherlands and the USA, Australian producers have a disadvantage in terms of overhead costs and the situation is deteriorating as imports continue to reduce the opportunity for Australian producers to produce the heavier weight carcasses required by the manufacturing sector. [41]

The Netherlands and Denmark have no real or technical advantage in terms of feed costs or cost of production due largely to their higher overhead costs. Both countries enjoy export subsidies but do have technical and market advantages over Australia in terms of reproduction and volume. The latter is due to a combination of more pigs sold per sow/year and markedly heavier carcass weights than the average for Australia.

The better reproductive performance indicated for the Netherlands and Denmark in Table 13 is likely to be due to a combination of the smaller size of operations in both countries and more prolific genotypes since both countries have concentrated on increasing reproduction and have national genetic programs with breeding objectives based on the benefits to the industry as a whole. In contrast, market demands and pricing schedules have forced genetic selection in Australia to concentrate on increasing carcass lean content and reducing carcass fat thickness and we do not have a national breeding program. The former is in part being addressed through APL's Strategy 4 via Carcase Measurement Systems.

The 10 per cent better HFC on an energy basis indicated in Table 13 for the Netherlands and Canada when compared with Australia herd feed efficiency on an energy basis is certainly associated in part with the concomitant differences in volume though the production of heavy pigs, which offsets the volume effect to some extent, because the feed efficiency of growing pigs declines with weight. Both countries also produce castrated male pigs which are less feed efficient than intact male pigs. On the other hand, dressing percentage increases with weight and is lower for intact than castrated males. The better HFC values for Canada and The Netherlands may also reflect better/more efficient genetics and/or nutritional or housing differences.

Castrated males are demanded by the market in all the countries shown in Table 13 with the exception of Australia. The markets and the size of the structure of the processing plants in the USA, Canada and the Netherlands also favour the production of heavier carcasses than in Australia.

[41] Source: Windridge Farms Submission to the Productivity Commission Inquiry 30/11/2007

In the Netherlands liquid feeding is also common and pigs are fed restrictively between 20 kg and slaughter. The latter might improve the feed efficiency of castrated males. However, this is not the situation in Canada.

There are production units in Australia which utilise liquid feeding but the practice is not as common as it is in Europe, mainly because liquid by-products are available in closer proximity to pork production areas in Europe.

The carcass weight sold/sow/year (volume) affects overhead costs, HFC and revenue and as such is a major factor affecting profitability. The effects of volume on cost of production are shown in Table 14. The summary, which is based on increasing the number of pigs sold per sow/year at a constant carcass weight demonstrates the importance of volume (pigs sold X carcass weight) on cost of production and global competitiveness and this is an area where Australia trails competitors such as Denmark, Canada and the USA and is an aspect of competitiveness and profitability directly affected by imported pork.

However, as imports of pork from Denmark, Canada and the USA have increased, the opportunity for Australian producers to produce heavier carcasses for the manufacturing market has declined as has the average sale weight of pigs in Australia. It is obvious from Table 14 that a reduction in volume has a marked adverse effect on the efficiency of production and on profitability through increased over head costs, reduced efficiency and reduced revenue. It also determines what variables we can affect with the greatest return to our investment to improve our competitiveness.

Table 14. Effects of volume on the HFC and cost of production (COP) for a herd with an initial HFC of 4.22 on a carcase weight basis, feed at $480/tonne and an average carcase weight of 72 kg

Pigs sold/sow/year	Carcase weight sold/sow/year (kg)	HFC	COP ($/kg carcase weight)
18	1296	4.22	3.14
20	1440	4.13	2.98
22	1584	4.06	2.86
24	1728	3.99	2.74

Source: Pork CRC

While the average HFC value for Australia may seem considerably higher than for Canada and the Netherlands, a submission to the first Productivity Commission by IAS Management Services reported a whole herd feed efficiency of only 3.4:1 (Approx 46 MJ DE/kg carcass weight) for some of their clients producing heavier pigs. Similarly, there are herds in Australia selling 24 plus pigs/sow/year with the top 10 per cent of participants in APL's benchmarking study exceeding 25 pigs weaned/sow /year.

The industry through APL and the Pork CRC is investing in improving the overall competitiveness of the industry firstly by ensuring current information and knowledge associated with improving productivity is communicated to and implemented by the industry. One example is the extremely low herd efficiency reported for particular producers in the submission by IAS Management Services to the Productivity Commission associated with the use of a particular genetic line or some other factor than can be implemented by

other Australian producers? Similarly, are the globally competitive reproductive performances seen in APL's bench marking study due to particular genetics and/or housing and management systems that could /should be available to all Australian producers?

The second level of investment is in research and development aimed at enhancing the current advantages Australia has and the development of new technologies and knowledge to enhance the productivity and efficiency of the Australian pork industry. These are medium to long term projects and will not significantly improve the current crisis faced by Australian pork producers.

The strategy is supported through APL and the Pork CRC with the two organisations working closely together to develop research projects that have the potential to alleviate Australia's major constraints on its global competitiveness in pork production.

The factors most affecting Australia's competitive position are best illustrated in Tables 15 and 16 which show the sensitivity of profit to changes in business indicators with feed at $280 (original Pork CRC value) and $400/tonne respectively. The results show that with higher feed costs improving FE or reducing feed costs will have a larger effect on profit than the same proportional improvement in volume. At the same time volume, may decline further (at least as affected by carcass weight), if imports continue to reduce the amount of Australian pork used for manufacturing and the strength of the Australian dollar continues to limit export opportunities. Under these situations more emphasis needs to be placed on improving reproductive capacity and the number of pigs' sold/sow/year.

Table 15. The effects of 10 per cent improvements in business indicators on profit with average feed cost at $280/tonne and price at $2.40 for a 72kg carcase

Business indicator	Change in margin (cents/kg carcass weight)	Percentage Change in profit ($/sow)
Price	24.0 ($2.40)	345 (107%)
Feed cost	11.8 ($280/tonne)	169.34 (52.5%)
HFC	11.8 (4.2)	169.34 (52.5%)
Pigs/sold/sow/year	9.1 (20)	238.43 (73.4%)
Carcass weight	9.1 (72)	238.43 (73.4%)

Source: Pork CRC

(Note that in Table 15 & Table 16 the figures reported in parenthesis show the value of the starting business.)

Table 16. The effects of 10 per cent improvements in business indicators on profit with average feed cost at $400/tonne

Business indicator	Change in margin (cents/kg carcass weight)	Percentage Change in profit ($/sow)
Price	24 ($2.40)	$345.60 (from -$403)
Feed cost	16.8 ($400/tonne)	$242 (80%)
HFC	16.8 (4.2)	$242 (80%)
Pigs/sold/sow/year	14.7 (20)	$ 192.4 (48%)
Carcass weight (kg)	14.7 (72)	$ 192.4 (40.2%)

Source: Pork CRC

Australia's competitive position in the global pork industry is well understood. In terms of farm gate costs Australia is equally and probably more efficient than the USA and Canada, but is disadvantaged in terms of grain and feed costs and also subsidies available to both grain and pig farmers in these countries. The latter can be alleviated in Australia by developing a dedicated feed grain industry with particular emphasis on the selection of grains with yield and nutritional characteristics specifically suited to pigs and pork producers and the development of different supply chain arrangements for feed grains. A complimentary strategy is to increase the efficiency with which existing grains and feed are used within the Australian pork industry.

Compared to the EU and Denmark in particular, Australia has similar costs of production and the potential to markedly improve its competitive position: firstly by ensuring the outcomes of the grain research projects are commercialized, since the technologies developed within these projects are presently unique to Australia; and secondly by enhancing the reproductive capacity of the Australian herd and/or increasing carcass weight without reducing price. There are producers in Australia achieving world best practice in terms of the number of pigs sold/sow/year and recent research findings offer the potential for Australia to significantly improve this crucial business indicator.

Investment in research and development to improve the productivity and profitability of the Australian pork industry has increased significantly since 2005-2006. The focused programs of the Pork CRC and APL have and will continue to deliver technologies and new knowledge to improve the efficiency of pork production in Australia. Research and development, however, by its nature will result in continuing and longer term improvements in the efficiency of the industry and can't be expected to offset the marked deterioration in margins experienced by Australian pork producers over the last 6-7 months.

Policy and Regulatory Burdens

APL regards the following areas as significant to the development of the Australian pork industry as outlined in its two submissions to the Productivity Commission's Annual Review of Regulatory Burdens on Businesses[42]. Some of these are listed below. Annexure D and E provide a copy of these submissions to the Productivity Commission for further details.

Regulatory burdens for the Australian pork industry include:

- The Model Code of Practice for the Welfare of Animals – Pigs
- OH and S/Worker's Compensation Regulation
- Food Industry Regulation including PigPass NVD
- Ethanol Regulation
- Environmental Requirements
- Changes to the National Residue Survey
- Food Labelling Issues
- Transport Regulation
- Wheat Export Single Desk
- Labour
- Supermarket Sector Dominance

5.2 PC 2004 Inquiry Findings and Industry Progress

The findings of the 2004 Productivity Commission Inquiry[43] comprised recommendations for the pork industry and the Australian government in order to improve the situation of the Australian pork industry.

The pork industry addressed these recommendations, developing or implementing measures to improve competitiveness and achieve profitability.

Recommendations:

I. Link and tighten the supply chain for pigmeat;
II. Improve the industry's ability to meet consumer needs domestically and overseas; and
III. Develop and implement risk management measures.

Table 17 provides a summary of projects and achievements of the Australian pork industry and the Australian Government following the 2004 Productivity Commission Inquiry. APL together with the Pork CRC and the Australian pork industry have invested significant funds into management, marketing and research projects and significant progress has been made in each of the key areas recommended by the 2004 Productivity Commission Report. Further information on these achievements can be found in APL's Annual Reports.

[42] APL Submission #1 and #2 to the Productivity Commission Inquiry – Annual Review of Regulatory Burdens on Businesses: Primary Sector 2007

[43] Productivity Commission Inquiry Report – Australian Pigmeat Industry 2005

Table 17. Projects and Achievements addressing the recommendations of the 2004-05 PC Inquiry

PC Inquiry Recommendation	APL Response and Progress	Reflected in APL Strategic Plan and associated progress[44]	Impediments
1. Link and tighten the supply chain for pigmeat	• $26 million funding for research and education projects; development of new technology and research into production efficiency • Establishment of the Pork Cooperative Research Centre Pork CRC 2005	Strategy 3 – Reducing Supply Chain Costs	• Gains displaced by increasing production costs and low producer returns; nevertheless Pork CRC is addressing some of these issues
	• $4.47 million funding for a benchmarking project and subsequent implementation of findings to improve the competitive performance of the pork industry • Launch of the Pork Market Improvement Program 2005	Strategy 3 – Reducing Supply Chain Costs	
2. Improve the industry's ability to meet consumer needs domestically and overseas	• 15.5 per cent increase in per capita consumption of fresh pork • Export Marketing Development Grant was successfully procured by APL Marketing for marketing research and development	Strategy 1 – Increasing Fresh Pork Demand	• Exports impacted by drought; adverse exchange rate movements; intensified competition
	• Specialised consumer research for Moisture Infused Pork and account planning, in coordination with regulatory agencies such as Food Standards Australia New Zealand (FSANZ) and Australian Competition and Consumer Commission (ACCC) to target optimal industry outcomes • Other APL Marketing projects focused on: o Launch of new pork products to increase carcase utilisation involving lower valued cuts including mince, bellies and ribs o Launch of 10 new pork products to meet modern consumer needs o Increasing industry capability to value-add to fresh pork	Strategy 2 – Improving Carcase Value	• Ongoing strategies under development by APL Marketing, building on domestic increases in consumption and targeting international consumer demands, which are significant and important to our future competitiveness

For detailed information refer to APL's Annual Report 2006-07

PC Inquiry Recommendation	APL Response and Progress	Reflected in APL Strategic Plan and associated progress[44]	Impediments
	via adoption of new technology and development of new products requiring alternative cooking practices o New cutting lines for forequarter pork chops and steaks for the retail sector were developed and delivered in October 2006		
	• APL successful in obtaining AusIndustry support for development of new manual carcase grading system; project due for completion by April 2008 with future targets to be determined • Stage 1 of project completed and PorkScan system to be implemented into a commercial processing plant	Strategy 4 – Contracts and measurement Systems	• Linking PorkScan data with individual processing sector information systems; • Linking PorkScan data with on-farm data to provide an effective feedback mechanism
	• Pork CRC measures to improve herd feed conversion (HFC) efficiency • Reduction of average herd feed conversion (HFC) from 4.2:1 to 4.13:1 (4.05:1 for larger farm businesses)	Strategy 3 – Reducing Supply Chain Costs	• Improving industry integration is displaced by uncertain production environment affecting the viability of the pork industry; • Impediments include feed grain cost increases; drought events; in the long term, lower slaughtering and throughput is cost ineffective with higher overhead costs; bearing on abattoir profitability and lower recoup of costs. • Australian pig producers have a disadvantage in terms of overhead costs and the situation is deteriorating as imports continue to reduce the opportunity for Australian producers to produce the heavier weight carcases required by the manufacturing sector

PC Inquiry Recommendation	APL Response and Progress	Reflected in APL Strategic Plan and associated progress[44]	Impediments
3. Develop and implement risk management measures	• An industry specific Risk Management Training Program developed and rolled out with trainers trained in all states • The National Centre for Pork Industry Training & Education (established in 2003 and co-funded by APL and the Pork CRC) provides ongoing training resources to enhance recruitment and retention in the broader Australian pork industry • The PigLink program is a seminar series delivered via electronic communication (internet & telephone) in order to eliminate the constraints of travel, time away from work and biosecurity. PigLink is managed by APL and the Pork CRC. In 2007 it reached 70 % of producers nationally • Pig producers actively use Farm management Deposits (FMD) to manage cash flow variations and tax matters • Warwick Yates (2008) report which assessed Drought Assistance program utilisation in the Australian Pork Industry to improve understanding of the specific needs for intensive livestock sectors, specifically pork production • Some pig producers actively use Farm Management Deposits (FMDs) to manage cash flow variations and tax matters, including other risk management strategies such as pig destock/restock and cost of production tools	Strategy 5 – Ensuring Industry Capability	• Producers operate in a risky commercial environment including highly variable spot prices, imports, substitute meats and exchange rates • Only 5% of producers are accessing some component of the drought assistance suite of programs offered by Federal and State governments; • Pork producers are impacted by the effects of drought even though they may not be in a specifically 'drought declared' area due to the impacts that drought has on the cost of feed grain. • Many of the drought assistance programs available are tailored to extensive industry and have specifications that render intensive livestock producers ineligible, and there are no specific drought assistance programs for intensive livestock producers. • Some drought aid measures provided by the government actually work against the pork industry. For example the grain transportation subsidies available in some states effectively drive up the price of grain for every grain user, so pork producers, while unable to obtain the transport subsidy, face higher grain prices

PC Inquiry Recommendation	APL Response and Progress	Reflected in APL Strategic Plan and associated progress[44]	Impediments
	• Establishment of PigPass NVD to improve traceability 2006 • The PigPass National Vendor Declaration for pig consignments, enabling traceability in the event of animal disease outbreak launched in August 2006	Strategy 6 – Managing Risks for Sustainability	• Considered a regulatory burden (see PC Inquiry recommendations into the Regulatory Burdens on the Primary Sector 2007); • Difficulty experienced with the voluntary PigPass NVD program in coordinating the process of securing multi-agency involvement and support
4. Reduce overseas trade barriers to Australian pigmeat exports	• Ongoing input into free trade agreement (FTA) negotiations and WTO: • Submissions and meetings with DFAT on ASEAN, Chile, China, India, Indonesia, Japan, Malaysia, United States FTAs and WTO issues	Strategy 6 – Managing Risks for Sustainability	• Tariff barriers in FTA bilateral negotiations and stalled WTO Doha round • Non-trade barriers complicate access to export markets e.g. China (import protocols), Japan (safeguard tariffs), and Philippines (tariff rate quotas)
5. Review the single desk arrangement for grain exports regularly, independently and transparently	• Established the Livestock Feed Grain Users Group (LFGUG) which APL chairs, secured funding from the Australian Government's Industry Partnership Program to establish a Feed Grain Partnership Supply Chain Forum and a Feed Grain Partnership R & D Forum, with the support of the grain industry including the GRDC • Other efforts to improve feed security in conjunction with other industry stakeholders: o R & D side successful – report completed on preliminary assessment of Distillers Dried Grains with Solubles (DDGS) to alleviate supply in grain shortage o Completion of large scale grain fumigation trials using Ethanedinitrile (EDN) in 2005, in cooperation with Meat and Livestock Australia (MLA) and commissioned by the	Strategy 3.2 – Reducing Supply Chain Costs: Improving feed security	• Single desk wheat export arrangements are still in place • EDN Trial: o Supply concerns: BOC, the company which produced EDN for the trial was bought by a German company o Concern over the quantity required for the EDN trials o EDN trials implicated due to increased worldwide consumption of corn in biofuel production may limit the benefits of the project o Extruding (heat treatment) of corn may be an alternative to EDN treatment,

PC Inquiry Recommendation	APL Response and Progress	Reflected in APL Strategic Plan and associated progress[44]	Impediments
	CSIRO Entomology Division. Application made to Biosecurity Australia to approve protocol		but yet to be investigated • Biofuels submissions still have not influenced government's current mandate for ethanol throughout the transport sector • Feedstuff supply variability constrained by drought events, biosecurity concerning grain imports and the single wheat desk • 1st generation biofuel (fuel vs. food) production will impact on feed supplies available for pork production • Imported DDGS was uneconomical event at high grain prices
	• Commissioning of various reports and submissions including: o Victorian Biofuels Submission by Emergent Futures in 2007 o APL, with ALFA, through Meat and Livestock Australia (MLA), Dairy Australia and Australian Wool Innovation Limited (AWI), commissioned principal consultant, Macarthur Agribusiness (now known as Warwick Yates and Associates) to review options to reduce feedstuff supply variability in Australia o Impact of ethanol policies: o APL funded a biofuels scenario analysis report of biofuels developments and assessment on the pork industry o APL co-funded with MLA and Dairy Australia a scoping study on the importation of DDGS from the USA in the event of grain shortages	Strategy 3.2 – Reducing Supply Chain Costs: Improving feed security	

PC Inquiry Recommendation	APL Response and Progress	Reflected in APL Strategic Plan and associated progress[44]	Impediments
6. Review regulatory burdens on the pigmeat industry to make sure that they are the minimum necessary to achieve their objectives	• APL provided two submissions to the Productivity Commission Inquiry on Regulatory Burdens on the Primary Sector 2007 • APL has made many representations on this via various government forums • APL has a long-standing position on consistency and harmonisation of legislation across the states. States agree in principle but the reality is different in practice and imposes significant costs for producers, which therefore affects their competitiveness • Review of the Model Code of Practice for Welfare of Animals (Pigs) 2007 completed and signed off by PIMC • Review of the Model Code of Practice for the Transport of Livestock (2008)	Strategy 6 – Managing Risks for Sustainability	Not all regulatory burdens were acknowledged by the PC. Issues for the industry included[45]: • Model Code of Practice for the Welfare of Animals (Pigs) • OH and S/Worker's Compensation Regulation • Food Industry Regulation including PigPass NVD • Ethanol Regulation • Environmental Requirements • Changes to the National Residue Survey • Food Labelling Issues • Transport Regulation • Wheat Export Single Desk • Labour availability and accessibility • Supermarket Sector Dominance • Overall slow progress of the Implementation Work Group (IWG) for the Model Code Of Practice for Welfare of Animals (Pigs); • Inconsistent regulations across state jurisdictions across a range of issues including animal welfare (Model Code of Practice), food safety and the environment

[45] APL's 1st Submission to the Productivity Commission – Regulatory Burdens on Business, August 2007. Available Online: http://www.pc.gov.au/__data/assets/pdf_file/0005/66893/sub044.pdf

6 Conclusion

APL has not altered its view that the provision of safeguards is fundamental requirement for the stabilisation and the future development of the pork industry in Australia. Imports have surged and caused damage to the industry that warranted provisional safeguards. It remains APL's view, which has not been changed by the deeply flawed Accelerated Report produced by the PC, that safeguards are fully justified to remedy damage caused to the pork industry from imports, are an entirely lawful measure under the WTO Safeguard Agreement, and not protection for its own sake but form an integral part of a process of adjustment by the pork industry.

As the PC is unlikely to support use of normal safeguards in its March report on this precedent and with the industry continuing to suffer and forecasts showing this will not alleviate, the Government will have to use other measures to support restructuring in the pork industry.

The Pork CRC's programs target those variables which will provide the greatest return to investment to improve the global competitiveness of the Australian pork industry. To secure more reliable and consistent supplies of feed grain and energy for pigs, and thereby enhance the competitiveness of the Australian pork industry, the Pork CRC is seeking $2 million per annum over five years for targeted projects. Australia's research in this area is unique to the Pork CRC and additional funding would help ensure the outcomes of the research are further enhanced and made available to producers in all regions of Australia.

However research and development, by its nature is long term and cannot be expected to offset the marked deterioration in margins experienced by Australian pork producers over the last several months. Therefore APL is seeking, on behalf of the industry, additional industry assistance to facilitate and manage industry restructure so as to minimise the impact of the poor and deteriorating market conditions resulting from increasing capture of the processed market by imports. APL is seeking some $90million (inclusive of Pork CRC assistance) for a range of industry assistance measures subject to specific criteria so as to ensure that the long term market forces are not unduly interfered with, and that such measures are, as far as possible, equitable and non discriminatory regardless of farm entity size and structure.

These proposed measures and funding estimates are in no way definitive and should be viewed as a guide to further discussions with Government. Nevertheless, the industry is in no doubt that the competitiveness and future sustainability of the industry is closely tied to additional funding for the Pork CRC and animal welfare and environmental stewardship, particularly in those areas where government regulation is a growing burden on producer efficiency and competitiveness.

7 Annexes

A. Pork CRC Research Programs – Status Update

Program 1: Securing more reliable and consistent supplies of protein and energy for pig diets

The Pork CRC has invested some $3.7 million cash in the three sub program areas all of which are linked to varying degrees. The overall objective is to identify and develop using NIRS (project 1B 101) grains which have high yield potential and nutrient profiles particularly suited to pigs which can be considered true feed grains and grown in pork producing areas to reduce feed costs at least on a digestible energy (DE) basis.

The Grainsearch project (Project 1a 103-Appendix X) clearly identified the value of using high yielding feed grains within a closed loop system involving growers and pork producers. The system enabled pork producers within the system to access wheat at $30-$50 below market prices in normal years and at even greater "discounts" using risk management tools developed by the managers of Grainsearch during the drought of 2006.

The Triticale project (1A 102) has developed at least two new varieties of triticale that have 15-20 per cent higher yields than the benchmark varieties and 8-12 per cent higher DE levels than other varieties providing the opportunity to increase DE yields/hectare by 23-32 per cent . The latter would enable growers to increase returns/hectare and for pork producers to access grain (under contract or through a closed loop system) at a 10-15 per cent discount on wheat or current Triticale. The first new varieties of triticale from the program/project are expected to be released in 2008/2009. The potential return to the pork industry from a 10 per cent reduction in the cost of grain ($20/tonne) would be in the order of $24 million annually. If the new grains can be used within pork producing areas and effectively divorced from the export and human feed grain markets the potential saving/returns will be even higher.

The identification/development of high energy feed grains will also improve the energetic efficiency of the feed milling and pork production sectors since less feed will have to be milled, transported and used to achieve the same volume of production. Effluent output and costs will also be reduced (as well as having beneficial environmental effects.)

Within Sub Program 1B researchers are attempting to identify the reasons for the differences in DE and feed intake within and between grains and to develop processing and other technologies to improve the DE content of the lower DE grains. Improving the DE content of a grain by 1 MJ/kg would effectively reduce the cost of the grain by 7-10 per cent. The results of projects in Sub Program 1B to date demonstrate that the DE contents of wheats and barleys differ by as much as 20 per cent (2.2 -2.7 MJ/kg). Consequently investment in this area has potentially large returns. The first outcomes from these projects are expected in 2008-2009.

The NIRS calibrations being developed by the Pork CRC (Project 1B 101) will also enable feed mills and producers to rapidly determine the DE and other nutrient levels of their grain and

to use the information to markedly enhance the accuracy of diet formulation and reduce the variability in production associated with the effects of grains per se. The Pork CRC will attempt to commercialize the NIRS calibrations through a licensing arrangement with the Grains Research and Development Corporation (GRDC). The agreement will be finalized in February 2008.The NIRS calibrations revised for pigs through Pork CRC research in Project 1B 101 will also be available in February 2008.

Research and development in grains is a new initiative for the Australian pork industry and is seen as high priority by Australian pork producers. Current funding of the Pork CRC necessarily limits the amount and type of research that can be conducted in the area and is likely to limit outcomes for the industry. Assistance in the form of additional funding would enable the program area to be expanded and enhance the likely outcomes for the industry as described below.

The grain research projects currently funded by the Pork CRC are unique and offer real potential for Australian producers to gain real competitive advantage over European producers and to leverage their technical advantages over the USA.

A number of areas where assistance in the shorter and longer term would further enhance the Pork CRC programs in grain research and improve the likelihood of commercial outcomes to benefit the industry are described below.

Program 2: Improving Whole Herd Feed Efficiency (HFE)

Improving HFC has the same proportional effect on cost of production as reducing feed cost. Improvements in HFC can be achieved though strategies which improve animal health and/or survival, reproduction and /or the animal's capacity for muscle growth. Strategies which influence volume also have positive effects on over head costs and revenue and as such can have a proportionally bigger effect on profit than the improvement in HFC per se might suggest. Similarly strategies such as improving the pig's capacity for muscle growth also affect carcass lean content and the price received.

The Pork CRC has spread its investment in Sub Program 2 over seven Sub Programs to ensure the industry maintains a wide and active research base and that new graduates are attracted to the industry. The pork research community and expertise is also more attuned to the areas of production and animal physiology covered in Program 2. In contrast research in grains is relatively new to the pork industry and requires new and different ways of thinking and personnel with different expertise and the ability to convince plant breeders that the breeding objectives for pig feed grains are or can be markedly different from those they are accustomed to for grains destined for export or human food use.

At the technical level Australia has a competitive disadvantage compared to Denmark and the Netherlands in terms of the weight of meat sold/sow/year as this is affected by reproduction. It has been mentioned previously that this disadvantage is exacerbated by the much lighter carcass weights required by the Australian fresh meat market (driven largely by the impact of imports on the requirement for domestic pork for manufacturing purposes) compared to those in countries such as the USA, Canada, and the Netherlands. For example, the difference in average carcass weight between Australia (73-75 kg) and the Netherlands

or the USA (90 kg) represents a potential competitive disadvantage in terms of overhead costs of some 20-23 per cent. The latter increases to 33 per cent when differences in reproductive performance are taken into account between the Netherlands and Australia. For this reason high priority has been given to improving reproduction within the Pork CRC research projects within Program 2. By contrast, under the current import environment any investments made in relation to increasing carcase weight would have little chance of success and therefore a poor investment

The results of recently completed projects in Program 2 have shown that the energy content of the diet offered gilts during their first lactation is crucial to determining subsequent fertility and longevity. Indeed the finding suggest that raising the DE level of the diet to 14.4 MJ/kg or higher increases the number of gilts successfully having a second litter by some 30 per cent, resulting in reduced replacement costs and overall improved reproduction. High sow turnover is a major factor constraining reproduction in the Australian industry and it has been calculated that reducing the number of gilts mated from 30 per cent to 20 per cent would save the Australian industry some $33mn annually. This finding has important commercial implications.

Another recently completed project in the area of reproduction has shown that supplementing the diet of gestating sows with the amino acid Arginine starting day 16-17 of pregnancy for 10-14 days has the potential to increase litter size by 1.4-1.5 pigs. If only 50per cent of the extra pigs born were weaned this would increase net profitability by $152/sow. The technology, however, carries some risk and the initial results need to be confirmed and the mechanisms better understood.

There are projects investigating the manipulation of muscle growth in growing pigs which have shown that using currently registered technologies at the appropriate stage of development can improve feed efficiency between 8 and 22per cent. One of these is exogenous Porcine Somatotropin (PST) administration. The technology has been registered and used in Australia for some 12 years but has low adoption because the material has to be administered by daily injection. The technology, however, offers the potential for marked improvement in feed efficiency and carcass lean content and research to develop a sustained delivery system is certainly warranted.

Program 3: Enhancing capacity to deliver nutrients promoting health and well-being through pork

The Pork CRC has struggled to attract and develop innovative projects in this area though it is obvious from Tables 5 and 6 that increasing the price received by producers has a greater effect on profit and potentially return on investment than a similar improvement in any of the other business indicators. For this reason, and the fact that imports are both reducing the size of the industry and forcing the industry towards a fresh market only, increasing the demand for Australian pork is clearly necessary if the industry is to grow and be sustainable in the longer term.

Until November 2007 the Pork CRC had funded only one project in Program 3. This is designed to increase the Selenium content of pork and to investigate the effects of Selenium enriched pork on the incidence of colon cancer using a rat model To date the project has

demonstrated that pork muscle is sensitive to dietary Selenium supplementation and we are waiting on the results of the rat study to see what human health benefits such pork may have.

In November 2007, we approved the funding of four additional projects following a very successful tender for research to identify and demonstrate the natural benefits of Australian pork on human health and well being. The project time frames range from 12 to 36 months and total funding is $1.5 mn shared equally between the Pork CRC and APL.

All four projects are exciting and have implications with respect to the value and demand for Australian fresh pork both domestically and internationally.

Program 4: Education and communications

The Pork CRC currently has 14 postgraduate students and four postdoctoral researchers working within its projects. The Pork CRC also introduced honours awards for undergraduate students and has attracted 14 students to date.
In conjunction with APL, the Pork CRC has developed a course work Masters Degree in pig management with the University of Adelaide and information packages for secondary school students.

The Pork CRC also held an industry update meeting for piggery managers and consultants. The subjects covered included bench marking against the USA and Canada, the latest in systems and labour management and the latest on pig health.

The Pork CRC has developed a comprehensive communications package and program to help ensure our research findings are effectively communicate to producers and our participants.

B. Independent Review of the UNE time series econometrics analysis with reference to the Productivity Commission's assessment and criticisms

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UniQuest Project No. **15288**

Report Prepared for: **Australian Pork Limited**

Subject: **Review of the UNE time series econometrics analysis with reference to the Productivity Commission's assessment and criticisms**

Date: **18 February 2008**

Report Prepared By: **Dr Alicia Rambaldi**

Signed for and on behalf of UniQuest Pty Limited

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Gary Heyden

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TERMS OF REFERENCE FOR THE REVIEW

1. Review the time series econometric analysis in terms of its robustness in testing whether past values of pigmeat imports can be used to explain movements in domestic pigmeat prices and production? This evaluation should also include the effect of:
    - the effect of omitting key explanatory variable
    - assigning causality and the use of Granger and Sims causality tests to determine the direction of causality, including an evaluation of which (if any) test results should be preferred particularly where ambiguity in causality is implied
    - the suggestion that the econometric analysis is of limited value because of issues with the time series data
    - the appropriateness of using the Australian-US exchange rate

2. Provide recommendations as to how improvements in the time series econometric analysis can be obtained, including those suggested by UNE in their draft rebuttal.

EXECUTIVE SUMMARY

This report has been prepared by request from the Australian Pork Limited to provide a review of the econometric analysis prepared by Stuart Mounter and Albert Wijeweera (University of New England) as part of APL's submission to the inquiry into the import of pigmeat undertaken by the Productivity Commission.

The assessment is that the framework chosen by the consultants is appropriate although some aspects of the modelling can be strengthened. Specific recommendations have been provided to this end. They include the inclusion of variables that were omitted in the initial analysis as well as alternative testing methodology.

It appears the exclusion of some variables in the analysis was due to lack of available data. If these data were not available within the time frame of the original analysis but were made available subsequently, one weakness of the original analysis is removed. If these data have not become available, and specifically for the case of feedgrain prices, it is likely that even revised modelling will still be dismissed as unreliable.

The results presented in the econometric analysis were in some cases not conclusive and in at least one instance led to contradictory and counter intuitive conclusions. The implementation of my recommendations regarding methodology will strengthen the modelling in its own right for two reasons. First, the econometric methods and tests to be used in the revised modelling will be the most currently accepted by the specialised international literature. Second, a series of robustness checks will be conducted to provide evidence of which results hold across different model specifications and/or changes in measurements for some of the variables in the model. Results that are robust to some changes in model specification will allow much stronger conclusions.

INTRODUCTION

Australian Pork Limited (APL) made submissions to the Australian Government's Inquiry into the import of pigmeat currently being undertaken by the Productivity Commission (PC). The submission included econometric modelling prepared by Stuart Mounter and Albert Wijeweera (University of New England). The Productivity Commission produced an Accelerated Report in December 2007. In this report a series of criticisms of the econometric modelling undertaken by Mounter and Wijeweera (MW) were raised. The present report is prepared to assist (APL) by reviewing the econometric modelling and the assessment made by the PC. This report supersedes the preliminary report prepared for APL in January 2008.

The first section of this report presents a brief review of the time series econometric analysis and it is designed to highlight what I consider important issues of methodology and data. The second section provides a series of recommendations on the modelling aimed at producing a robust set of results. The third section provides comments with reference to the PC's assessment and criticisms.

REVIEW OF THE TIME SERIES ECONOMETRIC ANALYSIS

Introduction

The main purpose of the econometric analysis by MW is to address whether frozen pigmeat import volumes (subheading 0203.29) significantly influence domestic prices for baconers (specifically contract and wholesale price).

Given the posed question, the approach taken is to specify a Vector Autoregressive Model (VAR). The choice of a VAR is correct in my opinion given it allows feedback among endogenous variables in the system. The VAR framework is well established in the literature and considered a standard approach to answer questions of "Granger causality (GC)." Granger causality refers to statistical evidence of predictability. Thus, when a variable *x* is said to Granger cause *y*, this indicates that knowledge of the past behaviour of *x* improves the prediction of *y*. In the context of the pigmeat market, concluding that domestic prices are Granger caused by import volumes, indicates that at any given time period, the prediction of the domestic prices is improved by knowledge of import volumes. Thus, it is evidence of "significant influence."

MW analysis includes the testing for the null of Granger non-causality through two alternative pairwise tests (labeled Granger Causality and Sims Causality). These tests provide some

contradictory results which have resulted in claims of lack of robustness of the analysis by the PC.

MW analysis also included Impulse Response and Forecast Variance Decomposition analyses generated from the VAR model specified for the pigmeat market. These two techniques are complementary to GC analysis and should not contradict those results but add additional insights. MW's analysis estimates the responses of domestic volumes and prices to a one time increase in pigmeat imports (of size 1%). The only *statistically significant* response, when the model is estimated over the period 1995-2007, is from domestic farm level prices[46]. Farm prices show a negative response that lasts a period of eight months. When the sample considered is 2002-2007, the responses of both prices (farm and wholesale) are significant and negative over a period of eight and six months, respectively. Domestic production is not significantly affected by increased imports according to the results.

The empirical results obtained from these tests and techniques can be affected by decisions made regarding model specification. Thus, I will concentrate on this issue first. I will then address issues of the methods used in this case and whether these are robust.

Model Specification

Testing of GC (independently of which test is used) and related response analyses will be influenced by model specification. It is therefore crucial that testing and other inferences are conducted within a fully specified model. To this end, every effort must be made to include of all relevant variables and correct dynamics.

The first step in model specification is to identify all important variables that should be included in the model given economic theory. In this case the model aims at capturing the supply side of the market. Some variables are directly affected by the behaviour of the domestic industry. These variables are endogenous and in a VAR framework the number of endogenous variables determines the number of equations. However, many other factors will have an influence in the determination of volume and prices although they cannot be directly affected by industry behaviour. These are exogenous to the system under study, but their influence must be appropriately included in the model. Careful specification of endogenous and exogenous variables helps the structure of the model by adding important information and adds robustness to the exercise. In Section 2 I offer some specific recommendations regarding model specification.

[46] The statistical significance of the impulse response point estimates is easily evaluated by using the constructed 95% confidence interval.

VAR models require an empirical determination of the number of lags to be included on the right hand side as well as pre-testing for the presence of unit roots which can affect the test statistics and analyses subsequently conducted with the model. Alternative tests for lag order often provide conflicting results. This is the case in the MW analysis. The omission of important lags is potentially more harmful than the inclusion of irrelevant lags. My reading of the literature is that SC tends to underfit. If this is the case, it is likely that GC testing and other analysis conducted will provide conflicting results when the model is estimated with different lag lengths indicating that a shorter number of lags might be underfitting the model. I note that a lag length of one was used through the MW analysis.

The presence of unit roots, as it is the case in this study, must be taken into account when testing and forecasting with a VAR. The VAR in levels must be checked for stability and appropriate test statistics are required to insure that conclusions are based on the correct statistical distribution. In the MW analysis the VAR in levels reported seems stable and thus the impulse responses seem to return to equilibrium following a shock.

Granger Non-Causality Tests And Associated VAR Response Analysis

At the core of the question of whether imports of frozen pigmeat can be used to explain movements in domestic prices and production is whether import volumes are contained in the information set of domestic prices and production. Granger causality and Sims causality seek to establish this. Granger causality is an assessment of whether the past history of import volumes can predict the current movement in prices and production. Sims causality includes both past and contemporaneous movements and thus it is more a statistical test for exogeneity. In practice, the test statistics used can be affected by an array of factors in the model specification. Omitted variables and omitted dynamics will affect the performance of these tests. Thus, even when only the direction of causality between two variables is of interest, the test must be conducted within a fully specified model. The presence of unit roots affects the distribution of test statistics and GC type tests are not exempt. The use of an incorrect statistic, even in a correctly specified model, can lead to incorrect inferences. My assessment is the tests for GC used in the MW report are not robust to the presence of unit roots.

Robustness Of The Results

Robustness is a complex concept. In the context of the problem under study we must consider issues of data, method and sensitivity of the analysis.

Data And Variables

The study requires data for variables that influence the supply side of the pigmeat market. MW include in the analysis variables designed to measure the price received by farmers (contract price), wholesale carcass price (Sydney price), volume of imports (a single aggregate over all origins), volume of domestic production (national and NSW), and exchange rates (Australia-US). Two notable omissions are price of substitutes and input prices. The PC's report makes a strong case that feedgrain prices have risen substantially and that they are the cause of the problems faced by the domestic industry. Therefore, the exclusion of some form of input prices in the model must be addressed or it will remain a point of criticisms of the modelling. The material provided to me indicates that some data might be available for these two omitted variables, although not for the full sample. Although their inclusion might result in a reduction in the sample size, the use of solid methodology and sensitivity analyses can diminish the possible criticisms.

As the study involves international trade, the effect of exchange rates needs to be included. Whether the results will differ if the exchange rates of the countries with the larger shares of the import market are included is an empirical question. In theory, an appropriately weighted index of the three exchange rates would be ideal. In practice, estimation of the model with all three major exporter's exchange rates and then including one rate at the time seems the most feasible option.

MW estimated the model for two time periods. The first covers monthly observations from 1995:1-2007:8. The second covers the last five years (2002:9-2007:8). The argument seems to be that imports have become an important part of the market in the last five years. I find this arbitrary sub-sample difficult to justify. Figure one shows the increasing trend in imports started around 1998. Shortening the sample weakens any statistical analysis and more so in the case of a time series analysis.

I am not completely convinced there is a need to include both volume of domestic production for Australia and for NSW.

Methodology

MW have chosen the appropriate framework, namely a VAR, which is flexible and allows feedback relationships among the endogenous variables. I have already mentioned the issue of the choice of GC test and I will return to this in Section 2.

One analysis that was not carried out in their study is that of long-run trends. I will return to this issue in Section 2 with a recommendation.

The use of impulse responses and forecast variance decomposition based on a Choleski decomposition suffers from a variable ordering problem. No mention of how the ordering is chosen was presented in MW's report.

Sensitivity of the Results

The MW analysis conducted two sensitivity analyses. Two alternative GC tests were applied, and two alternative sample periods were considered. As the results conflicted across these analyses in some cases, this gave rise to criticisms of lack of robustness. A wider set of sensitivity checks can add to the robustness of conclusions. Thus a series of recommendations are presented in Section 2.

RECOMMENDATIONS ON HOW TO IMPROVE THE TIME SERIES ECONOMETRIC ANALYSIS

Model Specification

In my opinion the *endogenous* variables in this model are: price received by farmers, wholesale carcass price, volume of imports, volume of domestic production, and price of substitutes (although the later might be weakly exogenous). Input prices are likely to be exogenous as feedgain costs are determined by weather and the demand for grain crops by other industries. Thus, I would argue that *exogenous* variables to this system are exchange rates, input prices, and other factors that might affect the market but are not directly "controllable" by industry players, of which examples would be changes in tariff regulations and seasonal patterns on the demand side. Accordingly, a suitable specification of the model would be as a system of five equations, namely, price received by farmers, wholesale carcass price, volume of imports, volume of domestic production, and price of substitutes, and each equation would include all exogenous variables (exchange rates, input prices, other trend and seasonal effects) on the right hand side to insure all exogenous effects are controlled for. Exogenous variables should enter with some lags to insure their dynamic effects are captured.

In relation to the issue of the sample length already mentioned in Section 1, I would recommend that the complete sample is kept if data availability permits. If it is believed that there is a changing trend between two periods (say pre- and post 1998) an intercept dummy variable can be added to the model to account for the regime change.

Methodology

VAR Lag Order

I recommend the model be specified as in 2.1 and the analysis be carried out with the lag order chosen by the AIC. Robustness of the results can then be checked by reducing the lag length.

Granger Non-Causality Testing

As the main question to be statistically answered is that of whether imports of frozen pigmeat have a significant influence on domestic prices, the choice of an appropriate non-causality test is crucial. MW's preliminary testing indicates presence of unit roots in several variables. Thus, the robust Wald test proposed by Toda and Yamamoto (1995) for VAR system including integrated (and possibly cointegrated) variables is the most appropriate. This test has been shown in the literature to perform well in medium as well as large samples (see Zapata and Rambaldi (1997) or Yamada and Toda (1998) for example)[47]. Once the model is specified as in 2.1 and the lag order determined as per 2.2.1, using the Toda and Yamamoto approach tests of Granger non-causality involving two or more variables, as well as across-equations restrictions can be carried out easily

Impulse Response and Forecast Variance Decompositions

The estimation and interpretation of Impulse Responses (IR) and Forecast Variance Decomposition are sensitive to variable ordering because both of these methods use a Choleski decomposition which is not invariant to the ordering of the variables in the VAR. It is then important to choose an appropriate order for the variables using some economic guidance. A clearly set out example is presented in Lütkepohl and Reimer (1992). Further, the interpretation of IR estimates must consider the 95% confidence bound, and thus when the interval contains zero, the IR should be interpreted as statistically zero.

[47] The implementation is relatively simple and sample codes for several of the commercial software can be found in Rambaldi and Doran (1996).

Long Run Relationships (Cointegrating Relationships)

Testing for the presence of cointegrating relationships should be added to the analysis. Separating the long- from the short- run effects can provide important insights. If cointegration were to be found, the coefficients in the estimated cointegrated vector provide estimates of long-run elasticities and the speed of adjustment coefficient estimates can allow strong statements about which part of the market adjusts when disequilibrium arises.

Sensitivity Analyses

The following robustness checks are recommended:

- Repeat the GC tests for VAR lag order above and below the AIC lag length.
- Exclude any exogenous variables that are statistically non-significant to check if results change.
- Check results by including alternative exchange rates one at the time, as well as all three in the model.
- Check results by including and excluding NSW production (in addition to Australian production).
- Establish a preliminary ordering of the variables for the Impulse Responses and Forecast Variance Decomposition and test minor changes in ordering.

PRODUCTIVITY COMMISSION ASSESSMENT AND CRITICISMS

I have read the PC's report and draft rebuttal from Stuart Mounter. I use the draft rebuttal to offer the following comments:

a)
PC: "The analysis excludes variables such as retail prices for substitute meats"

SM: We acknowledge that the exclusion of retail prices from the model is a limitation of the analysis. Given the short time frame we had to work with, data on retail prices were not available to us. We are happy to re-run the model with retail prices included once we have that data.

This has been addressed by my report. I reiterate my view that to extent that it is possible to find some data, the model should be re-run including previously omitted variables.

b)
PC: "use of the Australia-US exchange rate may not adequately capture import price movements, particularly as the majority of imports come from Denmark and Canada, and pigmeat has only recently been imported from the United States."

SM: Broadly speaking, the possibility of arbitrage ensures global exchange rates adjust to maintain parity. Hence, the Australia-US exchange rate should adequately capture import price movements.
Again, it would not be too difficult to re-run the model using Australia-Denmark or Australia-Canada exchange rates, though we believe this to be unnecessary and would not dramatically alter the results

This has also been addressed by my report. I suggest this as part of the robustness checks.

c)
PC: "There are problems assigning the direction of causality (do imports affect domestic prices, or vice versa, or both?). Granger and Sims causality tests are used to determine the direction of causality. Although both test results show a relationship between imports and domestic prices, they have contradictory findings regarding the direction of causality. Although the authors note the contradictory results regarding the direction of causality, there is no evaluation of which test results should be preferred."

SM: Little inference should made concerning the Granger and Sims causality tests. They are a very minor component and an initial step in the analysis. The tests were included in the analysis for two reasons. Firstly, to show the existence of causality and secondly, to provide some level of consistency with the Griffith (1998) report.
Much more sophisticated methods such as VAR analysis are now used in preference to simple Granger and Sims causality tests. In fact the causality tests are embedded in the VAR framework. Where multi-directional causality exists among a number of variables, approaches such as VAR are appropriate to capture the relationships. In VAR the feedback effects between all endogenous variables are accounted for.

I agree the MW's report showed conflicting results and there was not guidance on which set of results were to be preferred. SM's answer is not very clear on this point. However, I hope I have provided a strong case for the use of Toda and Yamamoto's test which is fully embedded in the VAR framework.

d)
PC: "In their analysis, the authors assume that only imports affect prices (not vice versa)".

SM: The focus of the analysis was to determine if imported pigmeat impacted on domestic prices. As mentioned above, the VAR framework is an appropriate approach as it accounts for all the feedback effects within the specified system. If we were particularly concerned with the impact that a number of independent explanatory variables have on one specified dependent variable it may be more appropriate to use an approach such as the Engle and Granger cointegration technique. It is logical to expect that an increase in import volumes would be associated with an increase in domestic prices.
Instead of imposing a shock to import volumes we could apply a shock to domestic prices to determine what the impacts are on all the other endogenous variables in the model.

It is not correct to state that the authors assume that only imports affect prices as that would imply that the model by MW specified imports as exogenous, which was not the case. The VAR model allows and controls for feedback from imports to prices and vice versa. The MW's report did not test for joint causality in both directions or studied the effects of shocks to domestic prices, however, this can be easily achieved in the framework I have recommended.

e)
PC:"The reverse effect of an increase in prices on imports is not considered. This is surprising because of the ambiguity regarding causality noted above, and because a one per cent increase in baconer prices results in a 0.85 per cent increase in import volumes after one month (a much larger result than for the opposite causality). There is also a contradictory result where an increase in the Sydney wholesale carcass price leads to a decrease in import volumes after one month."

SM: Albert and I are confused and concerned as to where the information in these statements was obtained. Nowhere in our analysis did we state these results. We did not analyse the impact of baconer prices on imports or the impact of the Sydney wholesale carcass price on import volumes.
Our results do not imply these conclusions.

I agree with SM. Their results do not imply any of the above conclusions.

f)
PC: "Intuitively, some other results are difficult to explain. An increase in imports leads to a decrease in domestic prices and an increase in domestic production. In principle, domestic production should decrease if prices fall."

SM: We agree with this statement. In our report we acknowledge this is a counterintuitive response.
However, we do suggest there may be positive supply pressure from other sources counteracting any negative influence on domestic production (e.g. economies of scale, export prices and productivity improvements due to factors such as higher fertility, reduced mortality rates and better feed conversion rates).

This discussion seems to derive from an interpretation of responses of the production variables to a 1% increase in pigmeat imports presented in Figures 2 and 7. I disagree with both the PC and SM as the statistical conclusion is that prices fall and production shows no statistical significant response. The 95% confidence interval estimates for the responses of the production variables contain zero. Therefore, these responses are not statistically different from zero. In the short sample (Figure 7) there is a single and very small significant response (around 3 months), however this is acceptable sampling error.

g)
PC: "In modelling for the 1998 safeguards inquiry, some consultants stated that a reasonable theoretical framework for the pig industry requires data on the costs of production. Because such data are not easy to obtain for the entire industry, feed costs could be used as a proxy for production costs."

SM: Following Selwyn Hielbron's comments "Just looking at the data since 2002 I think there is a very close correlation between imports and the exchange rate but little link between grain prices and imports" we elected to not to include feedgrain prices. We do have data on feedgrain prices for the 2002-2007 sample period but not for years prior to 2002. Nadia Bottari informed us that to purchase the required data was going to cost quite a bit of money. Hence, we elected not to proceed with feedgrain prices but kept it as an option for future analysis.

As noted previously, it is clear the PC is making a strong case in relation to the importance of feedgrain prices in this debate. Further, this is a theoretically important variable. Thus, I strongly recommend that every effort be made to re-run the model including feedgrain prices.

CONCLUSIONS

This report was prepared by request from the Australian Pork Limited. It provides a review of the econometric analysis prepared by Stuart Mounter and Albert Wijeweera (University of New England) as part of APL's submission to the inquiry into the import of pigmeat undertaken by the Productivity Commission.

My assessment is that the framework chosen by the consultants is appropriate although some aspects of the modelling can be strengthened. Specific recommendations have been provided to this end. They include the inclusion of variables that were omitted in the initial analysis (retail prices of substitute meats and feedgrain prices) as well as alternative testing methodology. Specifically, recommendations have been made on: the specification of endogenous and exogenous variables; the number of lags to appropriately capture the dynamics of the market; a statistically preferred test for Granger non-causality; suggestions on the estimation and interpretation of impulse response and variance decomposition analysis; and the inclusion of testing for long-run trends.

The exclusion of some variables in the analysis was argued to be due to the lack of available data. If these data have become available subsequently one weakness of the original analysis is removed. If these data have not become available, and specifically for the case of feedgrain prices, it is likely that even revised modelling will still be dismissed.

The results presented in the econometric analysis by MW were in some cases not conclusive and in at least one instance led to contradictory and counter intuitive conclusions. The implementation of my recommendations regarding methodology will strengthen the modelling in its own right for two reasons. First, the econometric methods and tests to be used could be argued to be the most currently accepted by the international literature when modelling non-stationary data. Second, a series of robustness checks will be conducted to provide evidence of which results hold across different model specifications and/or changes in measurements for some of the variables in the model. Results that are robust allow much stronger conclusions.

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C. ITS Global - The crisis in the pig meat industry: The Productivity Commission Report on use of WTO Safeguards

The crisis in the pig meat industry: The Productivity Commission Report on use of WTO Safeguards

Review for Australian Pork Limited

February 28, 2008

Executive Summary

The Australian pork industry is facing a major crisis to which the long term increase and recent surge in imports has been a major contributor.

In late November, the Howard Government commissioned the Productivity Commission (PC) as regulation requires, to rule if the WTO Agreement on Safeguards (the Agreement) allowed controls on imports in these circumstances.

The Agreement is the only WTO instrument which specifically permits use of import measures in strategies to restructure industries which cannot compete against unexpected and prolonged surges of imports. The PC was to report twice: in December, to advise if emergency safeguards were justified; and in March, if normal safeguards could be used.

In its December report, the PC declined to make a determination. It said there was no clear evidence that imports were injuring the industry. (It was ample.) More remarkably, the PC ventured an opinion that this WTO Agreement should not be used to restrict imports just because domestic producers face "cost disability" (that is, could not match the price of imports). Yet, that is the aim of the Agreement.

The PC agreed the industry was losing money and imports had risen strongly. It accepted that cheaper imports prevented growers from passing higher costs, like feed grain, on to consumers. It noted importers were subsidized. Yet it formally refused to conclude pork imports were harming the industry or that the terms of the Agreement should be invoked.

This principle which the Commission has set down effectively rules out use of the WTO Safeguards Agreement in future for any Australian industry.

The PC's analysis was also technically weak: its analysis of the industry and the international market was uninformed; and the evidentiary standards used for economic policy presupposed an outcome, intended or not, that set the bar so high that a provisional safeguard recommendation was simply the unattainable. The PC is unlikely to support use of normal safeguards in its March report.

On this precedent, the Government will have to use other measures to support restructuring in the pork industry. If it wants the option to use the provisions of the WTO Safeguards Agreement in future, it will have to change the system for assessing such situations.

Overview of the Productivity Commission Report

WTO requirements

The WTO Agreement permits Governments to impose temporary controls on imports if there has been a prolonged increase in imports which was unexpected and provided they are time bound and part of a system to facilitate restructuring of the industry.

The right to impose safeguard measures has been an integral part of the architecture of the international trading system since the GATT was negotiated in 1948. It recognised that international markets can be volatile and that some temporary mechanism should be provided to enable governments to manage the impacts of import surges from unexpected events.

While the original provisions (of Article IXX of the GATT) were loose and abused the additional conditions on use of safeguards laid down when the WTO Agreement on Safeguards was negotiated in the Uruguay Round converted the provision into a tightly-regulated adjustment mechanism. Safeguard measures cannot be imposed unless they are part of an adjustment program; are formally monitored by the WTO; and are time bound.

The Agreement requires a prior assessment of the situation by a nominated Government agency, in this case the PC, before restrictions can be imposed. There is no such requirement for determinations to impose emergency safeguards, but Australian regulations require prior assessment.

For the PC to recommend provisional (or emergency) safeguards, it must find that "critical circumstances exist such that delay in applying measures would cause damage which it would be difficult to repair" *and* there is "clear evidence that increased imports have cause or are threatening to cause injury "

Following is an analysis of the key points in the PC report.

The PC assertion that imports are not a cause of serious injury lacks credulity

The PC accepted that imports limit the capacity of pork producers and processors to pass on increases in the costs of grain and that imports have increased substantially, in absolute and relative terms, over the last eight years.

The Commission considered that the "principal cause" of the serious injury to the industry "has been triggered by extraordinary increases in feed grain prices in Australia since the middle of 2007, not by increased imports significantly undercutting and pushing down domestic prices".

This lacks credulity. Imports have been rising steadily for eight years, and dramatically in the last two, increasing their share of pork production in Australia from 33 to 50 percent in the last year. Grain prices have risen and fallen over that period and have risen rapidly only in the last year.

Remarkably (on p49), the PC states that "*moreover, pig producers worldwide are facing a similar cost- price squeeze (although probably not to the same extent as Australian producers), and higher global production costs can be expected to affect world pig meat prices as production cuts come into effect*."

Yet the PC fails to explain why foreign producers are not suffering to the same degree if they are facing a "similar cost price squeeze" and trying to pass on costs as Australian producers are trying to do. If higher global production costs can be expected to affect future prices, why have they already not done so over the last year when EU and North America cost increases have already been in the order of 35 percent and 26 percent respectively? The PC's analysis was not taken to its next logical step.

Under the Safeguards Agreement, imports must be a clear cause of damage to the industry, but they do not have to be the only cause. The logic of the PC analysis is that imports are a causal factor; it simply could not or would not say how much.

The PC did not systematically assess the causal relationship between imports and industry losses.

The PC compounded the poor credibility of its conclusion by not demonstrating any method to assess the role of imports.

The PC seemed to have had no trouble with a nearly identical Commission in 1998. Professor Richard Snape, an eminent economist, presided over that inquiry. He determined that "*Any rise in pig prices due to a rise in feed or other costs of growing pigs will be moderated by the availability of imports — more of the adjustment will occur through a reduction in domestic supply than without imports*". He set out a methodology to determine causation and concluded that he was "*unable to find any other factor capable of explaining the large fall in demand for local pig meat and consequent fall in pig meat prices since October 1997.*" [48]

The circumstances today differ only in the greater magnitude of the imports and the resulting damage and an apparent unwillingness of today's Commission to systematically assess the causal impact of the surge of imports and assess if the circumstances have met the terms of the Safeguards Agreement.

The PC rejected the rationale of the WTO Safeguards Agreement

The PC effectively stated it did not accept the rationale of the Safeguards Agreement. It observed that if tariffs were justified on the grounds that import competition was causing cost disability among domestic producers (i.e. they could not match prices of imports) this would represent a rationale "which, in the Commission's view, is not, and should not be, the rationale for emergency action under the WTO."

The drafters of the WTO Agreement did intend that it should provide opportunities for redress from the impact of lower import price in circumstances where there was an unanticipated and prolonged increase in imports.

The then Liberal Federal Government's assignment to the PC was specific – assess if the circumstances were those envisaged in the WTO Agreement. It did not invite the PC to assess the propriety of the terms of the Agreement. The PC did the latter and did not complete the former.

The PC's analysis of the industry lacked expertise and rested on self-fulfilling evidentiary standards

The PC's analysis of the impact of changes in the industry did not reflect an expert understanding of the economic structure of the industry. In particular, the PC failed to indicate how Australian producers could undertake profitable business by diverting their products from the processed market, which imports were taking over, to the fresh market and remain profitable given the way the industry is currently structured.

As shown in APL's second submission, a further problem in being able to compete with imports arises through differential treatment by processors. Many of the latter are happy to buy cheaper imported products from animals with a carcase weight above 100kg, particularly from the US. At the same time their pricing structure heavily penalises carcase weights for local producers shifting to bone-in hams and for rasher bacon products. This also adversely affects production costs.

The PC analysis was incorrect about the pattern of world prices and set a number of evidentiary tests to support its analysis which was self-fulfilling.

Conclusion

[48] For the record the Commission chose not to recommend imposition of tariffs.

The Commission has created several problems for the newly elected Labor Federal Government:

1. It will be difficult for the Government now to avail itself of the adjustment procedures, in particular temporary use of tariff controls as provided for in the Agreement, to address the serious problems facing the industry.

2. Existing arrangements and procedures for satisfying the terms of the WTO Agreement appear dysfunctional. If the Government wants to avail itself of these rights in future, it will have to create new procedures.

Attachment - Critical analysis of the PC's Report

The PC does not accept the rationale of the Safeguards Agreement – (Page 48, paras 3-4).

APL requested Safeguards action on the basis of the rapid and increasing rise in imports which have prevented feed cost increases being passed on, as provided for in the WTO Agreement. The PC indicated that it did not consider that the WTO Safeguards Agreement should be used to sanction imports controls when domestic producers face "cost disability".

The PC appears to recognise the logical weakness in its report in revealing discussion about the "price capping' effect of imports.

Yet, it does not accept the logic that such price capping is the cause of serious injury. It acknowledges that "It is always the case that import competition constrains or suppresses domestic prices (that is the main source of the gains from trade); but it does not follow that imports must consequently be the cause of serious injury. In the present case this would be akin to blaming domestic competition for suppressing cost-driven price increases in a protected domestic market. Acceptance of this argument would lead to import protection being based on domestic cost disability which, in the Commission's view, is not, and should not be, the rationale for emergency action under the WTO".

However while the PC argues that prices have failed to fall sufficiently, it fell short of asking the flipside of the same question: what volume of imports producers are producers prevented from recovering their costs of production close to breakeven?

All competition whether from domestic or imported sources, cause injury to competitors. This is the fundamental basis of competition – the "creative destruction" identified by Joseph Schumpeter.

The framers of the WTO Safeguards Agreement did not want safeguards to prevent all imports – they wanted safeguards to contain a rapid and unanticipated increase in imports which threatened an industry.

While the PC accepts that import volumes have increased in absolute and relative terms, it has disregarded this in its analysis. It is not the price capping that has caused the injury; it is the rapid rise in imports allied with their price capping effect.

The PC has clearly revealed in its report a position that it is opposed to endorsing import protection in principle, even if it is justified under the WTO Safeguards Agreement.

The PC accepts APL's case for safeguards on all key points except causation (Box 2.7)

The PC accepts the thrust of APL's case for safeguards on all key points except that imports cause the injury being experienced:

- Australian produced pork is like or directly competitive with imported pig meat;
- Australian pork producers and primary processors produce products that are like or directly competitive with imports;
- Import quantities have increased in both absolute and relative terms and the increase in imports has been recent, significant, sharp and sudden enough consistent with WTO legal requirements for safeguards;
- Import growth has been due to developments which could not possibly have been foreseen;
- Overall the domestic industry is suffering, or is under threat of, serious injury.

However, having followed the logic of APL's case, which is also the logic which led the PC to accept that safeguards were justified in 1998, the PC then abruptly finds that imports did not cause the injury to the industry.

The PC creates an illogical and fallacious standard to assess the impacts of imports (Page 33, para 2.)

The PC states that "The key mechanism through which imports cause injury to domestic industry (though simultaneously bringing gains to consumers) is by *driving down the market price"* (PC emphasis).

This does not mean that the pig meat price has to be lower in absolute terms compared with a previous period. It means that the price must be lower than it otherwise would be in the absence of imports.

Yet the PC states that "The Commission's preliminary analysis suggest that despite increased imports, import prices (as measured by unit values) have not changed much in recent years" (page 33, para 3). The PC then links this assertion to the absence of a fall in producer prices by saying "Furthermore, domestic producer prices which are heavily influenced by import prices (Box 2.5), have remained within normal annual cyclical bounds" (ibid.).

This is logically fallacious and analytically incorrect. The PC accepts that imports place a ceiling on the ability of domestic producers to pass on higher costs (Box 2.5). Logically imports can serve to depress prices below what they otherwise would have been without depressing them in absolute terms relative to any particular time period. In analytical terms, analysing the impact of a variable entails comparing the situation with and without that variable, not before and after a particular time period.

APL clearly stated in it submission on pages 48ff that the impact of imports is to ensure prices are lower than they otherwise would be. The PC itself accepts this logic (see below). A logical extension of this argument is that import price that did not reflect respective feed cost increases suppressed domestic prices from passing on such costs.

The PC asserts that other drivers besides import prices have caused imports and injury (Page 42, para 4.)

The PC states "That imports have increased significantly while average producer prices have remained fairly steady suggest that there have been other drivers of both increased imports and injury".

This is logically fallacious. If imports have kept producer prices lower than they otherwise would have been then the steadiness or otherwise of producer prices over a particular period is totally irrelevant.

The PC in the sentence above also seems to be intimating that either imports *alone* (writer's emphasis) or other factors have driven injury. To satisfy the WTO safeguards requirements, imports must be a significant factor, but they need not be the sole factor.

The PC contradicts itself by claiming it is unclear that imports cause injury while accepting that imports cap domestic prices and have increased rapidly – (Page 47, para 3.)

The PC argues that because domestic prices are within normal cyclical bounds while import unit values have risen since 2002 other factors beside imports are responsible for the current profit squeeze.

It finds that "There is not clear evidence that increased imports have caused or are threatening to cause serious injury to the domestic industry", and that the "principal cause" would appear to be higher domestic feed prices.

As indicated above, the PC's assertion that other factors beside imports are responsible for injury because domestic prices are within normal bounds whilst import values have risen over a particular period is logically fallacious.

The PC's finding raises the following fundamental questions:

- The evidence according to the PC is not clear – does this mean there is some evidence but it is unclear or conflicting – if so, what is that evidence?
- Does it mean that there is no evidence whatsoever, in which case the PC should have said so?
- If feed is the principal cause, what are the secondary causes, and are imports one such cause (noting that imports do not have to be the sole cause of injury, just a separately identifiable cause)?

The PC blames injury solely on feed prices (Page 48, para 5.)

The PC concludes that the serious injury being experienced by the industry is a situation that "has been triggered by extraordinary increases in feed grain prices in Australia since the middle of 2007, not by increased imports significantly undercutting and pushing down domestic prices".

The PC is clearly claiming here that imports have had nothing whatsoever to do with the injury faced. This is counter intuitive and lacks credulity. Given that the PC itself accepts that imports serve to cap domestic prices, and that the PC itself points out that "The annual moving share of imports to domestic production has increased from a little over one-third to just under one half in the last year" (page 19, para 1), the PC's conclusion simply defies credulity. How could such a rise not have caused any injury whatsoever, whatever had happened to other factors such as feed prices?

The very next sentence seems to qualify the PC's unequivocal statement by saying "Because the Commission considers that clear evidence of causation from serious injury is wanting…." This begs the obvious question of whether the injury is not caused at all or whether there is evidence of some cause but it is "unclear". Which is it? If the latter, then the same questions prevail as applied in relation to Page 47, para 3 above.

The PC's standard for evidence to justify provisional safeguards is wrong. (Page 2, para 1)

The PC report asserts that a government can only take action if the competent authority finds that action is justified. This overstates the PC's role. According to its own regulation, the government must use the PC. If it disagrees with the PC, it can still impose a provisional safeguard, provided the terms of Article 3 of the Safeguards Agreement are satisfied. The Agreement makes clear a determination to impose a provisional safeguard is a matter for the Government.

If all necessary factual findings are in the PC report and the government can justify a different conclusion in law, it can impose a measure without further enquiry, although it still needs to provide interested parties with an opportunity for input. Advice from Professor Jeff Waincymer, Monash Faculty of Law, explaining this is available in APL's final submission.

Key PC analyses are technically incorrect

a. The PC fails to grasp the economics of the pork industry. (Page 42, Para 1.)

The PC asserts the implausible case that imports do not undercut domestic prices. It cites APL's evidence that imports cause serious injury because import prices consistently undercut prices for

locally produced pig meat, and claims that the evidence of persistent (if variable) price gaps between imported and domestic cuts reflects either the use of non-comparable data or differences in the nature of the products (or some mix of the two) not price undercutting.

It then elaborates by saying that unit values exclude importers margins and other costs (intimating that this might account for the differences between import unit values and domestic wholesale prices); and states that higher prices for domestic products means they are preferred by local purchasers or are simply different.

The PC is wrong to suggest that importers margins constitute a major factor in the difference between domestic prices and unit values (see above comment in relation to Page 33, footnote 6).

Higher prices for domestic product reflect number of factors:

- Differences in product specification do apply to some extent and cause differences in prices for domestic and imported products e.g. with respect to Danish middles (see note in relation to Page 34, para1). However the domestic and imported products are still directly competitive, as the PC itself concludes.

- There is a limit to the level of imports because of restrictions on the import of bone-in products which creates a gap between domestic and imported prices and means domestic prices are higher than they otherwise would be in the absence of import restrictions.

- The persistent gap between domestic and imported prices reflects differences in the cost of production in exporting countries and in Australia.

- There is also the impact of subsidies granted to producers in all the countries exporting to Australia, as discussed in APL's first submission (pages 53-54) and acknowledged by the PC as having some effect p49.

The persistence of gaps between domestic and imported prices can thus be easily envisaged along with the resulting rising level of imports that has been experienced in absolute and relative terms.

This indicates that the PC has refused to understand the factors described above which explain persistent gaps in prices between imported and domestic products, because this explanation conflicts with its pre-determined outcome – rejection of the case for Safeguards for the pork industry.

The PC ignores the structure of the pork industry and the limitation it imposes on Australian pork producers. Producers cannot simply switch production away from the processed market where prices are stable to the fresh market and remain profitable given the way the industry is currently structured.

b. The PC incorrectly claims unit values underestimate import prices. (Page 33, footnote 6.)

The PC states that unit values will systematically understate actual import prices because they exclude freight and insurance costs and any importers' margin.

APL's second submission addressed the issue of freight and insurance costs and concluded on page 51 that the addition of costs for freight and insurance would only add a marginal amount to the costs of landed product. According to commercial sources, importers' margins on pork imports are typically in the order of 1 percent of the fob price and no margin exists at all in the numerous instances where retailers or processors import product directly without use of an intermediary importer.

c. The PC uses incorrect analysis to assert import prices have been stable so domestic prices cannot have been undercut. (Page 34, para 1.)

The PC asserts that import unit values have been stable and cites Figure 2.6 which shows average values for imports from all sources since October 2002. It also states that in the case of Danish imports, unit values have actually increased over the past year (Figure 2.8). Figure 2.8 actually

shows how Canadian and US values are significantly below December 2004 levels (by some 17 percent on inspection) but Danish levels have decreased.

The ability of Danish prices to remain firm reflects two factors:

- The consistency typically achieved in Danish middles production which differentiates it to some extent from domestic Australian middles;
- The fact that the Danish industry is effectively a monopoly with the major processor on recent estimates slaughtering 96 percent of the pigs in Denmark, enabling it to price discriminate to export markets such as Australia.

These factors were ignored by the PC despite the fact that in respect of point one above the PC's own report says "Although several participants observed some difference in product consistency, this generally referred to products meeting customer specification for cut, fat and size rather than any inherent differences in taste that would be noticeable to a final consumer" (page 14, para 4); and point two above was brought to the PC's attention in APL's presentation at the Canberra hearing.

But even taking this into account, if import unit values were 50 percent above their levels at some point in the past it would prove nothing about the impact of imports on domestic prices. The key test is whether domestic prices are lower than they otherwise would be as a result of import prices.

The PC constructs its own evidentiary standards to support its conclusions

a. PC states it is unable to determine causation for imports

The PC says is cannot make a determination. Yet when the Commission examined the same question in 1998, the Commissioner, then Professor Snape, described the process he used to lead him to determine the impact of rising imports among other factors were key in causing injury.

He determined that "Any rise in pig prices due to a rise in feed or other costs of growing pigs will be moderated by the availability of imports — more of the adjustment will occur through a reduction in domestic supply than without imports". He had "examined a wide range of factors which may have contributed to the injury described above and has concluded that increased imports were the dominant cause of low pig prices and reduced profitability" and concluded that he was "unable to find any other factor capable of explaining the large fall in demand for local pig meat and consequent fall in pig meat prices since October 1997".

There is no indication that the Commission considered and rejected that process. Determination of causation is a competence in microeconomic analysis for those that are expert in the field and well within the grasp of the Commission. In this case the Commission evidently thought otherwise.

b. The PC proposes that feed costs should be used as a proxy for all costs - Page 40, para 1.

The PC claims that econometric analysis may be of limited value because of "issues with data series" and proposes that it may develop its preliminary modelling by using other variables including feed costs. Because other consultants in the 1998 Inquiry had argued that a reasonable theoretical framework for the pig industry requires data on costs of production, but such data are not easy to obtain, "feed costs could be used as a proxy for production costs". This is not acceptable – feed costs are a major component of pig production costs, but the total cost of production for pork includes processing, marketing and other costs.

c. The PC wrongly asserts domestic prices have been steady

The PC report asserts that:

- Sharp increases in domestic prices have preceded increases in import volumes i.e. when domestic prices increase significantly as they did in late 2006, manufacturers respond by importing pig meat (page 39). The PC asserts this to counter APL's argument that increased imports are linked with lower domestic prices for pig meat. The Commission

appeared to disregard the simple fact that many producers were able to make a modest profit in 2006/ 2007 financial year, despite some periods of high feed grain costs, due to the high pig prices received in late 2006 and early 2007. These high prices were the result of global factors – Brazilian pork being locked out of Russia due to a Foot & Mouth Disease outbreak there, and thus US and Canadian pork filling Russian orders. At the same time, thousands of weaners were being sent into Germany from Denmark due to a specific short term demand there. These factors restricted supply and pushed up prices of imported pork, leading to greater demand for the domestic pig. Of course since this time, Brazil has re-entered the Russian market and global forces have returned to a more normal level, and imports have, as we know, flooded into Australia, depressing prices and leading to greater losses as extreme feed prices also hit profit and loss sheets from August onwards. The full extent of the losses in the industry will be felt from the second quarter or later in the 2007/ 2008 year.

- Imports have increased significantly while average producer prices have remained fairly steady. The PC uses this assertion to suggest that there have been other drivers of both increased imports and injury (page 42). Domestic prices have not been "fairly steady". Data on average monthly porker prices over the past 5 years indicates that far from being fairly steady, prices have varied significantly, both within years and between years. In the most recent year 2007, prices in the first half of the year were generally at their highest levels since 2002, for reasons explained above, but then following a surge of imports in the second half of the year, prices have been generally well below previous years' levels. In the final months of the year they have been some 10 percent below last year's level; August to November 2007, saw the lowest prices for porkers in six years.

d. The PC asserts that econometric analysis does not produce "reliable results" -

The PC (Page 41, Box 2.6) attacks the University of New England's analysis. It is notable however that the PC's comments on the work by UNE are totally negative. The PC does not even bother summarising the findings of the UNE's work before attacking it.

The PC (page 40, para 2) says that because of the difficulties in obtaining "reliable results" (left undefined) from econometric analysis, it will consider developing a partial equilibrium model of the industry. There is no argument that a partial equilibrium model would produce any more "reliable results."

Other failings

a. The PC fails to provide rigorous evidence about producers not exiting – Page 49, para 2.

The PC argues against the "over-shooting' scenario based on evidence received from "a number of pig producers who had adopted a wait-and-see' approach, at least for the next few months". The PC does not state whether they were waiting to see whether it would recommend safeguard action or for some other event that could keep them in business, or whether they were waiting for conditions to improve, or any other development. The PC's argument is not supported by any rigorous evidence.

However industry developments post the PC's Accelerated Report validate the overshooting scenario.

b. PC fails to address potential threat of injury from foreign subsidies – page 49, para 5

The PC indicates that new foreign measures recently announced might ultimately bear on the case for safeguards. Such polices presumably refer to first the reintroduction of Private Storage Aid which was then replaced with the reintroduction of export refunds for pork by the EU at the end of November 2007.

It is somewhat surprising that the PC should at this point choose to introduce this matter. In previous analysis of the factors influencing the competitiveness of imported pork, the Productivity Commission indicated the formal level of support for pork in Europe was not significant.

Research commissioned by APL has demonstrated that these assessments were incorrect and that the level of support for the pork industry in Europe was significant.

If the PC perceives now these matters have some relevance, as Australian Pork Limited has always insisted they did, they should not simply be left for further analysis. They should at least be taken into account now given that the PC considers that prices (of imports) are significant to the threat posed by imports and by increased imports.

Observations

1. The PC has failed to properly carry out its task and satisfy its Terms of Reference. It has produced a technically inadequate report and revealed a position in principle which indicates it does not agree that restrictions on trade should be imposed in the manner provided for in the WTO Agreement on Safeguards.

2. The PC avoided making a standard analysis to determine causation, despite the existence of a plausible model in previous enquiries.

3. While failing to make a determination, it nevertheless drew conclusions which are likely to be used by others to challenge any determination by the Government of the evidence of serious injury, thus arguably impeding the Government's capacity to exercise legal rights granted available to it under the WTO Agreement on Safeguards.

4. The PC was wrong in not looking at whether any part of the injury might have been caused by imports and too readily ascribed it all to feed costs. Its reasoning in reaching this conclusion was logically incoherent and is counter intuitive.

5. The PC was wrong in terms of its evidentiary standard in several key respects, in particular that imports had to be the only cause of injury.

6. PC revealed that while the Commission remains to complete the second part of its commissioned task, which is to see if the circumstances warrant imposition of normal safeguards, there is no reason to suppose it will, given that it has stated it does not accept the rationales behind the Agreement.

7. The PC's Accelerated Report begs the question as to whether it should continue to be the appropriate body to undertake the required analysis of the conditions which need to be in place before the Government can use the provisions of the Agreement in future.

Conclusion

The PC has chosen to disagree with the rationale of the WTO Safeguards Agreement.

Critically, the PC has not fulfilled its mandate to assess if the conditions specified in the Agreement warranted imposition of temporary safeguards.

While the Commission remains to complete the second part of its commissioned task, which is to see if the circumstances warrant imposition of normal safeguards, there is no reason to suppose it will, given that it has stated it does not accept the rationales behind the Agreement.

The Commission has created several problems for the Government:

1. It will be difficult for the Government now to avail itself of the adjustment procedures, in particular the temporary use of tariff controls provided for in the Agreement, to address the serious problems facing the industry.

2. Existing arrangements and procedures for satisfying the terms of the WTO Agreement now appear dysfunctional given the PC's stated views. If the Government wants to avail itself of these rights in future, it will have to create new procedures.

D. APL Submission #1 to The Productivity Commission Inquiry – Annual Review of Regulatory Burdens on Business: Primary Sector (August 2007)

Please Note: This document is provided to the PC as a pdf-file attached to this submission

E. APL Submission #2 to The Productivity Commission Inquiry – Annual Review of Regulatory Burdens on Business: Primary Sector (October 2007)

Please Note: This document is provided to the PC as a pdf-file attached to this submission

Submission to

The Productivity Commission Inquiry – Annual Review of Regulatory Burdens on Business: Primary Sector

August 2007

SUBMISSION BY AUSTRALIAN PORK LIMITED TO THE PRODUCTIVITY COMMISSION INQUIRY - ANNUAL REVIEW OF REGULATORY BURDENS ON BUSINESS: PRIMARY SECTOR

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

This submission draws on a substantial body of analysis of regulatory impacts on the pork industry that industry body Australian Pork Limited (APL) has conducted over the past few years, and in response to the Productivity Commission: Annual Review of Regulatory Burdens on Business – Primary Sector Issues Paper (2007)[1],. The submission suggests how some regulation can be reformed to improve industry competitiveness.

Some typical justifications for regulation which have included industry and government participation have focused on the pig industry's environmental responsibilities, traceability for food safety and for animal welfare.

Recognising these potential impacts, this has provided a strong rationale for government monitored self regulation or co-regulation. Co-regulation has allowed industry to closely align business priorities with those regulations imposed by the Australian Government, and the requirements of our domestic market and export destinations.

We detail preferred regulatory mechanisms and key areas for regulatory review and areas of regulatory improvement. They include:

1) Complicated State and Federal relations;
2) The lag times regarding developmental approvals for essential infrastructure;
3) Impacts relating to environmental legislation;
4) Changes to animal welfare such as the limitation on the use of and design of sow stalls and the impact on a producer's profitability over the long term;
5) O H and S and Workers Compensation Regulation;
6) Changing food regulations and the resultant costs regarding The National Residue Survey (NRS) in relation to the *Australian Standard for Hygienic Production of Meat*;
7) Inequitable transport regulation;
8) Ability to engage in cost recovery;
9) The grain market structure in Australia and the indirect impacts of levies and subsidies for biofuel production, and legislating ethanol in gasoline in different states; and
10) Regulatory partnerships including industry and government such as the co-regulated PigPass NVD system and the development of the Model Code of Practice for the Welfare of Animals – Pigs.

[1] http://www.pc.gov.au/regulatoryburdens/primarysector/issuespaper/primarysector.pdf

APL regards these areas as significant to the development of the Australian Pork Industry. APL believes that regulation should be based on clear market failure, or quantified societal expectation criteria. Regulation should be underpinned by rigorous scientific and economic analysis, including attitudinal and behavioural studies to avoid unnecessary over-regulation. In many cases the interests of the community, as represented by regulatory agencies and those of industry overlap.

2. INTRODUCTION: BACKGROUND

Australian Pork Limited (APL) is the national representative body for Australian pig producers. It is a producer-owned, not-for-profit company combining marketing, export development, research and innovation and policy development to assist in securing a profitable and sustainable future for the Australian pork industry. APL works in close association with key industry and government stakeholders.

APL is a unique rural industry service body for the Australian pork industry. The framework for APL was established under the Pig Industry Act 2001[2]. Operating and reporting guidelines are provided for in the Funding Agreement with the Commonwealth of Australia. This forms the basis of APL's operations.

APL's primary funding is derived from statutory pig slaughter levies collected under the Primary Industry (Excise) Levies Act 1999[3]. The levy amounts to $2.525 cents per carcase levy at slaughter and is made up of $1.65 for Marketing activities, $0.70 cents for Research and Innovation activities, and $0.175 for the National Residue Survey (NRS)[4]. Additional research-specific funds are also received from the Australian Government under the portfolio of the Federal Minister for Agriculture, Fisheries and Forestry.

In addition to APL's primary audience of levy-paying pork producers, there are a number of other groups who are considered stakeholders of APL including:

- the Australian Government, state and local governments and their agencies;
- processors and exporters;
- wholesalers, distributors and retailers;
- other agricultural industry associations;
- consumers and the community;
- finance and business community;
- APL staff and suppliers;
- industry employees and suppliers; and
- research institutions and providers.

The following objectives for the 2005-2010 Strategic Plan focus on a central strategy to drive up domestic demand for Australian pork, while building the industry's capacity to expand exports and compete successfully against pork imports:

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[2] http://www.comlaw.gov.au/ComLaw/Legislation/ActCompilation1.nsf/0/935C1FDED0B51DF1CA256F71005501E2/$file/PigIndustry2001.pdf

[3] http://www.comlaw.gov.au/ComLaw/Legislation/ActCompilation1.nsf/0/E231CA546E7CC2DBCA25703F001AA557/$file/PrimIndExciseLevies1999_WD02.pdf

[4] http://www.daff.gov.au/agriculture-food/nrs/industry-info/animal

1. increasing fresh pork demand;
2. increasing carcase value;
3. reducing supply chain costs;
4. contracts and measurements systems;
5. ensuring industry capability; and
6. managing risk.

a. Structure and Regional Distribution of the Industry

There are currently an estimated 1,500 pork producers in Australia with total pig numbers at approximately 2,702,000. APL's members own approximately 85 percent of the Australian pig production. The estimated Gross Value of Production (GVP) for pig production is $1,008m for the period 2006/07.[5] Pork represents 2.38% of total Australian farm production.[6] During 2005-2006, the pig industry had a farmgate value of $867 million (ABARE).

The Australian pork industry provides a significant positive impact to local, regional, state and national economies through substantial income generation and employment. In 2004, the pork industry directly generated approximately 6,000 full time jobs with a further 35,000 jobs generated indirectly throughout the pork production chain.[7] The chain was valued at $2.6 billion in 2005-2006.

b. The Geographical Make-up of the Australian Pork Industry

The pig industry, closely associated with the dairy industry locations in the past, is now largely located in the grain growing regions. Grain growing areas of Australia are found in two relatively narrow inland belts; the eastern Australian grain belt, which stretches through central Queensland, New South Wales, Victoria and South Australia, and the Western Australian grain belt, which is in an area bordered by Geraldton in the north, Albany to the south and Esperance to the east.[8] The quantity of pork produced in each state is linked to the size of its major grain growing regions but is also influenced by proximity to major

[5] Australian Bureau of Statistics (2007). Value of Principal Agricultural Commodities Produced: Australia Preliminary – 2005-2006. [Online]. Accessed July 13, 2007: http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/E6AF653115ACB249CA25730200194FD6/$File/75010_2005-06.pdf, Vol 7501.0. pp. 5.

[6] Australian Bureau of Statistics (2007). Value of Principal Agricultural Commodities Produced: Australia Preliminary – 2005-2006. [Online]. Accessed July 13, 2007: http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/E6AF653115ACB249CA25730200194FD6/$File/75010_2005-06.pdf, Vol 7501.0. pp. 5.

[7] http://www.daff.gov.au/__data/assets/pdf_file/0018/18081/2004-01b.pdf, (2004) pp. 20.

[8] Feed Grains – Future supply and demand in Australia, ABARE E Report 03.21, Prepared for the Grains Research and Development Corporation, Amhed Hafi and Peter Connell, November 2003

population centres. New South Wales produces the most pig meat (30 per cent of Australian production), followed by Queensland (21 per cent), Victoria (19 per cent), South Australia (17 per cent) and Western Australia (12 per cent).[9]

Australian pig production is located Australia-wide reflecting transport costs and also historical factors such as storage, technology, grain producing areas and demand for fresh product by consumers. This spatial distribution has probable implications for realisation of scale economies and specialisation in pig production and processing.

Intensive farming, environmental concerns, and nutritional research showing increased productivity through grain feeds, is largely behind the move toward the grain based diets and the separation from the dairy sector into the grain belts. The number and kind of pig by state are as follows:

i. Table 1: Pig Population and Distribution Throughout Australia[10]

	Australia	*NSW*	*VIC*	*QLD*	*SA*	*WA*	*TAS*	*NT*	*ACT*
Boars ('000)	12	3	3	3	2	2			NA
Breeding Sows ('000)	302	73	68	73	51	34	2		NA
Gilts intended for breeding ('000)	50	19	10	10	6	4			NA
All other pigs	2,338	565	524	630	367	238	14	2	NA
TOTAL PIGS ('000)	**2,538**	**660**	**605**	**715**	**427**	**277**	**16**	**2**	**NA**

c. Assessment of Regulatory Quality

APL supports the Productivity Commission: Annual Review of Regulatory Burdens on Business – Primary Sector Issues Paper (2007)[11] check list for assessing regulatory quality, i.e. that regulations should be:

I. the minimum necessary to achieve objectives
II. not unduly prescriptive
III. accessible, transparent and accountable
IV. integrated and consistent with other laws

[9] http://www.abareconomics.com/interactive/ausnz_ag/htm/au_pig.htm
[10] ABS Principal Agricultural Commodities, (2007), 7111.0, 2005-2006. [Online]. Available August 2: 2007: http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/7111.02005-06?OpenDocument
[11] http://www.pc.gov.au/regulatoryburdens/primarysector/issuespaper/primarysector.pdf

V. communicated effectively
VI. mindful of the compliance burden imposed
VII. enforceable

APL supports the seven conditions for the assessment of regulatory quality which states that, regulations should be the minimum necessary, are not unduly prescriptive, is accessible, transparent, demonstrates accountability, is integrated and consistent with other laws, is well communicated, is mindful of other compliance burdens and is enforceable.

Regulatory goal clarity, goal consistency and objectivity are the foundation of these seven conditions. Goal clarity implies that regulations are specific, and outline areas to be regulated and the conditions which must be met. Removing regulatory ambiguity should be the focus of this Inquiry. It is in this process of removing ambiguity that goal consistency can be ascertained with the focus on the ability to measure those goals.

An objective goal means that regulation can be assessed impartially and as such promotes goal achievability. Regulation should not become too prescriptive and cause unnecessary cost increases in the short to medium, unless there are sound reasons for implementing them. It is in this sense that regulation remains realistic and reflects the capacity of industry to meet ongoing regulations.

Further, if a community service function, such as animal welfare is being met by regulation, then the community should bear that cost. If the regulation can value-add to the industry, or is a service to the industry, it then can be legitimately cost recovered.

The market failure rationale is that an unregulated industry will necessarily cause external costs as well as risks incurred by the wider community which cannot be accounted for by the unregulated industry.[12] These expected community wide costs will have to be recovered from the entire industry. These are areas which could be reviewed by the Australian Government authorities.

It is important to note that being a provider of industry services is incompatible with the regulatory features featuring lack of contestability, public sector cost levels and staffing requirements, and government control over cost recovery

[12] Market failure: the result when the price of goods and services do not reflect the costs of producing and consuming those goods and services. For environmental externalities, market failure occurs when the price of goods and services does not reflect full societal costs, which are conventional financial costs including environmental externalities. Some initiatives that address market failures include the establishment of the National Residue Survey and environmental regulations such as NPI reporting.

charges. It is distinct from community services. Regulations should be explicit about the mix of community and industry service, and that stated mix should be reflected in deciding who meets the cost of administering the regulation. The industry should have a say in how costs are structured, i.e. greater transparency, so as to maintain industry efficiency and viability.

3. COMMENTS ON AND IMPROVEMENTS TO REGULATION

a. Overview

A broad assessment of the regulatory environment in Australia suggests that it discourages industry growth. In 1999, Dr Sandra Welsman carried out a review of the pigmeat regulatory environment, during which she conducted interviews with industry members. This included research from a wide range of materials from formal reports to media debate. While regulation was considered essential, many industry participants found that it was costly and time consuming. It had deterred the construction of new facilities throughout parts of the total pork industry chain[13]. Approximately 25 percent of management time was found to be spent on environmental and QA matters alone. Furthermore, most Australian regulators have recovered the full costs of their activities from industry participants who they regulate, inspect, audit and advise[14].

When these regulatory guidelines change, they create uncertainties in the regulatory environment that also inhibit investment by pig producers in new infrastructure and expansion. It has in turn has also reduced a producer's ability to plan and risk manage for their enterprises' operations.

b. State and Federal Relations

Disorganised regulation is symptomatic of State and Federal relations that are integral to and affect the pig industry. APL recognises that the critical relationship is an inefficient mechanism for enacting and enforcing consistent legislation. State and Federal relations have impacted upon:

i. The Model Code of Practice for the Welfare of Animals - Pigs
ii. OH and S/Worker's Compensation regulation
iii. Food industry regulation including PigPass NVD
iv. Ethanol regulation

i) The Model Code of Practice for the Welfare of Animals - Pigs

The Primary Industries Ministerial Council (PIMC) approved the new Model Code of Practice for the Welfare of Animals – Pigs in April 2007. Though the

[13] Department of Agriculture, Fisheries and Forestry. (1999). Review of Regulatory Environment. [Online]. Last Accessed: July 30, 2007: http://www.daff.gov.au/agriculture-food/meat-wool-dairy/ilg/industries/pork/npidp/outcomes#regulatory
[14] Department of Agriculture, Fisheries and Forestry. (1999). Review of Regulatory Environment. [Online]. Last Accessed: July 30, 2007: http://www.daff.gov.au/agriculture-food/meat-wool-dairy/ilg/industries/pork/npidp/outcomes#regulatory

Commonwealth has developed the new Code, it is the responsibility of States to legislate. As at August 2007, little progress has been made on the establishment of the Implementation Working Group (IWG), the body approved by the PIMC to help in the implementation of the Code at state level.

The Code took three years to develop before endorsement by PIMC. With the current requirement that Codes be reviewed every five years, the actual implementation of the Code will only just be completed when the next review is due. Furthermore, there have been mishandling of drafts and changes to standards without consultation add the cost to producers and the industry as a whole through lost time, resources and levy payments which funds are redirected away from other priorities.

Other fundamental planning problems are reflected in other industry analyses. A Western Research Institute (WRI) study into the Socio-Economic Impacts of the Australian Pork Industry study (2002)[15] identified approval costs, developmental approval, and ambiguous interpretation of regulations as detrimental to the pork industry. The WRI study also highlighted the lack of uniformity in the application of legislation nationally and within states at regional and local levels as a regulatory burden.

At a state level, the Welsman report[16] noted that new piggeries are being built in South Australia and not in New South Wales because of the different regulatory stances of the respective governments.

Pork producer investment through APL including commissioning of surveys, financial analysis and modelling to provide input into the development of a national Code which is then implemented and regulated at a state level has not been sound. Delays have been costly to the pork industry in terms of our competitiveness and sustainability and again create uncertainty in the investment environment. **Efficient mechanisms must be in place to allow timely implementation of certain laws that would ensure investment confidence. With limited time in which the industry can adapt to these changes, it is imperative that legislation can be implemented consistently and harmonised across states.**

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[15] Western Research Institute (20072) 'Socio-Economic Impacts of the Australian Pork Industry': 17 December, 2002

[16] Department of Agriculture, Fisheries and Forestry. (1999). Review of Regulatory Environment. [Online]. Last Accessed: July 30, 2007: http://www.daff.gov.au/agriculture-food/meat-wool-dairy/ilg/industries/pork/npidp/outcomes#regulatory

This creates additional costs to producers both through their investment via levies paid to APL and through their business operations made by their national representative body, APL. These regulatory problems should be assessed so as to ensure smooth integration and consistency with other laws. This places a strong responsibility on APL to be technically equipped and resourced to be effective partners with State and Federal governments.

ii) OH and S and Worker's Compensation regulation

The statutory requirements by state agencies for employers to carry workers compensation obligations linked to assessed industry Occupational Health and Safety risk carry with them substantial costs. The Welsman Report[17] noted that in NSW and Queensland, insurance costs at that time were over 10% of wage costs. However, in other states such as Victoria the charges were lower. These estimates were consistent with a 2003 review of OH and S regulatory impacts on the cattle feedlot industry carried out by Meat and Livestock Australia (MLA).

The insurance levels are typically linked to industry categories, and from the recorded accident performance of those categories, rates are derived. There have been reviews and reforms in various agencies in recent years, as well as a new national provision to be made available to national businesses through a national government scheme.

OH and S regulations should provide for strong incentives for individual businesses to improve their accident performance. Industry QA systems that impact on accident risk should be evaluated by the relevant agency so that if the disciplines involved a lower assessed risk, participants can be rewarded accordingly by rate discounts.

iii) Food industry regulation including PigPass NVD

The different roles and focus of state departments of agriculture and food safety regulators have contributed to poor industry coordination. The issue of food industry regulation across governments should be given attention through Council of Australian Government (COAG) mechanisms. This is an area where close industry and government collaboration to deliver shared goals is ideal.

However, actual delivery of shared goals has been difficult. APL notes the difficulty experienced with the voluntary PigPass NVD program in coordinating

[17] Department of Agriculture, Fisheries and Forestry. (1999). Review of Regulatory Environment. [Online]. Last Accessed: July 30, 2007: http://www.daff.gov.au/agriculture-food/meat-wool-dairy/ilg/industries/pork/npidp/outcomes#regulatory

the process of securing multi-agency involvement and support. **It is essential that any arrangement be implemented as widely as possible for regulatory consistency and cooperation.**

iv) Ethanol Regulation

Feed grain costs are a key competitive disadvantage for Australian pork producers. With biofuel production increasing with consumer interest and uptake via ethanol content mandates and government encouragement to industry, demand for feedgrain for human consumption and livestock production will increase grain prices.

State governments have separately taken steps to apply state based ethanol mandates additional to a raft of other regulations (e.g. in NSW requiring government cars to use biofuels) that effectively advantage ethanol processors over other grain dependent industries.

The NSW government in 2007 enacted the Biofuel Bill, mandating a 2% ethanol blend in all petrol sold in NSW.[18] It has also stated its intention of applying a 10% mandate by 2011, with Queensland promising to apply a 5% mandate by 2010. The Victorian government has now set up an inquiry to look at mandating ethanol content in Victoria.

There are currently, (or planning process), a raft of Australian and state government interventions in the biofuels market that are both inconsistent across governments, and any changes should be made in consultation to complementary industries.

c. Regulatory Impact Statements

In addition to State and Federal relations, **APL highlights the need for improvement into future regulatory impact statements (RIS).** The RIS takes into account the costs associated with enacting new laws or changing regulations. They are a significant part of developing for example, the national Model Codes of Practice for the Welfare of Animals and the Australian Standards and Guidelines for the Welfare of Animals – The Land Transport of Livestock (currently in development in 2007). APL requested that the RIS look at not only the specific impact of the regulation, but that impact in the context of the total weight of regulations already impacting on the industry. With this in mind, deterrence of innovation and investment due to increased compliance responsibilities, as well as the capacity of the enterprise to manage those changes

[18] http://www.parliament.nsw.gov.au/prod/PARLMENT/hansArt.nsf/V3Key/LC20070509089

should be assessed. APL notes that **although The Council of Australian Governments (COAG) agreed processes through which regulatory impact statements (RIS) are carried out are sound in general terms, are not always adhered to (e.g. ethanol industry regulation).**

d. Environmental Requirements

The Western Research Institute (WRI)[19] study highlighted that producers face increasing barriers to piggery developments due to changing environmental requirements. Rural life-style residents are driving local regulations often without adequate consultation with the pig industry or consideration of its needs or regional economic benefits. Consequently, the regulations often include misconceptions and technical errors.

The WRI study also identified that the opportunity cost for each months delay in the construction of a new intensive piggery operating with 1,800 sows resulted in lost pig sales of $450,000 per month.[20]

The National Pollution Inventory (NPI) Industry Reporting[21] has also impacted on producers. The first Piggery Emission Estimation Manual produced in 1999, was too complex. One large integrated producer had to complete up to 40 Ammonia Emission Estimation forms resulting in considerable expense and lost time. The same integrated producer also had to determine the Liquid Petroleum Gas (LPG) used in farm vehicles – a measurement at the time which had never been conducted. Calculating measurements requires expertise and resources for which can also result in lost time. To counteract these problems, APL assisted the Australian Government in preparing a revised version released in 2007.[22]

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[19] Western Research Institute (2002) 'Socio-Economic Impacts of the Australian Pork Industry': 17 December, 2002 *cited in* Australian Pork Limited (2004). APL Submission 2: Productivity Commission Australian Pig Meat Industry Public Inquiry [Online]. Last Updated: July 31, 2007: http://www.australianpork.com.au/media/S%20-%20second%20pc%20submission%20-%20FINAL%20-%20CONFIDENTIAL.pdf

[20] Western Research Institute (2002) 'Socio-Economic Impacts of the Australian Pork Industry': 17 December, 2002 cited in Australian Pork Limited (2004). APL Submission 2: Productivity Commission Australian Pig Meat Industry Public Inquiry [Online]. Last Updated: July 31, 2007: http://www.australianpork.com.au/media/S%20-%20second%20pc%20submission%20-%20FINAL%20-%20CONFIDENTIAL.pdf

[21] Department of Environment and Water Resources. (2007). National Pollution Inventory [Online]. Last Accessed: July 30, 2007: http://www.npi.gov.au/

[22] Department of Environment and Water Resources. (2007). Intensive livestock - pig farming - Emission estimation technique manual - Version 2.0. Australian Government. [Online]. Last Accessed: July 31, 2007: http://www.npi.gov.au/handbooks/approved_handbooks/pork.html

Further the NPI website could be interpreted as a breach of privacy, listing the street address of production sites and a searchable web site. APL has deep concerns with privacy issues associated with public assess to electronic data, which includes spatial addresses, names and contact details. Animal activists have in the past violated strict biosecurity arrangements on several pig farms and this publicly available information poses a genuine threat not only to biosecurity but to the whole of the Australian pork industry and national agribusiness. **Public access to these private enterprises will actively facilitate animal activism.**

Initially the NEPC, supported by the Commonwealth, proposed the implementation of the purpose-designed single national greenhouse reporting system. **APL has concerns about the practicality of implementing an interim reporting system which involves the inclusion of greenhouse emission reporting into the NPI system.** The Australian pork industry has already made considerable investments in time and effort toward the Commonwealth's preferred option. This would be an unnecessary duplication of legislation.

If such an 'interim' system were to be implemented, a consultation process with industry is essential. The proposed timeframes do not allow for such a process to take place and given the restraints on time and resources are tight this may be expended on a system which may never be used. Further, should this interim system be introduced a considerable investment will be required by industry, and the government will be required to communicate the new, if temporary system.

Finally, there is no surety that an interim system will be compatible with or even similar to the proposed national system. **The proposed interim reporting system poses an unnecessary and unfair burden on the pig industry.**

e. Changes to the National Residue Survey

Testing of samples for residues under the National Residue Survey (NRS) costs Australian pork producers $430,000[23] annually. The process is funded by a levy at slaughter of 17.5 cents per carcass. This regulatory system which is managed by the Department of Agriculture, Fisheries and Forestry (DAFF), continues to change the requirements and costs for testing. **Any changes to NRS program must be made in consideration to the protection of Australia's export markets and with regard to the sustainability of the industry in Australia.**

[23] Australian Pork Limited (2004). Productivity Commission Submission No. 2 into the Productivity Commission Inquiry Report: Australian Pigmeat Industry. [Online]. Last Accessed: July 31, 2007: http://www.australianpork.com.au/media/S%20-%20second%20pc%20submission%20-%20FINAL%20-%20CONFIDENTIAL.pdf

f. Food Labelling Issues

On emerging labelling issues, the absence of an effective regulatory system relating to 'free-range' and 'organic' status is of concern. Though recognition of Australia's own organic standards under the authority of the Australian Quarantine and Inspection Service (AQIS) has become the legislated standard for food produce for exports, consumer groups have not been satisfied with its standards and have invested additional resources into research and development of their own welfare-oriented production methods.

The definition of 'free range' in particular has prompted animal welfare organisations such as the RSPCA, Humane Society International (HSI) and associations such as Free Range Pork Farmers Association (FREPA) to develop and promote their own variation of welfare-oriented production standards. Supermarket chains Woolworths and Coles have also promoted their own free-range pork products. These variations in the definition of 'free-range' can confuse consumers and demonstrate the extra resources the pig industry has employed by having developed independent free-range standards.

Australian standards relating to 'organic meat production' by regulatory bodies has been scant. Food Standards Australia New Zealand (FSANZ)[24] has no published definitions or standards on organic food production. Standards Australia indicated in 2007 that they will develop a framework for the organic production of meat, from which, when completed, the Primary Industries Ministerial Council (PIMC) intends to regulate the industry[25]. The Australian Competition and Consumer Commission (ACCC) has so far only indicated its commitment to ensure truthfulness in organic production claims[26].

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[24] Biological Farmers of Australia (2006). Regulation of Organic Foods in Australia and New Zealand: Incorporating Management of an Organic Standard. August 24, 2006. [Online]. Last Accessed: July 31, 2007:
http://www.bfa.com.au/_files/Regulation%20of%20Organic%20Foods%20in%20Australia%20and%20NZ.pdf

[25] Burke, K. (2006) 'Food Labelling Plan Spells an End to Free-range-for-all', *Sydney Morning Herald,*
24 November 2006: http://www.smh.com.au/news/national/food-labelling-plan-spells-an-end-to-freerangefreeforall/2006/11/23/1163871546476.html

[26] Burke, K. (2006) 'Food Labelling Plan Spells an End to Free-range-for-all', *Sydney Morning Herald,*
24 November 2006: http://www.smh.com.au/news/national/food-labelling-plan-spells-an-end-to-freerangefreeforall/2006/11/23/1163871546476.html

Uncertainty in organic food production standards, including the definition of 'organic' and 'free-range' which do not satisfy consumer wants is not conducive to future investment in the industry for both domestic and export markets. **Addressing food labelling concerns must be the focus of the Australian government in years to come. APL urges that this regulatory impost be subject to Commission review as soon as possible.**

g. Transport Regulation

Coastal shipping controls which impact on the grain dependent livestock industries in eastern Australia have an adverse effect on costs. The grain dependent livestock industries have long been concerned at the expensive costs associated with coastal shipping, particularly those arising from cabotage regulations which add costs due to permit, cleaning and other quarantine requirements.

Current coastal shipping controls require vessels plying this trade to be licensed. There is although a provision for permits to be issued to unlicensed vessels under stringent temporary conditions.

One of these conditions requires that Australian award conditions must be paid. These licensing arrangements are unsuitable for the grains industry. The costs incurred by the grains industry are passed to the intensive livestock sector, more so during drought periods. During recent droughts, it was more costly to ship grain from WA ports to the eastern seaboard than to do so from the major US grain ports.

Coastal navigation legislation should be reviewed by the Commission. Red meat organisations have submitted analysis by Dr Welsman about the difficulties caused by current land transport regulations affecting grain haulage.

h. Import and Export Protocols

Restrictions and the 'phasing out' of some antibiotics have forced the industry to investigate new strategies (in terms of vaccines, pro-biotics, and general management) or risk industry inefficiency. **Speeding up the registration of imported vaccines by the Australian Pesticides and Veterinary Medicines Authority (APVMA)[27] is a priority as long approval times impact on the efficiency of the industry.**

[27] Australian Pork Limited (2004). APL Submission 2: Productivity Commission Australian Pigmeat Industry Public Inquiry. [Online]. Last Accessed: July 31, 2007:

Similar constraints are found in the export market for wheat. By commanding 80% of wheat exports, the Australian Wheat Board International (AWBI) is the price maker on wheat supplies through the single wheat desk arrangement. The AWB also markets and trades other grains including barley, sorghum and oilseeds. During times of shortage, which is typical of drought conditions, Australian domestic grain prices have risen above the world price average. Taking advantage of the domestic shortage, the AWB sources additional supplies destined for the domestic market to sell into higher priced sectors of world grain markets. Though favourable to Australian grain growers in terms of mitigating decreased yields with increased prices, it is unfavourable to the intensive livestock industries. It exposes the pig industry to additional cost impacts. Quarantine restrictions that limit grain imports create a situation where imported grain prices are higher than the export price.

APL believes that during times of grain shortage a single wheat desk represents a significant regulatory burden and cost to grain dependent livestock producers. Australian pork producers in 2005-2006 and 2006-2007 levels used approximately 14 per cent of all feedgrains produced in Australia[28]. It is a policy that does not recognise appropriate adjustment measures that ensures the growth and viability of grain user industries during drought cycles.

i. Ethanol

Australian Government subsidies toward the ethanol industry distort regional feedstuff markets. This has shown to be the case in the USA where feed prices have doubled.[29] APL's second submission to the Productivity Commission outlined how the Australian Government's subsidised development of the fuel ethanol industry sourced from feed grains would impact on existing livestock feeding industries.[30]

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http://www.apl.au.com/media/S%20-%20second%20pc%20submission%20-%20FINAL%20-%20CONFIDENTIAL.pdf, pp. 12.

[28] Hirad, S.H., Hafi, A., Lawrance, L., Brown, A., and Shaw, I., (2007) Feedgrains: Regional Demand and Supply in Australia: Abare Report to Client: April 2007, Australian Bureau of Agricultural and Resource Economics [Online]. Last Accessed: August 1, 2007: http://www.daff.gov.au/__data/assets/pdf_file/0009/210141/abare-feedgrains-report.pdf, pp.14.

[29] Neutkens, D. (2007). PorkNet Daily E-Newsletter. MetaFarms, Incorporated. www.porknet.com. April 1, 2007.

[30] Australian Pork Limited (2004). APL Submission 2: Productivity Commission Australian Pigmeat Industry Public Inquiry. [Online]. Last Accessed: July 31, 2007: http://www.apl.au.com/media/S%20-%20second%20pc%20submission%20-%20FINAL%20-%20CONFIDENTIAL.pdf

$10 million has been allocated per ethanol plant established, as well as start up assistance for individual projects and test marketing of ethanol by the Australian Government. A report by Macarthur Agribusiness, Review Options to Reduce Feedstuff Supply Variability in Australia (November 2003) There is increasing demand for feedgrain, by intensive livestock producers. This increased demand coincides with a relatively slower increase in Australian feedgrain production[31].

Currently ethanol manufactured in Australia receives excise rebates which are scheduled to phase out after 2011. These rebates are supplemented by plant start up grants that have been provided to some biofuel plants. Following recent reviews the Australian government has reiterated its intention not to change those policy settings, although there is continuing political pressure to legislate for a national mandated level of ethanol content in motor fuels.

Despite a large body of reputable analysis that has shown that grain based ethanol production is not viable on an unsubsidised basis in Australia, and that current and potential subsidies disadvantage the pork and other grain end use industries. The recent report of the Prime Minister's Biofuels Taskforce[32] concluded that grain based ethanol production was not viable in Australia for the foreseeable future. It concluded that an assisted biofuels industry may increase grain prices to the financial detriment to some livestock industries. This conclusion is consistent with repeated ABARE analyses, and a report on subsidised ethanol impacts on livestock industries carried out by the Centre of International Economics[33].

These interventions in the biofuels industry are at serious odds with the regulatory principles agreed by COAG, and inconsistent with the Commission scrutiny that was recently required of the pork industry. Financial incentives to stimulate biofuels should not come at a significant cost to intensive livestock producers and that any move should be in consultation with grain dependent producers. These financial incentives mean increased competition for intensive livestock producers in an environment of increasingly limited supplies of grain.

j. Wheat Export Single Desk

The damaging effects of the wheat export single desk on pork industry competitiveness are highlighted in submissions to the 2005 Productivity

[31] Yates, W.J. and Coombs, R., (2003). Review Options to Reduce Feedstuff Supply Variability in Australia – Volume 1: Main Report. Macarthur Agribusiness and Rural Action. [Online]. Last Accessed: July 31, 2007: http://www.apl.au.com/media/Main%20Report%2022Dec2003%20-%20FINAL%20-%20Feasibility%20studyL.pdf

[32] http://www.grainscouncil.com/Policy/Biofuels/05_Sept_13_PM_Biofuel_Report.pdf

[33] http://www.thecie.com.au/publications/CIE-Ethanol_report.pdf

Commission inquiry into the Pigmeat industry.[34] Our industry is expected to compete with often subsidised overseas producers while being burdened with a regulated wheat trade. Grain is a significant cost input, representing 55%-65% of pig farming production costs.[35]

APL, in collaboration with some other intensive livestock industries, recently commissioned a report by ACIL-Tasman on the interactions between the single desk and the competitiveness of intensive livestock industries. The report concluded that:

- The grain dependent intensive animal industries in Australia require profitable and productive grain producers to ensure that a consistent supply of high quality feed grains is available on the domestic market.
- **Removing the wheat export monopoly – the 'single desk' – would lead to savings of about $15.00 per tonne in marketing costs, of which $9.00 would flow from abolishing the service agreement between AWBL and AWBI, and at least $6.00 from identified efficiencies from removing the monopoly exporter's effective control of bulk handling, transport and storage.** Those savings would be available for sharing between growers and domestic users, the balance depending on prevailing elasticity of supply and demand at the time of transaction.
- Intensive animal production industries compete in highly competitive international markets and do not have the capacity to pass higher production costs onto consumers. To remain competitive in international markets, Australian intensive animal industries need to be able to access their major input from an efficient market with transparent price signals. The significant linkage between the wheat export pool price and the prevailing domestic wheat and other substitutable feed grain prices means that **domestic users must have access to feed grain at the same relative price as their competitors.**
- The 2006-07 drought year provides demonstrates the rapid increase in local prices in times of a domestic grain production short fall. The price of wheat used for livestock feeding increased by 87%, from an average of A$176 per tonne in January 2006 to an average of A$329 per tonne in November 2006. However, domestic grain buyers are not able to protect themselves sufficiently from rising stock feed prices because of inadequate risk management instruments based on the local market. The wheat export

[34] Productivity Commission 2005, *Australian Pigmeat Industry*, Report no. 35, Melbourne. [Online]. Last Accessed: July 31, 2007: http://www.pc.gov.au/inquiry/pigmeat/finalreport/pigmeat.pdf

[35] Australian Pork Limited. (2006). Australian Pig Annual 2005. [Online]. Last Accessed: July 31, 2007: http://www.australianpork.com.au/media/Australian%20Pig%20Annual%2Epdf

marketing arrangements stifle the development of a sophisticated secondary market in Australia upon which these risk management tools are based.

- In contrast, international competitors of Australian intensive animal industries do have access to sophisticated and liquid secondary grain markets.
- Therefore any advantages to domestic stock feed users of wheat during times of exportable surplus from the current marketing arrangements are more than offset by the losses arising from not being able to manage risk in developed secondary markets in the same manner as their competitors.
- This disadvantage – and the consequent costs of not being able to transfer risk adequately – is likely to continue without the many buyers and sellers of wheat, both export and domestic operating in open competition, which are necessary for efficient physical spot and forward markets and as well as viable and efficient secondary markets

k. Supermarket Sector Dominance

Trend lines in general for retail prices have increased on an ongoing basis, with prices received by producers remaining relatively flat. Australia is dominated by two major retailers in the supermarket sector and as a result, supermarkets tend to be price makers which in turn can affect price, product specifications, production methods and supply volumes and can promote anti-competitive behaviour. This discrepancy has been confirmed by the Department of Agriculture, Fisheries and Forestry (DAFF) has noted in its Price Determination in the Australian Food Industry 2004 report.

APL believes that there is an opportunity to introduce a mandatory Horticulture Code of Conduct alongside legislated powers by the Australian Competition and Consumer Commission (ACCC). The voluntary Retail Grocery Industry Code of Conduct[36] introduced in 2000 is also a way in which the regulatory conditions can be managed.

[36]http://www.industry.gov.au/assets/documents/itrinternet/Produce_grocery_industry_COC_20052005050609 2049.pdf

4. CONCLUSION

Though regulatory practice in Australia is well developed, there are opportunities for greater improvement. Australian Pork Limited has outlined where and how co-regulation between government and industry can satisfy industry needs, as well as those required by government.

Regulation should be based on good science, rigorous analysis, and consultation through regulatory impact statements across government agencies should be sound. An emphasis on practical industry involvement via government monitored self regulation, or co-regulation, are safeguards that ensure over-regulation is avoided. APL supports regulation, but believes that over-regulation can generate greater costs and risks than can be individually recovered. Unlike business and industry, government alone does not compete in the international market. Government regulators must demonstrate an understanding that they are not the stewards of business and industry. This prevents a regulatory 'creep' with over regulation in the absence of the cost disciplines imposed by market signals.

Evaluating policies and programs, particularly those that receive government funding, is a necessary discipline. Evaluations can facilitate improved program management, accountability, decision making and resource allocation, particularly for the different scales of enterprise. These evaluations would also measure how regulation would interact with existing legislation and their impact on industry innovation.

Maintaining sound food safety and animal health protocols remain Australia's competitive advantage in maintaining our world status as a quality producer of pork foodstuffs.

APL believes on the basis of our assessments that entirely commercial requirements should be left to industry or by a co-regulation arrangement with government. An economy-wide rule setting and enforcement, such as national taxation policies, is legitimately the province of government; no individual or company is likely to voluntarily pay the full amount of taxes on an ongoing basis for consolidated revenue purposes.

Without effective legislation, industry has to invest more resources than it needs to in order to address growing consumer awareness of animal welfare.

New levy and subsidy arrangements for complementary industries such as grains need to be assessed so that the pig industry does not come to a significant disadvantage.

Adverse affects on the pork industry also arise from the operations of the single desk for wheat exports, and State and Federal government interventions in the ethanol industry which distort the Australian feed grain market.

There is an increasing tendency for regulatory agencies to be fully cost recovered from industry without associated rigour and transparency as to whether industry, or community, services are being delivered. The industry affected should have a strong say in how those charges are incurred and set, and the potential for contestability investigated.

All regulation must demonstrate flexibility and awareness of changing macroeconomic conditions, as well as encourage a fair market, particularly for pig farmers. So as to maintain accessibility, transparency and accountability to industry stakeholders, it is critical that these regulatory policies be made with adequate public scrutiny. Public scrutiny should also help future regulators ascertain a sound understanding of the compliance burdens posed.

Regulatory changes should be made transparent with greater industry involvement, and lack of clarity must be addressed as a priority. Where regulation of specific industry activity is intended, the aims of that regulation should be clearly explained, and the scope for industry involvement explored.

This government should ensure that where state government regulation is planned, harmonisation and consistency across states achieved for investment planning and capital mobility. These are critical issues which should be reviewed as they can improve industry viability and ensure pig industry growth.

Submission to

The Productivity Commission Inquiry – Annual Review of Regulatory Burdens on Business: Primary Sector

October 2007

COMMENTS BY AUSTRALIAN PORK LIMITED TO THE PRODUCTIVITY COMMISSION INQUIRY DRAFT REPORT- ANNUAL REVIEW OF REGULATORY BURDENS ON BUSINESS: PRIMARY SECTOR

1. Executive Summary

Australian Pork Limited (APL) welcomes the opportunity for further comment to the Productivity Commission Inquiry Draft Report – Annual Review of Regulatory Burdens on Business: Primary Sector. Where indicated, APL supports the findings of the draft report, reiterates ongoing industry concern, and indicates other significant regulatory imposts. They include three areas of concern the pork industry:

1) reducing compliance burdens with the time involved when completing the required paperwork;
2) hastening the implementation of recently completed regulatory reform; and
3) supporting and recommending areas for regulatory review to redress inequity.

These have the potential to stymie pork industry development and impinge on pork industry viability.

2. Introduction

APL recognises that although regulation may be an appropriate way to achieve sound governance, it can have a substantial impact on business. Through government regulation, Australia should be able to gain a competitive advantage and an internationally competitive economy. Regulatory reform that ameliorates difficulties in key areas will ensure the Australian pork industry can justifiably meet government requirements.

The Australian Chamber of Commerce and Industry (ACCI) mentions of federal and state relations:

> *"There is a need for greater coordination not just at the Commonwealth level but spread across all levels of government - Commonwealth, State, Territory, regional and local. Frequently the lack of coordination has led to duplication of policies, delivery systems, controls and the like, or just as divisive differences and clashes which have lead to even worse outcomes. This whole area has been made more complicated by the delicate issue of what is perceived as States' rights."*[1]

In APL's review of the publicly available submissions, and that of the PC's assessments, consistency in Federal and State regulations to achieve agreed outcomes is crucial for efficient business... While the Commission insists that although there are instances where there is little that the Federal Government can achieve unilaterally with federal and state regulations, there remains an agenda for stronger multilateral cooperation to effect consistent regulatory change which achieves agreed or similar outcomes.

Our response report structure is as follows, and models the draft PC report:

1. Unnecessary burdens which can be removed immediately
2. Reforms that are progressing
3. Reforms that have commenced but are taking too long
4. Policy review
5. Other significant issues not recognised in the draft PC report.

Where not all APL's concerns had been mentioned in the Commission's draft report, there are critical issues which, without due process into Federal regulatory development can impact significantly on the Australian pork industry. APL identified regulatory concerns and still recognises them as valid in this new submission to the Productivity Commission.

[1] http://www.acci.asn.au/text_files/policies/2005/2005%20Regulatory%20Reform%20Policy.pdf

3. Unnecessary burdens which can be removed immediately

The Commission has identified a further set of actions which can be taken without delay, including drought support and farm surveys:

Drought support

Concern: Duplication and unnecessary burdens in applying for drought support.

Draft Response 3.17

To avoid duplication and reduce unnecessary burdens in the application process:

1. ***Centrelink and state and territory government rural adjustment authorities should provide applications for both Exceptional Circumstances (EC) income support and EC interest rate subsidies;***
2. ***Applicant information should be able to be used across different Centrelink administered programs;***
3. ***A single application form for EC interest rate subsidies should be adopted by state and territory governments; and***
4. ***The Commission seeks views on whether drought support, by all governments, should be reviewed.***

APL's response:

APL broadly supports the recommendations outlined above. The cooperation between Centrelink and State and Territory governments, and the sharing of information between government agencies will enhance transparency into the need for and encourage data management; the opportunity to assess needs and direct funds in a timely fashion.

APL supports the National Farmers Federation on its assessment of drought support issues in Australia:

- Inconsistencies with accessing Exceptional Circumstances (EC) benefits linked to drought support are unnecessarily complex;
- Farmers with properties across state jurisdictions find that the EC interest rate subsidy component of the program is administered separately by each state, increasing paperwork. Furthermore, the different state forms are inconsistent.

- Management of the EC program is messy – the Farm Help and EC Relief Payment components are administered federally by Centrelink, with inconsistencies between State and Federal applications.
- A move to streamline State and Federal drought support application and processing.

In streamlining State and Federal drought support application processes, consideration should also be given to identifying opportunities for harmonisation and consistency of current drought policy and assistance measures across states to uniform outcomes and that no one industry is unfairly disadvantaged.

At present State Governments declare drought areas based on individual state criteria. While state drought declaration is required for an EC application, EC approval is totally separate to the state schemes. Each state instigates its own drought assistance schemes, which vary in criteria and delivery method.

While there are feed supply difficulties for both intensive and extensive industries during a drought, intensive livestock industries are affected by high grain prices even if they are not located in a "drought declared" area. Many of the current state drought assistance schemes are designed to support broad acre farming and include freight or grain subsidies that actually work against intensive farms by driving the price of grain up further. This in turn affects the competitiveness and sustainability of pig producers and the industry as a whole.

Farm surveys

Concern: Time involved in completing farm surveys.

Draft Response: 3.29

Improved coordination between ABARE and other government agencies in collecting farm data could reduce the time spent by agricultural producers completing surveys.

APL's response:

Australian Pork Limited broadly supports the recommendation outlined above, as a means to increase the time spent attending to business duties. APL agrees with Commission's assessment that there is a degree of overlap between the ABARE farm surveys and those conducted by state government agencies.

However, APL appreciates that farm surveys have wide value to the community. APL believes that stronger coordination between ABARE and the Australian Bureau of Statistics (ABS) may result in faster reporting of raw market data to the pork industry. The raw data that the government agencies provide assists in APL's strategic planning priorities.

APL strongly supports improved coordination between ABARE and other Federal and State government agencies when collecting data from rural producers.

4. Reforms that are progressing

Although some reforms have been agreed at policy level, primary sector businesses are not seeing any tangible results. Examples of where the implementation processes are taking too long include the National Pollutant Inventory, the importation of veterinary medicines, and on animal welfare matters.

National Pollutant Inventory

Concern: Intensive agricultural operations

Draft Response 3.4

Reforms are progressing to reduce the compliance burden on individual farmers in intensive agricultural operations resulting from the reporting requirements in the NPI National Environment Protection Measure. The Environment Protection and Heritage Council should also consider expanding the role of industry associations in meeting reporting requirements.

Concern: Intensive agricultural operations – the NPI reporting threshold for ammonia adversely affects small beef feedlots.

Draft Response 3.5

The Environment Protection and Heritage Council should commission a review of reporting thresholds for all NPI substances. The review should occur by 2009.

Concern: Public access to facility-based information in the NPI.

Draft Response 3.6

The Environment Protection and Heritage Council should review whether facility-based data collected under the NPI could be aggregated before being made available to the public without unduly reducing the value of the information or the incentive for businesses to reduce their emissions.

APL's response:

APL supports the position of other livestock intensive sectors of the compliance burden imposed by NPI reporting. APL supports the Environment Protection

and Heritage Council in expanding the role of industry associations in meeting reporting requirements. This also includes the aggregation of facility based data collected under the NPI, before being made publicly available.

APL also supports a review of the threshold requirements in 2009, particularly an increase in the threshold for mandatory reporting for Australian pork facilities. APL supports the aggregation of facility-based data collected under the NPI before being made available to the public. This protects the right to privacy for the intensive livestock sector(s). APL recommends the aggregation of data by postcode.

Other significant pig industry concerns:

- Strong concerns with privacy issues associated with public access to electronic data which includes spatial addresses, names and contact details;
- Breach of privacy and biosecurity protocols on individual pork farms;
- The practicality and cost of implementing an interim NPI system;
- Whether investment in terms of consultation, design and implementation of an interim system into NPI is cost effective or necessary.

Regulatory overlap

Regulatory overlap

Concern: Overlap between regulatory agencies over the importation of veterinary vaccines.

Draft Response: 3.8

Recent initiatives by the Australian Quarantine and Inspection Service, Biosecurity Australia and the Australian Pesticides and Veterinary Medicines Authority should result in reduced duplicative requirements governing the importation of veterinary vaccines.

Agricultural and veterinary chemicals

Concern: Delays, inconsistencies and complexity in agricultural and veterinary chemicals regulation.
Draft Response 3.27

There are many agricultural and veterinary medicines regulatory issues that require detailed examination. The recently commenced Commission study into chemicals and plastics provides that opportunity.

APL's response:

APL reiterates the need to streamline the approval process for the importation of veterinary medicines and pesticides, necessary to and critical for the pig industry's businesses and to cost effectively manage animal health. Many of these vaccines are already being used by our competitors and provide in some instance of a cost competitive advantage by reducing costs of production.

5. Reforms that have commenced but are taking too long

While the need for reform has been acknowledged, its implementation is taking too long, particularly in relation to animal welfare.

Animal welfare

Concern: Slow progress in implementing rule harmonisation.

Draft Response 3.16

There appears to be scope to implement the Australian Animal Welfare Strategy more quickly. The Commission seeks views on this matter.

APL's response:

Australian Pork Limited wishes to note that, along with the Red Meat Industry, (representing Meat & Livestock Australia, the Cattle Council of Australia, the Sheepmeat Council of Australia, the Australian Lot Feeders' Association, Livecorp and the Australian Meat Industry Council), that regulatory harmonisation is a priority area for reducing regulatory burdens.

APL agrees that there is scope to implement the Australian Animal Welfare Strategy (AAWS) in a timelier manner. This process has been hampered by the fact that the states and territories have primary responsibility for animal welfare. One major issue is the need for harmonisation of the regulatory framework.

Model Code of Practice: The Welfare of Animals – Pigs

The Primary Industries Ministerial Council approved the revised Model Code of Practice on 20 April, 2007. The development of the Model Code of Practice: The Welfare of Animals – Pigs has been an especially difficult process to complete. It was completed on a partial template of a newly designed process which was agreed to by all key stakeholders for consistency. The theory of consistent implementation in each state has been problematic as the Pig Code is effectively a "Clayton's code", being the last Code written under the previous method of code development but also embodying aspects of the new code development template. The PIMC agreed to the establishment of an Implementation Working Group (IWG) from all jurisdictions to ensure consistent implementation in each state, but progress has been slow due to different state approaches to animal welfare regulation and individual interpretation of agreed outcomes. South Australia has been of particular concern to the industry.

Under South Australian law, the new edition of the Pig COP was automatically regulated under POCTA after it was endorsed by the Primary Industries Ministerial Council (PIMC). This "entire code' regulation includes recommended practice and also the guidelines (these were never written to be or intended to be regulated), which poses risk to pork producers, particularly given the South Australia system of third party prosecutions for animal welfare. Currently SA refuses to amend its regulations to reflect the agreement made by PIMC in regards to consistent implementation of the Code.

Australian Standards and Guidelines for the Welfare of Animals – Land Transport of Livestock

A similar problem has arisen with the development of the Code of Practice for the Land Transport of Livestock. Each livestock industry in Australia is party to the Code writing process. The RSPCA noted in its submission to the Productivity Commission that it had concerns about the process in which the Code is being developed. Australian Pork Limited also believes that there has been a deviation from the agreed Terms of Reference by the Standard Writing Group, who are primarily responsible for drafting the standards and guidelines: there has been a lack of consultation with the livestock industry members in relation to changes made unilaterally by the Standard Writing Group.

While the regulatory reform and process was agreed to in principle, APL believes that the agreed process has not been consistently followed through.

6. Policy review

A number of unnecessary regulatory burdens can only be removed after a full policy and framework review, including those in relation to cabotage restrictions, the Wheat Marketing Act, and OH & S matters.

Transport infrastructure

Concern: High costs due to cabotage restrictions.

Draft Response: 4.21

Given its importance within Australia's freight transport task, coastal shipping should be included in COAG's national transport market reform agenda.

APL's response:

Australian Pork Limited supports the Commission's assessment for a review which was made as part of its 2005 Review of National Competition Policy Reform. The Commission concluded that coastal shipping should be included as part of a wider review of the national freight transport system.

APL supports the Commission's assessment that there are interjurisdictional inconsistencies in road transport and that there is a large agenda to progress. Nevertheless this should be given a priority to ensure its progress and timely resolution.

Wheat marketing

Concern: Costs imposed by the single desk for exporting wheat.

Draft Response: 3.15

The Wheat Marketing Act should be subject to a review in accordance with National Competition Policy principles as soon as practicable.

APL's response:

Australian Pork Limited notes the response of the Red Meat Industry:

APL supports the Red Meat Industry, representing the Australian Lot Feeders Association (ALFA), opposition toe single desk arrangement. ALFA raised concerns of the muffling effect the single desk had on grain prices and the removal of the single desk increasing competition and investment:

> *" A commissioned analysis confirms distortions are caused by a muffling effect of the pooled export price on domestic grain prices and that 'abolition of the Single Desk will increase competition…, increase investment through the supply chain and improve the responsiveness of the grains industry in its interactions with its domestic customers."*

Improvements in the responsiveness of the grains industry to its domestic customers

APL strongly supports the Commission's assessment that the Wheat Marketing Act be subject to a review in accordance with National Competition Policy, and agrees with the concerns of the Red Meat Industry (who include Meat & Livestock Australia, Cattle Council of Australia, Sheepmeat Council of Australia, Australian Lot Feeders Association, Livecorp and the Australian Meat Industry Council)

Occupational health and safety

Concern: Complex and inconsistent regulation across jurisdictions.

Draft Response 3.18:

COAG has developed a strategy to develop a nationally consistent occupational health and safety framework. Its progress will be reported on during the 2011 review of generic regulation.

APL's response:

APL supports the position of the National Farmers Federation (NFF), and the Queensland Farmers Federation (QFF) – that occupational health and safety (OH&S) requirements are a significant regulatory burden on Australian farmers. It is hoped that the COAG progress review due in 2011 will put forward the changes required to effect change to the OH & S system.

APL supports the National Farmers Federation position on OH&S issues:

- OH&S regulations are complex, costly and onerous to the employer;
- OH&S regulations are not conducive to reducing workplace injury and encouraging work-safe behaviours;

OH&S issues should be a joint responsibility between employer and employee. These views are consistent with APL's concerns which emphasise:

- Statutory requirements by state agencies for employers to have workers compensation was costly;
- In NSW and QLD, insurance was 10% of wage costs, but in VIC the costs were lower.
- OH&S regulations should provide strong incentive for individual businesses to improve accident performance.

7. Other significant issues

Food regulation

Concern: Inconsistency and lack of timeliness in food regulation.

Draft response: 3.19

Food regulation concerns are currently being examined by the Bethwaite Review.

APL's response:

Inconsistencies between domestic and imported food

APL supports the views of the Virginia Horticulture Centre and that of the Victorian Farmers Federation; that food imported from other countries must be subject to the food safety standards applied to Australian produced food. The Queensland Farmer's Federation has also sought consistent testing of imported and domestic produce and for standards harmonisation between import and export products While the Commission admits that AQIS officers inspect imported food to the same standards applied to domestic food under the Imported Food Control Act 1992, Australian Pork Limited believes that food imports do not undergo the same treatment for domestic food such as certain chemicals used in overseas production which are not allowed t in Australia are not necessarily tested at the border, e.g. Carbadox. This results in a two-tier system in relation to food safety and also impacts on industry competitiveness.APL highlights in detail the specific problems between the *Australian Quarantine Inspection Service (AQIS) Imported Food Inspection Program*, and *AQIS' Export Meat Program.*

APL wishes to see greater transparency in the AQIS Meat Notice process. These notices detail the changes to meat legislation in relation to food and meat imports. **APL wishes to see greater industry consultation into the rationale and decisions made for changing food import testing requirements in the *active surveillance, random surveillance* and *risk surveillance* categories**. As part of post-border import audits, AQIS conducts on a regular basis, testing of meat and meat products in accordance with their current testing categories. *The Imported Food Control Order 2001* specifies what foods are considered active, risk and random surveillance foods.

APL has concerns over the tests conducted for food and meat imports into Australia. The PESTICID screen is the prescribed test for food imports and dependent on the imported food's surveillance category. **APL finds the**

PESTICID screen inconsistent and deficient compared to the National Residue Survey (NRS) – Pig Monitoring Scheme, which is applied only to domestically produced pig meat.

The NRS is a domestic program and the Australian MRLs do not apply to other countries. The Australian Maximum Residue Limits (MRLs) in the National Residue Survey – Pig Monitoring Scheme are established by Food Standards Australia New Zealand (FSANZ). The Australian MRLs in the NRS detail the maximum residue limits for different body parts such as the liver, muscle, kidney and meat. Other countries have set their own Maximum Residue Limits.

The AQIS Food Import Inspection Program tests for a limited number of pesticides and antibiotics in its PESTICID screen. It tests for 49 chemicals in the fat component of pig meat imports. It is less stringent than the NRS Pig Monitoring Scheme for domestic production. This is a regulatory loophole which can impact on consumer health. This deficiency also enhances the competitive advantage of imports compared to local produce.

The recent decision of AQIS to remove Carbadox testing for food imports, based on an internal review in 2006 demonstrates the problem of AQIS' transparency when managing food safety protocols and its impact on Australian industry. APL has concern that there was no consultation with industry to reach this decision.

Furthermore, Australia does not permit over thirty substances for use in Australian pig meat production; however these substances are permitted in the U.S. for any food producing animal. Some of these substances, for example Carbadox, been banned in Australia and also in the EU and Canada as a carcinogen, are not tested for on import to Australia. What is not registered for use in Australian domestic meat or pig production should also apply to food and meat imports. **APL believes that there is rationale for a strengthening of import protocols to ensure that Australian food safety standards apply equally to Australian and imported food produce.**

While the Commission admits that AQIS officers inspect imported food to the same standards applied to domestic food under the *Imported Food Control Act 1992*, APL believes that meat imports still do not undergo the same treatment for domestic food.

Ethanol Regulation: Mandating ethanol by States

Concern: Poor coordination with legislation between Federal and State and Territory authorities

APL's response:

APL believes ethanol regulation in Australia will impact significantly on the Australian pork industry and other intensive livestock sectors, once established and particularly when combined in times of drought and acute grain supply deficiency. The Commission did not recognise the impact of successive State legislation of mandating biofuel content in fuels and Federal Government programs on the intensive livestock sector. APL agrees the statement made by the Red Meat industry in relation to this matter.

The Red Meat Industry stated:

> *"**Ethanol from grain**. ALFA supports viable energy alter-natives and does not oppose ethanol as a fuel. The sector strongly disagrees with government interventions such as mandating ethanol content in fuel (as in NSW May 2007) that distort grain markets with harm to efficient industries. Evidenced submissions have been made to inquiries."*

According to the Prime Minister's Biofuels Taskforce Report 2005 there has been a Federal focus on encouraging the biofuels industry here in Australia. In particular, the Federal Government in 2005:

- announced reforms to fuel taxation
- introduced capital grants to encourage new biofuels capacity through the $37.6 million Biofuels Capital Grants Program
- introduced a 10% ethanol limit in petrol

The Task Force concluded[2] that there is a potential for subsidised grain ethanol plants to have a local impact on feedgrain prices in the short to medium term. Many in the livestock industry emphasise the demand impact of feedgrain for fuel production as detrimental to their industry.

> **"Conclusion 29:** *The Taskforce considers that, on current policy settings, there is real potential for subsidised grain ethanol plants to have a local impact on feedgrain prices in the short to medium term. In the longer term, fuel ethanol rates of return are likely to drop as the policy settings reduce the subsidies – and*

[2] Conclusion 29 from the Prime Minister's Biofuels Taskforce Report, 2005.

as ethanol import competition is allowed in 2011. The fuel ethanol industry would then be placed on a more even footing in its ability to bid for grain against the livestock industry."[3]

Australian Pork Limited believes that decisions to mandate in any state will provide only limited short term and heavily subsidised employment opportunities. Regional employment benefits from the development of a mandated biofuels industry are unlikely to be sustainable because modern biofuel plants do not have high labour needs and it is highly likely there will be employment losses in other value adding industries as a result of an increase in feedstock prices for those industries.

An ABARE analysis for the Prime Minister's Biofuels Task Force Report showed that if the 350 million litre target was achieved in 2009-10 the government expenditure would be $545,000 per direct job created and the direct economic cost would be $417,000 per direct job created. This analysis did not take into account any job losses in other grain value adding industries.

While the Federal Government is not seeking to mandate, the inconsistency displayed by State policy and in some cases where mandatory targets have been set, in effect will cancel this; it could result in an overall mandate on a state-by-state basis. A framework to encourage cooperation with State and Territory, and the Federal Government in recognition of the anticipated, detrimental impact on mandated ethanol targets is necessary, and we request that the Commission recognise this in its assessment of the Regulatory Burdens on Business.

Transparency in public debate and Commission inquiries will enable the pork industry and those in the livestock sector to expound its viewpoints: any changes that may impact the livestock sector will be made in consultation to industries complementary to biofuel production.

[3] http://www.pmc.gov.au/publications/biofuels_report/docs/report_full.pdf, 18.

F. State Drought Assistance & Federal Exceptional Circumstances: Pig Industry Status

Many of the current state drought assistance schemes are designed to support broad acre farming and include freight or grain subsidies that work against intensive farms by driving the price of grain up further. There is no consistency among state-based schemes.

In the last drought, most were unable to access assistance due to Exceptional Circumstances (EC) eligibility criteria. While drought preparedness is essential and self reliance should be the aim of all good managers, it is essential that some form of assistance under exceptional circumstances be available as a welfare safety net.

Table 4 :- Exceptional Circumstance Relief Payments to Australian Pig Producers 2006-07 and 2007-08

	2006-2007		2007-2008 to 26 October	
	# Recipients	**Expenditure**	**# Recipients**	**Expenditure**
Exceptional Circumstance Relief Payments	86	$866,578	93	$440,243
Interest Rate Subsidy	71	$2,099,650	44	$1,593,451

Source:- Drought and Exceptional Circumstance Section, Rural Policy and Innovation Division, Australian Government Department of Agriculture , Fisheries and Forestry

The utilisation of interest rate subsidies by pig producers since 2002 shows the following variable usage pattern (Table 5).

Table 5: Utilisation of Interest Rate Subsidies By Australian Pig Producers since 2002

	Approved applications	**Expenditure**
2001-2002	7	$121,018
2002-2003	34	$549,201
2003-2004	68	$1,210,290
2004-2005	70	$1,487,210
2005-2006	75	$2,119,470
2006-2007	71	$2,099,650
2007-2008 to 26 October	44	$1,593,451

Source: - Drought and Exceptional Circumstance Section, Rural Policy and Innovation Division, Australian Government Department of Agriculture, Fisheries and Forestry. Note These figures do not include Victorian pigs (as pigs are not specified separately), Tasmania (no pig producer has an application) and WA (WA does not supply industry information)

Centrelink has also advised that there are few applications for farm exit grants across Australia (most are horticultural producers with water supply problems) and currently no pig producers have made application for farm exit grants either in the pre- assessment phase or the post sale phase of exit grant applications.

G. Independent Review of the UNE Econometric Modelling

THE IMPACT OF PIGMEAT IMPORTS ON AUSTRALIAN PIGMEAT PRICES

A report prepared for
Australian Pork Limited
February 2008

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EXECUTIVE SUMMARY

This report supersedes an earlier report prepared for Australian Pork Limited as part of their submission to the Productivity Commission's inquiry into safeguard action against imports of frozen pigmeat. The main aim of this report is to examine the impacts of imports of frozen pigmeat within subheading 0203.29 of the Australian Customs Tariff on domestic pig and pigmeat prices. The econometric analysis in this study takes into consideration the Productivity Commission's critique of the initial report and the comments and recommendations of an independent reviewer (Rambaldi 2008).

Eight endogenous variables and three exogenous variables are chosen for inclusion in the study based on theoretical considerations, previous literature and data availability. The endogenous variables are:

1. Imports of pigmeat 'meat of swine, frozen' into Australia, tariff subheading 0203.29, from Canada, Denmark and the USA, tonnes carcase weight equivalent
2. The national average baconer contract price, 60-75 kg pigs, cents/kg carcase weight
3. The Sydney wholesale carcase price, GI bacon 60-75 kg, cents/kg
4. Production of pigmeat in Australia, tonnes carcase weight
5. The retail price of pigmeat in Australia, c/kg
6. The retail price of beef in Australia, c/kg
7. The retail price of lamb in Australia, c/kg
8. The retail price of poultry in Australia, c/kg

The exogenous variables are:
1. The bilateral exchange rate between Canada and Australia
2. The bilateral exchange rate between Denmark and Canada
3. A weighted average national feed grain price, $/tonne

The sample period of analysis is from January 1999 to November 2007. All data represent monthly averages. Australian Pork Limited provided the price and quantity data series and the bilateral exchange rate data were obtained from the Reserve Bank of Australia. Seasonal and trend variables are also specified in the analysis.

Granger causality tests are used to test if past values of imported pigmeat are useful in predicting movements in domestic pig and pigmeat prices, and vice-versa. The test results confirm that an endogenous framework approach is required to correctly model the interrelationships. A Vector Autoregressive (VAR) model is specified to account for multi-directional causalities and capture the feedback effects between all the endogenous variables. Impulse response (IRF) functions are used to track the responsiveness of all the endogenous variables in the model to a 1 per cent increase in one of the endogenous variables.

The findings from this analysis provide evidence that pigmeat imports do have a statistically significant and negative impact on the domestic contract price for baconers and the Sydney wholesale price for baconers. Increased import volumes are also found to negatively influence domestic production of pigmeat in the immediate short-run. Retail prices for pigmeat remain generally unaffected by increased pigmeat volumes. The IRF results also suggest a statistically significant and positive import response to an increase in the contract baconer price. However, there is no evidence to suggest that import volumes increase as a result of an increase in the Sydney wholesale baconer price or an increase in the domestic retail price of pigmeat.

Variance Decomposition (VDC) techniques are used to determine the relative importance of each random innovation in affecting the endogenous variables in the VAR. The variance decompositions of the contract baconer price, the Sydney wholesale baconer price and domestic pigmeat production suggest pigmeat imports are an explanatory variable in the movements of those variables. The variance decomposition of imported pigmeat suggests the national contract baconer price has an explanatory relationship on imports of pigmeat. There are no indications in the variance decompositions that the Sydney wholesale baconer price or the retail pigmeat price contributes to explaining movements in imports of pigmeat.

The data series for the contract price for baconers, the Sydney wholesale price for baconers and imported pigmeat are stationary, implying a long-run relationship among the variables. Cointegration tests also verify evidence of a long-run relationship between imported pigmeat and domestic production of pigmeat.

In summary, this report finds evidence of a significant negative impact on the contract baconer price, the Sydney wholesale baconer price and domestic production of pigmeat from an increase in the volume of pigmeat imports. The report also finds evidence that pigmeat imports respond positively to an increase in the contract price of baconers. There is no evidence to suggest that changes in the Sydney wholesale baconer price or changes in the retail pigmeat price influence import volumes.

Acknowledgements

We would like to acknowledge the assistance and comments provided by Garry Griffith (NSW Department of Primary Industries) and Nadia Bottari (Australian Pork Limited) for the compilation of data.

1. Introduction

This report supersedes an earlier report prepared for Australian Pork Limited as part of their submission to the Productivity Commission's inquiry into safeguard action against imports of frozen pigmeat.

Imports of frozen, uncooked pigmeat began arriving in Australia from Canada in July 1990. Boning of pigmeat prior to export has been an additional import requirement since 1992. Subsequent amendments to quarantine regulations have allowed import access to frozen, boned and uncooked pigmeat from Denmark in 1997 and the USA in 2004. Almost all frozen pigmeat imports within tariff subheading 0203.29 originate from these three countries. The Australian pork industry contends that frozen pigmeat imports suppress domestic farm-gate prices and displace local product in the bacon, ham and smallgoods markets.

The main aims of this report are to test if there are statistically significant impacts on domestic pig and pigmeat prices from imported pigmeat volumes. The sample period considered in this analysis is from January 1999 to November 2007.

One of the issues of concern with the initial report was the omission of potentially important explanatory variables (Productivity Commission 2007). These were retail prices for substitute meats and production input prices. The econometric analysis in this report includes retail prices for pigmeat and retail prices for substitute meats, beef, lamb and poultry. Feed grain prices are also included in the analysis as a proxy for production input prices. The Productivity Commission also suggested the choice of exchange rate as a shortcoming of the initial analysis. The bilateral exchange rates between Australia and the two major suppliers of pigmeat imports to Australia have been included in this analysis.

Detailed responses to the Productivity Commission's assessment of the initial analysis are included in Appendix B of this report. Responses to the comments and suggestions provided in an independent review of the initial econometric analysis are listed in Appendix C of this report.

2. Granger Causality

Granger (1969) causality tests are used to examine whether past values of pigmeat imports can be used to explain movements in domestic pigmeat prices, and vice-versa. Granger causality tests endeavour to determine if, in addition to past values of *y*, the inclusion of past values of *x* in the regression equation improve the prediction of the current variable *y*. In general, an equation of the following form is estimated to determine if *x* Granger causes *y*:

$$y_t = \delta_0 + \delta_1 y_{t-1} + \cdots + \delta_l y_{t-l} + \alpha_1 x_{t-1} + \cdots + \alpha_l x_{t-l} + u_t$$

An F test is conducted for the joint hypothesis:

$H_0 : \alpha_1 = \alpha_2 = \cdots = \alpha_l = 0$ (*x* does not Granger cause *y*)

If the *x* coefficients are jointly different from zero the null hypothesis is rejected in favour of the alternate hypothesis that there is evidence of causality from *x* to *y*. It is important to note here that '*x* Granger causes *y*' does not mean that *y* is the result of *x*. Granger causality tests

determine if past values of *x* are useful in predicting y. The test itself does not imply 'causality' in the true meaning of the word.

As pointed out by Griffith (1998), the causality literature is surrounded in controversy. Various aspects of causality tests have been subject to criticism, including methodological and philosophical issues (see Bishop 1979; Zellner). In this study, Granger causality tests are used to establish the existence of endogeneity between variables. For example, if past values of pigmeat imports are useful in explaining movements in domestic pigmeat prices.

3. Vector Autoregression

The problem with Granger causality testing is that other relevant causal relationships are excluded from the procedure. Granger causality is a partial test in that it is only concerned with pairwise causality. Hence, other market information is precluded from the explanatory analysis. This limitation is addressed through the use of Vector Autoregressive (VAR) models.

The VAR method has been used for analysing the dynamic impacts of random disturbances on a system of endogenous variables since the influential work of Sims (1980). In this approach, each variable is explained by its own lagged values and the lagged values of all the endogenous variables included in model. In contrast to the pairwise Granger causality tests, the VAR framework can be used to examine the causality between all the variables of concern. The appropriate lag length of the VAR is determined using optimum lag length selection criteria such as the Akaike Information Criterion (AIC), Schwarz Criterion (SC) or Hannan-Quinn Criterion (HQ). Short run dynamics as well as long run relationships can be investigated within the VAR framework through the use of impulse response functions (IRF) and variance decomposition techniques (VDC).

The general form of the VAR is given below:

$$y_t = \beta_0 + \beta_1 y_{t-1} + \beta_2 y_{t-2} + ...+ \beta_p y_{t-p} + \varepsilon_t \qquad (1)$$

where, y_t is a vector containing each of the endogenous variables included in the VAR, β_0 is a vector of intercept terms, β_i is a matrix of coefficients to be estimated and ε_t is a vector of innovations that are uncorrelated with their own lagged values and uncorrelated with all of the right hand side variables.

Due to the dynamic structure of the VAR, a shock to one variable is conveyed to all of the endogenous variables in the model. In order to understand this it is necessary to express the variables in terms of the current and past values of the innovations. This can be achieved by realising that all autoregression representation can be written as a moving average process. Using Sims's (1980) method, moving average representation of equation (1) in terms of innovations can be written as in equation (2), where the coefficients δ_i are the IRF.

$$y_t = \sum_{i=0}^{\infty} \delta_i \varepsilon_{t-i} \qquad (2)$$

The IRF trace the responsiveness of the dependent variables in the VAR to a shock in the current value of one of the VAR errors (Stock and Watson 2001). This representation is useful

to examine the interaction between endogenous variables and to trace out the time path of various shocks.

The proportion of the movements in a variable due to its own shocks, relative to shocks to other variables, can be measured using VDC techniques. Separation of this type explains the interactions among the series and determines the relative importance of each random innovation in affecting the variables in the VAR.

4. Variables, Data and Shocks

The variables chosen for inclusion in this analysis are based on theoretical considerations, previous literature and data availability. In order to control for possible non-linearity, all of the variables are transformed into natural logs. There are eight endogenous variables and three exogenous variables. The endogenous variables are defined as:

LIMPO: imports of pigmeat 'meat of swine, frozen' into Australia, tariff subheading 0203.29, from Canada, Denmark and the USA, tonnes carcase weight equivalent
LNBACON: national average baconer contract price, 60-75 kg pigs, cents/kg carcase weight,
LSBACON: Sydney wholesale carcase price, GI bacon 60-75 kg, cents/kg
LAPRO: production of pigmeat in Australia, tonnes carcase weight
LPORKP: retail price of pigmeat in Australia, cents/kg
LBEEFP: retail price of beef in Australia, cents/kg
LLAMBP: retail price of lamb in Australia, cents/kg
LPOULTRYP: retail price of poultry in Australia, cents/kg

The exogenous variables are:
LEXCA: bilateral exchange rate between Canada and Australia
LEXDE: bilateral exchange rate between Denmark and Australia
LGRP: weighted average national feed grain price, $/tonne

The sample period for analysis consists of 107 observations from January 1999 to November 2007 and includes all of the variables listed above. Imported pigmeat is assumed to be a like product competing with domestic pigmeat used in the manufacture of bacon, ham and smallgoods. The majority of domestic pigmeat supplied to the manufacturing industry comprises baconer pigs. Because most pigs in Australia are sold on a contract basis (Sheales, Apted and Ashton 2004, p.17), a national average contract price for baconers was chosen as representative of the farm price for baconers. Data availability on wholesale carcase prices was limited to Sydney averages. The retail pigmeat price and the retail prices of the substitute meats included in the VAR are average prices of saleable meat normally sold in the retail market. They are calculated as a simple average price across all cuts of meat. The substitute meat prices are included as exogenous variables in the VAR, although they might more correctly be classified as weakly exogenous variables.[49] The substitute meat prices can be thought of as exogenous to the pig industry but they are endogenous variables in a meat demand system. Empirical estimates of cross-price retail demand elasticities among pork, beef, lamb and chicken support this argument (see, Griffith et al. 2001).

For consistency with domestic production data, which is specified in carcase weight, import volumes were converted from shipped weight to carcase weight equivalent volumes. Middle

[49] The substitute meat prices were included as endogenous variables based on a recommendation by Rambaldi (2008) in a review of an earlier version of this report.

cuts were converted using a factor of 0.8 (Heilbron, S. 2007, pers. comm., 2 November) while all other cwe volumes of boneless, frozen meat, including leg and shoulder cuts, were estimated using a 0.56 conversion factor (APL 2007, pers. comm., 2 November). Information on the volumes of imported meat by cut prior to 2001 was not available. The average percentages of the various cuts of meat from Canada, Denmark and the USA for the period January 2001 to August 2007 were used to approximate the pre 2001 cwe volumes originating from those countries.

The bilateral exchange rates between Australia and the two major exporters of pigmeat to Australia, Canada and Denmark, are exogenous variables to the system. Feed grain prices, included in the model as a proxy for input prices, are also specified as an exogenous variable. As noted by Rambaldi (2008), feed grain prices are determined by other exogenous influences such as the weather and the demand for grain by other industries.

Seasonal and trend variables are also specified in the model. Seasonality is evident in historical pig prices, with a peak in prices usually occurring around December as manufacturers increase demand prior to Christmas (Productivity Commission 2005).

Australian Pork Limited provided all the price and quantity data series data except for the bilateral exchange rate data which were obtained from the Reserve Bank of Australia. All data represent monthly averages.

The responses of the endogenous variables to a number of different one-off shocks are examined within the VAR framework.

1. 1% increase in the volume of imports (LIMPO)

1a. 1% increase in the volume of imports (LIMPO – alternative ordering of variables)
1b. 1% increase in the volume of imports (LIMPO – Canada/Australia exchange rate)
1c. 1% increase in the volume of imports (LIMPO – Denmark/Australia exchange rate)

2. 1% increase in the national average baconer contract price (LNBACON)
3. 1% increase in the Sydney wholesale carcase price (LSBACON)
4. 1% increase in the retail price of pigmeat (LPORKP)

The IRF and VDC techniques in the VAR use Choleski decomposition. Hence, the IRF and VDC estimations may be sensitive to the ordering of the variables in the model. Shock 1a provides an alternative ordering of the variables to test for sensitivity of the results.

The choice of exchange rate to include in the model should reflect the importance of the trading partners in the sample period under consideration. One suggestion is the use of the trade weighted index, but a case would need to be made as to whether it would capture the exchange rate effects for the frozen pigmeat market (Rambaldi 2008). As the bulk of pigmeat imports are from Canada and Denmark, an argument can be made for the use of Australia-Denmark and Australia-Canada bilateral exchange rates. Shock 1 and Shock 1a include both bilateral exchange rates. In Shock 1b and Shock 1c the exchange rates are included one at a time to determine if the individual influences differ from their combined effects.

5. Model Estimation

5.1 Lag Order Selection Criteria

Standard procedure dictates the use of an information criterion to determine the selection of the appropriate distributed lag length. The information criterion provides a measure of the

trade-off between the goodness of fit and complexity of the model. The three most often used criteria are the Schwarz Criterion (SC), the Akaike Information Criterion (AIC) and the Hannan-Quinn Criterion (HQ). The optimal lag length to include in the VAR was tested over a number of lag length intervals. The SC was the only criterion to consistently specify the same optimum lag length over all the intervals tested. Hence, the SC was used in preference to the other criteria and an optimum lag length of one was specified in the VAR. The results of the VAR lag order selection criteria are presented in Table A4.

5.2 Testing for Non-stationarity

When conducting time series estimation the data series should be checked for unit roots to verify VAR stability (Enders 2004). If a unit root exists, the series is considered as non-stationary. This is often the case for monthly commodity prices (Grant et al. 1983). The Augmented Dickey-Fuller (ADF) test is used to verify the stationarity of each variable. Results of the tests are given in Table A5. Three data series were found to contain a unit root. They are Australian production of pigmeat (LAPRO), the retail lamb price (LLAMBP) and the retail poultry price (LPOULTRYP). Data series can be differenced appropriately to achieve stationarity. However, Sims (1980), and others (e.g. Pierce 1977; Stock and Watson 2001), has shown that vital information of long-run properties of the data can be lost through differencing. Therefore, we decided to use levels rather than first differences in our estimations. The existence of unit roots is only a problem if the VAR is not stable. Instability of the VAR implies that certain results such as impulse response standard errors are not valid. The results of the VAR stability test are provided in Table A6. All characteristic roots in this VAR have modulus less than one and lie inside the unit circle. Hence, the VAR is stable and the IRF standard errors are sound.

5.3 VAR Representation

Representation of the equations in VAR estimation can be in structural form, reduced form or recursive form (Stock and Watson 2001). The reduced form equations used in this analysis express each of the variables as a function of their own lag values, the lag values of all the other variables and an uncorrelated error term. For example, imported pigmeat (LIMPO) is explained by its own lagged values and the lagged values of the other variables included in the VAR. With this type of specification, endogenous bias is not a concern as the method produces consistent estimates. Contemporaneous correlation of the error term does not cause a statistical problem in this setting as all the equations contain identical explanatory variables. The model is simply a case of seemingly unrelated regression (SUR) and is estimated using ordinary least squares regression (OLS). The econometric package Eviews was used to estimate the VAR and output from the model is given in Table A11.

6. Granger Causality Test Results

The results of the pairwise Granger causality tests between imported pigmeat and domestic pigmeat prices are presented in Table 1.[50] The null hypothesis is *x* does not Granger cause *y*. If the null hypothesis is rejected, there is evidence to suggest that past values of *x* are useful in the prediction of *y*.

[50] Results of the Granger causality between the other variables in the model are not presented here but are available from the authors.

Table 1: Granger Causality Test Results

Null Hypothesis:	Obs	F-Statistic	Probability
1. LNBACON does not Granger Cause LIMPO	107	4.06855	0.04627
2. LIMPO does not Granger Cause LNBACON		5.99324	0.01603
3. LSBACON does not Granger Cause LIMPO	107	8.08141	0.00538
4. LIMPO does not Granger Cause LSBACON		0.47795	0.49089

In only one of the four tests in Table 1 is the null hypothesis not rejected (null hypothesis 4). The test results suggest that domestic pigmeat prices assist in explaining imports of pigmeat and imports of pigmeat assist in explaining farm-level pigmeat prices (LNBACON).[51] The Granger results confirm there are pairwise endogenous relationships between variables indicating that a VAR framework is the correct approach to model the interrelationships.

7. VAR Results, Sample Period 1999:1 - 2007:11

The responses of the eight endogenous variables to the alternative one percentage point shocks are examined using IRF and forecast error VDC generated from the estimated VAR.[52] As discussed in Section 3, IRF are obtained using vector moving average representation of the VAR whereby each equation in the VAR is expressed in terms of the current and past values of the innovations.

7.1 Shock 1: 1% Increase in the Volume of Imports (LIMPO)

In Figure 1 the IRF responses for each of the variables of interest are plotted for a one-percentage point increase in total pigmeat imports, with the dotted lines representing ± 2 standard errors. The results suggest that the farm pig price (LNBACON) and the wholesale price (LSBACON) fall as pigmeat imports increase. The response of the farm price is immediate and statistically significant for the first four and a half months. The statistically significant decrease in the wholesale price occurs two to four months after the initial shock. There is also a significant production response (LAPRO) in the two to four month period after pigmeat imports increase. During this two to four month period domestic production of pigmeat decreases. The responses of the pigmeat retail price and the three substitute meat retail prices to a 1 per cent increase in import volumes are not statistically significant.

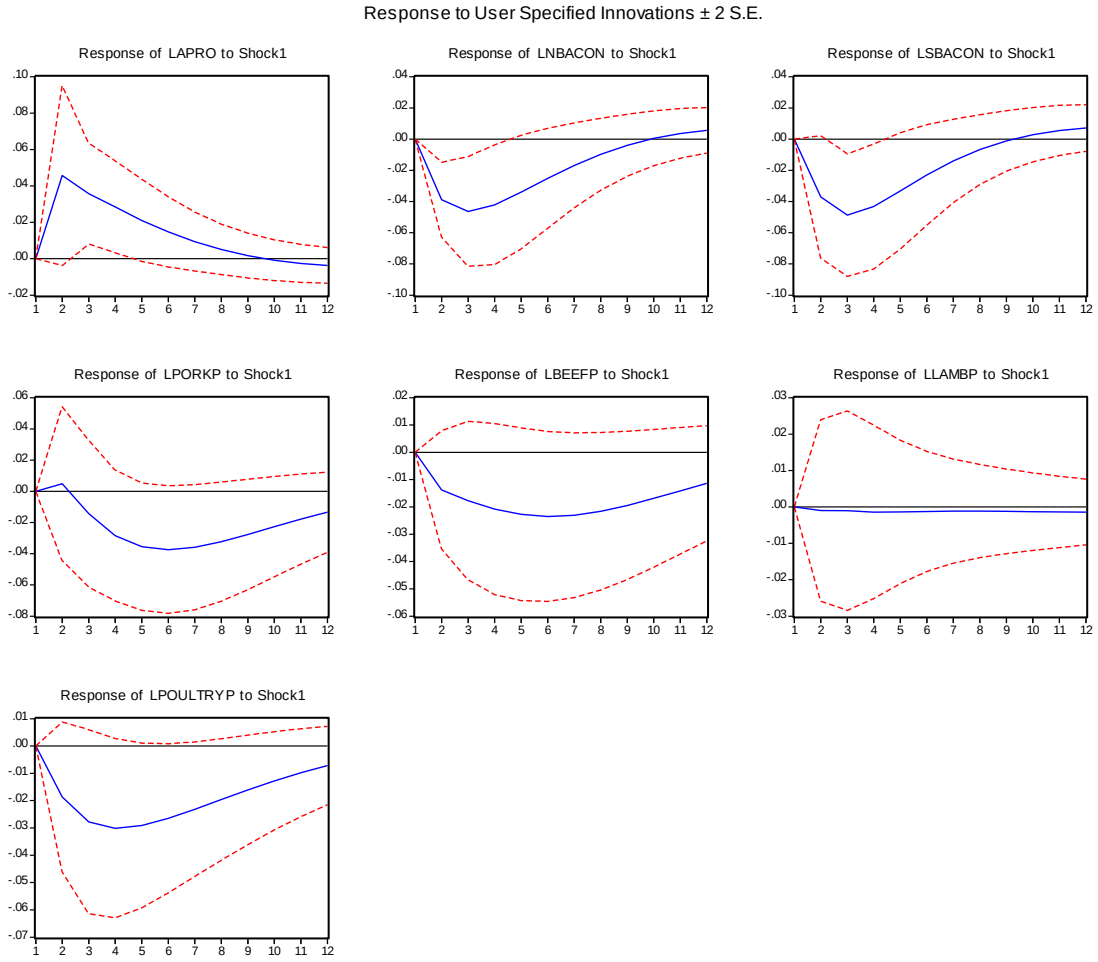
The accumulated effects on the endogenous variables from a 1 per cent increase in imports are presented in Table 1. The results suggest that the accumulated negative impacts on the farm pig price (LNBACON) are around 0.16 per cent after five months and around 0.09 per cent on the wholesale price (LSBACON) in the statistically significant two to four month period following the 1 per cent increase in imports. The accumulated impacts indicate Australian production (LAPRO) decreases by approximately 0.06 per cent in the two to four month period after the initial shock. The responses of the other variables are not statistically significant and are therefore not considered.

[51] It is important to bear in mind the results do not imply imports of pigmeat cause domestic pigmeat prices or vice-versa.
[52] Enders (2004, pp. 264-290) provides an excellent treatment of the technical details of VAR, IRF and VDC.

The importance of the interactions among the variables can be examined using VDC. Since reduced form equations were chosen in the estimation of the VAR, orthogonalized innovations, obtained from Choleski decomposition, were used in the VDC analysis. The VDC of the endogenous variables from a 1 per cent increase in the level of imported pigmeat are reported in Table A8. The percentages of the forecast variance due to each innovation are given in columns three through to eight. The sum of each row is equal to 100.

Column three of Table A8 (VDC of LAPRO) indicates that after four months, apart from its own innovation, the farm pig price (LNBACON) contributes most to the forecast VDC of Australian pigmeat production (LAPRO). Of the other endogenous variables, imports of pigmeat (LIMPO) and the retail poultry price (LPOULTRYP) account for around 5 per cent each.

Figure 1: Impulse Responses to a 1% Increase in Pigmeat Imports
(Cholesky Ordering: LAPRO LNBACON LSBACON LPORKP LBEEFP LLAMBP LPOULTRYP LIMPO)



The fourth column of Table A8 (VDC of LNBACON) shows that the forecast variance of the farm price (LNBACON) due to its own innovation falls from 97 per cent to 76 per cent in the four month period after imported pigmeat volumes increase. From month two onwards, the innovations of the other variables contribute successively more to the forecast variance. After four months, the increased contributions are from imported pigmeat (7 per cent) and the retail lamb price (14 per cent).

Table A8 reports a similar finding with respect to the importance of pigmeat imports in the VDC of the wholesale pigmeat price (LSBACON), contributing around 5 per cent four months after the initial shock. Over the same period the forecast variance of the wholesale pigmeat price due to its own innovation decreases in importance from 53 per cent to 36 per cent. The contributions of the farm pig price (LNBACON) and the retail lamb price increase from 38 per cent to 42 per cent and from 5 per cent to 12 per cent, respectively.

Table 2: Accumulated Impulse Responses to a 1% Increase in Pigmeat Imports
(Cholesky Ordering: LAPRO LNBACON LSBACON LPORKP LBEEFP LLAMBP LPOULTRYP LIMPO)

Period	LAPRO	LNBACON	LSBACON	LPORKP	LBEEFP	LLAMBP	LPOULTRYP
1	0	0	0	0	0	0	0
2	0.045668	-0.03886	-0.03709	0.00487	-0.01375	-0.00099	-0.01862
3	0.081389	-0.0852	-0.0858	-0.00948	-0.03146	-0.00203	-0.0464
4	0.109857	-0.12733	-0.12902	-0.03786	-0.05224	-0.00344	-0.07653
5	0.1309	-0.16134	-0.16223	-0.07339	-0.07498	-0.00483	-0.10567
6	0.145597	-0.18649	-0.18519	-0.11077	-0.09848	-0.0061	-0.13217
7	0.154992	-0.20338	-0.1992	-0.14659	-0.12154	-0.00728	-0.15533
8	0.160083	-0.21312	-0.20594	-0.17884	-0.14318	-0.00845	-0.17494
9	0.161801	-0.21709	-0.20712	-0.2065	-0.16265	-0.00968	-0.19103
10	0.160998	-0.21663	-0.20427	-0.22922	-0.17954	-0.011	-0.20381
11	0.15843	-0.21301	-0.19875	-0.24708	-0.19365	-0.01239	-0.21358
12	0.154744	-0.20735	-0.19166	-0.26045	-0.20502	-0.01381	-0.22073

7.2 Shocks 1a, 1b and 1c: 1% Increase in the Volume of Imports (LIMPO) – Alternative Ordering of Variables - Canada/Australia and Denmark/Australia Exchange Rates

The results from the VAR may be sensitive to the ordering of the variables in the model as the IRF and VDC techniques use Choleski decomposition. The IRF in Figure A1 and the accumulated responses in Table A1 of Appendix A are obtained from a different Choleski ordering of the variables than are used in Shock 1. Examination of Figure A1 and Table A1 shows the responses of the statistically significant variables in Shock 1a are almost identical to those derived in Shock 1. A comparison of the VDC for the two shocks in Table A8 and Table A9 indicates the proportions of the forecast VDC of the three statistically significant endogenous variables do not differ markedly. However, the contribution of imports in the forecast variances does increase in importance under the alternative Choleski ordering specification.

The impacts of a 1 per cent increase in imported pigmeat are examined using a single bilateral exchange rate to ascertain if the implied import price movements captured by a single rate differ from those captured through the inclusion of the two exchange rates. The IRF and accumulated IRF presented in Figure A2 and Table A2 correspond to the Canadian/Australian bilateral exchange rate specification. The differences in the responses are negligible to when both exchange rates are taken into account.

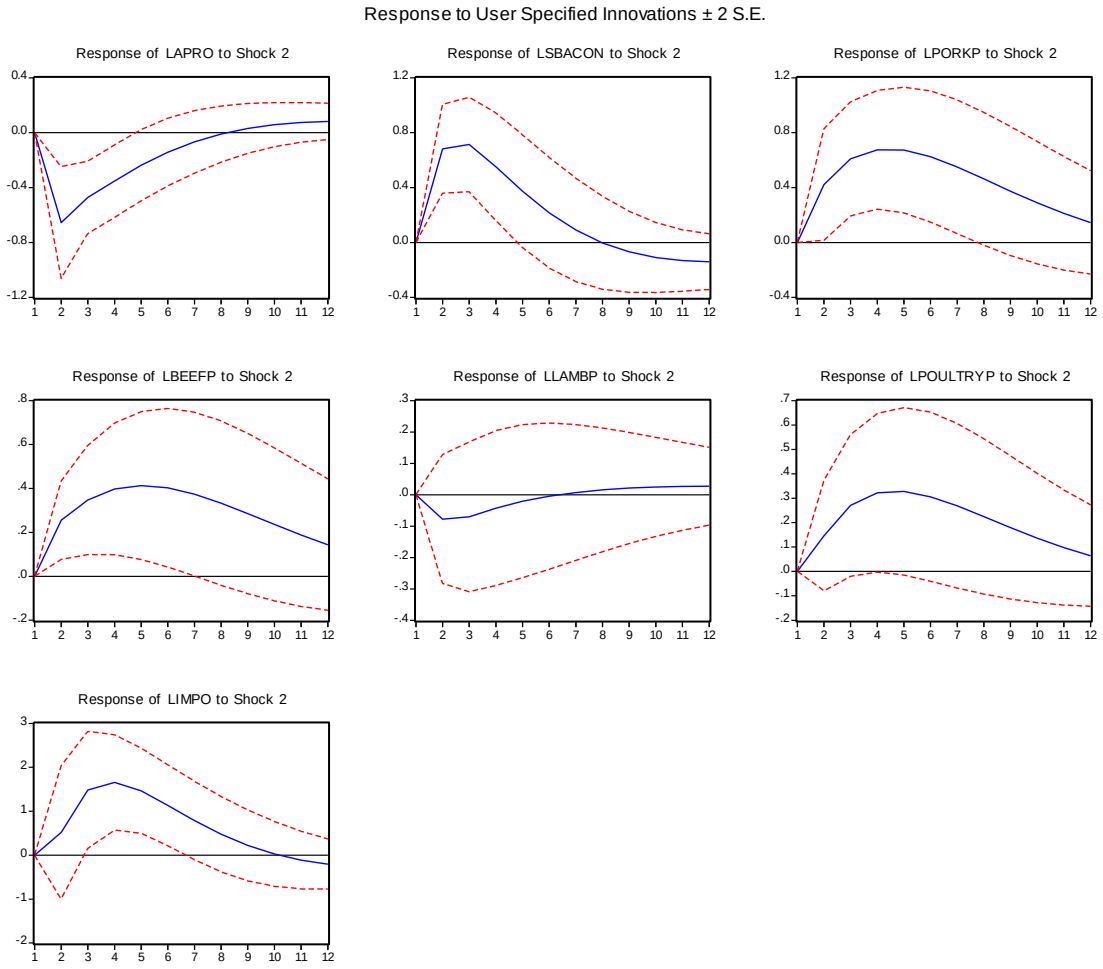
Figure A3 and Table A3 display the IRF and accumulated IRF for a 1 per cent increase in pigmeat imports based on the specification of the Denmark/Australian bilateral exchange rate. As in the previous analyses, the responses of the contract bacon price (LNBACON), the Sydney wholesale price (LSBACON) and Australian production of pigmeat (LAPRO) are statistically significant. The IRF in Figure A3 show that that the magnitude of the responses are larger and persist for longer than in the previous three analyses. Inspection of Table A3

indicates that the accumulated responses are considerably larger, more than double the previous estimates. The accumulated negative impacts on the contract baconer price (LNBACON) over eight months, and on the Sydney wholesale price (LSBACON) over seven months, is approximately 0.41 per cent. There also appears to be a minor statistically significant decrease in the retail price of pigmeat and in the retail price of beef five to six months after the initial shock takes place.

7.3 Shock 2: 1% Increase in the National Average Contract Baconer Price (LNBACON)

The IRF corresponding to a 1 per cent increase in the national baconer contract price (LNBACON) are displayed in Figure 2. The farm price increase translates into an increase in the wholesale pigmeat price and the retail pigmeat price. The increase in the wholesale price (LSBACON) is statistically significant up to five months after the farm price increase, peaking at around three months before beginning to fall. A statistically significant response is not realised for the retail pigmeat price until approximately two months after the farm price increase. After around four months the retail price begins to decline, with the effects dissipating by around month eight. The retail beef price responds positively to the price increase in pigmeat, increasing up to month five before beginning to decline. The responses of the other substitute retail meat prices, lamb and poultry, are not significant over the twelve-month period examined.

Figure 2: Impulse Responses to a 1% Increase in the National Contract Baconer Price
(Cholesky Ordering: LAPRO LNBACON LSBACON LPORKP LBEEFP LLAMBP LPOULTRYP LIMPO)



Imported pigmeat volumes show a statistically significant positive response from months three through to seven. Statistically significant responses are reported for Australian production of pigmeat up to month five. The initial response is negative but from month two onwards the response is positive. The negative production response could be due to an initial reaction by pig producers to build up the breeding capacity of their herds by holding back a higher percentage of females from sale, enabling a future expansion in output.

Table 3 contains the accumulated impacts from a 1 per cent increase in the farm pig price (LNBACON). The accumulated negative impact on Australian production (LAPRO) is around 1.70 per cent over the five-month statistically significant period though the responses are positive after two months. The cumulative increase in the wholesale price of pigmeat is 2.3 per cent over five months while the accumulated impacts at the retail level are a 3.6 per cent increase in the pigmeat price. The higher price of pigmeat leads to an accumulated 2.2 per cent in the retail price of beef over a seven-month period. Imports of pigmeat show an accumulated increase of approximately 4.2 per cent in the three to seven months after the increase in the farm price of pigmeat.

- The VDC are listed in Table A10. Apart from its own innovation, the contract baconer price accounts for largest contribution in the forecast variance of Australian production of pigmeat. Imports account for the third largest proportion (5 per cent after five months) behind the retail poultry price. The contribution of imports in the VDC of the Sydney wholesale price after 5 months is 5 percent, third in importance behind contract baconer price and the retail lamb price. The VDC of imports suggests that after a period of seven months the national contract baconer price accounts for around 14 per cent of the forecast variance.

Table 3: Accumulated Impulse Responses to a 1% Increase in the National Baconer Contract Price

(Cholesky Ordering: LAPRO LNBACON LSBACON LPORKP LBEEFP LLAMBP LPOULTRYP LIMPO)

Period	LAPRO	LSBACON	LPORKP	LBEEFP	LLAMBP	LPOULTRYP	LIMPO
1	0	0	0	0	0	0	0
2	-0.65467	0.682329	0.422052	0.255499	-0.07784	0.146202	0.519868
3	-1.12581	1.396123	1.031026	0.60269	-0.14824	0.416357	2.003095
4	-1.47801	1.948185	1.706493	1.000328	-0.19109	0.738495	3.65665
5	-1.71478	2.321443	2.379584	1.413274	-0.21195	1.066449	5.121152
6	-1.85692	2.537662	3.004732	1.816058	-0.21665	1.372287	6.255768
7	-1.92404	2.628657	3.555402	2.190104	-0.20966	1.640934	7.042594
8	-1.93427	2.626067	4.019144	2.523248	-0.19428	1.865654	7.518009
9	-1.90357	2.558109	4.393459	2.808906	-0.17312	2.045143	7.738553
10	-1.84554	2.44855	4.682513	3.045039	-0.14837	2.181589	7.764298
11	-1.77142	2.316537	4.89463	3.233042	-0.12183	2.279312	7.651128
12	-1.69012	2.176821	5.040412	3.376696	-0.09499	2.343789	7.447377

7.4 Shock 3: 1% Increase in the Sydney Wholesale Baconer Price (LSBACON), Shock 4: 1% Increase in the Retail Pigmeat Price (LPORKP).

Two other shocks were examined in the econometric analysis. These were a 1 per cent increase in the Sydney wholesale price and a 1% increase in the retail pigmeat price, respectively. The impulse responses for each of these shocks are displayed in Figure 3 and Figure 4. In the case of a 1 per cent increase in the Sydney wholesale carcase price (Figure 3)

there is no evidence of any statistically significant responses for the endogenous variables. There is small statistically positive response in the retail beef price as a consequence of a 1 per cent increase in the retail pigmeat price (Figure 4). The IRF of the other endogenous variables is not statistically significant.

Figure 3: Impulse Responses to a 1% Increase in the Sydney Wholesale Baconer Carcase Price

(Cholesky Ordering: LAPRO LNBACON LSBACON LPORKP LBEEFP LLAMBP LPOULTRYP LIMPO)

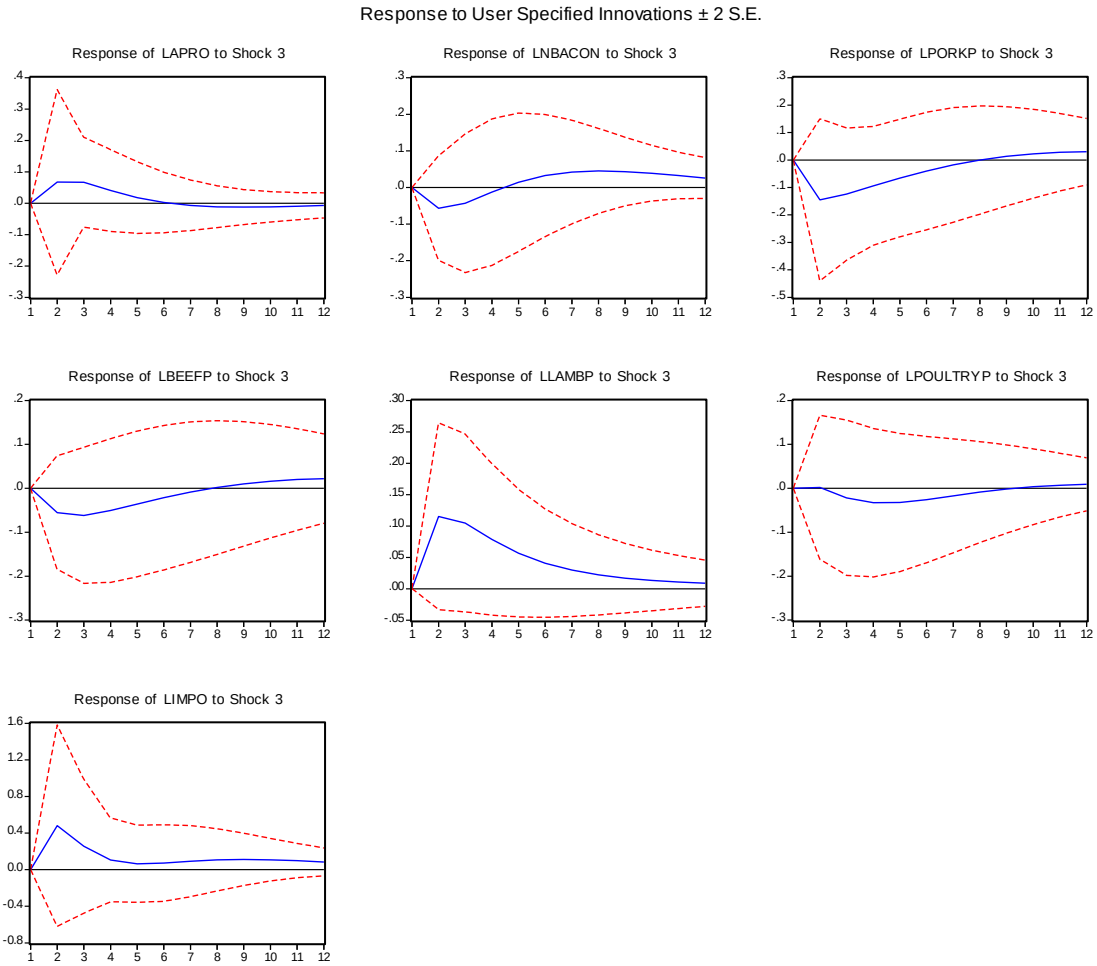
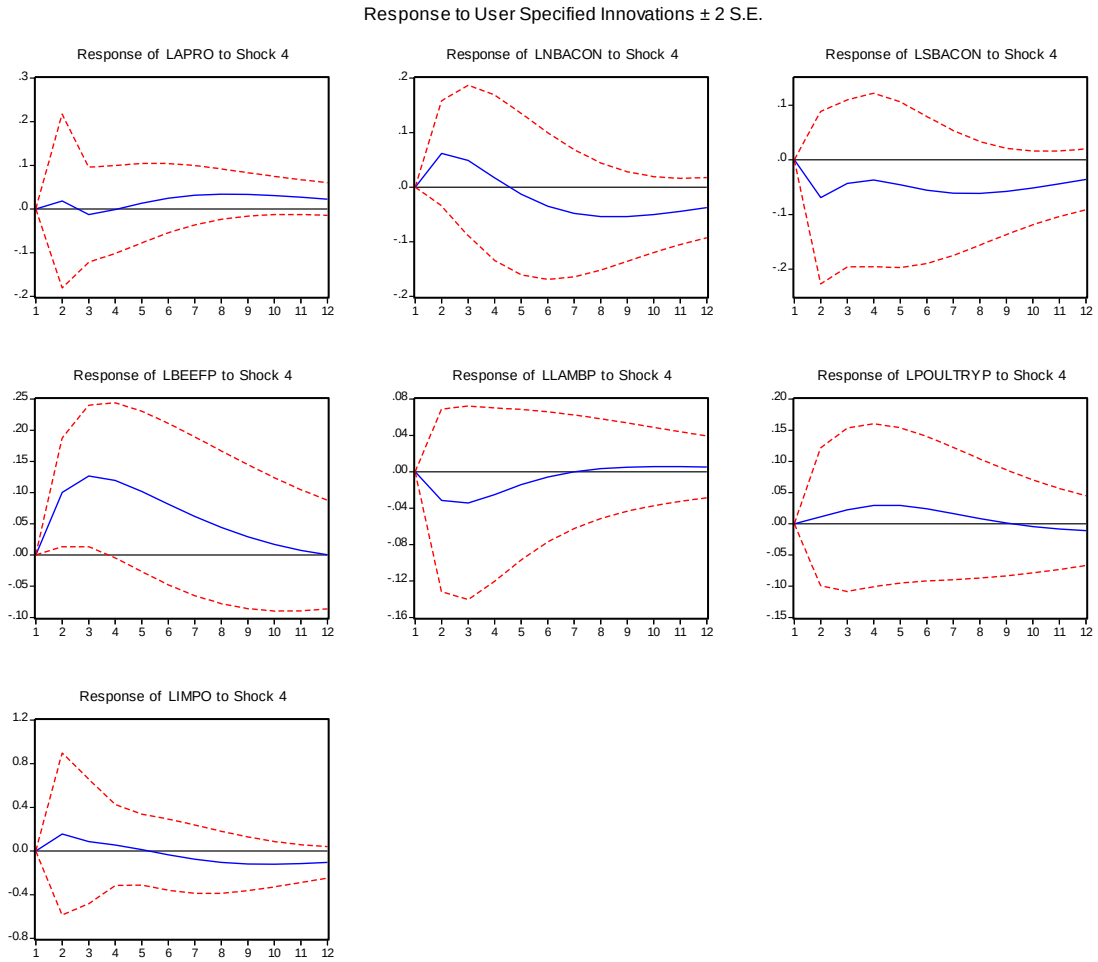


Figure 4: Impulse Responses to a 1% Increase in the Retail Pigmeat Price
(Cholesky Ordering: LAPRO LNBACON LSBACON LPORKP LBEEFP LLAMBP LPOULTRYP LIMPO)



8. Summary of the VAR Results

Over the sample period of 1999:1 to 2007:11, an increase in the level of pigmeat imports is shown, statistically, to negatively affect the contract baconer price and the Sydney wholesale price. The impact on the contract price of baconers (LNBACON) is immediate with negative responses reported for the first three months. The impact on the Sydney wholesale price (LSBACON) is a little less pronounced with a statistically significant response occurring two months after the initial shock. A similar period of time elapses before the statistically negative influence on domestic production (LAPRO) is displayed.

The negative impacts on the domestic pigmeat prices were shown to be larger in magnitude when the Denmark/Australian bilateral exchange was singly included in the model. There were no noticeable differences in the size of the responses between singly including the Canada/Australian exchange rate and including both bilateral exchange rates in the analysis.

An increase in the national baconer contract price (LNBACON) translates into an increase in the wholesale pigmeat price and the retail pigmeat price. The retail beef price responds positively to the retail pigmeat price increase suggesting that beef and pigmeat are substitutes in consumption. The statistically significant response of imported pigmeat volumes to the

domestic price increase is positive, displaying a lag of approximately two to three months. The one per cent increase in the contract baconer price shows a net negative effect on production over a five-month period, though three of the five months show a positive effect. The initial negative impact could be indicative of a response by pig producers to increase future production by increasing herd capacity in the immediate short-run.

No statistically significant impacts were recorded for any of the variables in response to an increase in the Sydney wholesale price. The only statistically significant response reported for an increase in the retail pigmeat price was an increase in the retail beef price, suggesting beef and pigmeat are substitutes in consumption.

9. Cointegration Results

If the residuals in the data series are stationary, the series are cointegrated indicating the existence of a long-run relationship. The data series LNBACON, LSBACON and LIMPO do not contain unit roots. In other words they are stationary. This implies a long-run relationship among the contract price for baconers, the Sydney wholesale price for baconers and imported pigmeat volumes.

When the data series contains a unit root it is said to be non-stationary. However, a linear combination of non-stationary series may be stationary. If a stationary linear combination between variables exists, the non-stationary series are said to be cointegrated (Engle and Granger 1987). Table A5 indicates that the Australian production data series (LAPRO) does contain a unit root. Cointegration tests were carried out between pigmeat imports and Australian production of pigmeat. In EViews the cointegration tests are based on the methodology developed in Johansen (1991; 1995). The results of the tests are shown in Table A7. The null hypothesis of no cointegration is rejected and we conclude there is long-run relationship between pigmeat imports and Australian production of pigmeat.

10. Conclusions

This analysis used a sample period from January 1999 to November 2007 to investigate the relationships among domestic pigmeat prices, domestic pigmeat production and imported pigmeat. Granger causality tests were conducted to determine if past values of imported pigmeat are useful in predicting movements in domestic pig and pigmeat prices, and vice-versa. The test results confirmed such relationships did exist, indicating that an endogenous framework approach was required to correctly model the interrelationships. Because Granger causality only tests for pairwise causality, other important causal relationships are excluded from the procedures. A Vector Autoregressive (VAR) model was specified to account for multi-directional causalities and capture the feedback effects between all the endogenous variables. Impulse response (IRF) functions were used to track the responsiveness of all the endogenous variables in the model to a 1 per cent increase in one of the endogenous variables.

The findings from this analysis provide evidence that pigmeat imports do have a statistically significant and negative impact on the domestic contract price for baconers and the Sydney wholesale price for baconers. Increased import volumes were also found to negatively influence domestic production of pigmeat. In general, retail prices for pigmeat remain unaffected by increased pigmeat volumes. The choice of the appropriate exchange rate to use in the analysis is not clear. However, it is agreed the exchange rate chosen should reflect the countries with the larger share of the import market. Bilateral exchange rates between Australia and Canada and between Australia and Denmark were included separately and

jointly in the analysis to test if their inclusion or exclusion altered the results. Statistically significant responses in the same order of magnitude were found for the same variables, with one exception. When the Australia/Denmark exchange rate was singly included in the analysis the negative impacts on domestic pigmeat prices from an increase in imports were found to be more than double the effects from singly including the Canada/Australia exchange rate and including both exchange rates.

The IRF results also suggest a statistically significant and positive import response to an increase in the contract bacon price. However, there is no evidence to suggest that import volumes increase as a result of an increase in the Sydney wholesale baconer price or an increase in the domestic retail price of pigmeat.

- Variance decomposition techniques were used to examine the importance of the interactions among the variables. The variance decompositions of the contract baconer price, the Sydney wholesale baconer price and domestic pigmeat production imply pigmeat imports are an explanatory variable in the movements of those variables. The variance decomposition of imports suggests the national contract baconer price has an explanatory relationship on imports of pigmeat. There are no indications in the variance decompositions that the Sydney wholesale baconer price or the retail pigmeat price contributes to explaining movements in imports of pigmeat.

The data series for the contract price for baconers, the Sydney wholesale price for baconers and imported pigmeat are stationary. This implies a long-run relationship among the variables. Cointegration tests carried out within the VAR also found evidence of a long-run relationship between imported pigmeat and domestic production of pigmeat.

In summary, this report finds evidence that imports of pigmeat have a significant negative impact on the contract baconer price, the Sydney wholesale baconer price and domestic production of pigmeat. There is also evidence that pigmeat imports respond positively to an increase in the contract price of baconers. There is no evidence to suggest that import volumes are influenced by changes in the Sydney wholesale baconer price or changes in the retail pigmeat price.

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Appendix A: Additional Figures and Tables

Figure A1: Impulse Responses to a 1% Increase in Pigmeat Imports

(Cholesky Ordering: LIMPO LAPRO LNBACON LSBACON LPORKP LBEEFP LLAMBP LPOULTRYP)

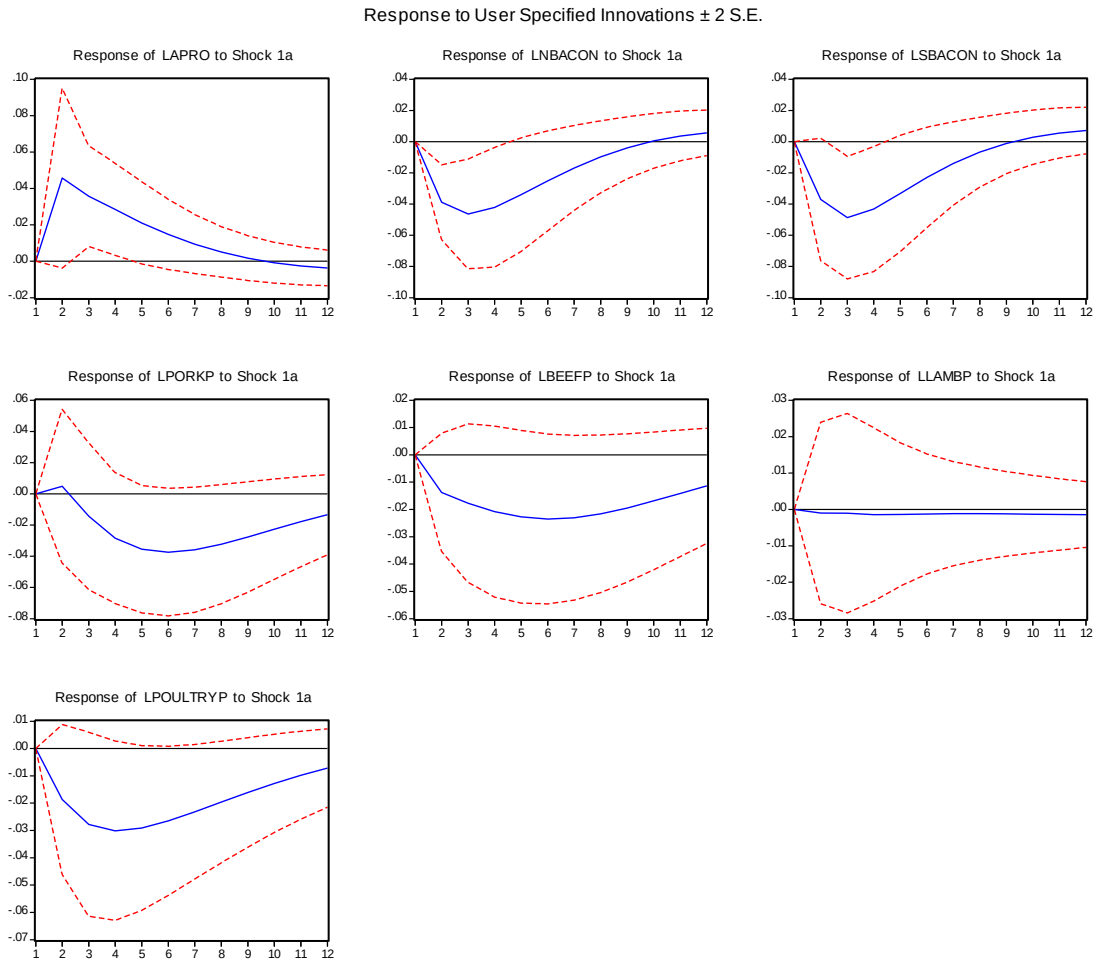

Table A1: Accumulated Impulse Responses to a 1% Increase in Pigmeat Imports

(Cholesky Ordering: LIMPO LAPRO LNBACON LSBACON LPORKP LBEEFP LLAMBP LPOULTRYP)

Period	LAPRO	LNBACON	LSBACON	LPORKP	LBEEFP	LLAMBP	LPOULTRYP
1	0	0	0	0	0	0	0
2	0.045668	-0.03886	-0.03709	0.00487	-0.01375	-0.00099	-0.01862
3	0.081389	-0.0852	-0.0858	-0.00948	-0.03146	-0.00203	-0.0464
4	0.109857	-0.12733	-0.12902	-0.03786	-0.05224	-0.00344	-0.07653
5	0.1309	-0.16134	-0.16223	-0.07339	-0.07498	-0.00483	-0.10567
6	0.145597	-0.18649	-0.18519	-0.11077	-0.09848	-0.0061	-0.13217
7	0.154992	-0.20338	-0.1992	-0.14659	-0.12154	-0.00728	-0.15533
8	0.160083	-0.21312	-0.20594	-0.17884	-0.14318	-0.00845	-0.17494
9	0.161801	-0.21709	-0.20712	-0.2065	-0.16265	-0.00968	-0.19103
10	0.160998	-0.21663	-0.20427	-0.22922	-0.17954	-0.011	-0.20381
11	0.15843	-0.21301	-0.19875	-0.24708	-0.19365	-0.01239	-0.21358
12	0.154744	-0.20735	-0.19166	-0.26045	-0.20502	-0.01381	-0.22073

Figure A2: Impulse Responses to a 1% Increase in Pigmeat Imports - CAN/AUS Exchange Rate
(Cholesky Ordering: LAPRO LNBACON LSBACON LPORKP LBEEFP LLAMBP LPOULTRYP LIMPO)

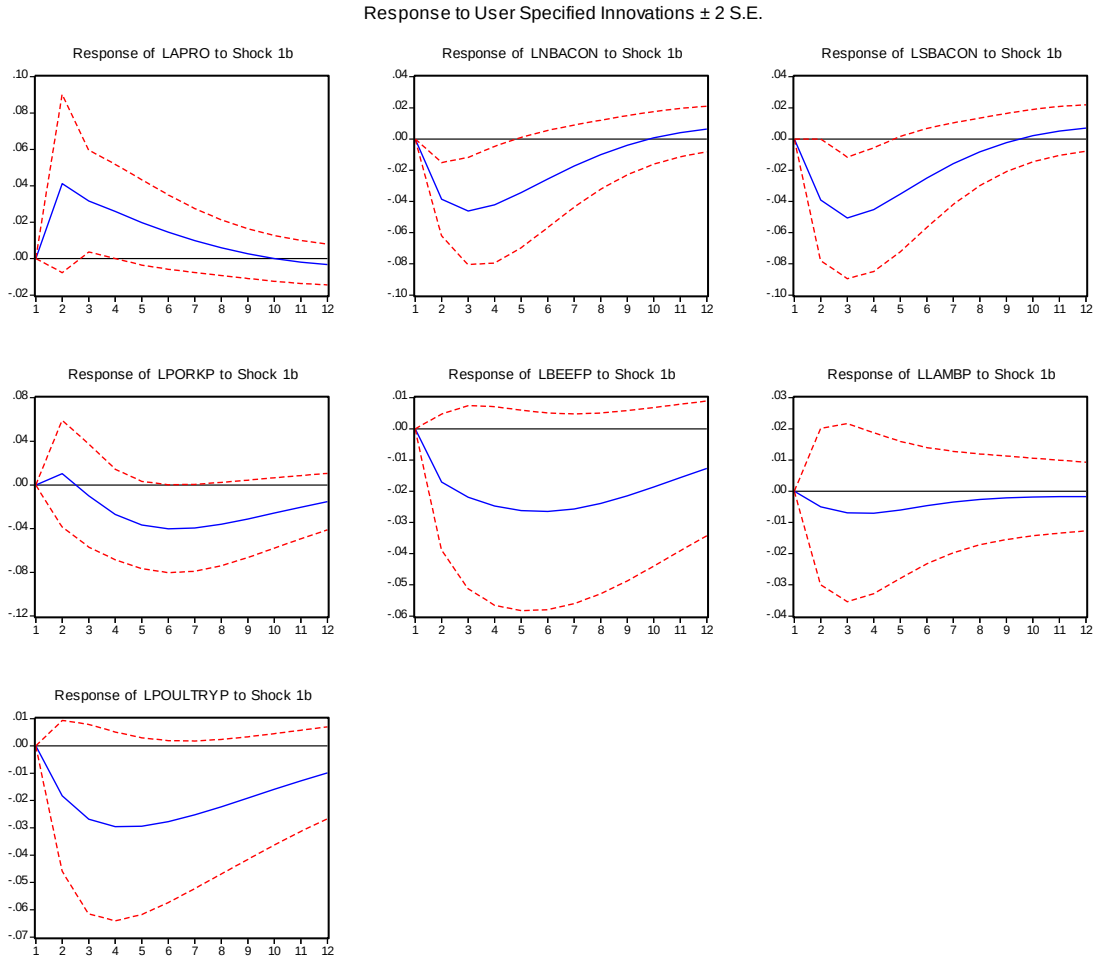

Table A2: Accumulated Impulse Responses to a 1% Increase in Pigmeat Imports - CAN/AUS Exchange Rate
(Cholesky Ordering: LAPRO LNBACON LSBACON LPORKP LBEEFP LLAMBP LPOULTRYP LIMPO)

Period	LAPRO	LNBACON	LSBACON	LPORKP	LBEEFP	LLAMBP	LPOULTRYP
1	0	0	0	0	0	0	0
2	0.041203	-0.03859	-0.03907	0.010328	-0.01704	-0.00499	-0.01828
3	0.072806	-0.08472	-0.0897	0.00048	-0.03899	-0.01189	-0.04512
4	0.098732	-0.12689	-0.13496	-0.02656	-0.06374	-0.01896	-0.07467
5	0.118577	-0.16124	-0.17024	-0.06329	-0.08994	-0.02497	-0.10408
6	0.133142	-0.18691	-0.19518	-0.10343	-0.11643	-0.02962	-0.13181
7	0.143091	-0.20428	-0.21097	-0.14274	-0.14211	-0.03309	-0.15706
8	0.149083	-0.21435	-0.21919	-0.17863	-0.16603	-0.03572	-0.17936
9	0.151786	-0.21837	-0.22147	-0.20971	-0.18751	-0.03784	-0.19848
10	0.15187	-0.21766	-0.21936	-0.23542	-0.20616	-0.03969	-0.21437
11	0.149982	-0.21353	-0.21423	-0.25573	-0.2218	-0.04145	-0.22716
12	0.14672	-0.20715	-0.20724	-0.27099	-0.23449	-0.04318	-0.23704

Figure A3: Impulse Responses to a 1% Increase in Pigmeat Imports - DEN/AUS Exchange Rate

(Cholesky Ordering: LAPRO LNBACON LSBACON LPORKP LBEEFP LLAMBP LPOULTRYP LIMPO)

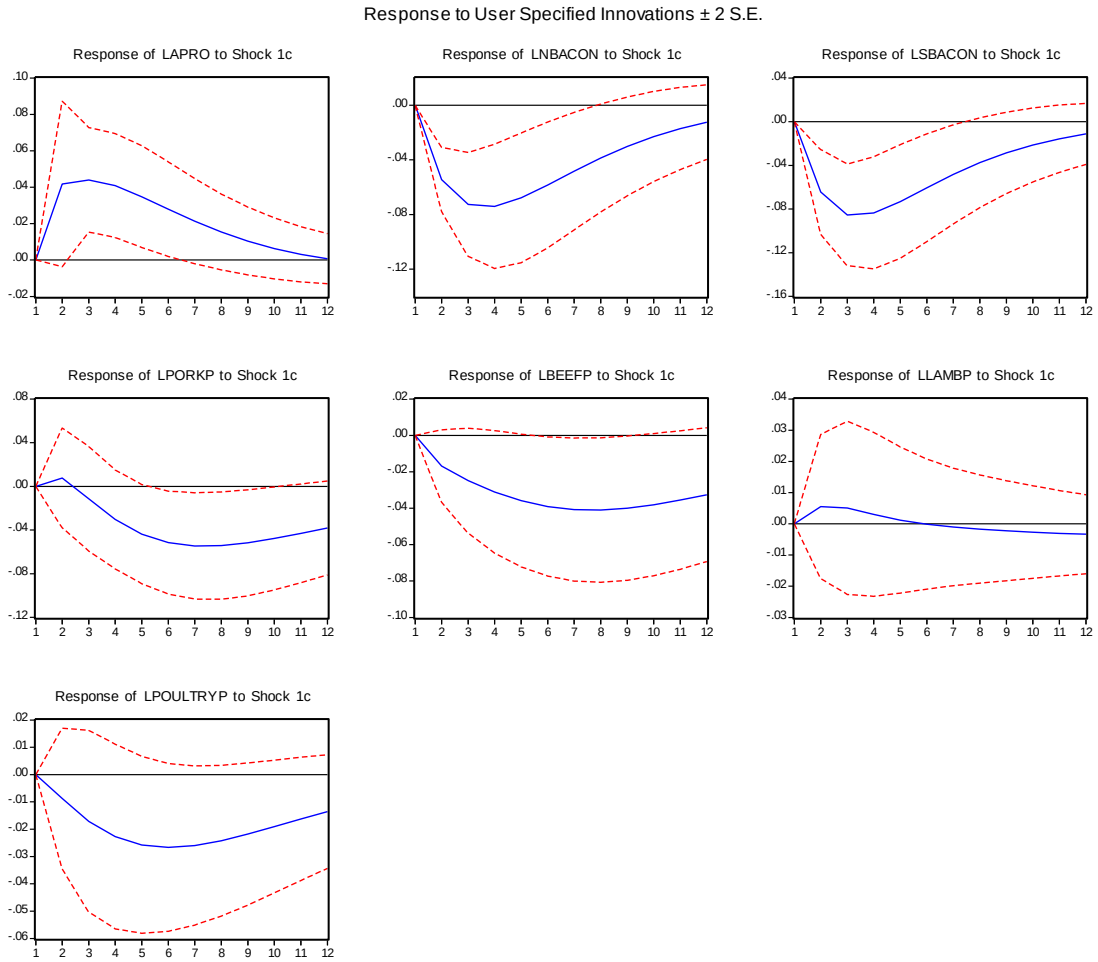

Table A3: Accumulated Impulse Responses to a 1% Increase in Pigmeat Imports - DEN/AUS Exchange Rate

(Cholesky Ordering: LAPRO LNBACON LSBACON LPORKP LBEEFP LLAMBP LPOULTRYP LIMPO)

Period	LAPRO	LNBACON	LSBACON	LPORKP	LBEEFP	LLAMBP	LPOULTRYP
1	0	0	0	0	0	0	0
2	0.041723	-0.0544	-0.06443	0.007694	-0.01682	0.005514	-0.00875
3	0.085684	-0.12704	-0.1499	-0.00376	-0.04171	0.010599	-0.02588
4	0.126545	-0.20113	-0.23346	-0.03408	-0.0728	0.013601	-0.0486
5	0.161289	-0.26895	-0.30659	-0.07785	-0.10865	0.014778	-0.07437
6	0.189193	-0.32736	-0.36706	-0.12935	-0.14775	0.014653	-0.10106
7	0.210485	-0.37563	-0.41534	-0.18393	-0.18852	0.013625	-0.12706
8	0.225873	-0.41427	-0.45291	-0.2382	-0.22951	0.011932	-0.15128
9	0.236258	-0.4444	-0.48153	-0.28988	-0.26951	0.009708	-0.17306
10	0.242578	-0.46733	-0.5029	-0.33758	-0.30759	0.007038	-0.1921
11	0.245718	-0.48439	-0.51855	-0.3806	-0.34312	0.003992	-0.20834
12	0.24646	-0.49679	-0.52978	-0.4187	-0.37572	0.000641	-0.22189

Table A4: VAR Lag Order Selection Criteria

Endogenous variables:
LAPRO LNBACON LSBACON LPORKP LBEEFP LLAMBP LPOULTRYP LIMPO
Exogenous variables:
C LEXCA LEXDE LGRP
Date: 02/23/08 Time: 08:13
Sample: 1999M01 2007M12
Included observations: 104

Lag	LogL	LR	FPE	AIC	SC	HQ
0	860.9809	NA	1.65E-17	-15.9419	-15.1283	-15.6123
1	1351.648	868.1039	4.54E-21	-24.1471	-21.70611*	-23.15817*
2	1436.922	137.7494	3.11e-21*	-24.55619*	-20.4879	-22.908
3	1497.924	89.15681*	3.53E-21	-24.4985	-18.8029	-22.19107

* indicates lag order selected by the criterion

Lag	LogL	LR	FPE	AIC	SC	HQ
0	850.9715	NA	1.25E-17	-16.2173	-15.3887	-15.88183
1	1315.47	818.6219	4.54E-21	-24.1479	-21.66227*	-23.14166*
2	1398.373	132.9722	3.23e-21*	-24.5222	-20.3795	-22.84512
3	1457.514	85.49152	3.84E-21	-24.426	-18.6262	-22.07807
4	1525.573	87.60084	4.08E-21	-24.5064	-17.0494	-21.4876
5	1589.664	72.34013	5.17E-21	-24.5082	-15.3941	-20.81856
6	1676.947	84.69003*	4.73E-21	-24.96924*	-14.1981	-20.60876

* indicates lag order selected by the criterion

Lag	LogL	LR	FPE	AIC	SC	HQ
0	876.144	NA	4.56E-18	-17.2274	-16.3834	-16.88602
1	1313.698	767.9525	2.25E-21	-24.851	-22.31877*	-23.82676
2	1395.855	130.7798	1.61E-21	-25.2215	-21.0012	-23.51448
3	1461.039	93.11999	1.71E-21	-25.2457	-19.3372	-22.85583
4	1527.459	84.04196	1.90E-21	-25.2951	-17.6985	-22.2224
5	1602.354	82.53673	1.98E-21	-25.5174	-16.2326	-21.76192
6	1698.197	89.97511	1.57E-21	-26.1673	-15.1944	-21.72896
7	1795.298	75.30316	1.51E-21	-26.8428	-14.1818	-21.72168
8	1957.379	99.23295*	5.44E-22	-28.8445	-14.4953	-23.0405
9	2132.973	78.83842	2.63e-22*	-31.12190*	-15.0846	-24.63513*

* indicates lag order selected by the criterion

Table A5: Augmented Dickey-Fuller Unit Root Test Results

Variable	t-statistic	Critical Value 5% level	Prob*	Decision
LAPRO	-1.40966	-2.8922	0.5745	unit root
LNBACON	-5.81992	-2.8889	0	no unit root
LSBACON	-3.29662	-2.8887	0.0174	no unit root
LPORKP	-3.38017	-2.8889	0.0138	no unit root
LBEEFP	-3.45596	-2.8887	0.0111	no unit root
LLAMBP	-2.26197	-2.8887	0.1862	unit root
LPOULTRYP	-2.25708	-2.8887	0.1879	unit root
LIMPO	-2.95965	-2.8887	0.0421	no unit root

Table A6: VAR Stability Condition Check

Root	Modulus
0.843898	0.843898
0.816432 - 0.170135i	0.83397
0.816432 + 0.170135i	0.83397
0.666745	0.666745
0.389392 - 0.103573i	0.402931
0.389392 + 0.103573i	0.402931
0.1561	0.1561
-0.11742	0.117423

Table A7: Cointegration Tests

Date: 02/25/08 Time: 11:33
Sample (adjusted): 1999M02 2007M11
Included observations: 106 after adjustments
Trend assumption: Linear deterministic trend
Series: LIMPO LAPRO
Lags interval (in first differences): No lags

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.382894	59.39509	15.49471	0
At most 1 *	0.074681	8.227411	3.841466	0.0041

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.382894	51.16767	14.2646	0
At most 1 *	0.074681	8.227411	3.841466	0.0041

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Table A8: Variance Decompositions for a 1% Increase in Pigmeat Imports
(Cholesky Ordering: LAPRO LNBACON LSBACON LPORKP LBEEFP LLAMBP LPOULTRYP LIMPO)

Variance Decomposition of LAPRO:

Period	S.E.	LAPRO	LNBACON	LSBACON	LPORKP	LBEEFP	LLAMBP	LPOULTRYP	LIMPO
1	0.065105	100	0	0	0	0	0	0	0
2	0.070345	85.9292	8.060996	0.009856	0.666554	0.328483	0.024883	2.961999	2.018025
3	0.073065	79.82913	11.06252	0.017174	0.982912	0.759763	0.222614	4.110839	3.015051
4	0.07483	76.13933	12.47395	0.051002	1.374993	1.189951	0.486994	4.716318	3.567461
5	0.075905	74.01088	12.96627	0.107698	1.816552	1.574549	0.690573	4.998375	3.835105
6	0.076551	72.76986	13.0349	0.174282	2.259227	1.905157	0.793894	5.115561	3.947115
7	0.076948	72.0222	12.95303	0.238166	2.653906	2.181747	0.822026	5.151035	3.977895
8	0.077214	71.52713	12.86401	0.291723	2.971841	2.406455	0.818432	5.149052	3.971355
9	0.07742	71.1465	12.82807	0.332076	3.20526	2.58286	0.820839	5.131822	3.952569
10	0.077603	70.81149	12.85571	0.359668	3.361571	2.71617	0.851255	5.109684	3.934451
11	0.077777	70.49709	12.93233	0.376734	3.456153	2.812943	0.915534	5.087058	3.922161
12	0.077941	70.20194	13.03516	0.386101	3.506432	2.880357	1.007897	5.065735	3.916377

Variance Decomposition of LNBACON:

Period	S.E.	LAPRO	LNBACON	LSBACON	LPORKP	LBEEFP	LLAMBP	LPOULTRYP	LIMPO
1	0.031506	2.523885	97.47611	0	0	0	0	0	0
2	0.046629	1.318723	89.36781	7.74E-05	0.014005	0.141765	5.332718	0.499229	3.325669
3	0.056996	0.882967	82.01465	0.030426	0.267705	0.325497	10.33591	0.75141	5.391441
4	0.063712	0.747357	76.59199	0.127111	0.837497	0.523234	13.95972	0.805514	6.407577
5	0.067834	0.739533	72.6585	0.275369	1.624748	0.731707	16.33965	0.774262	6.856232
6	0.070231	0.785373	69.84955	0.445799	2.491165	0.946309	17.7426	0.728668	7.010539
7	0.071561	0.846558	67.91035	0.611512	3.314634	1.157947	18.43522	0.705052	7.018733
8	0.072291	0.90228	66.63679	0.753719	4.010681	1.354957	18.66171	0.715138	6.964729
9	0.072725	0.942941	65.84894	0.862925	4.538375	1.526553	18.62943	0.754673	6.89617
10	0.073037	0.966663	65.38957	0.937901	4.895799	1.665816	18.49528	0.811466	6.837503
11	0.073313	0.976233	65.13172	0.983221	5.108125	1.770962	18.35976	0.872162	6.797812
12	0.07358	0.976361	64.98372	1.006288	5.213104	1.844729	18.27231	0.926565	6.776921

Variance Decomposition of LSBACON:									
Period	S.E.	LAPRO	LNBACON	LSBACON	LPORKP	LBEEFP	LLAMBP	LPOULTRYP	LIMPO
1	0.051721	0.019073	26.0503	73.93063	0	0	0	0	0
2	0.06257	0.321941	38.02251	52.92032	1.788923	0.004247	4.612857	0.646683	1.682518
3	0.071149	0.284198	41.92414	41.25646	2.89538	0.058562	8.931413	1.104646	3.5452
4	0.076671	0.316233	42.28432	35.72397	3.743264	0.202343	11.94451	1.210476	4.574882
5	0.07991	0.379348	41.58267	33.07612	4.571023	0.391568	13.77368	1.18714	5.038452
6	0.081694	0.44646	40.69049	31.82747	5.362364	0.594376	14.73728	1.142552	5.199009
7	0.082649	0.504595	39.9365	31.25173	6.051923	0.790506	15.12844	1.11928	5.217017
8	0.083185	0.547433	39.42424	30.972	6.591286	0.966118	15.19137	1.126143	5.181415
9	0.083543	0.574018	39.14818	30.79472	6.966647	1.112697	15.10952	1.15608	5.138133
10	0.083841	0.586985	39.0529	30.63251	7.194424	1.227018	15.00211	1.196961	5.107098
11	0.084127	0.590592	39.07016	30.45863	7.308277	1.310443	14.9309	1.237889	5.093112
12	0.084405	0.589088	39.1407	30.27641	7.345954	1.367416	14.9151	1.271932	5.093389

Table A9: Variance Decompositions for a 1% Increase in Pigmeat Imports

(Cholesky Ordering: LIMPO LAPRO LNBACON LSBACON LPORKP LBEEFP LLAMBP LPOULTRYP)

Variance Decomposition of LAPRO:									
Period	S.E.	LIMPO	LAPRO	LNBACON	LSBACON	LPORKP	LBEEFP	LLAMBP	LPOULTRYP
1	0.065105	0.764412	99.23559	0	0.00E+00	0	0	0	0
2	0.070345	4.870804	85.49752	6.298507	2.62E-05	0.566101	0.965002	0.203203	1.598836
3	0.073065	6.987499	79.33247	8.563914	0.000151	0.834008	1.873181	0.238681	2.170094
4	0.07483	8.093114	75.63914	9.603724	0.015833	1.185429	2.647555	0.349747	2.46546
5	0.075905	8.579742	73.51352	9.947955	0.054422	1.596731	3.252537	0.454219	2.600875
6	0.076551	8.736166	72.27755	9.980493	0.107667	2.019994	3.712113	0.509092	2.656923
7	0.076948	8.73821	71.53413	9.909698	0.16406	2.40507	4.052571	0.521742	2.674524
8	0.077214	8.689644	71.04222	9.84227	0.215105	2.720905	4.29682	0.518363	2.674677
9	0.07742	8.645145	70.66429	9.820681	0.256354	2.957048	4.464771	0.524275	2.667441
10	0.077603	8.626603	70.33221	9.849813	0.286672	3.118494	4.574207	0.55466	2.657345
11	0.077777	8.636127	70.02134	9.916292	0.307057	3.218827	4.640812	0.61312	2.646421
12	0.077941	8.666199	69.73035	10.0015	0.319539	3.274359	4.677796	0.694545	2.635715

Variance Decomposition of LNBACON:

Period	S.E.	LIMPO	LAPRO	LNBACON	LSBACON	LPORKP	LBEEFP	LLAMBP	LPOULTRYP
1	0.031506	3.449329	2.049987	94.50068	0	0	0	0	0
2	0.046629	12.43978	0.950379	81.85745	0.021129	1.13E-03	0.830051	3.868309	0.031777
3	0.056996	16.76181	0.711064	73.00063	0.015636	0.181134	1.573649	7.717334	0.038748
4	0.063712	18.58629	0.730808	67.14503	0.056355	0.665495	2.151645	10.63201	0.032374
5	0.067834	19.1812	0.830299	63.19334	0.15215	1.379841	2.612673	12.61847	0.032025
6	0.070231	19.18787	0.942672	60.52197	0.283266	2.194565	2.986723	13.83382	0.049119
7	0.071561	18.9547	1.038812	58.75671	0.425012	2.988343	3.285498	14.46503	0.085908
8	0.072291	18.67739	1.10733	57.636	0.556922	3.673285	3.513144	14.69846	0.137464
9	0.072725	18.45674	1.147418	56.95666	0.665939	4.203069	3.674074	14.70098	0.195121
10	0.073037	18.32914	1.164437	56.55897	0.746785	4.570094	3.776478	14.604	0.2501
11	0.073313	18.29023	1.166232	56.32477	0.800497	4.794766	3.832191	14.4952	0.296115
12	0.07358	18.31554	1.160317	56.17532	0.831969	4.911589	3.854523	14.42041	0.330327

Variance Decomposition of LSBACON:

Period	S.E.	LIMPO	LAPRO	LNBACON	LSBACON	LPORKP	LBEEFP	LLAMBP	LPOULTRYP
1	0.051721	2.069225	0.000153	24.30095	73.62967	0	0	0	0
2	0.06257	8.700696	0.103154	33.37382	52.36089	1.605038	0.13202	3.550663	0.173712
3	0.071149	13.1408	0.24837	35.66666	40.69646	2.57255	0.599196	6.828752	0.247212
4	0.076671	15.10928	0.406916	35.44058	35.16352	3.334203	1.106748	9.203204	0.235549
5	0.07991	15.77008	0.54924	34.60765	32.50326	4.105428	1.546467	10.70093	0.216932
6	0.081694	15.83214	0.65928	33.76494	31.24228	4.863231	1.898323	11.52409	0.215719
7	0.082649	15.67509	0.735601	33.1095	30.66052	5.538113	2.165685	11.88088	0.234611
8	0.083185	15.49265	0.781397	32.68394	30.38206	6.076815	2.357472	11.95839	0.267277
9	0.083543	15.36963	0.803305	32.46036	30.21163	6.460242	2.485304	11.90466	0.304863
10	0.083841	15.32644	0.809364	32.38228	30.05926	6.700054	2.562632	11.82016	0.339813
11	0.084127	15.34969	0.807029	32.39046	29.89584	6.826382	2.603259	11.75975	0.367599
12	0.084405	15.41363	0.801902	32.43717	29.72308	6.874881	2.619666	11.74289	0.386787

Table A10: Variance Decompositions for a 1% Increase in the National Baconer Contract Price
(Cholesky Ordering: LAPRO LNBACON LSBACON LPORKP LBEEFP LLAMBP LPOULTRYP LIMPO)

Variance Decomposition of LAPRO:									
Period	S.E.	LAPRO	LNBACON	LSBACON	LPORKP	LBEEFP	LLAMBP	LPOULTRYP	LIMPO
1	0.065105	100	0	0	0	0	0	0	0
2	0.070345	85.9292	8.060996	0.009856	0.666554	0.328483	0.024883	2.961999	2.018025
3	0.073065	79.82913	11.06252	0.017174	0.982912	0.759763	0.222614	4.110839	3.015051
4	0.07483	76.13933	12.47395	0.051002	1.374993	1.189951	0.486994	4.716318	3.567461
5	0.075905	74.01088	12.96627	0.107698	1.816552	1.574549	0.690573	4.998375	3.835105
6	0.076551	72.76986	13.0349	0.174282	2.259227	1.905157	0.793894	5.115561	3.947115
7	0.076948	72.0222	12.95303	0.238166	2.653906	2.181747	0.822026	5.151035	3.977895
8	0.077214	71.52713	12.86401	0.291723	2.971841	2.406455	0.818432	5.149052	3.971355
9	0.07742	71.1465	12.82807	0.332076	3.20526	2.58286	0.820839	5.131822	3.952569
10	0.077603	70.81149	12.85571	0.359668	3.361571	2.71617	0.851255	5.109684	3.934451
11	0.077777	70.49709	12.93233	0.376734	3.456153	2.812943	0.915534	5.087058	3.922161
12	0.077941	70.20194	13.03516	0.386101	3.506432	2.880357	1.007897	5.065735	3.916377

Variance Decomposition of LSBACON:									
Period	S.E.	LAPRO	LNBACON	LSBACON	LPORKP	LBEEFP	LLAMBP	LPOULTRYP	LIMPO
1	0.051721	0.019073	26.0503	73.93063	0	0	0	0	0
2	0.06257	0.321941	38.02251	52.92032	1.788923	0.004247	4.612857	0.646683	1.682518
3	0.071149	0.284198	41.92414	41.25646	2.89538	0.058562	8.931413	1.104646	3.5452
4	0.076671	0.316233	42.28432	35.72397	3.743264	0.202343	11.94451	1.210476	4.574882
5	0.07991	0.379348	41.58267	33.07612	4.571023	0.391568	13.77368	1.18714	5.038452
6	0.081694	0.44646	40.69049	31.82747	5.362364	0.594376	14.73728	1.142552	5.199009
7	0.082649	0.504595	39.9365	31.25173	6.051923	0.790506	15.12844	1.11928	5.217017
8	0.083185	0.547433	39.42424	30.972	6.591286	0.966118	15.19137	1.126143	5.181415
9	0.083543	0.574018	39.14818	30.79472	6.966647	1.112697	15.10952	1.15608	5.138133
10	0.083841	0.586985	39.0529	30.63251	7.194424	1.227018	15.00211	1.196961	5.107098
11	0.084127	0.590592	39.07016	30.45863	7.308277	1.310443	14.9309	1.237889	5.093112
12	0.084405	0.589088	39.1407	30.27641	7.345954	1.367416	14.9151	1.271932	5.093389

Variance Decomposition of LPORKP:

Period	S.E.	LAPRO	LNBACON	LSBACON	LPORKP	LBEEFP	LLAMBP	LPOULTRYP	LIMPO
1	0.064959	4.119188	0.964308	1.950553	92.96595	0	0	0	0
2	0.074983	4.625159	4.415376	2.034094	86.73072	1.55769	0.247625	0.369134	0.020198
3	0.081976	4.16058	10.12732	2.274356	77.91138	3.077982	1.310643	0.974199	0.16354
4	0.088414	3.636761	15.78915	2.261926	69.00868	3.97024	3.230211	1.46895	0.634085
5	0.094242	3.204367	20.28006	2.12302	61.49629	4.349497	5.539744	1.768495	1.238528
6	0.099183	2.896479	23.42036	1.961774	55.76343	4.442808	7.812449	1.904351	1.798349
7	0.103117	2.697165	25.44193	1.824601	51.64098	4.407961	9.809367	1.936468	2.241523
8	0.106079	2.579599	26.65107	1.724404	48.79939	4.330084	11.43951	1.915212	2.560735
9	0.108196	2.518848	27.31285	1.659117	46.91416	4.249287	12.69682	1.874456	2.774455
10	0.109635	2.494928	27.62868	1.621371	45.7137	4.181683	13.618	1.83404	2.9076
11	0.110566	2.492859	27.74198	1.602941	44.98479	4.131445	14.25852	1.80369	2.98377
12	0.111137	2.502008	27.74961	1.596627	44.56648	4.097246	14.67903	1.786438	3.022553

Variance Decomposition of LBEEFP:

Period	S.E.	LAPRO	LNBACON	LSBACON	LPORKP	LBEEFP	LLAMBP	LPOULTRYP	LIMPO
1	0.028491	1.732061	2.648514	8.66095	18.48226	68.47621	0	0	0
2	0.039535	1.147643	9.631365	8.087362	22.29512	56.43419	1.597424	0.227963	0.578925
3	0.047721	0.818529	14.96418	7.267419	22.86544	48.2226	4.474522	0.330411	1.056897
4	0.054325	0.667281	19.4637	6.415386	21.62837	42.2816	7.625057	0.402411	1.516197
5	0.05977	0.596877	22.9997	5.671014	19.83343	37.85339	10.65777	0.442431	1.945389
6	0.064237	0.57633	25.60659	5.071077	18.07554	34.52	13.37051	0.454951	2.325007
7	0.067823	0.588374	27.41283	4.611859	16.59172	32.02542	15.68272	0.447573	2.639495
8	0.070619	0.621278	28.58685	4.273864	15.43818	30.18396	17.58245	0.429428	2.883988
9	0.072727	0.666153	29.29379	4.033637	14.59132	28.84937	19.09422	0.408876	3.062639
10	0.074261	0.716163	29.67557	3.86881	13.99863	27.90338	20.26028	0.392183	3.184985
11	0.075336	0.766182	29.84514	3.759969	13.60231	27.25002	21.13054	0.383071	3.262768
12	0.076063	0.812603	29.88728	3.691141	13.34948	26.81197	21.75692	0.382858	3.307747

Variance Decomposition of LIMPO:									
Period	S.E.	LAPRO	LNBACON	LSBACON	LPORKP	LBEEFP	LLAMBP	LPOULTRYP	LIMPO
1	0.242697	0.764412	3.029138	0.391643	0.150031	5.411716	2.324189	6.639047	81.28982
2	0.26408	2.898773	2.821315	0.652233	0.364544	5.106928	1.965062	7.218255	78.97289
3	0.270975	2.932565	6.087021	0.786337	0.346464	4.917253	2.510907	6.937307	75.48215
4	0.279033	2.775214	9.74588	0.810175	0.380759	4.659892	3.826108	6.544872	71.2571
5	0.286623	2.637284	12.24999	0.818254	0.510469	4.440394	5.290141	6.217997	67.83547
6	0.292318	2.562341	13.56692	0.838856	0.717478	4.301878	6.504436	5.985821	65.52227
7	0.296023	2.535897	14.10781	0.873471	0.964392	4.235763	7.348603	5.837356	64.09671
8	0.298208	2.536589	14.24181	0.914817	1.21215	4.219179	7.853506	5.754228	63.26772
9	0.29942	2.54815	14.21187	0.954945	1.430814	4.230472	8.10634	5.717646	62.79976
10	0.300092	2.560675	14.15249	0.988458	1.603986	4.253425	8.200908	5.710525	62.52953
11	0.300512	2.569461	14.12297	1.013097	1.728018	4.277635	8.214381	5.71888	62.35556
12	0.300836	2.573327	14.13716	1.029061	1.808238	4.297599	8.199516	5.732632	62.22246

Table A11: Vector Autoregression Estimates

	LAPRO	LNBACON	LSBACON	LPORKP	LBEEFP	LLAMBP	LPOULTRYP	LIMPO
LAPRO(-1)	-0.13452	0.041619	-0.02709	0.002633	0.10805	0.047382	-0.01739	-0.71771
	[-1.31676]	[0.84181]	[-0.33377]	[0.02583]	[2.41683]	[0.91922]	[-0.30645]	[-1.88455]
LNBACON(-1)	-0.65467	0.998503	0.682329	0.422052	0.255499	-0.07784	0.146202	0.519868
	[-3.21754]	[10.1407]	[4.22124]	[2.07894]	[2.86948]	[-0.75819]	[1.29390]	[0.68540]
LSBACON(-1)	0.067152	-0.0566	0.205492	-0.14511	-0.05564	0.115232	0.002011	0.480477
	[0.45494]	[-0.79242]	[1.75243]	[-0.98527]	[-0.86133]	[1.54727]	[0.02453]	[0.87322]
LPORKP(-1)	0.018381	0.06172	-0.0692	0.435786	0.100326	-0.03153	0.011234	0.15556
	[0.18488]	[1.28285]	[-0.87620]	[4.39316]	[2.30599]	[-0.62853]	[0.20348]	[0.41974]
LBEEFP(-1)	0.28722	-0.29109	-0.2387	0.33603	0.670929	0.130952	0.031863	-0.04811
	[1.80379]	[-3.77765]	[-1.88695]	[2.11507]	[9.62856]	[1.62997]	[0.36034]	[-0.08104]
LLAMBP(-1)	0.191449	0.292559	0.36098	0.073621	0.134061	0.664879	-0.01477	0.60371
	[1.14462]	[3.61440]	[2.71666]	[0.44115]	[1.83157]	[7.87852]	[-0.15906]	[0.96824]
LPOULTRYP(-1)	-0.28258	0.026407	0.08285	0.148462	0.0314	-0.0559	0.732311	-0.28344
	[-2.60351]	[0.50275]	[0.96085]	[1.37090]	[0.66109]	[-1.02067]	[12.1495]	[-0.70052]
LIMPO(-1)	0.045668	-0.03886	-0.03709	0.00487	-0.01375	-0.00099	-0.01862	0.38759
	[1.84817]	[-3.24980]	[-1.88947]	[0.19753]	[-1.27131]	[-0.07943]	[-1.35707]	[4.20777]
C	13.34884	-0.36139	-0.07413	-1.9038	-1.52702	1.416486	1.016097	5.288104
	[9.06119]	[-0.50691]	[-0.06334]	[-1.29521]	[-2.36864]	[1.90568]	[1.24201]	[0.96292]
LEXCA	-0.26378	-0.27984	-0.27581	-0.50473	-4.90E-05	-0.03025	-0.01116	-1.69018
	[-0.61641]	[-1.35132]	[-0.81128]	[-1.18210]	[-0.00026]	[-0.14011]	[-0.04695]	[-1.05951]

LEXCA(-1)	0.18537	4.38E-06	-0.20829	0.534341	-0.05319	0.141751	0.181709	3.307337
	[0.43772]	[2.1e-05]	[-0.61912]	[1.26458]	[-0.28700]	[0.66340]	[0.77264]	[2.09500]
LEXDE	-0.37735	0.048943	-0.27996	0.546099	-0.36017	-0.42427	-0.04967	0.657218
	[-1.00736]	[0.26999]	[-0.94077]	[1.46111]	[-2.19711]	[-2.24478]	[-0.23878]	[0.47065]
LEXDE(-1)	0.064404	-0.10224	0.44872	-0.39458	0.351801	0.379568	0.286706	-1.35827
	[0.17838]	[-0.58518]	[1.56447]	[-1.09536]	[2.22667]	[2.08368]	[1.42998]	[-1.00921]
LGRP	-0.08277	0.05777	-0.06234	0.03994	-0.02299	-0.09657	0.041831	-0.05362
	[-0.75710]	[1.09198]	[-0.71786]	[0.36616]	[-0.48060]	[-1.75077]	[0.68904]	[-0.13156]
LGRP(-1)	0.125772	-0.03558	0.142581	-0.00294	0.012707	0.053819	-0.10262	0.03944
	[1.10300]	[-0.64486]	[1.57398]	[-0.02581]	[0.25465]	[0.93545]	[-1.62051]	[0.09279]
@SEAS(12)	0.038318	0.030509	0.037868	-0.11324	0.01007	0.009489	0.043831	-0.01222
	[1.40928]	[2.31868]	[1.75312]	[-4.17414]	[0.84628]	[0.69165]	[2.90281]	[-0.12051]
@TREND	-0.00108	4.70E-05	0.000316	-0.0011	0.000302	0.00143	0.001608	0.006838
	[-1.11049]	[0.10003]	[0.41008]	[-1.13099]	[0.71118]	[2.92042]	[2.98456]	[1.89065]
R-squared	0.48155	0.904874	0.841455	0.886656	0.981514	0.96967	0.967576	0.843012
Adj. R-squared	0.388346	0.887772	0.812953	0.86628	0.97819	0.964218	0.961747	0.81479
Sum sq. resids	0.377242	0.088346	0.238083	0.375552	0.072243	0.096035	0.116339	5.242265
S.E. equation	0.065105	0.031506	0.051721	0.064959	0.028491	0.032849	0.036155	0.242697
F-statistic	5.166599	52.91242	29.52217	43.51394	295.3365	177.8375	165.9913	29.87018
Log likelihood	148.4228	225.3591	172.8171	148.6608	236.0242	220.936	210.7707	8.946848
Akaike AIC	-2.47968	-3.93131	-2.93995	-2.48417	-4.13253	-3.84785	-3.65605	0.151946
Schwarz SC	-2.05252	-3.50415	-2.51279	-2.05701	-3.70538	-3.42069	-3.2289	0.579102
Mean dependent	10.38072	5.455849	5.84443	6.651516	6.876928	6.672379	6.644937	8.779786
S.D. dependent	0.083246	0.094048	0.119589	0.177641	0.19292	0.173654	0.184856	0.563939

Appendix B: Productivity Commission Assessment of the Initial Econometric Analysis: Response

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Introduction

This is to respond to the issues raised by the Productivity Commission in its review of the econometric analysis undertaken by the authors on behalf of Australian Pork Limited for the November 2007 safeguards inquiry submission into the import of pigmeat. The main aim of the econometric analysis was to examine the impacts of frozen pigmeat imports, within subheading 0203.29 of the Australian Customs Tariff, on the domestic contract price for baconers and the domestic wholesale price for baconers. An additional aim of the analysis was to determine if the same classification of imported pigmeat adversely affects Australian production of pigmeat. A Vector Autoregressive Model (VAR) comprising six variables was specified and estimated over two sample periods. Granger and Sims causality tests, Impulse Responses and Variance Decomposition techniques were used in the analysis. The report finds evidence of a substantial negative impact on both domestic prices from an increased level of imported pigmeat.

The Productivity Commission's preliminary assessment viewed the analysis as not robust, mainly because of the omission of important explanatory variables and conflicting bilateral causality results. Each of the issues raised by the Productivity Commission is discussed in turn. In some instances reference is made to comments and suggestions from an independent review of the econometric analysis (Rambaldi 2008).

Issues

The Productivity Commission highlights the omission of retail prices for substitute meats from the model as a problem.

The authors acknowledge the exclusion of retail prices is a limitation of the analysis. Data on retail meat prices were not readily available for inclusion in the model prior to the November 2007 submission deadline for the safeguards inquiry into the import of pigmeat. The current analysis does accommodate retail price data to capture any influence that substitute meat prices may have on domestic pigmeat prices.

A second concern relates to the choice of bilateral exchange rate. The Productivity Commission argues that the use of the Australia-USA exchange rate may not adequately capture import price movements given that the majority of imports originate from Canada and Denmark, and pigmeat has only been imported from the United States in recent years.

Theoretically, the possibility of arbitrage ensures global exchange rates adjust to maintain parity. While the Australian dollar has appreciated considerably against the US dollar over the last five years, it has remained relatively stable against the Danish Kroner and Canadian dollar (Productivity Commission 2007, pp.46-47). It was the authors' view that the Australia-USA exchange rate should satisfactorily capture import price movements. However, as pointed out by (Rambaldi 2008), the exchange rate that is chosen should be one that reflects the trading patterns of the market. That said it is unlikely there exists an optimal rate and one could argue for the inclusion of a particular exchange rate over another. One suggestion is the use of the trade-weighted index but a case would need to be made as to whether it would capture the exchange rate effects for the frozen pigmeat market (Rambaldi 2008). The authors agree the exchange rate of choice should be guided by the importance of the trading partners associated

with the sample period under consideration. As the bulk of pigmeat imports are from Canada and Denmark, a valid argument can be made for the use of Australia-Denmark and Australia-Canada bilateral exchange rates in preference to the Australia-USA exchange rate.

A third issue refers to the Granger and Sims causality tests conducted in the analysis. The Productivity Commission's main concern is that the tests give contradictory results as to the direction of causality between variables, and no indication is given as to which test results should be preferred.

At this point it is important to discuss the methodology used. Granger causality tests determine if past values of *x* are useful in predicting y. It is important to note that '*x* Granger causes *y*' does not mean that *y* is the result of *x.* The test itself does not imply 'causality' in the true meaning of the word. The purpose of the Granger and Sims causality tests is to establish if endogenous relationships exist between the variables included in the analysis. For example, if past values of pigmeat imports can be used to explain movements in domestic pigmeat prices and production. The test results confirmed such relationships did exist, indicating that an endogenous framework approach was required to correctly model the interrelationships. Little inference should be made to the Granger and Sims test results, as the main purpose of the tests is to determine if there are causal relationships between variables. Because the approaches only test for pairwise causality, other important causal relationships are excluded from the procedures. Hence, the tests are an initial step and a minor component of the analysis.

The major econometric technique used in the analysis is Vector Autoregressive (VAR) modelling. As opposed to the pairwise Granger and Sims causality tests, VAR captures all the multi-directional causality and feedback effects among all the endogenously specified variables. Rambaldi (2008) agrees that VAR is the correct approach to use in the analysis.

A fourth comment made by the Productivity Commission queries why the impact of an increase in import volumes on domestic prices is considered in the analysis but the reverse effect of an increase in domestic prices on imports is not. The Productivity Commission states:

"*In their analysis, the authors assume that only imports affect prices (not vice-versa)".*

Rambaldi (2008) points out that it not correct to state that we assume that only imports affect prices and not vice-versa. The statement implies that imports are exogenous rather than endogenous. The VAR framework captures the feedback effects between all the endogenous variables (eg. from imports to domestic prices and vice-versa). A shock can be applied to any of the variables in the model to determine the direction and magnitude of impacts on the other endogenous variables in the model. The analysis did not include a shock to domestic prices, as the main objective was to determine if an increase in the level of imported pigmeat impacts adversely on domestic prices. Hence, the following statement by the Productivity Commission relating to our econometric analysis is confusing:

"*a one per cent increase in baconer prices results in a 0.85 per cent increase in import volumes after one month (a much larger result than for the opposite causality). There is also a contradictory result where an increase in the Sydney wholesale carcass price leads to a decrease in import volumes after one month."*

We did not state these results in our analysis, nor do our results imply these conclusions. Rambaldi (2008) agrees that the results do not imply these conclusions.

A fifth issue raised by the Productivity Commission concerns the positive domestic production response to an increase in imports. As pointed out by Rambaldi (2008) this is not the case. The production response is not statistically significant. Hence, a 1 per cent increase in imported pigmeat has no impact on domestic production. The authors acknowledge this was an oversight in the interpretation of the results.

A final point raised by the Productivity Commission relates to the omission of input prices from the model. In modelling undertaken for the 1998 safeguards enquiry, it was stated that data on production costs should be included in the modelling framework. It is suggested that feed costs could be used as a proxy for industry production costs.

As with the data on retail meat prices, data on feed grain prices for the relevant sample periods were not available for inclusion in the model prior to the November 2007 submission deadline. The current analysis does include feed grain price data as an approximation of production costs. In theory it is expected that import volumes would increase in response to an increase in domestic production costs, if the cost increases translate into higher domestic prices downstream.

Conclusions

Concerns raised by the Productivity Commission over the robustness of the econometric analysis undertaken by the authors on behalf of Australian Pork Limited have been addressed in this paper. The authors acknowledge the analysis does have some weaknesses but they are limitations easily remedied.

The choice of modelling framework is appropriate though severable explanatory variables are omitted from the analysis. Substitute retail meat prices and feed grain costs, as a proxy for industry production costs, have subsequently been included in the model.

The selection of a satisfactory exchange rate variable is less straightforward but it is agreed that it should reflect the trading patterns of the frozen pigmeat import market. Data on bilateral exchange rates for Australia-Canada and Australia-Denmark, traditionally the two biggest importers of pigmeat into Australia, are available from a number of sources (e.g. Reserve Bank of Australia) and have been added to the model.

Issues of contradictory directional causalities are accounted for in the VAR framework. Simple tests such as the Granger and Sims tests are used to establish the existence of pairwise causality between variables. In VAR the endogenous feedback effects between all variables are captured.

The Productivity Commission identified not examining the reverse implications of an increase in domestic prices on import volumes as a limitation of the study. Additional analyses are undertaken in the current study to examine the effects from a variety of different shocks, including the impact on import levels from an increase in domestic prices.

References

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Appendix C: Independent Reviewers' Comments and Suggestions: Response

Introduction

This response is to comments and recommendations provided by Dr Alicia Rambaldi in an independent review of the authors' initial econometric analysis prepared for Australian Pork Limited as part of their submission to the Productivity Commission safeguards inquiry into the import of pigmeat.

In her assessment of the econometric analysis, Dr Rambaldi agreed that a Vector Autoregressive (VAR) model was the correct approach to use as it allows feedback effects among all the endogenously specified variables in the system. Dr Rambaldi identified five main areas where the modelling could be strengthened. Each of these areas is discussed in turn.

Model Specification

In their review of the initial econometric analysis, the Productivity Commission argued that the model was not robust due to the omission of important explanatory variables. Data on retail meat prices and feed grain prices, as a proxy for input prices, were not readily available for inclusion in the model prior to the November 2007 submission deadline. These series have subsequently been included in the current analysis. The Productivity Commission also argue that the use of the Australia-USA exchange rate may not adequately capture import price movements given that the majority of imports originate from Canada and Denmark. As pointed out by Dr Rambaldi the exchange rate that is chosen should be one that reflects the trading patterns of the market but that said, it is unlikely there exists an optimal rate and one could argue for the inclusion of a particular exchange rate over another. In the current analysis the model is specified according to Dr Rambald's recommendations. The endogenous variables in the model are the price received by farmers, the wholesale carcass price, the volume of imports, the volume of domestic production, and the price of substitute meats. The substitute meat prices are included as exogenous variables in the VAR although, as Dr Rambaldi suggests, they might more correctly be classified as weakly exogenous variables. The substitute meat prices can be thought of as exogenous to the pig industry but they are endogenous variables in a meat demand system. Empirical estimates of cross-price retail demand elasticities among pork, beef, lamb and chicken support this argument (see, Griffith et al. 2001).

The exogenous variables are feed grain prices and the exchange rate. As the bulk of pigmeat imports are from Canada and Denmark, a valid argument can be made for the use of Australia-Denmark and Australia-Canada bilateral exchange rates. Tests for robustness are undertaken by including both exchange rates and including them one at a time.

VAR Lag Order

The number of lags to include in the VAR is determined by an information criterion. The three most often used criteria are the Schwarz Criterion (SC), the Akaike Information Criterion (AIC) and the Hannan-Quinn Criterion (HQ). Dr Rambaldi suggests the SC tends to underfit and recommends the use of the AIC. The optimal lag length to include in the VAR was tested over a number of lag length intervals. The SC was the only criterion to consistently specify the same optimum lag length over all the intervals tested. The AIC specified a lag order equal to the lag interval over which the tests were carried out. For example, the AIC

recommended a lag order of six when the lag interval over which to test was specified as six and recommended a lag order of nine when the lag interval was specified as nine. Hence, the SC was used in preference to the other criteria because of their inconsistencies. The SC recommended an optimum lag length of one regardless of the length of the lag test interval.

Granger Causality Tests

Dr Rambaldi noted that omitted variables and dynamics, and the presence of unit roots would affect the performance of the Granger Causality tests. The model in the current analysis includes the omitted variables of concern. Dr Rambaldi's assessment of the tests for Granger causality in the initial analysis was that they were not robust because the data series contained unit roots. When unit roots are present, Dr Rambaldi advocates the use of a Wald test proposed by Toda and Yamamoto (1995) as the most appropriate approach for tests of Granger causality. The sample period in the current analysis differs to the sample period in the initial analysis due to data availability associated with additional variables included in the VAR. The data series in the current analysis used in the Granger causality tests do not contain a unit root. Hence, it was not necessary to use the Toda and Yamamoto approach.

Choleski Ordering of the Variables

The results from the VAR may be sensitive to the ordering of the variables in the model as the Impulse Responses (IRF) and Forecast Variance Decompositions (VDC) use a Choleski decomposition. Dr Rambaldi recommends the establishment of a preliminary ordering of the variables and to test minor changes in the ordering. This procedure was undertaken in the current analysis as a test for robustness of the results. The impacts on the results from alternative ordering of the variables were small.

Cointegration

Dr Rambaldi suggested that testing for cointegrating relationships should be added to the analysis. The existence of cointegration provides evidence of a long-run relationship among variables. The data series for import volumes and domestic pig and pigmeat prices are stationary which indicates there is a long-run relationship among the variables. The data series for Australian production of pigmeat does contain a unit root. Cointegration tests based on the methodology developed in Johansen (1991; 1995) were carried out for Australian pigmeat production and imported pigmeat volumes. The results provide evidence of a long-run relationship between those two variables.

Conclusions

Responses to the comments and recommendations by Dr Rambaldi for strengthening the initial econometric analysis have been discussed in this paper. The current econometric analysis takes into account suggestions of improved model specification and includes additional tests for robustness such as the use of alternative exchange rates, changing the ordering of the variables and tests for long-run relationships among variables. The questions of lag length determination and appropriate Granger causality testing procedures have both been addressed.

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