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LAWYERS

26 March 2008

MINTER ELLISON BUILDING
25 NATIONAL CIRCUIT FORREST, CANBERRA
GPO BOX 369 CANBERRA ACT 2601 AUSTRALIA
DX 5601 CANBERRA www.minterellison.com
TELEPHONE +61 2 6225 3000 FACSIMILE +61 2 6225 1000

Mr Gary Banks AO
Chairman
Pigmeat Safeguard Inquiry
Productivity Commission
Locked Bag 2
Collins Street East
MELBOURNE VIC 8003

Dear Mr Banks

Response to report entitled 'Econometric Modeling of Pigmeat Imports'

Please find attached comments prepared by Professor Hayes commenting on the report presented at the modeling workshop of 17 March.

Yours faithfully
MINTER ELLISON

Iain Sandford
Deputy Director, International Trade Group

Contact: Iain Sandford Direct phone: +61 2 6225 3014 Direct fax: +61 (0)2 6225 1014
Email: iain.sandford@minterellison.com
Partner responsible: Russell Miller Direct phone: +61 2 6225 3297
Our reference: 26-5674265

Safeguards Inquiry into the Import of Pigmeat - Response to report entitled 'Econometric Modelling of Pigmeat Imports' prepared by Productivity Commission staff and presented at the modelling workshop on Monday, 17 March 2008

Dermot Hayes
Professor of Economics and Pioneer Chair in Agribusiness
Iowa State University

Introduction

A key part of any decision to impose an import safeguard is to show that imports are causing serious harm to the domestic industry. In its initial submission to the Commission, the APL presented an econometric model that claimed to show that imports were causing domestic prices to fall, and that the level of causation was statistically significant. In its preliminary determination, the Commission rejected the findings of the APL's model and found that there was insufficient evidence that the serious injury allegedly suffered by the domestic industry was caused by imports. The Commission subsequently undertook its own study of causation. The Commission's models were presented by Mr Anthony Shomos, and Ms Lisa Gropp at an informal workshop on March 17th. The Commission's models were reviewed by two well-respected experts in the area, Professor Brett Inder and Professor Kalvinder Shields. These experts attended the workshop and recently provided written reports. In this submission, I provide comments on the Commission's work.

The Commission's models examine the relationship between the volume of imports and Australian prices for domestic pork using three, separate models. The models are a Vector Auto Regression (VAR) analysis in log levels, a VAR analysis in log differences, and an Inverse Demand model. The data analysed with the models related to two time periods and a range of endogenous and exogenous variables. Although

the experts had some substantive comments about the stationarity of the data, there seemed to be a consensus that the work was technically proficient. We agree that the work was well done, and we thank the Commission for presenting such a wide range of alternative methods. This truly is a test that satisfied the modern definition of "robustness," as defined by Leamer. Our comments, therefore, focus on the Commission's interpretation of the results, rather than the methods themselves.

Comment 1

Although the Commission ran three different models with at least four alternative model specifications for each model, **the Commission did not find, in any instance, a significant relationship between import volumes and domestic prices.** To our knowledge, the only report that managed to find any significant relationship between import volumes and prices was the one submitted by the APL. The Commission's findings confirm its preliminary determination rejecting the findings of the APL's model.

Comment 2

The Commission's report states that there is a causal relationship between import **volumes** and prices, but fails to also state that this relationship is **not** significant. We have reproduced below the key table from the report and highlighted the key results. The term labelled "p-value" can be interpreted as the probability that the statement made is correct. The key statement in the report is that "imports does not Granger cause price" and the p-value result associated with that statement indicates that there is a 95% probability that this statement is correct. In other words, the Commission's model demonstrates that imports do not "Granger cause" prices.

In our view, the sheer size of this estimated probability should have been taken as very strong evidence against causality. We therefore believe that Commission's report is incorrect in stating that "An increase in imports was found to cause a decline in prices for the period 2000–07." We also believe that the impulse response function based on

this result is flawed, and that it should not have been presented. At a minimum, the written report should have presented the same confidence intervals around the impulse response function that was presented in the PowerPoint presentation This impulse response function showed that the range of possible responses to an increase in import volumes ranged from a positive price response to a negative price response. Yet the written report only commented on the negative response.

Table A.1 Granger causality test results from VAR model[a]

Sample estimation period Jan 2000 to Nov 2007

Null Hypothesis	*Chi²*	*p-value*
Imports does not Granger cause Feed	1.315	0.518
Feed does not Granger cause Imports	2.155	0.34
Imports does not Granger cause Production	4.148	0.126
Production does not Granger cause Imports	11.69	0.003
Imports does not Granger cause Import Unit Value	2.273	0.321
Import Unit Value does not Granger cause Imports	8.316	0.016
Imports does not Granger cause Price	**0.103**	**0.95**
Price does not Granger cause Imports	2.882	0.237
Production does not Granger cause Feed	0.273	0.872
Feed does not Granger cause Production	13.725	0.001
Production does not Granger cause Import Unit value	0.634	0.728
Import Unit Value does not Granger cause Production	3.981	0.137
Production does not Granger cause Price	1.011	0.603
Price does not Granger cause Production	3.814	0.149
Price does not Granger cause Feed	1.556	0.459
Feed does not Granger cause Price	0.403	0.817

Price does not Granger cause Import Unit value	15.67	0.000
Import Unit Value does not Granger cause Price	9.474	0.009
Import Unit Value does not Granger cause Feed	1.659	0.436
Feed does not Granger cause Import Unit value	1.447	0.485

[a] A low p-value supports Granger causality.

Source: Productivity Commission estimates.

Comment 3

During the workshop, Mr. Shomos acknowledged that he had run a version of the first difference VAR model The results of this model were not presented in the written report, despite the fact that the first difference model could have been used to solve some of the problems encountered with the stationality of the data. Mr Shomos said that he had excluded these results from the written report because they were "not intuitive". When asked about this, he went on to say that the results showed a **positive** relationship between imports and domestic prices. That is, an increase in import volume actually led to an increase in domestic prices. While we agree with the conclusion that this result is not intuitive, we disagree with the decision to exclude the result from the written report. Models will occasionally provide results that appear to be significant, even if the underlying data are purely random. By including non-intuitive positive results that appear to be outliers, the report would have been in a better position to refute the APL analysis. Had this been done it would have become even more obvious that the APL analysis was also an outlier.