D Analysis of rice price premiums

This appendix provides an analysis of price premiums for rice exported from Australia. It updates and extends previous analysis by Deloitte Access Economics (2012), which compared the unit value of Australian exports to the price of Californian rice exports. It extends this analysis using price data from the Food and Agriculture Organization of the United Nations (FAO) to compare price premiums generated in different groups of countries ('regions') to which Australia exports rice.

Methodology

Comparison with California

Deloitte Access Economics (2012) compared the unit value of Australian rice exports to the price of Californian rice exports for the years 2001-02 to 2010-11. The Commission repeated this analysis for two time periods (1989-90 to 2012-13 and 2003-04 to 2012-13) using price data published by ABARES (2015).

The nominal prices of Australian and Californian rice exports were converted from US dollars to Australian dollars using exchange rates published by ABARES (2015), and converted into real terms using the consumer price index (with 2011-12 as the base year) from the same source.

Price premiums were calculated by subtracting the Californian price from the Australian price, weighted by the volume of trade in each year across the two time periods. This compensates for years (such as drought years) when price premiums can be large for a volume of trade that is small.

As a form of sensitivity analysis, price premiums were also calculated after adjusting prices to reflect packaging and transport differences. This adjustment was made because the costs incurred in packaging and transporting Australian rice are not price premiums that are available to be distributed to rice growers.

Australia exports rice mainly as branded and pre-packaged products, and its price is quoted at the point of export. In contrast, California exports similar varieties of rice in bulk, and the export price is quoted free-on-board at the mill rather than at the point of export. This means that the published price data do not reflect the costs of packaging and transport to the point of export.

It is difficult to estimate the value added by packaging and transporting rice to the point of export without detailed industry data, so an approximation was used for sensitivity analysis. Spencer (2004) found that the value added by processing, packaging and transport to the final price of rice was between 20 and 25 per cent. Exporting is only an intermediate step in the value chain, so it is reasonable to assume that the value added by processing, packaging and transport is a higher proportion of unit export values than it is of the final retail price. This would suggest using an estimate higher than the 20 to 25 per cent range. However, the value added estimated by Spencer already includes processing as well as packaging and transport to the point of sale. This suggests using an estimate lower than the 20 to 25 per cent range. Taking both of these factors into account, the Californian price was conservatively adjusted upwards by 10 per cent to reflect the value added of packaging and 5 per cent to reflect the value added by transport to the point of export.

Comparison by export region

According to NSW Trade & Investment (2012), a weakness with the type of analysis conducted by Deloitte Access Economics is that it relies on global average data, rather than individual country data. As SunRice is the only exporter of rice from Australia, the Australian Bureau of Statistics maintains commercial confidentiality by not publishing export volumes or values by country of destination.

Deloitte Access Economics (2012) cited unpublished SunRice data which suggested that there was a 20 per cent price premium for the Middle East and New Zealand markets.

The FAO publishes volume and value data for rice exported from Australia and imported into 123 countries between 1986 and 2013 (FAO 2016). The Commission used this data from 1989 onward to estimate price premiums from 25 Middle East and North African (MENA) nations accounting for around 30 per cent of Australia's exports, and for New Zealand which accounts for about 10 per cent of exports. The trade weighted price for the MENA region mainly reflects Australian exports to Israel, Saudi Arabia, Jordan and Turkey, and to a lesser extent exports to Kuwait, the United Arab Emirates and Syria. The analysis was repeated for two time periods, the 24 years from 1989-90 to 2012-13, and the 10 years from 2003-04 to 2012-13.

As above, a trade-weighted import price was calculated by dividing the value of imports by the volume of imports from Australia to each country, and weighting the resulting 'unit import value' (average price of imports in each year) by the volume of imports to each country in each year. Prices were converted from United States to Australian dollars using exchanges rates published by ABARES (2015) and converted into real terms with 2011-12 as the base year using the consumer price index from the same source.

The price of imports from Australia into each region was adjusted for the cost of insurance and freight to estimate a free-on-board export price that could then be compared to the price of Californian exports (available from 1989 onwards, and adjusted for transport and packaging as above). The cost of containerised shipping for agricultural products to north

and east Asia was reported by Shipping Australia Limited (2014) to be around A$30 a tonne, which is similar to the cost of bulk grain exports estimated by Stretch et al. (2014). A cost of A$40 a tonne was conservatively estimated for shipping from Australia to the Middle East and North Africa, and A$15 a tonne to New Zealand.

To compare the price of Australian imports to New Zealand, the price of Californian rice was increased by A$25 a tonne ($40-$15=$25) to reflect the additional cost of transporting rice from California to New Zealand. This is consistent with the cost of transporting grain from California to Asia as estimated by Stretch et al. (2014). This transport cost advantage is a form of price premium that should be available for distribution to Australian rice growers, provided it is not dissipated in other markets.

Price premiums were calculated by subtracting the Californian price from the Australian export price (calculated from the adjusted price of Australian imports into each region), and weighted by the volume of trade in each year across the two time periods (again to compensate for variability such as drought years when price premiums can be large but the volume of trade small).

Sensitivity analysis was conducted around the various adjustments made to compensate for differences in cost, freight and packaging.

Results

Comparison with California

The analysis comparing Australia's aggregate export price to the price of Californian exports shows a price detriment of -5.9 per cent for the period 1989-90 to 2012-13, and a small premium of +1.2 per cent for the period 2003-04 to 2012-13 (table D.1). When the Californian price is adjusted for packaging and transport, the analysis of table D.1 shows a price detriment of -18.1 per cent for the period 1989-90 to 2012-13, and -12.0 per cent for the period 2003-04 to 2012-13.

Comparison by export region

The results of the analysis by export region are presented in table D.2. For the 24 years from 1989-90 to 2012-13, the trade-weighted price detriment of Australia's rice exports to all 123 countries was -4.7 per cent, compared to -12.1 per cent for the MENA region and (a price premium of) +25.3 per cent for New Zealand. For the 10 years from 2003-04 to 2012-13, the analysis suggests that premiums were close to zero for all countries (+0.8 per cent) and the MENA region (+1.1 per cent), but strongly positive for New Zealand (+46.9 per cent).

Sensitivity analysis shows that estimates of price premiums are larger without adjusting for the costs of insurance, freight and processing. Along with trade weighting the price data, this may account for differences with past analyses.

Conclusion

The Commission's preliminary analysis finds little or no evidence of a sustained and positive price premium for Australian rice exports in world markets. Premiums received for markets such as New Zealand appear to be offset by lower returns in other markets.

Table D.1 **Comparison of Australian and Californian export prices**

	Nominal		*US$/$A*	*Nominal*			*CPI*	*Real*			*Price premium (Aus to Cal.)*	
	US$/t			A$/t				A$/t (2011-12 prices)			A$/t	%
	Cal[a]	Cal+[b]		Aus[c]	Cal	Cal+		Aus	Cal	Cal+		
89-90	358	411	0.77	440	465	534	55.7	790	834	959	-45	-5
90-91	355	408	0.79	452	451	519	58.6	771	770	886	1	0
91-92	396	456	0.77	402	515	592	59.7	674	862	991	-188	-22
92-93	395	454	0.70	448	562	646	60.3	743	931	1070	-188	-20
93-94	486	559	0.69	480	703	809	61.4	781	1144	1316	-364	-32
94-95	392	450	0.74	513	527	606	63.4	809	832	956	-22	-3
95-96	465	535	0.76	600	612	704	66.1	907	926	1065	-19	-2
96-97	432	497	0.78	567	552	635	67.0	846	824	948	22	3
97-98	413	474	0.68	565	605	696	67.0	844	904	1039	-60	-7
98-99	484	557	0.63	587	772	888	67.8	865	1138	1309	-273	-24
99-00	475	546	0.63	665	755	868	69.4	958	1087	1250	-129	-12
00-01	338	389	0.54	607	628	722	73.6	824	853	981	-29	-3
01-02	294	338	0.52	637	561	645	75.7	841	740	851	100	14
02-03	327	376	0.58	564	559	643	78.0	724	717	824	7	1
03-04	533	613	0.71	508	748	860	79.9	636	936	1077	-301	-32
04-05	404	465	0.75	651	537	618	81.8	796	657	756	139	21
05-06	484	557	0.75	767	648	745	84.4	909	767	882	142	18
06-07	538	619	0.79	787	685	787	86.9	905	788	906	118	15
07-08	694	798	0.90	692	774	890	89.8	770	861	990	-91	-11
08-09	1119	1286	0.75	779	1495	1719	92.6	841	1613	1855	-772	-48
09-10	791	910	0.88	1535	896	1031	94.8	1619	946	1087	674	71
10-11	796	916	0.99	1799	806	927	97.7	1840	824	948	1016	123
11-12	764	879	1.03	1116	741	852	100.0	1116	741	852	375	51
12-13	712	819	1.03	813	693	797	102.3	795	678	780	117	17

[a] **Cal**: Californian price; US no. 1 medium grain milled, bulk, free on board truck at Californian mill. Prior to August 2010 reported as sacked. [b] **Cal+:** California price increased by 15 per cent for value adding. [c] **Aus**: Australian price; gross unit value of Australian exports. From 1988-89, calculated from marketing year (April–March) total export values.

(continued next page)

Table D.1 (continued)

	Price premium (Aus to Cal+)		*Exports*	*Trade weight*		*Trade weighted price premium (Aus to Cal)*				*Trade weighted price premium (Aus to Cal+)*			
				89-90 to 12-13	03-04 to 12-13	89-90 to 12-13		03-04 to 12-13		89-90 to 12-13		03-04 to 12-13	
	A$/t	%	‘000t			A$/t	%	A$/t	%	A$/t	%	A$/t	%
89-90	-170	-18	311	0.03		-1	-0.2			-5	-0.6		
90-91	-115	-13	321	0.03		0	0.0			-4	-0.4		
91-92	-317	-32	423	0.04		-8	-1.0			-14	-1.4		
92-93	-327	-31	516	0.05		-10	-1.1			-18	-1.6		
93-94	-535	-41	502	0.05		-19	-1.7			-28	-2.1		
94-95	-147	-15	548	0.06		-1	-0.2			-8	-0.9		
95-96	-158	-15	594	0.06		-1	-0.1			-10	-0.9		
96-97	-102	-11	614	0.06		1	0.2			-7	-0.7		
97-98	-196	-19	540	0.06		-3	-0.4			-11	-1.1		
98-99	-444	-34	703	0.07		-20	-1.8			-32	-2.5		
99-00	-292	-23	607	0.06		-8	-0.7			-18	-1.5		
00-01	-157	-16	710	0.07		-2	-0.3			-12	-1.2		
01-02	-11	-1	661	0.07		7	0.9			-1	-0.1		
02-03	-101	-12	704	0.07		0	0.1			-7	-0.9		
03-04	-441	-41	287	0.03	0.15	-9	-1.0	-46	-4.9	-13	-1.2	-68	-6.3
04-05	40	5	151	0.02	0.08	2	0.3	11	1.7	1	0.1	3	0.4
05-06	27	3	69	0.01	0.04	1	0.1	5	0.7	0	0.0	1	0.1
06-07	-1	0	103	0.01	0.06	1	0.2	6	0.8	0	0.0	0	0.0
07-08	-221	-22	414	0.04	0.22	-4	-0.5	-20	-2.3	-9	-1.0	-49	-4.9
08-09	-1014	-55	191	0.02	0.10	-15	-0.9	-79	-4.9	-20	-1.1	-103	-5.6
09-10	532	49	45	0.00	0.02	3	0.3	16	1.7	2	0.2	13	1.2
10-11	892	94	21	0.00	0.01	2	0.3	11	1.4	2	0.2	10	1.0
11-12	263	31	91	0.01	0.05	4	0.5	18	2.5	3	0.3	13	1.5
12-13	15	2	501	0.05	0.27	6	0.9	31	4.6	1	0.1	4	0.5
Total				**1.00**	**1.00**	**-75**	**-5.9**	**-45**	**1.2**	**-209**	**-18.1**	**-176**	**-12.0**

Sources: ABARES (2015), analysis follows Deloitte Access Economics (2012)

Table D.2 **Price premiums for Australian rice exports**

Market	*Percentage of Australian exports*		*Insurance and freight*	*Packaging and transport*	*Premium relative to Californian price*			
	1989-90 to 2012-13	2003-04 to 2012-13			1989-90 to 2012-13		2003-04 to 2012-13	
	%	%	A$/t	A$/t	A$/t	%	A$/t	%
World								
(123 countries)	100	100						
Baseline			30	15	-52	-4.7	3	0.8
Low			20	10	2	1.4	57	7.0
High			40	20	-107	-10.9	-51	-5.5
No adjustment			0	0	112	13.7	164	19.4
MENA								
(25 countries)	26.9	36.2						
Baseline			40	15	-120	-12.1	3	1.1
Low			30	10	-66	-5.9	53	7.3
High			50	20	-173	-18.3	-48	-5.2
No adjustment			0	0	50	7.7	164	21.1
New Zealand	6.8	10.2						
Baseline			15	15	193	25.3	379	46.9
Low			10	10	242	30.9	425	52.5
High			20	20	144	19.7	332	41.3
No adjustment			0	0	339	42.1	518	63.8

Source: Productivity Commission analysis.