
Attachment A: Wall Street Journal article



September 28, 2007

PAGE ONE

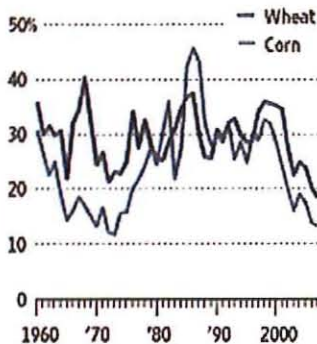
Historic Surge In Grain Prices Roils Markets

By SCOTT KILMAN
September 28, 2007

Rising prices and surging demand for the crops that supply half of the world's calories are producing the biggest changes in global food markets in 30 years, altering the economic landscape for everyone from consumers and farmers to corporate giants and the world's poor.

Grain Drain

Global demand is leaving end-of-year grain inventories at levels that are less than 20% of the total amount used each year; stocks as a percentage of use



Note: 2007 figure is a projection
Source: U.S. Department of Agriculture

"The days of cheap grain are gone," says Dan Basse, president of AgResource Co., a Chicago commodity forecasting concern.

This year the prices of Illinois corn and soybeans are up 40% and 75%, respectively, from a year ago. Kansas wheat is up 70% or more. And a growing number of economists and agribusiness executives think the run-ups could last as long as a decade, raising the cost of all kinds of food.

In the past, such increases have been caused by temporary supply disruptions. Following a poor harvest, farmers would rush to capitalize on higher crop prices by planting more of that crop the next season, sending

prices back down. But the current rally, which started a year ago in the corn-futures trading pit at the Chicago Board of Trade, is different.

Not only have prices remained high, but the rally has swept up other commodities such as barley, sorghum, eggs, cheese, oats, rice, peas, sunflower and lentils. In Georgia, the nation's No. 1 poultry-producing state, slaughterhouses are charging a record wholesale price for three-pound chickens, up 15% from a year ago.

What's changed is that powerful new sources of demand are emerging. In addition to U.S. government incentives that encourage businesses to turn corn and soybeans into motor fuel, the growing economies of Asia and Latin America are enabling hundreds of millions of people to spend more on food. A growing middle class in these regions is eating more meat and milk,

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which in turn is increasing demand for grain to feed livestock. In the U.S., a beef cow has to eat roughly six pounds of grain to put on a pound of weight, and a hog about four pounds.

The reversal of a long-term trend toward lower grain prices could have profound effects on the world's ability to feed its poor. Global grain stockpiles are being drawn down to their tightest levels in three decades, leaving the world vulnerable to shocks brought on by bad harvests. And it's far from clear how much more land could be brought into production or to what extent advances in biotechnology might increase crop yields in the future.

American families, which spend 9.9% of their disposable income on food, are facing the fastest-rising food prices in 17 years. The consumer's cost for everything from yogurt and popcorn to breakfast cereal and fast-food french fries is climbing. In U.S. cities last month, the average retail price of a pound loaf of whole-wheat bread was up 24% from a year ago, according to the Bureau of Labor Statistics. Whole milk hit \$3.807 a gallon, up 26%.

Similar increases are showing up abroad. Italian shoppers are protesting soaring pasta prices, and Mexican authorities have capped the price of corn tortillas. Pakistan is curbing wheat exports to counter rising food-price inflation while Russian authorities, worried about rising bread prices, are considering a similar clampdown.

Food companies are struggling to figure out how to pass on higher costs to supermarkets and restaurant chains, which have gotten bigger and thus gained clout since the last prolonged rise in food prices in the 1970s.

"We're in uncharted territory," says Christopher Fraleigh, chief executive of the food and beverage division of **Sara Lee Corp.**, which earlier this month raised its bread prices 5%.

The biggest winner is the U.S. Farm Belt, which is primed for an unusually long expansion, even as a nationwide housing slump damps the broader economy. The Agriculture Department expects U.S. net farm income to soar 48% this year to a record \$87.1 billion.

"I sold wheat here just the other day for \$7 [a bushel]. That's the first time I've ever done that," says Doyle Johannes, a fourth-generation grain farmer in Underwood, N.D. With prices so high, he bought his first new harvesting combine, a \$250,000 Caterpillar decked out with computerized controls and a built-in cooler.

An expected spending spree by farmers is igniting the stocks of several farm suppliers. Shares of implement maker **Deere & Co.** are up about 76% from a year ago, while seed and herbicide giant **Monsanto Co.**'s stock is up 79%, and fertilizer maker **Mosaic Co.**'s shares have more than tripled.

The grain rally shows few signs of slowing even though U.S. corn farmers are expecting a record harvest. Futures traders are betting that the price of corn, used for everything from sweetening soda to putting the crunch in snack foods, will climb above \$4 next March and stay above that level into 2010. In recent days, Iowa farmers have been selling corn for \$3.25 a bushel.

Next year is shaping up to be the third in a row in which the world consumes more grain to make fuel, food and livestock feed than it harvests. The trend is helping reduce global grain stockpiles to their lowest point relative to consumption since the mid-1970s, when Asia struggled with chronic food shortages and the Soviet Union suddenly emerged as a big grain importer.

Part of the reason for the drawdown can be seen in China, where soaring demand for milk has

increased the number of dairy cattle threefold so far this decade. Half of the world's hogs now live in China, which is importing about 13% of all the soybeans grown in the U.S. to help fatten its livestock. The Chinese government, caught off guard by a nearly 50% rise in retail pork prices, is throwing cash at farmers willing to produce more of the nation's most widely consumed meat.

The prospect for a long boom is riveting economists because the declining real price of grain has long been one of the unsung forces behind the development of the global economy. Thanks to steadily improving seeds, synthetic fertilizer and more powerful farm equipment, the productivity of farmers in the West and Asia has stayed so far ahead of population growth that prices of corn and wheat, adjusted for inflation, had dropped 75% and 69%, respectively, since 1974. Among other things, falling grain prices made food more affordable for the world's poor, helping shrink the percentage of the world's population that is malnourished.

The recent grain drain has stirred a new set of worries in the developing world. Developing nations used to complain their farmers were hurt by rich subsidies offered to producers in the U.S. and European Union, which encouraged price-depressing gluts. Now, their concern is shifting to how sharply high grain prices will erode the buying power of the world's hungry.

Humanitarian groups are cautioning that their budgets for food aid won't go nearly as far as they did in the past. Roughly 200 million of the 850 million malnourished people in the world's poorest nations receive some food assistance. "My major concern is that we will lose ground against hunger," says Josette Sheeran, executive director of the United Nations' World Food Program.

That outlook is increasing the urgency of nascent efforts to end food shortages in sub-Saharan Africa, the one region in which hunger is worsening. "I think we are going to be facing a food crunch," says former U.N. Secretary-General Kofi Annan. "So we have to really take charge and begin to produce our own food," Mr. Annan, a Ghanaian, said during an interview at his Geneva office, where he heads a push by the Bill & Melinda Gates Foundation and Rockefeller Foundation to help bring to Africa the agricultural revolution that spread across Asia and Latin America decades ago.

U.S. farm exports, meanwhile, are climbing, dousing the fears of just a few years ago that the U.S. farm sector was on the verge of generating a trade deficit. Agriculture Department economists expect exports to hit a record \$79 billion in the fiscal year ending Sept. 30, up 15% from last year.

For food-company executives, life is getting more complicated. "One year it's oil, the next it's grain," says **General Mills** Inc. Chief Executive Kendall Powell. "But it's all underpinned by one thing: strong global demand for those commodities." The Minneapolis food giant, which had sales of \$12.4 billion in its latest fiscal year, expects raw-material costs in the fiscal year ending in May to jump \$250 million, mostly due to costlier farm commodities.

To cope, General Mills is shrinking the size of its breakfast-cereal packages, effectively raising the price per ounce. At a Dominick's supermarket in suburban Chicago, a 15.6-ounce box of Wheaties recently cost \$5.16, more per ounce than the round steak London broil at the meat counter. Grain typically has accounted for a small part of the cost of packaged products like bread and ready-to-eat cereals.

Fast-food chain Burger King Corp. is importing more grass-fed beef to make its U.S. hamburgers, and its Asian outlets are switching to french fries made from cheaper New Zealand potatoes rather than Washington state spuds.

So far, the burden of higher grain prices is falling heaviest on small businesses, which don't have the wiggle room that large companies do.

Hit by a 35% increase in wheat-flour costs since December, Michael Kalupa, owner of Kalupa's Bakery in Tampa, Fla., said he has put off plans to buy a new walk-in refrigerator. "Guys like us pretty much have to bite the bullet," said Mr. Kalupa, president of Retail Bakers of America, a bakers trade group.

—Lauren Etter, Julie Jargon, Roger Thurow and David Kesmodel contributed to this article.

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Attachment B: Report prepared by CRA International – International Price Comparisons

1. INTERNATIONAL PRICE COMPARISONS

International prices were considered for a range of staple groceries and household products for 35 international cities, including the 5 largest Australian capital cities. The cities and products are listed in Appendix A.

- The data were collected by the Economist Intelligence Unit (EIU) for the purpose of making "cost of living" comparisons;
- The prices were for supermarkets;
- The data are 2007 average prices; and
- The data were converted into common currency using purchasing power exchange rates (PPP) obtained from the OECD.

Attached to this data set were two corresponding sets of prices from Woolworths in Sydney.

- Woolworths home brand (WW Home) which utilised home brand prices for products where they were available.;
- Woolworths name brand (WW Name) which utilises best selling name brand products.
- Where pack size differed prices were converted to an equivalent volume or weight.

Woolworths' products were not systematically greater or smaller in terms of package size.

Constructing a meaningful consumption basket from the cross section of goods is not possible given that expenditure weights for the various capital cities are unknown. Further, there is high degree of variability in some prices across cities that have the potential to have undue weight in the calculation of average prices.

As a consequence, CRA constructed city baskets on the basis of price ranks for each product. Ranks are robust against large differences in prices that may be due to spurious influences such as differences in product quality. However, care should be taken in making strong inferences with regard to small differences in rank orders.

- CRA assigned each city an ascending rank for each product, the median rank was then normalized to 0. That is, the ranks went from lowest at -15 and highest at +15.
- Sydney's prices tended to rank above all other Australian capital cities with the exception of Perth.

Wednesday 5 March 2008

Box and whisker plots of the ranks for selected cities are shown in Figure 1 below. The range of the plots indicates the range of the ranks for the various products in a given city. The box corresponds to the 25th to 75th percentiles of the ranks. The median rank, indicated by the red line in the box, corresponds to the median rank for that city.

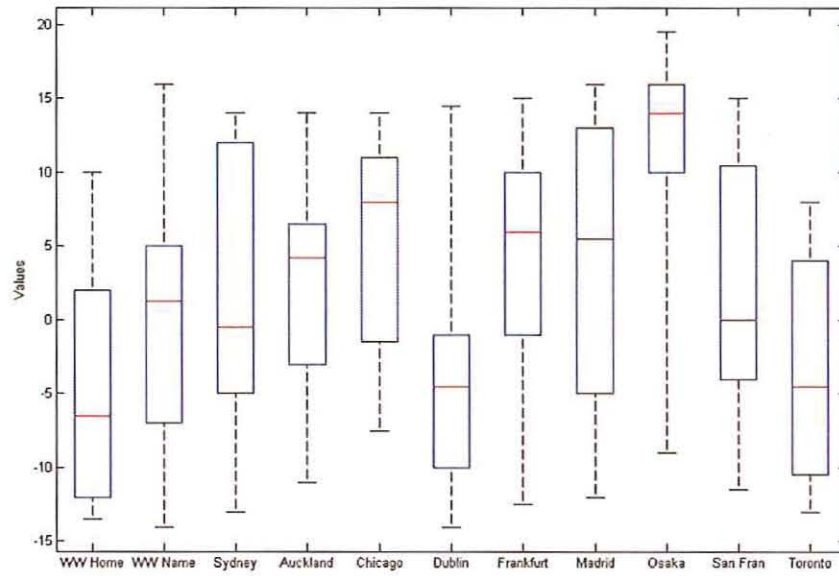
From an interpretive point of view, the boxes should be seen as the central range of prices within the basket of goods for the different cities. The median should be seen as the overall basket price. As the box contains 50 per cent of the observations, it provides a more reliable picture of the cost of a basket than the median.

In summary the plots indicate that:

- Woolworths home brand basket prices are low relative to international capital city prices, including Sydney.
- Woolworths name brand basket prices are also low relative to international capital city prices. In general, the price range of Woolworths name brand is below the corresponding prices for Sydney city, however, the median is higher for the Woolworths name brand prices due to the wider spread of prices between the median and the 25th percentile. In other words, the range of prices below the median is greater than the range of prices above the median.
- Sydney's prices, across a basket of goods, are close to the median when compared to other large international cities in Europe, North America and Asia.

It should be noted that in terms of the overall set of 35 cities Dublin and Toronto were amongst to lowest price capital cities. Further, Sydney prices were, on balance, higher than all other Australian capital cities in the EIU survey with the exception of Perth.

Figure 1: The distribution of product price ranks in PPP terms for Woolworths in Sydney and selected capital cities



APPENDIX A: LIST OF CITIES AND PRODUCTS

Table 1: Cities used for comparison

Adelaide	Brisbane	Lisbon	Paris	Stockholm
Amsterdam	Chicago	London	Perth	Sydney
Atlanta	Copenhagen	Madrid	San Fran	Toronto
Auckland	Dublin	Manchester	Sao Paolo	Vancouver
Bangkok	Frankfurt	Melbourne	Seoul	Vienna
Barcelona	Hong Kong	Milan	Shanghai	Wellington
Boston	Johannesburg	Osaka	Singapore	Zurich

Table 2: Products used for comparisons

White bread, 1 kg	Peaches, canned (500 g)
Butter, 500 g	Bacon (1 kg)
White rice, 1 kg	Chicken: fresh (1 kg)
Flour, white (1 kg)	Instant coffee (125 g)
Tomatoes (1 kg)	Soap (100 g)
Carrots (1 kg)	Toilet tissue (two rolls)
Apples (1 kg)	Aspirin (100 tablets)

Attachment C: Report prepared by Pitney Bowes MapInfo

This attachment reviews the numbers, turnover volumes and growth of retail stores throughout Australia which sell take-home food and groceries – take away food outlets, cafes, restaurants and liquor stores are excluded.

The data have been collated from various public sources, wherever possible from the Australian Bureau of Statistics (ABS), the official government statistician. The data set is not complete as there are occasional gaps in the quality and availability of statistics from the independent supermarkets sector. However, these gaps are relatively minor.

Despite such minor data limitations, the information shown presents a clear and consistent picture which can be summarised as follows:

- At June 2007 there were over 30,000 outlets selling take-home food and groceries throughout Australia. These establishments are classified by the ABS as being in one of the following categories
 - Supermarkets and grocery stores,
 - Fresh meat, fish and poultry retailing,
 - Fruit and vegetable retailing,
 - Bread and cake retailing, and
 - Specialised food retailing n.e.c (a category that includes such stores as delicatessens and confectionery stores).
- Woolworths accounted for 2.5% of the total number of outlets selling take-home food and groceries throughout Australia.
- Over the period 2002/03 to 2006/07, Woolworths accounted for 3.6% of the net increase in the numbers of such outlets.

Table 1 and Chart 1 detail the numbers of various types of businesses which sell take-home food and groceries (excluding take-away food stores, cafés, restaurants and liquor stores). At the end of June 2007, there were 30,420 establishments that were defined by the ABS to be food retailers.

Of this total, 28% or 8,535 businesses were classified by the ABS as Supermarkets and grocery stores. The other 72%, or nearly 22,000 establishments, are stores selling take-home food and groceries which fall into one of the other four categories listed above.

While the numbers in the various industry classes or store categories can fluctuate from year to year, the ABS data for the period 2002/03 to 2006/07 show a net increase of 2,007 businesses that directly sell take-home food and groceries to consumers. Of this net increase, approximately half of these new businesses (1,029) were classified by the ABS as Supermarkets and grocery stores.

Table 2 and Chart 2 show in greater detail the composition of the Supermarkets and grocery stores category. The information in Table 2 and Chart 2 shows that :

- At June 2007, Woolworths accounted for 767, or 2.5%, of the 30,420 stores in Australia selling take-home food and groceries,
- Over the period 2002/03 to 2006/07, Woolworths accounted for 73 net new stores, or 3.6% of the 2,007 net new supermarkets, grocery stores and other food specialty stores which the ABS counted throughout Australia.
- Coles/Bi-Lo increased its store numbers by an estimated 59 over this period.
- Aldi increased its store numbers by an estimated 95 over this period.
- The numbers of all other supermarkets and grocery stores over this period increased by an estimated 798 as reported by the ABS, including an estimated increase of 118 for Metcash (IGA).
- The numbers of other food specialty stores of various types over this period increased by 978.

The sheer volumes of these figures highlight the simple fact that it is not particularly difficult in Australia for any player to establish/operate a retail outlet selling fresh food or food and groceries.

ABS data on the turnover of the total food retailing sector is only available at the aggregate level. That is, we are not able to focus only on food and grocery sales. The turnover reported by the ABS includes all turnover recorded by retailers classified as being principally in the business of food retailing. The ABS data includes only those companies that are defined as employing businesses – i.e. businesses which have paid employees. Family businesses and sole proprietorships in which there are no formal employees are therefore not counted in these ABS statistics, meaning the actual numbers of small businesses are greater than the numbers indicated in the previous section.

Chart 3 shows the turnover from FY98 to FY07 for three ABS defined categories (by size/type) of take-home food and grocery retailers, namely

- Large supermarkets,
- Other supermarkets, grocery stores and convenience stores, and
- Other food retailing businesses.

Businesses that are defined as ‘Large supermarkets’ by the ABS (whose turnover levels and/or employment numbers are such that they exceed certain thresholds) are required to submit their actual turnover to the ABS every month without exception. This group, which is most likely to include all Woolworths stores, Coles stores, Aldi stores, Franklins stores as well as larger IGA and Foodworks stores, has seen its total volume of sales increase by 63% from \$31.2 billion in 1998 to \$50.9 billion at 2007. However, over this period its share of total combined sales recorded by supermarkets, grocery stores, and all other food retail stores fell from 66% to 63%, even though during this period the large supermarkets have expanded their product ranges to include more non-food items.

The smaller grocery stores, shown in the Chart 3 as Other supermarkets and convenience stores, increased their total sales volume over this period by 108%, from \$6.3 billion to \$13.1 billion. As a result, their share of total turnover of take-home food retailers increased from 13% to 16.1%.

For stores in the Other food retailing category (comprising primarily the various specialty stores) the data show clearly the ebb and flow of competition and competitive trends. Their sales volume over this period increased by 78% from \$9.7 billion to \$17.3 billion, but clearly evident is a period of relative decline compared to the other two categories from 1998 to 2001, during which time their combined share of total turnover fell from 21% to 18.7%,

followed by a period of sustained growth from 2001 to 2007, with their estimated share of total retail food turnover having increased back to 21.3% at 2007.

Table 1
Food Retail Division, Number of Establishments: 2003-2007

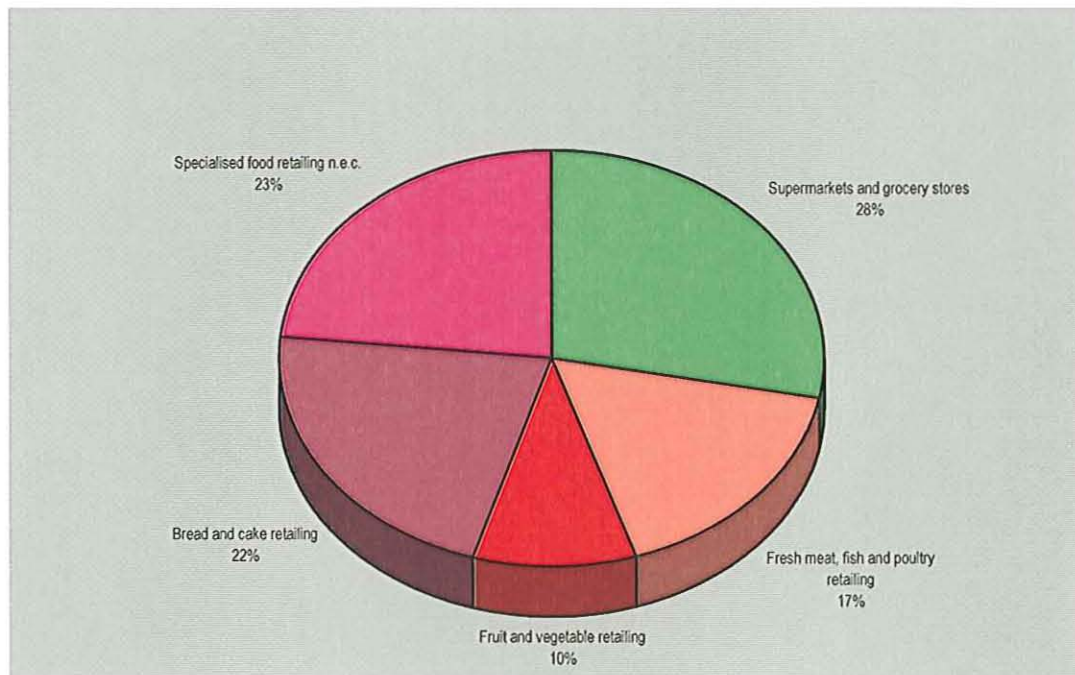
Industry Class	No. of Businesses					Net Gain/ Loss, 03-07
	2002/03	2003/04	2004/05	2005/06	2006/07	
Supermarkets and grocery stores	7,506	7,890	8,250	8,223	8,535	1,029
Fresh meat, fish and poultry retailing	4,968	4,980	4,950	4,959	5,142	174
Fruit and vegetable retailing	2,742	2,766	2,829	2,835	2,928	186
Bread and cake retailing	6,357	6,798	6,678	6,606	6,702	345
Specialised food retailing n.e.c.	<u>6,840</u>	<u>7,179</u>	<u>7,449</u>	<u>7,572</u>	<u>7,113</u>	<u>273</u>
Total Food Retail Establishments*	28,413	29,613	30,156	30,195	30,420	2,007

* Excludes the industry classes of home milk delivery operations, liquor retailing and take-away food retailing which also form part of the ABS definition of the Food Retail division

Source : Counts of Australian Businesses, including Entries and Exits, Jun 2003 to Jun 2007 , Australian Bureau of Statistics, Catalogue No.8,165.0

Note: This table presents the total number of businesses that are engaged in take-home food retailing (as defined in * above)

Chart 1
ABS Food Retail Division, No of Establishments 2006/07



* Excludes the industry classes of home milk delivery operations, liquor retailing and take-away food retailing which also form part of the ABS definition of the Food Retail division

Source : Counts of Australian Businesses, including Entries and Exits, Jun 2003 to Jun 2007 , Australian Bureau of Statistics, Catalogue No.8,165.0

Table 2
ABS Food Retail Division, Number of Stores by Specific Groups: 2002/03-2006/07

Group	No. of Outlets					Net Gain/ Loss, 03-07
	2002/03	2003/04	2004/05	2005/06	2006/07	
Woolworths ¹	694	708	723	756	767	73
Coles/Bi-Lo ²	686	700	719	737	745	59
Aldi ³	48	72	93	126	143	95
Franklins ⁴	<u>75</u>	<u>77</u>	<u>77</u>	<u>77</u>	<u>79</u>	<u>4</u>
Total Chain Stores	1,503	1,557	1,612	1,696	1,734	231
Metcash ⁵	1,138	1,138	1,099	1,209	1,256 *	118
Foodworks/AUR ⁶	680	680	693	664	710 **	30
FAL ⁷	298	304	331	0	0	-298
Other Independent Outlets ⁸	<u>3,887</u>	<u>4,211</u>	<u>4,515</u>	<u>4,654</u>	<u>4,835</u>	<u>948</u>
Total Independent Stores	6,003	6,333	6,638	6,527	6,801	798
Total Smkts & Grocery Stores⁹	7,506	7,890	8,250	8,223	8,535	1,029
Fresh Food Specialties ^{10, 11}	<u>20,907</u>	<u>21,723</u>	<u>21,906</u>	<u>21,972</u>	<u>21,885</u>	<u>978</u>
Total Food Retail Stores	28,413	29,613	30,156	30,195	30,420	2,007

1. Woolworths supplied data

2. From Coles Group Annual Reports so as at July each year

3. From Aldi website and Cordell's database (a national database of development approvals)

4. From Franklins Website and Pick 'N Pay Annual reports

5. Includes only IGA stores as reported in Metcash Annual Reports as at March except for 2006/07

* From A. Reitzer 2007 AGM Presentation. October 2007 half year report shows 1,384 stores

6. Foodworks/AUR numbers come from Metcash Annual reports and are as at March of each year except 2006/07

** From Foodworks article from 11 July 2007 provided on Foodworks website in the About Us - News & Media sub-directory

7. Ceased trading under these banners in November 2005, includes only Action & FAL banners

8. Includes all other foodstores, grocery stores and convenience stores selling food and groceries per ABS definition

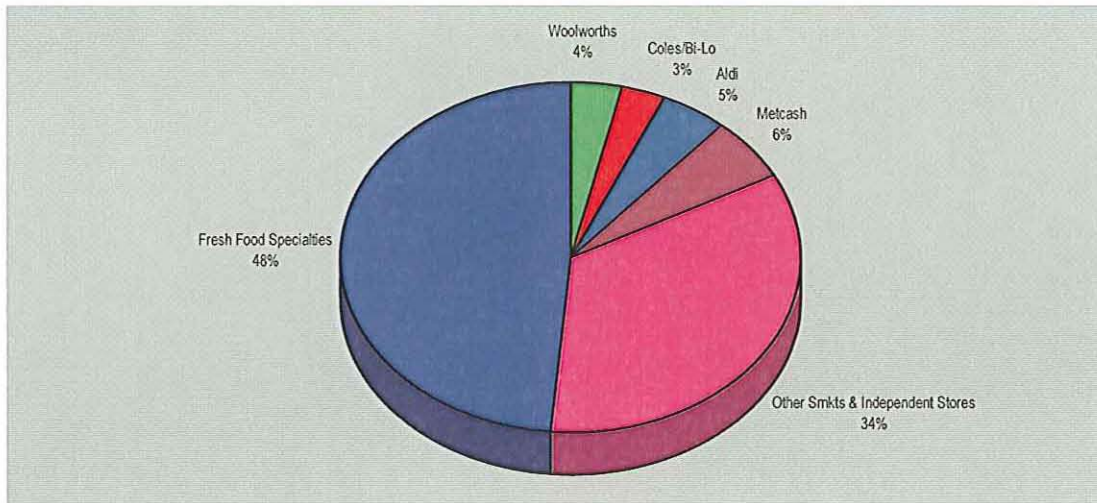
9. Data from 'Counts of Australian Businesses, including Entries and Exits, Jun 2003 to Jun 2007', ABS Cat No. 8165.0

10. Liquor retailers and take-away food outlets are excluded from this analysis but form part of the overall ABS Food Retail division

11. Data from 'Counts of Australian Businesses, including Entries and Exits, Jun 2003 to Jun 2007', ABS Cat No. 8165.0

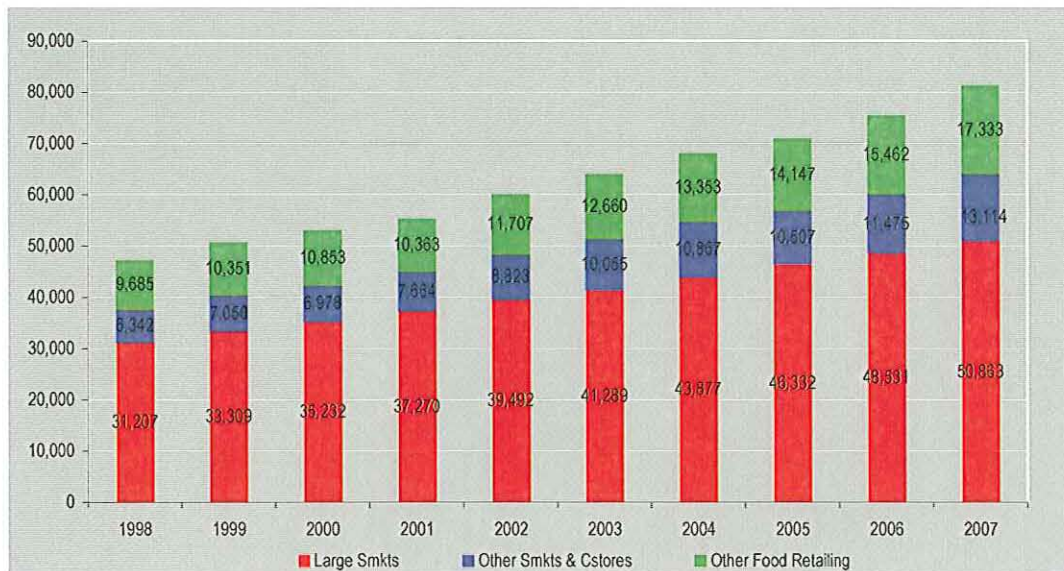
Source : Company Annual Reports, ABS, Pitney Bowes MapInfo

Chart 2
ABS Food Retail Division*, Share of Increase in Outlet Numbers by Specific Groups: 2002/03-2006/07



* Excludes the industry classes of liquor retailing and take-away food retailing which also form part of the ABS definition of the Food Retail division
Source : Counts of Australian Businesses, including Entries and Exits, Jun 2003 to Jun 2007 , Australian Bureau of Statistics, Catalogue No.8,165.0

Chart 3
Total Turnover by Store Type in Australia, 1998-2007

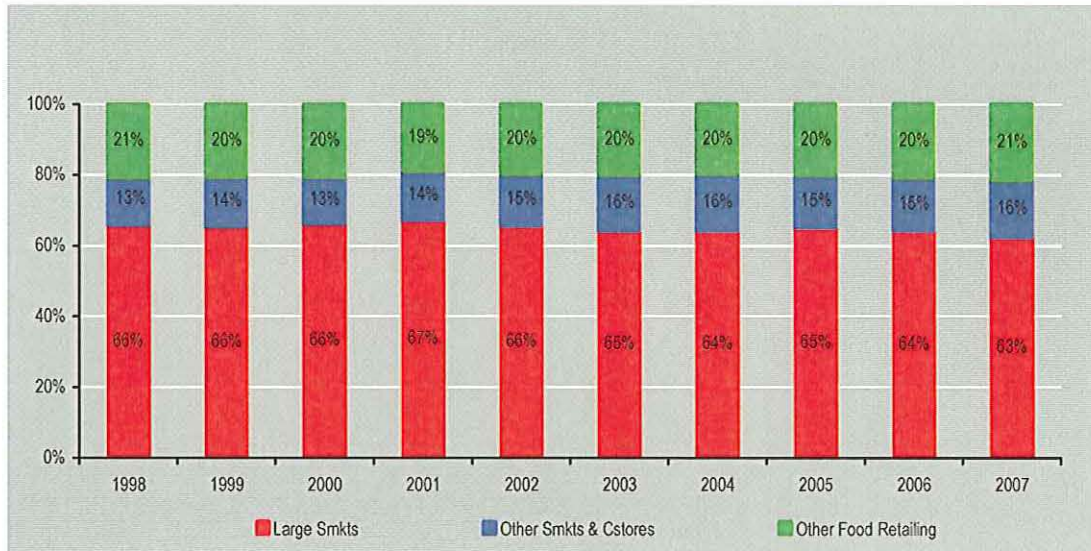


Note: Large Supermarkets = Businesses determined by the ABS to have turnover large enough so that they must report their monthly data
Other Supermarkets and Convenience Stores = Supermarkets whose turnover is sampled, as their turnover does not reach a threshold
Other Food Retailing = Includes Meat/Fish/Poultry; Fruit/Veg; Bread and other Specialised Retailers

Note 1: Turnover data includes all turnover from all of the store types listed.
Therefore, general merchandise and all other non-food, non-grocery sales are INCLUDED.

Source: ABS Retail Trade Series

Chart 4
Share of Total Turnover by Store Type in Australia, 1998-2007



Source: ABS Retail Trade Series

Note: Large Supermarkets = Businesses determined by the ABS to have turnover large enough so that they must report their monthly data

Other Supermarkets and Convenience Stores = Supermarkets whose turnover is sampled, as their turnover does not reach a threshold

Other Food Retailing = Includes Meat/Fish/Poultry; Fruit/Veg; Bread and other Specialised Retailers

Attachment D: Report prepared by CRA International – Food Price Indices

1. FOOD PRICE INDICES

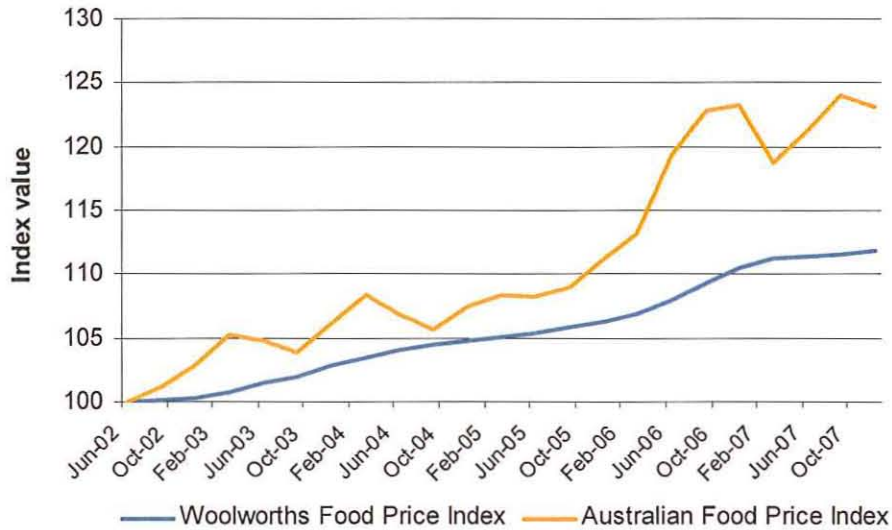
CRA constructed a Woolworths food price index based on quarterly sell price increases provided to the Reserve Bank of Australia over the last five years for given product categories. These categories were matched with ABS weights for the Australian food price index (as included in the Headline CPI calculations).

- Woolworths food price indices are calculated on a revenue weighted basis as opposed to the ABS Australia CPI which is calculated on a fixed weight basis for 5 years.
- For the majority of food categories, ABS categories were matched as closely as possible with Woolworths' categories and these were summed to create the Woolworths weight.
 - That is, fixed weights were applied to the Woolworths categories to align the Woolworths food price index with the Australian food price index.
- In the case of bread, there was one ABS and two Woolworths categories. In this case, one half of the ABS weight was assigned to each Woolworths category.
- The Woolworths general merchandise and service delicatessen categories were excluded.

The Australian food price index includes meals and take-away foods. These were excluded from the index and the index was then rebased.

The Australian food price index does not include tobacco products or liquor and so these were also excluded from the Woolworths food price index.

Figure 1: Woolworths Food Price Index versus Australian Food CPI



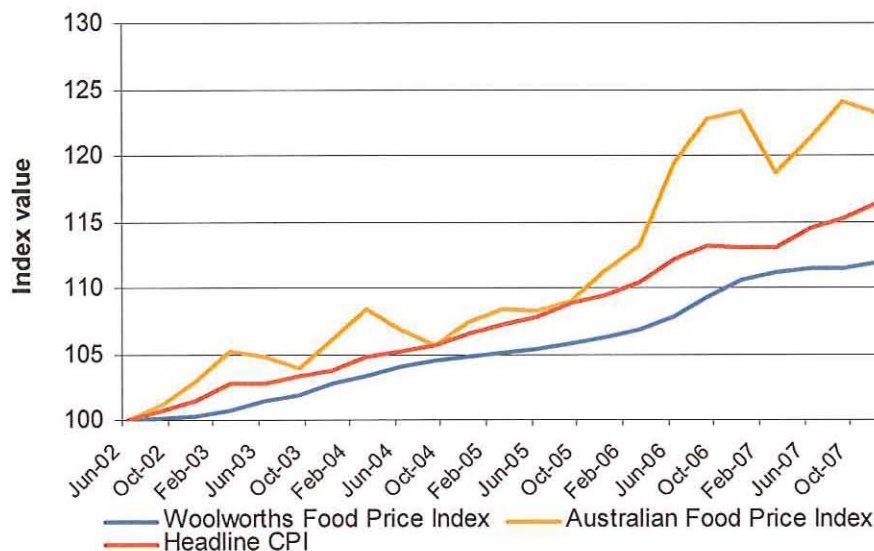
Base period is the June quarter 2002

Note: The category 'Meals out and takeaway food has been removed from the CPI food price index and the index has been re-weighted

It is important to note that the Australian food price index uses weights that are fixed over a 5 year period and the components Woolworths food price index uses current revenue weights. As a consequence the Australian index will be more sensitive to price changes and periods of limited supply as it does not account for the fact that consumers can change the composition of their basket.

Figure 2 presents Woolworths food price index figures against the Australian food price index and the Headline CPI.

Figure 2: Woolworths Food Price Index versus Australian Food Price Index versus Headline CPI



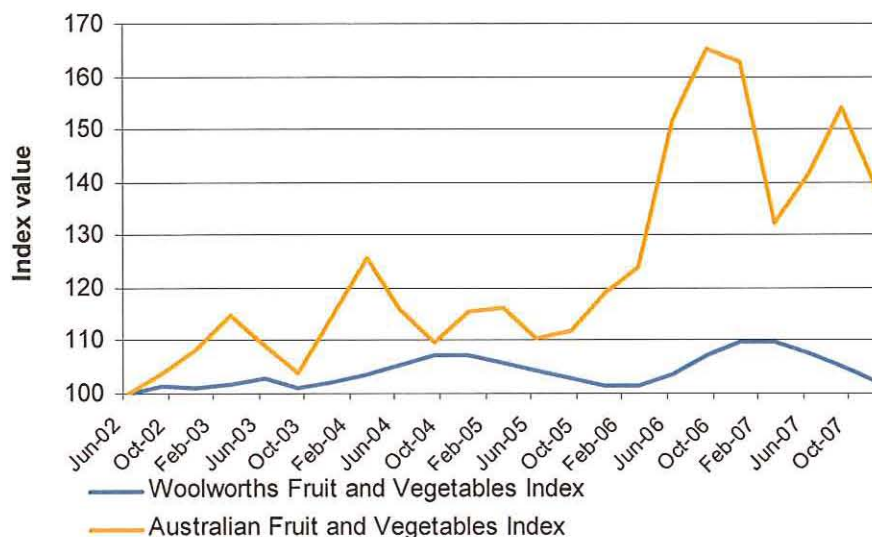
Base period is the June quarter 2002

1.1. FRUIT AND VEGETABLE COMPONENT OF THE FOOD PRICE INDICES

The Woolworths and Australian fruit and vegetable price indices are shown in Figure 3. As can be seen, there is a sharp divergence between the two indices. This is in part driven by two events representing the two peaks in the ABS series. In March 2006 Cyclone Larry hit Innisfail and ruined the majority of banana plantations in the area. In June 2007, East Gippsland was subject to severe flooding and large losses occurred in the lettuce crops of the region.

- The event driven divergence is likely to reflect the difference in methodology with Woolworths using variable weights based on sales quantity and price and the ABS using fixed weights.

Figure 3: Fruit and vegetables index comparisons



Base period is the June quarter 2002

However, in addition to these two peaks, there is also a large divergence on trend between the two series. The Australian fruit and vegetable price index shows a relatively strong upward trend over time with little to no trend observed in the Woolworths index.

- While this longer term trend may reflect differences in product weights, it is more likely to reflect price trends.

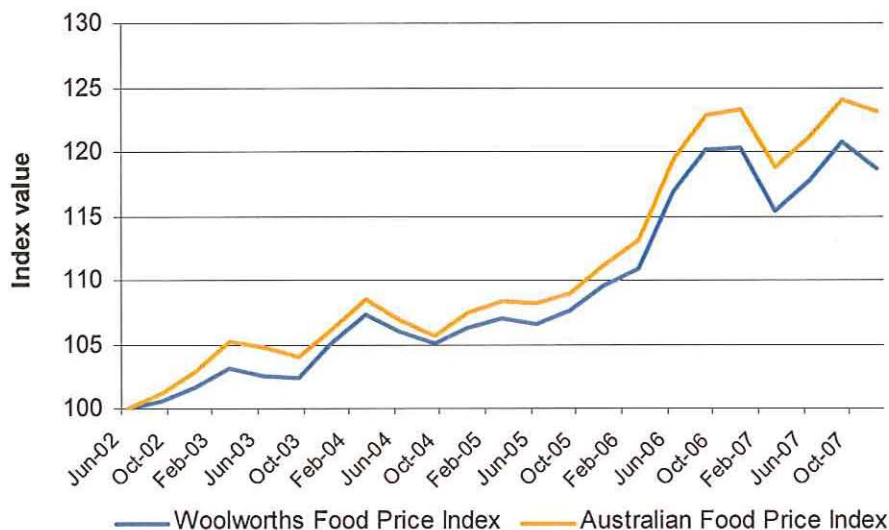
Effect of changing fruit and vegetable baskets

Noting that there is a large difference in the calculated Woolworths fruit and vegetable index and the Australian fruit and vegetables index, a test was constructed to examine the impact that this difference may have on both the Australian and the Woolworths calculated food price indices:

- First, the Woolworths food price index was recalculated using the ABS component price changes for fruits and vegetables;
- Second, the ABS food price index was recalculated using Woolworths' component price changes.

These revised indices are plotted against each other in Figure 4 and Figure 5.

Figure 4: Food index comparison (using Australian fruit and vegetable price increases in both indices)



Base period is the June quarter 2002

Note: Woolworths' fruit and vegetable data have been replaced with the Australian CPI fruit and vegetable data

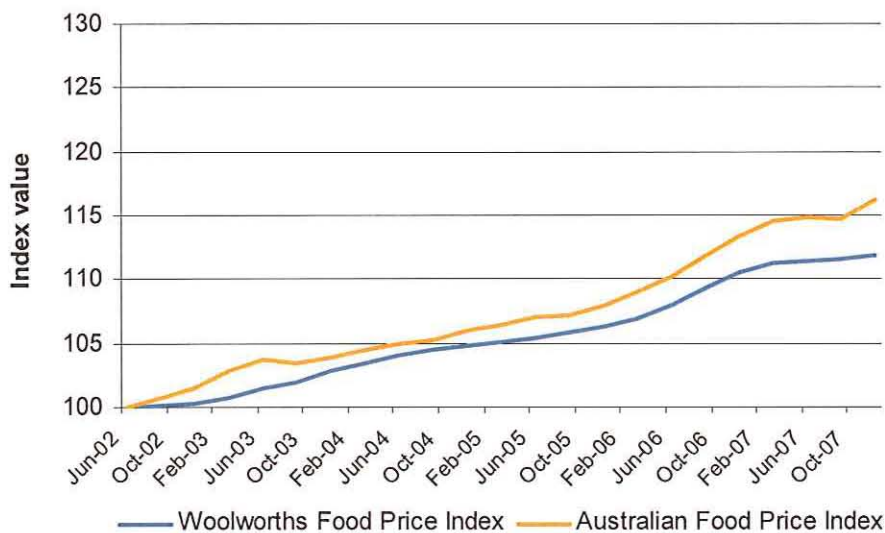
Methodology for Figure 4

The Australian food price index is unchanged from that published by the ABS.

To calculate the revised Woolworths trend, CRA used the price trends that were provided to the Reserve Bank of Australia, except for fruit and vegetables. Instead of using Woolworths data for the calculation, ABS fruit and vegetable price trends were substituted. This is the only non-Woolworths data that was used.

ABS weights were used in both calculations – the differences in the trends are driven by prices of the remaining components.

Figure 5: Food index comparison (using Woolworths' fruit and vegetable price data in both indices)



Base period is the June quarter 2002

Note: Australian CPI fruit and vegetable data have been replaced with Woolworths' fruit and vegetables data.

Methodology for Figure 5

The Woolworth's food price trend is unchanged from that calculated in Figure 1.

To calculate the adjusted ABS food price inflation trend, movements in fruit and vegetable prices, as calculated by Woolworths, were substituted instead of ABS calculated trends. This is the only non-ABS data that was included.

ABS weights were used in both calculations – the differences in the trends are driven by prices of the remaining components.

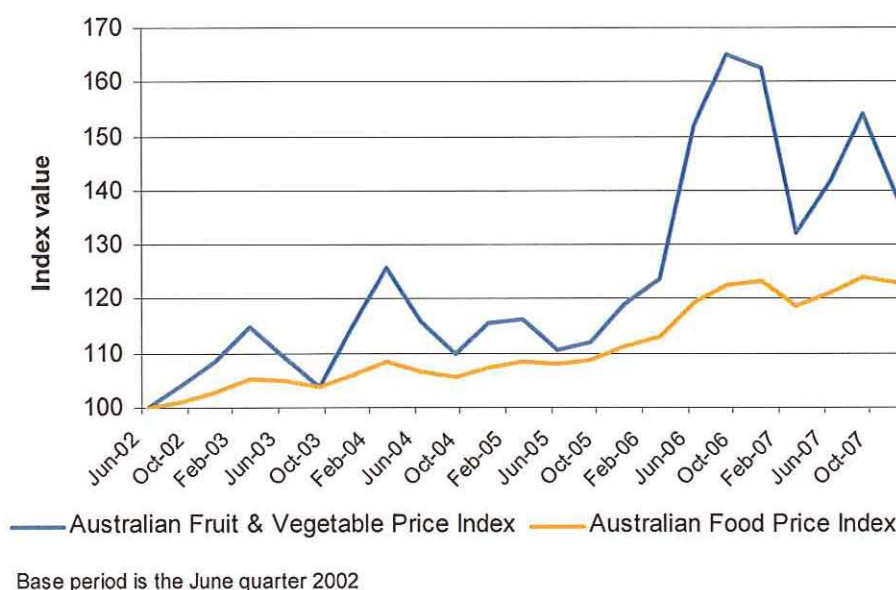
In Figure 4 (showing the original Australian food price index and a re-calculated Woolworths index using ABS food price data), the two indices track closely, indicating that:

- The Woolworths food price index and Australian food price index, while constructed using different pricing components, are reasonably consistent and meaningful comparisons can be made; and
- The increase in the Australian food price index since June 2006 is largely due to the increase in fruit and vegetable prices as measured by the ABS.

This last point is confirmed in Figure 5 in which the Woolworths food price index and Australian food price index have both been constructed using the increase in Woolworths' fruit and vegetable prices.

The Australian food price index and the Australian fruit and vegetable price index are shown in Figure 6.

Figure 6: Comparison of Australian Food Price Index, and Australian Fruit and Vegetables Price Index



The graph and the regression results show the following for the Australian food price index and the Australian fruit and vegetable price index as calculated by the ABS:

- The trend in fruit and vegetable prices is slightly above overall food prices prior to June 2006 and after this point fruit and vegetable prices start to increase much more rapidly.
- Deviations from the trend in the ABS food price index are largely driven by fruit and vegetable prices. The variations are smoothed in the overall index but the timing of the peaks and troughs match.

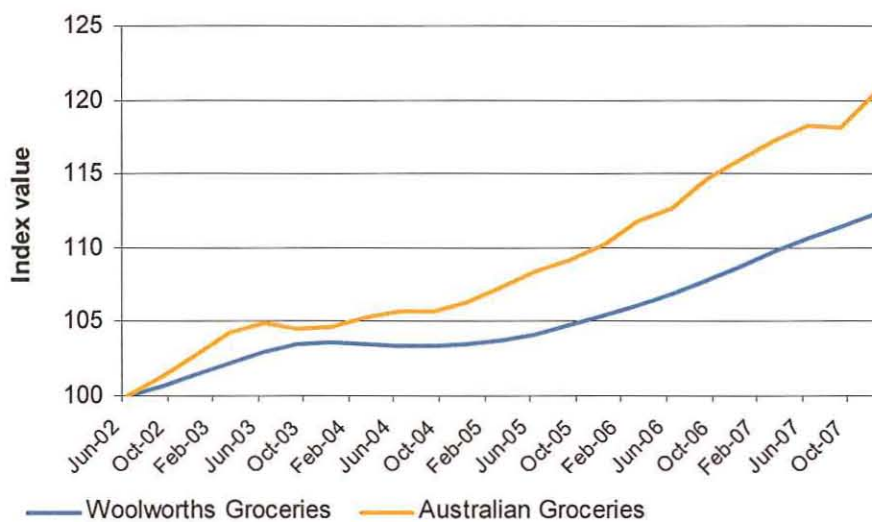
The latter point is consistent with the fact that majority of fruits and vegetables are sourced locally under local supply conditions due to the costs of transport. These prices will be subject to regional weather conditions and other factors affecting supply.

1.2. OTHER COMPONENTS

The Woolworths and ABS price indices for the other components reported by Woolworths to the RBA are shown in Figure 7 through to Figure 10.

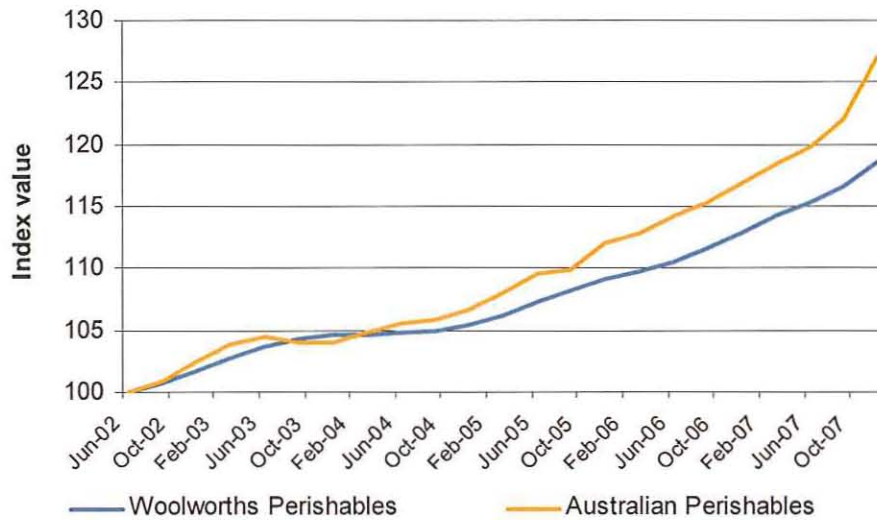
- Woolworths and ABS grocery prices indices begin to diverge in mid 2004 and Woolworths' prices have increased at a slower rate since that period. A similar but smaller diversion in trend is observed in perishables.
- Trends in Woolworths and ABS price indices for meat and bread do not show any clear indications of divergence.

Figure 7: Grocery price indices



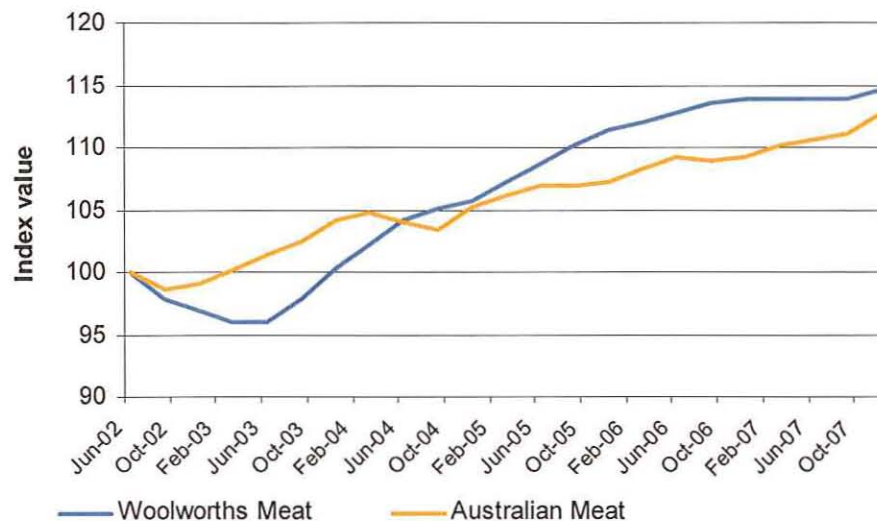
Base period is the June quarter 2002

Figure 8: Perishables price indices



Base period is the June quarter 2002

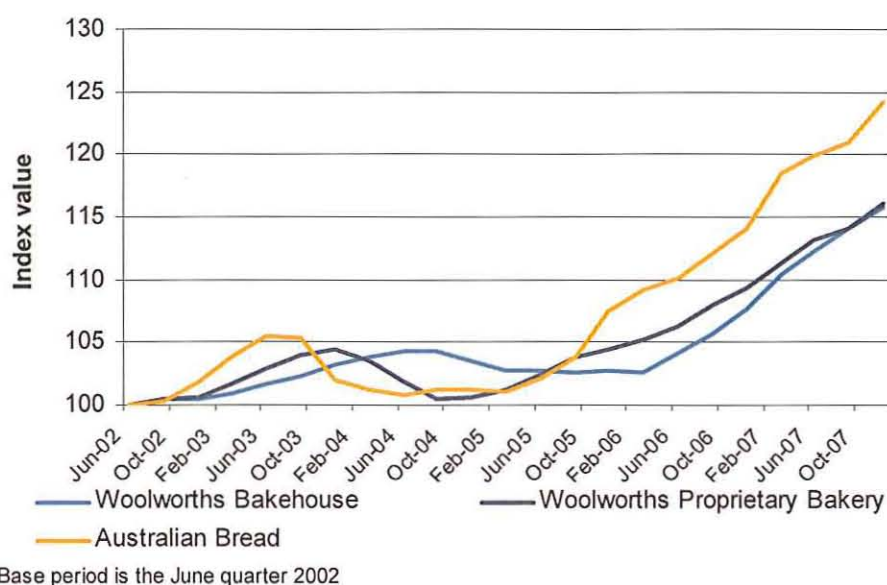
Figure 9: Meat price indices



Base period is the June quarter 2002

The recent increase in Woolworths' meat prices relative to Australian meat prices is noted. Woolworths has indicated to CRA that they target the higher end of the beef quality spectrum sourcing high grade animals and lot feeding through direct supply and feedlot arrangements. These arrangements will have a higher exposure to gain costs and adverse weather conditions that have affected temperate Eastern Australia.

Figure 10: Bread price indices



1.3. EXPENDITURE AND REVENUE SHARES

An attempt was made to compare the revenue shares from the Woolworths financial data with the household expenditure shares that are used to calculate the Australian Food CPI. The results for Woolworths' product categories are presented in Table 1.

Table 1: Expenditure and revenue share comparisons

Category	Weights calculated from the CPI series 15 weights	Weights based on Woolworths revenue share
Groceries	40.85%	50.25%
Perishables	11.78%	19.44%
Meat	22.26%	10.99%
Fruit & Vegetables	19.32%	13.60%
Bread	5.80%	5.72%

- Woolworths' revenue shares for meat and fruit and vegetables are considerably lower than the expenditure shares from the ABS Household Expenditure Survey (HES).
- Woolworths' revenue shares for groceries and perishables are considerably higher than the expenditure shares from the HES.

The differences in expenditure and revenue shares indicate that Woolworths' market share of meat and fruit and vegetables is lower than for other items such as groceries and perishables. This suggests that competition for fresh produce and meat may be higher.

These results indicate that Woolworths' market share of groceries and perishables is substantially greater than for other items. While this could be taken as an indication of less competitive pressure, it is of interest to note that Woolworths' price increases in both of these categories have been significantly lower, on trend, than the corresponding Australian food price index.

Attachment E - international inflation comparisons

Attachment E: International inflation comparisons

1 Introduction

This attachment outlines grounds for caution in making international comparisons of food price inflation, especially if the purpose of the analysis is to assess industry price competitiveness. These include the need to take account of:

- price level variation, exchange rate issues and period selection;
- measurement issues associated with different CPI methodologies;
- differences in cross-country macroeconomic performance;
- variations in domestic policy and regulatory environments;
- varying exposure to global food market conditions and the impact of sectoral protection policies; and
- differences in physical geography.

In light of these factors, sectoral inflation comparisons:

- on their own say nothing about the real cost of food or the capacity of consumers to purchase a basket of goods and services;
- are likely to be sensitive to exchange rate assumptions, base and time period selection and variations in CPI methodologies across countries; and
- in the case of Australia, may be misleading due to relatively strong economic growth, structural reform developments, close trade linkages with world food market conditions, low and stable agricultural protection and greater sensitivity to higher fuel prices.

2 Price levels, exchange rate issues and base/time period selection

Without taking account of cross-country differences in price levels, it is hard to provide any meaningful picture of food prices. Moreover, it is well known that in comparing prices across countries, market exchange rates can be misleading.

Purchasing Power Parity exchange rates are more appropriate currency converters by establishing purchasing power equivalence, where one dollar purchases the same quantity of goods and services in all countries. PPP conversions allow cross-country comparisons of economic aggregates on the basis of physical levels of output, free of price and exchange rate distortions.

Accurate PPP exchange rates are likely to require a different survey and sampling framework from that which a country follows for its CPI, which is designed to measure change over time in consumer prices. A common basket of well-defined goods and services is required and great care is needed to ensure that comparable products are being priced. Either the physical and economic characteristics are identical, or they are sufficiently similar that consumers are indifferent, showing no preferences when choosing from this pool of products. Prices for each product should be a national annual average, whereas in many countries prices for their CPI are only collected in the capital city.

Inflation comparisons can also be quite sensitive to the choice of base period and/or the selection of the relevant time period for analysis. For example, including one year (2006) in a comparative analysis has a significant upward impact on measured average food price inflation in Australia.

3 Other methodological issues

National statistical offices collect and publish Consumer Price Indices for the specific purpose of measuring within-country changes in prices over time. While certain statistical approaches may be satisfactory in a time series context, problems may arise in the interpretation of inter-area price indices.

Cross-country comparisons raise compositional issues, including different relative product weights within each country's food price calculations. Another issue is the degree of overlap in the coverage of price observations across product specifications from place to place.

Under very narrow product specifications, prices may be observed for these specifications in very few places, severely limiting overlap. At the same time, relaxing the product specification, effectively making comparable items that were considered different products under the tighter specification, tends to compromise the integrity of the index comparisons.¹

This may be a particular issue in the case of food where taste or quality attributes are judged to be significant.

4 Differences in macroeconomic performance

Focusing just on international comparisons of food price inflation pays no regard to broader variations in economic performance across countries. These are likely to be very important in explaining variations in inflation, including at the sectoral level. Nor do international inflation comparisons on their own provide meaningful insights into changes in living standards, or the real capacity of people to afford more or better quality products.

The table below examines average growth in real GDP, real per capita GDP growth and 'core inflation' (CPI All items, non food, non energy) in select industrialised economies over the period 1996-2006.

Macroeconomic indicators, select industrialised economies (1996-2006)

	Australia	USA	Japan	Germany	France	UK
GDP growth (av. annual %)	3.4	3.2	1.1	1.5	2.3	2.8
Per capita GDP growth (av. annual %)	2.4	2.1	0.9	1.4	1.8	2.4
Core inflation (av. annual %)	2.2	2.2	-0.1	1.2	1.3	1.2

Source: OECD, Conference Board

Two points are worth highlighting:

- the degree to which the higher growth economies (Australia and the United States) also experienced higher 'core inflation'; and
- the degree to which focusing narrowly on food price inflation fails to take account of real per capita income movements in the respective economies.

¹ Zieschang, Kimberley D., Paul A. Armknecht and Dale Smith (2001) 'Integrating inter-area and international price comparisons with consumer price index compilation', Joint World Bank-OECD Seminar on Purchasing Power Parities, Washington D.C.

That food price inflation over the last decade has been relatively higher in Australia compared with some other countries is not surprising given the economy's strong growth performance. Though at a relatively moderate rate in historical terms, prices overall have risen somewhat faster in Australia than in other advanced industrialised countries as a result of sustained high demand and competition for scarce resources. This can be seen in the rate of core inflation – excluding volatile items like food and energy. Hence this broad macroeconomic performance goes some distance towards explaining relatively higher food price inflation in Australia.

Lower food prices are not an end in themselves. Policy-makers in Australia could doubtless have achieved lower aggregate and sectoral inflation in an economy characterised by lower economic growth, yet this would likely have been at the expense of broader measures of economic welfare.

That Australia achieved relatively strong economic growth and per capita income growth over the period from 1996 to 2006 is a measure of its economic success. Unlike the United States and a number of other advanced economies, Australia avoided a recession in 2001. Europe was slow to recover from this slowdown and for some years lagged behind growth in the United States and Australia, with lower accompanying inflation.

The clearest example of why focusing narrowly on inflation in a sector like food can lead to spurious inferences is the contrasting experience of Australia and Japan, a country which experienced a decade of very low growth and deflation. Merely comparing food price inflation in Australia and Japan ignores both the absolute position of consumers (given the relatively high cost of food in Japan) and the relative improvement in real per capita living standards in Australia vis-à-vis Japan since 1996.

5 Variations in domestic policy and regulatory environments

In addition to variations in macroeconomic performance, variations in the policy and regulatory environment further complicate the interpretation of international inflation comparisons in any given time frame. Variations in the pace, scale and scope of regulatory reform are likely to have a particular impact on underlying cost pressures, especially in the services sector where traditionally large differences in approach have existed across OECD countries. This is the case directly in relation to the retail sector (e.g. regulation of shopping hours, zoning laws etc.), as well as in relation to key inputs (e.g. regulation of transport services).

Notably in the context of this inquiry, the last decade has seen a greater degree of convergence in product market regulation, with many continental European countries in particular moving towards more 'liberal' policy frameworks in the services sector. The extent to which an element of regulatory 'catch-up' in Europe has delivered efficiency benefits in the last decade is a further reason for caution in drawing strong inferences from cross-country inflation figures over this period.²

A good example is transport sector reform where 1992 was very much the start rather than the end point of moves within Europe towards a single internal market. Major reforms in road and rail freight only gathered pace in the 1990s (with road haulage opened fully in mid-1998), long after countries such as the United States and Australia had adopted efficiency-enhancing reforms to freight services.³

There is evidence of a strong positive effect on productivity levels from transport reform in the European Union. One study found that labour productivity in the French and German road freight sectors grew by 5 per cent annually between 1992 and 2000, due primarily to the deregulation of

² Conway, Paul and Giuseppe Nicoletti (2006), 'Product market regulation in the non-manufacturing sectors of OECD countries: Measurement and highlights', OECD Economics Department, November.

³ Hoj, Jens, Toshiyasu Kato and Dirk Pilat (1995), 'Deregulation and privatisation in the service sector', *OECD Economic Studies*, 25, 1995/II. Boylaud, Olivier (2000), 'Regulatory reform in road freight and retail distribution', OECD Economics Department Working Papers No. 255, ECO/WK(2000)28.

market access and tariffs, as well as to an increase in demand for cross-border shipments brought about by the European single market.⁴

As food products are heavily traded within Europe, reductions in intra-European transport costs, and the reduction or even elimination of border crossing costs in the single market, are likely to have had a restraining effect on food prices. To the extent that this is a form of 'catch-up' in regulatory reform, it essentially involves one-off increases in productivity levels rather than changes in productivity growth rates. Countries such as the United States and Australia (which undertook reform earlier or did not have similar restrictions in place), will not have benefited from this effect, a factor which needs to be taken into account in considering differences in sectoral inflation.

6 Exposure to global markets and sectoral protection policies

Australia's strong exposure to world food markets, especially compared with larger advanced economies like the United States, Japan and the Euro Area economies, is a further reason for caution in focusing on comparative measures of food price inflation.

Australia's agricultural sector is strongly export oriented, with agriculture and food products accounting for roughly a fifth of merchandise exports. In addition to the direct contribution of exports to farm earnings, and compared with some other industrialised countries, Australia is more likely to experience stronger feedback effects from changes in world prices. For commodities that are exported or that face competition from imports or that are domestically produced substitutes traded globally, domestic prices are generally relatively closely correlated with those in international markets.

Recent years have seen a sharp rise in international food prices, including for products such as beef, wheat, corn and soybeans. While Australia is a net gainer from higher food prices, this does mean upward pressure on the cost of living, both directly and through the potential impact on non-food prices.

Rapidly expanding food demand and changing diets in Asia are among the key drivers of higher food prices. The rapid expansion of biofuels production worldwide is also a major factor pushing up world grain prices.⁵

Australia is also more sensitive to world market conditions in light of the major policy-induced distortions to world agricultural production and trade. In many industrialised countries, direct government payments to agriculture (including market price support) account for a large proportion of farm incomes.

The OECD has estimated that in 2004-06 support to producers was around 5 per cent of farm receipts in Australia, compared with 14 per cent in the United States, 22 per cent in Canada, 34 per cent in the European Union and 55 per cent of farm receipts in Japan.⁶ Australia's relatively low and stable level of production linked support compared with these economies is a further reason why simple comparisons of changes in nominal food prices should be treated with caution.

While increased price pressure in global markets has been largely a response to increased demand for food products, supply conditions in recent years also reflect policy reforms on the part of some traditionally high agricultural protection economies.

Uruguay Round reforms and further steps by the EU to limit the impact of the Common Agricultural Policy, for example, have seen some unwinding of surplus stocks and reduction in

⁴ McKinsey Global Institute (2002), *Reaching Higher Productivity Growth in France and Germany*, McKinsey & Company. Though not as pronounced, there is also evidence of efficiency increasing effects from regulatory reform in the European rail sector. See OECD (2005) *Structural Reform in the Rail Industry*, (Discussion: Marc Ivaldi), OECD Policy Roundtables, which also includes a discussion of rail transport reform in Australia.

⁵ IMF (2007), *World Economic Outlook*, IMF: Washington D.C., October.

⁶ OECD (2007) *Agricultural Policies in OECD Countries, Monitoring and Evaluation 2007*, OECD: Paris.

subsidised exports. The last round of CAP reforms in 2003 included the introduction of a single farm payment and a lowering of support prices for a number of products, reducing the gap between internal prices and world market prices.⁷ In some cases, consumer food prices in Europe may have eased as a result.

As supply conditions have tightened, highly competitive agricultural exporters such as Australia, Argentina and Brazil have taken advantage of these developments. The consequent diversion of output from domestic markets has meant foreign barriers have played less of a role in keeping food prices in these countries relatively low.

7 Differences in physical geography

Australia's internal geography, as a large and sparsely populated country, creates distinct economic challenges, especially in sectors such as retailing where economies of scale, scope and density are important. Compared with more densely populated markets, firms face relatively higher transport costs or are forced to establish distribution points that service relatively small populations (or both).⁸

As well as having an impact on productivity levels, differences in internal geography are likely also to have implications for price changes given the degree to which transport costs, for example, vary in relative importance across countries. Again, noting the sensitivity of international price comparisons to time period selection, the steep rise in the world oil price since 2003 would be expected to have a greater impact on the cost structure of food retailing in Australia, compared with retail cost structures in geographically smaller, more densely populated countries.

8 Other issues

The above discussion is far from exhaustive in highlighting problems in making cross-country inflation comparisons, especially if the purpose of the exercise is to assess industry price competitiveness. Other potential difficulties arise due to: potentially significant shifts in relative prices; international variations in consumer demand and behaviour; and the relative significance of non-traded products in price indices.

⁷ OECD (2004) *Analysis of the 2003 CAP Reform*, OECD: Paris.

⁸ Battersby, Bryn (2006), 'Does Distance Matter? The effect of geographic isolation on productivity levels', *OECD Economic Studies*, No. 42, 2006/1.