

Embargoed until 10:45am – 20 January 2009

Food Price Index: December 2008

Highlights

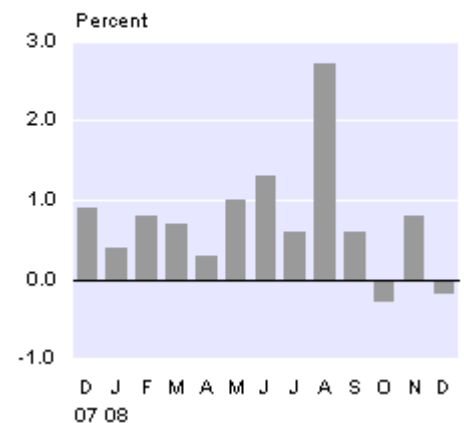
In December 2008 compared with November 2008:

- Food prices fell 0.2 percent.
- Fruit and vegetable prices fell 3.9 percent.
- Non-alcoholic beverage prices fell 1.0 percent.
- Restaurant meals and ready-to-eat food prices showed no change.
- Meat, poultry and fish prices rose 0.7 percent.
- Grocery food prices increased 0.9 percent.

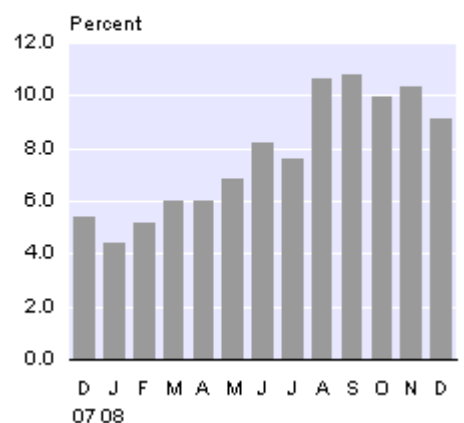
From December 2007 to December 2008:

- Food prices increased 9.1 percent.

Food Price Index
Monthly change



Food Price Index
Annual change



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See also [Food Price Index: December 2008 – Media release](#).

Commentary

Food prices in December 2008

Food prices fell 0.2 percent in December 2008, following an increase of 0.8 percent in November 2008 and a decrease of 0.3 percent in October 2008.

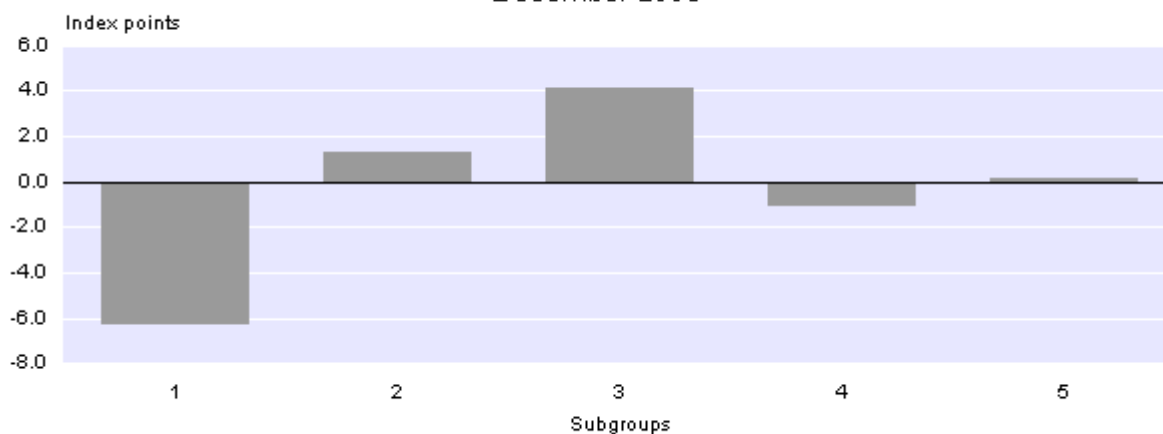
In December 2008, lower prices were recorded for the fruit and vegetables subgroup (down 3.9 percent) and the non-alcoholic beverages subgroup (down 1.0 percent). The restaurant meals and ready-to-eat food subgroup showed no change this month. Higher prices were recorded for the grocery food subgroup (up 0.9 percent), and the meat, poultry and fish subgroup (up 0.7 percent).

The most significant individual downward contributions came from lower prices for tomatoes (down 48.4 percent), broccoli (down 45.3 percent), minced beef (down 7.2 percent), and lettuce (down 17.7 percent).

The most significant individual upward contributions came from higher prices for apples (up 22.1 percent), bread (up 3.7 percent), fresh chicken (up 3.6 percent), and sausages (up 7.3 percent).

Index Points Contribution to Food Price Index

December 2008



1 Fruit and vegetables 2 Meat, poultry and fish 3 Grocery food 4 Non-alcoholic beverages
5 Restaurant meals and ready-to-eat food

Index Points Contribution		
Subgroup	October 2008 to November 2008	November 2008 to December 2008
Fruit and vegetables	-0.51	-6.33
Meat, poultry and fish	0.71	1.32
Grocery food	4.61	4.12
Non-alcoholic beverages	2.02	-1.12
Restaurant meals and ready-to-eat food	1.49	0.13
Food Price Index	8.32	-1.88

Note: Index points contribution may not sum to totals due to rounding.

Distribution of item-level movements

The table below outlines the distribution of price movements in November and December 2008. The Food Price Index (FPI) has been partitioned into those national item-level indexes that increased, showed no change, or decreased.

Distribution of Item-level Index Movements		
National item-level index movements	October 2008 to November 2008	November 2008 to December 2008
Increase in price		
Number of items	106	81
Percentage of all items	67.5	51.6
Percentage of expenditure weight	70.3	55.4
Index points contribution	25.7	20.6
Weighted average price increase (percent)	3.2	3.2
No change in price		
Number of items	2	4
Percentage of all items	1.3	2.5
Percentage of expenditure weight	2.0	1.1
Decrease in price		
Number of items	49	72
Percentage of all items	31.2	45.9
Percentage of expenditure weight	27.6	43.5
Index points contribution	-17.3	-22.5
Weighted average price decrease (percent)	5.4	4.5

The distribution of item-level movements shows that:

- the number of items that increased in price fell, while the number of items that decreased in price rose
- the percentage expenditure weight of items that increased in price fell sharply, while the percentage expenditure weight of items that decreased in price rose strongly
- the weighted average price decrease was greater than the weighted average price increase

These movements resulted in a 0.2 percent decrease in the December 2008 FPI, compared with a 0.8 percent increase in November 2008.

Annual movements

Food prices increased 9.1 percent in the year to December 2008, following increases of 10.3 percent and 9.9 percent in the years to November and October 2008, respectively.

All five of the food subgroups increased in the year to December 2008. The most significant upward contribution came from higher prices for the grocery food subgroup (up 11.0 percent), meat, poultry and fish (up 11.1 percent), restaurant meals and ready-to-eat food (up 6.1 percent), fruit and vegetables (up 8.7 percent), and non-alcoholic beverages (up 5.6 percent).

Within these subgroups, the most significant upward contributions came from higher prices for ready-to-eat food (up 6.9 percent), bread (up 20.2 percent), cakes and biscuits (up 14.0 percent), and restaurant meals (up 5.2 percent).

Annual Index Points Contribution	
Subgroup	December 2007 to December 2008
Grocery food	44.91
Meat, poultry and fish	20.06
Restaurant meals and ready-to-eat food	14.46
Fruit and vegetables	11.70
Non-alcoholic beverages	5.53
Food Price Index	96.65

Note: Index points contribution may not sum to totals due to rounding.

Fruit and vegetables

Prices for the fruit and vegetables subgroup decreased 3.9 percent in December 2008, following decreases of 0.3 percent and 6.0 percent in November and October 2008, respectively. Vegetable prices decreased 9.8 percent in December 2008, while fruit prices increased 4.5 percent.

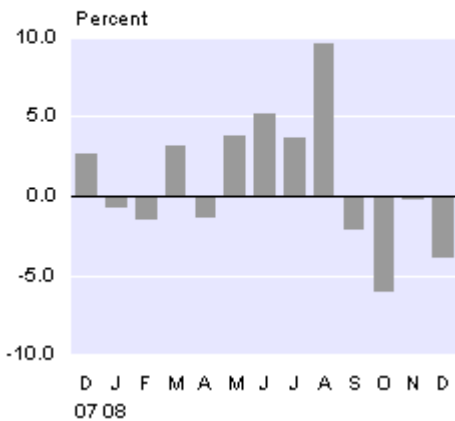
The most significant downward contributions came from lower prices for tomatoes (down 48.4 percent), broccoli (down 45.3 percent), lettuce (down 17.7 percent), and nectarines (down 15.6 percent).

The most significant upward contributions came from higher prices for apples (up 22.1 percent) and kiwifruit (up 27.8 percent).

For the year to December 2008, fruit and vegetable prices increased 8.7 percent. The most significant individual upward contributions came from higher prices for apples (up 38.1 percent), potatoes (up 29.7 percent), and carrots (up 69.4 percent). The most significant individual downward contribution came from lower prices for lettuce (down 10.7 percent).

Fruit and Vegetables Subgroup

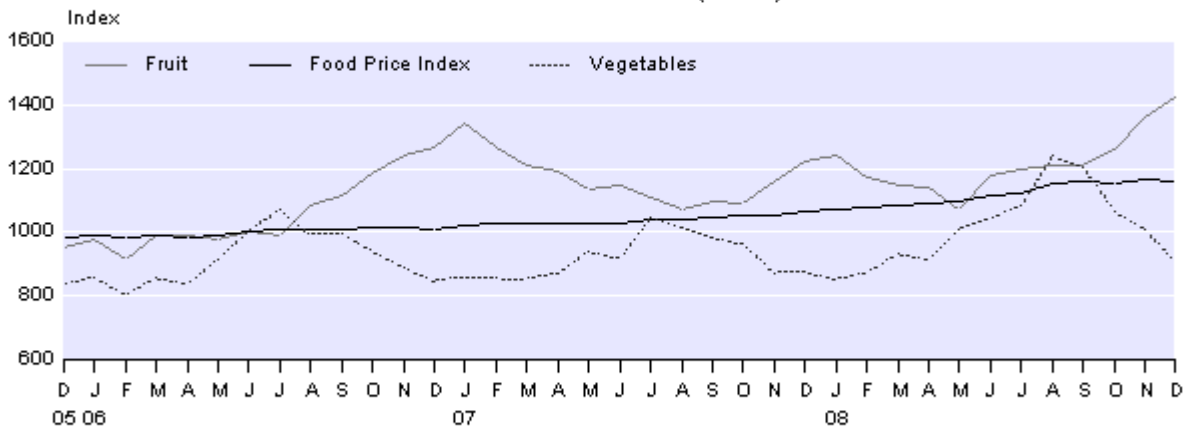
Monthly change



Fruit and Vegetables Subgroup and Food Group

Monthly indexes

Base: June 2006 month (=1000)



Note: From July 2006, prices for fresh fruit and vegetables are not seasonally adjusted. They were seasonally adjusted until June 2006.

Grocery food

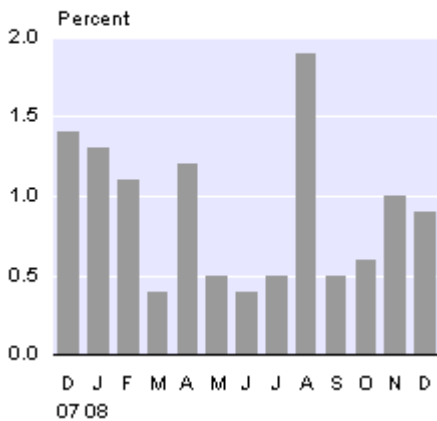
Prices for the grocery food subgroup increased 0.9 percent in December 2008, following increases of 1.0 percent and 0.6 percent in November 2008 and October 2008, respectively.

The most significant upward contributions came from higher prices for bread (up 3.7 percent), and cakes and biscuits (up 2.2 percent).

The most significant downward contribution came from lower prices for boxed chocolates (down 11.9 percent), salted peanuts (down 5.9 percent), and cheddar cheese (down 3.1 percent).

For the year to December 2008, prices for the grocery food subgroup increased 11.0 percent. The most significant upward contributions came from higher prices for bread (up 20.2 percent), cakes and biscuits (up 14.0 percent), potato crisps (up 18.1 percent), fresh milk (up 5.5 percent), cheddar cheese (up 15.1 percent), and yoghurt (up 11.3 percent).

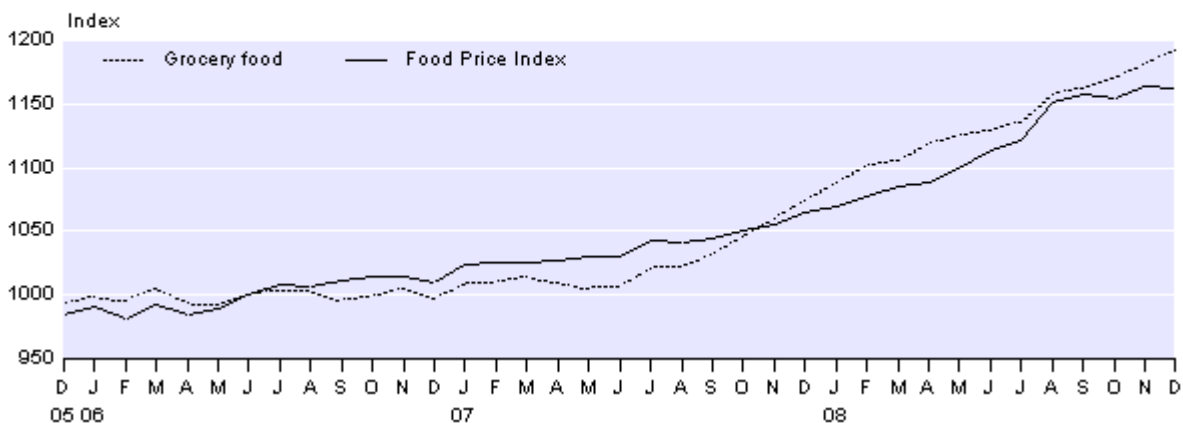
Grocery Food Subgroup Monthly change



Monthly Index Numbers

Movement in grocery food prices, and overall food prices

Base: June 2006 month (=1000)



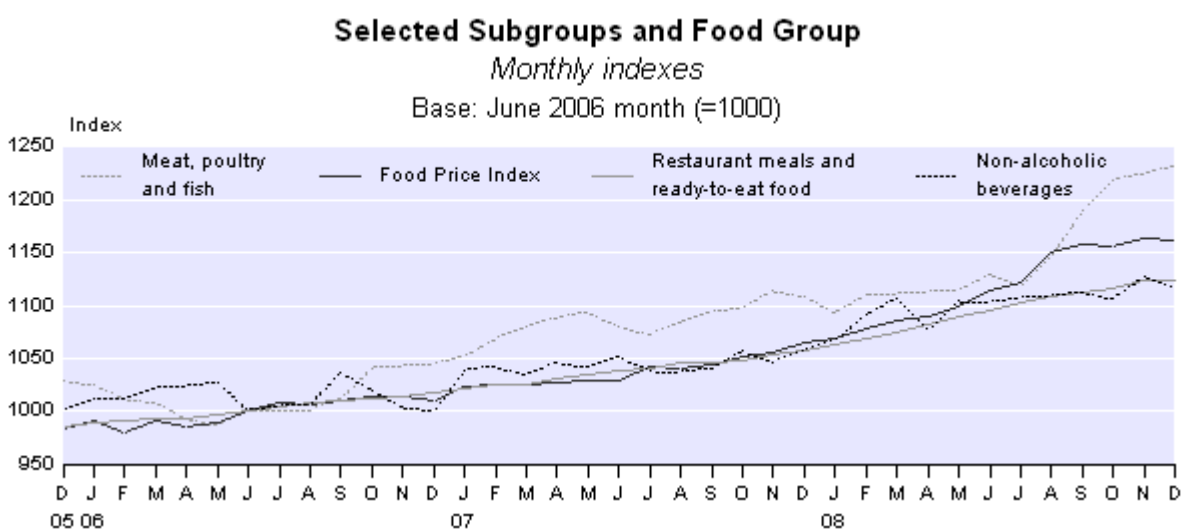
Other subgroups

In December 2008, lower prices were recorded for the non-alcoholic beverages subgroup (down 1.0 percent). The restaurant meals and ready-to-eat food subgroup showed no change this month. Higher prices were recorded for the meat, poultry and fish subgroup (up 0.7 percent).

Within these subgroups, the most significant upward contributions came from higher prices for fresh chicken (up 2.5 percent), sausages (up 7.3 percent), and lamb chops (up 7.6 percent).

The most significant downward contributions came from lower prices for minced beef (down 7.2 percent) and soft drinks (down 1.3 percent).

For the year to December 2008, prices for the meat, poultry and fish subgroup increased 11.1 percent, the restaurant meals and ready-to-eat food subgroup increased 6.1 percent, and the non-alcoholic beverages subgroup increased 5.6 percent.



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Next release ...

Food Price Index: January 2009 will be released on 12 February 2009.

Technical notes

What the Food Price Index measures

The Food Price Index (FPI) measures the rate of price change of food and food services purchased by households. The food group is the only commodity group of the Consumers Price Index (CPI) for which an index is prepared each month. The all groups CPI is prepared quarterly.

Index series available online from Infoshare

Under the Making More Information Freely Available (MIFA) initiative, a great wealth of index series can now be accessed free of charge from the online Infoshare database, available at: <http://www.stats.govt.nz/infoshare>.

To access FPI time series, click on '**Browse**', then choose:

Subject category: **Economic indicators**

Group: **Consumers Price Index**

The FPI series are listed immediately after the CPI series.

The time series can be downloaded in Excel or comma delimited format, where percentage movements can be calculated using the following formula:

$$\left(\frac{\text{Index number for later period} - \text{Index number for earlier period}}{\text{Index number for earlier period}} \right) \times 100$$

More information about Infoshare can be found at: <http://www.stats.govt.nz/about-infoshare>.

Distribution of item-level index movements

The Distribution of Item-level Index Movements table in the commentary of this Hot Off The Press gives additional information on the distribution of price movements recorded for the current month's FPI. The analytical statistics in the table give an indication of how widespread price changes are, and their relative magnitude compared with previous months.

Grocery food specials

Items that are 'on special' or come 'off special' are included in the FPI at the price levels observed at the time prices are collected. An analysis of the price quotes for these items is often given for the grocery food and non-alcoholic beverage subgroups in the commentary of this Hot Off The Press. To be included in this analysis, the priced item will have been on special either last month or this month, or have been on special in both months.

Sample of outlets

Prices are collected from a sample of retail outlets. This sample was selected as part of the 2006 FPI review. The last selection of outlets took place with the 1999 FPI review. As a result of the 2006 FPI review, the price collection effort was redistributed to align more closely with the population shares of the regions. This redistribution means more prices are collected in the larger pricing centres, particularly Auckland. The objective of this re-allocation is to maximise the accuracy of the national FPI while taking into account a secondary requirement to produce regional indexes of good quality.

Food prices are collected from about 650 outlets in the 15 surveyed urban areas. Of these, about 75 are supermarkets, 30 greengrocers, 30 fish shops, 30 butchers, 50 convenience stores (with half being service stations and the other half being dairies, grocery stores and superettes), 120 restaurants (for evening meals), and more than 300 are other suitable outlets (for breakfast, lunch and takeaway food).

Review of the Food Price Index

The FPI was reviewed in 2008 as part of the regular review of the Consumers Price Index (CPI). The review encompassed the reselection of the basket of representative food goods and services and the reweighting of the basket to reflect the relative importance of household spending on food.

The item pricing specifications were also updated and the sample of product sizes, brands and varieties has been reselected in some cases. Price collectors were also given more guidance about specific brand-share targets for selected goods by using summary information collated from supermarket scan data obtained from the Nielsen Company. The guidance ensures that the mix of brands in the FPI price samples reflect market shares.

The updated FPI sample of products was selected in April 2008. Price collection for the existing and new samples ran alongside each other until June 2008, when collection for the old index ceased.

Pricing coverage and timing

Prices are surveyed in 15 urban areas: Whangarei, Auckland, Hamilton, Tauranga, Rotorua, Napier-Hastings, New Plymouth, Wanganui, Palmerston North, Wellington, Nelson, Christchurch, Timaru, Dunedin and Invercargill.

Fresh fruit and vegetable prices are surveyed weekly, and the remaining food prices are generally surveyed between the 8th and 16th of the month, although sometimes surveying starts and finishes earlier or later.

Expenditure weights

The main source of information used to weight the FPI basket is the 2006/07 Household Economic Survey (HES), which collected detailed information on the spending patterns of about 2,600 households. However, because the HES doesn't provide accurate information for some food items, such as confectionery and soft drinks, information was also sourced from food manufacturers and distributors, and from supermarket scan data (from the Nielsen Company).

The initial weights for the year to June 2007 (the weight reference period) were 'price updated' to the June 2008 month (the price reference period). This updating involved expressing the underlying quantities of the weight reference period in the prices of the price reference period. The initial weights indicated that households spent \$13.263 billion on food during the year to June 2007 (2006/07). When the food consumed during 2006/07 is expressed in prices that were current at June 2008, that spending rises to \$14.583 billion (10.0 percent higher, due to increased food prices since 2006/07).

Table 4 (in the tables section) gives the expenditure weights, as at the June 2008 month, for the reweighted FPI. It shows that about \$21 of every \$100 spent by households on food is spent on eating out or takeaways. About \$17 of every \$100 spent on food is on meat, poultry and fish, and about \$14 is on fruit and vegetables. Non-alcoholic beverages such as coffee, soft drinks and fruit juice account for \$10, and the remaining \$38 is spent on grocery food.

Regional population weights

Regional population weights are used to allocate the national expenditure weights of goods and services derived from the Household Expenditure Survey (HES) and other sources to the FPI pricing centres. For example, the population weights ensure that a given price change in Auckland, with a population weight of 32.98 percent, would have nearly three times the effect on the national FPI than the same movement in Christchurch, which has a population weight of 11.55 percent.

The population weights, which appear in table 5, have been calculated by making use of local government boundaries. The 2008 weights were derived by assigning the census usually resident population as at June 2007 of each regional council area to the pricing centre(s) within the region.

For three regional council areas, Bay of Plenty, Manawatu-Wanganui and Canterbury, there are two pricing centres in each region. The proportion of the regional council area population allocated to each pricing centre was based on the population of the pricing centre's territorial authority.

The four regions without a pricing centre had their populations allocated to the nearest pricing centres. The Gisborne region's population was allocated to the Napier-Hastings pricing centre, and the Marlborough, Tasman and West Coast regions were allocated to the Nelson pricing centre.

The population weights used previously were based on the census usually resident population as at June 2005.

As well as allocating population weights to the 15 FPI pricing centres, Statistics New Zealand is also publishing the FPI and CPI for five broad regions based on regional council area boundaries. These regions are Auckland, Wellington, Rest of North Island, Canterbury and Rest of South Island. The population weights of these broad regions are also given in table 5.

Elementary aggregate formulae

Regional elementary aggregates are calculated for each of the 15 pricing centres from all prices collected for an item within that region. Regional elementary aggregates are calculated using a 'geometric mean of price relatives', or Jevons formula.

The Jevons formula is used to calculate average prices for all food goods and services in the basket, except for fresh fruit and fresh vegetables. The Jevons formula assumes that households spend the same amount at each surveyed outlet in each period. This implies that increased quantities are purchased from outlets showing lower-than-average relative price change and decreased quantities from outlets showing higher-than-average price change.

The Jevons formula is:

$$P_{JE} = \prod_{n=1}^N \left(\frac{P_n^1}{P_n^0} \right)^{\frac{1}{N}}$$

Where:

P_n^1 = Price of item n (n=1...N) in period 1

P_n^0 = Price of item n (n=1...N) in the base period

In practice, Statistics NZ uses a weighted geometric mean formula, with the weights, where available, representing the relative importance of outlet types such as supermarkets relative to convenience stores and the relative importance of individual outlets (eg supermarket chains).

As four or five prices (depending on how many Fridays fall within a given month) are collected within each month for fresh fruit and vegetables, the 'arithmetic mean of price relatives' or Dutot formula is used as the first stage of aggregation is across both outlets within each region and across weeks within each month.

The Dutot formula is:

$$P_{DU} = \sum_{i=1}^N \left(\frac{1}{N} \right) P_i^1 / \sum_{i=1}^M \left(\frac{1}{M} \right) P_i^0$$

Where:

P_i^1 = Price of item i ($i=1 \dots N$) in period 1

P_i^0 = Price of item i ($i=1 \dots M$) in the base period

In practice, Statistics NZ uses a weighted arithmetic mean formula, with the weights, where available, representing the relative importance of outlet types such as supermarkets relative to convenience stores, and the relative importance of individual outlets (eg supermarket chains).

Average prices of selected food items (table 3)

Table 3 contains a selection of average retail prices for the current and previous month. The weighted average prices are calculated by applying index movements to weighted average prices calculated for the June 2006 month. The weighted average prices are not statistically accurate measures of average transaction price levels, but do provide a reliable indicator of percentage changes in prices.

As the weighted average prices are calculated from the prices as at the June 2006 month, these are not strictly comparable with weighted average prices published before the July 2006 month (when the new June 2006 weighted average price based on the June 2006 sample of prices was published). Further, other methodological changes that will cause the weighted average prices based on the June 2006 average prices to differ from the previously published ones include:

- the adoption of the geometric mean formula for all food goods and services, other than fresh fruit and vegetables
- an updated relative importance of sampled outlet types (eg supermarkets and convenience stores) and sample outlets (eg supermarket chains)
- an updated mix of surveyed brands, varieties and sizes
- the changes that have been made in the reference size in the 'unit' column of table 3 for some items.

For any given set of prices, the use of the geometric mean formula will result in prices being less than or equal to an arithmetic mean price. This means that the June 2006 month average prices in table 3 for items other than fresh fruit and vegetables are in many cases lower than those that appeared in the June 2006 Hot Off The Press.

Seasonal effects – fresh fruit and vegetables

Until the June 2006 month, fresh fruit and vegetable items that exhibited a seasonal pattern were adjusted to remove the effect of normal seasonal change. This treatment was used to reduce the influence of normal seasonal price fluctuations. However, the treatment did not completely eliminate the effects of seasonal fluctuations if shifts in seasonal patterns occurred.

From the July 2006 month onwards, the FPI incorporates seasonally unadjusted prices for fresh fruit and vegetables. This change is in line with a recommendation made by the 2004 CPI Revision Advisory Committee.

The ongoing, fully unadjusted FPI is linked at the June 2006 month to the previously published FPI, which is partly seasonally adjusted. As such, annual movements calculated over the annual period encompassing the June 2006 month were based on fully unadjusted index numbers for the latest month, compared with partly adjusted index numbers for the same month of the previous year.

During the year-long transition of the official FPI, two sets of index numbers were supplied in table 3 of the FPI release: the index numbers for the FPI which were seasonally adjusted until the June 2006 month (the official FPI series) and the fully seasonally unadjusted analytical series which go back to the June 1999 month.

More information

For more information, follow the [link](#) from the technical notes of this release on the Statistics NZ website.

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Timing

Timed statistical releases are delivered using postal and electronic services provided by third parties. Delivery of these releases may be delayed by circumstances outside the control of Statistics NZ. Statistics NZ accepts no responsibility for any such delays.

Tables

The following tables are printed with this Hot Off The Press and can also be downloaded from the Statistics New Zealand website in Excel format. If you do not have access to Excel, you may use the [Excel file viewer](#) to view, print and export the contents of the file.

1. Food price index, subgroups
- 2.01. Food price index, subgroups, classes and selected sections – index numbers
- 2.02. Food price index, subgroups, classes and selected sections, percentage change from previous month
- 2.03. Food price index, subgroups, classes and selected sections, percentage change from same month of previous year
3. Food price index, weighted average retail prices of selected food items
4. Food price index, expenditure weights, subgroups, classes and selected sections
5. Food price index, population weights, region/pricing centre