

Embargoed until 10:45am – 15 July 2008

## Food Price Index: June 2008

### Highlights

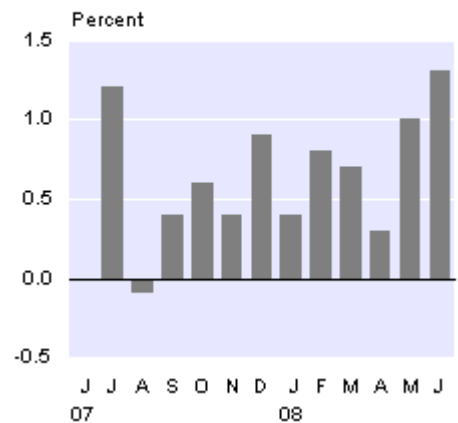
In June 2008, compared with May 2008:

- Food prices rose 1.3 percent.
- Fruit and vegetable prices rose 5.2 percent.
- Meat, poultry and fish prices rose 1.3 percent.
- Grocery food prices rose 0.4 percent.
- Restaurant meals and ready-to-eat food prices rose 0.6 percent.
- Non-alcoholic beverage prices fell 0.3 percent.

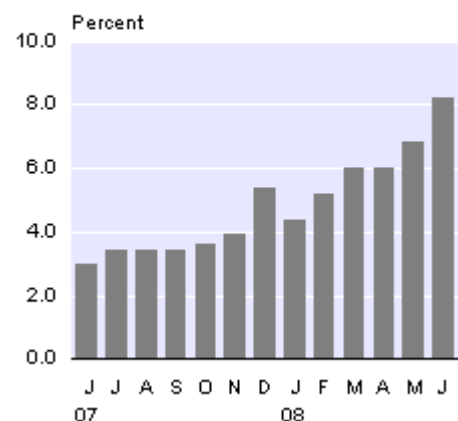
From June 2007 to June 2008:

- Food prices increased 8.2 percent.

**Food Price Index**  
Monthly change



**Food Price Index**  
Annual change



Geoff Bascand  
Government Statistician

15 July 2008  
ISSN 1178-0282

There is a companion Media Release published – [Food Price Index: June 2008](#).

# Commentary

## Food prices in June 2008

Food prices rose 1.3 percent in June 2008, following increases of 1.0 percent and 0.3 percent in May and April 2008, respectively.

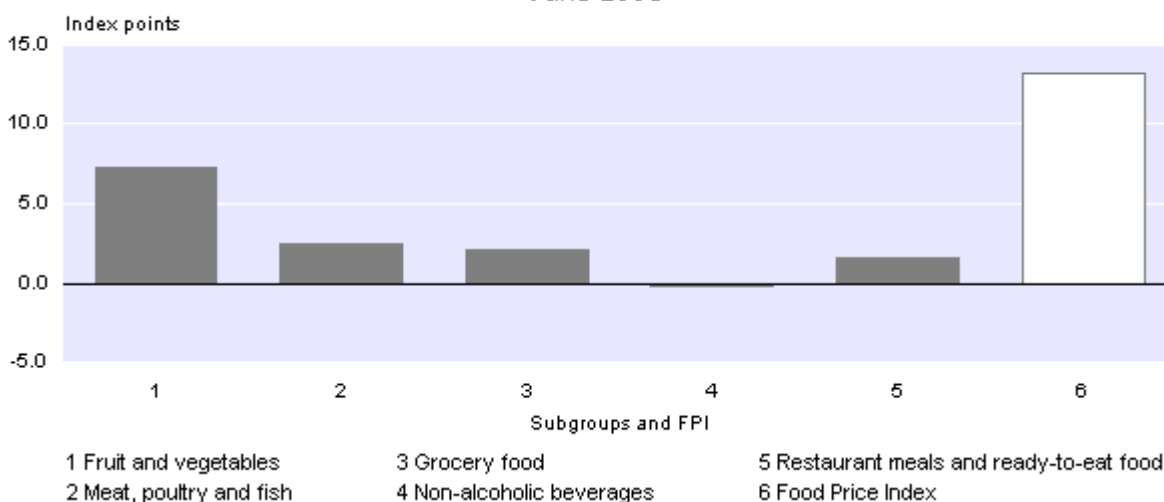
In June 2008, higher prices were recorded for the following subgroups: fruit and vegetables (up 5.2 percent), meat, poultry and fish (up 1.3 percent), grocery food (up 0.4 percent), and restaurant meals and ready-to-eat food (up 0.6 percent). Lower prices were recorded for the non-alcoholic beverage subgroup (down 0.3 percent).

The most significant individual upward contributions came from higher prices for lettuce (up 34.4 percent), poultry (up 4.8 percent), oranges (up 28.9 percent), apples (up 13.1 percent), and peaches (up 79.0 percent).

The most significant individual downward contributions came from lower prices for tomatoes (down 18.8 percent), and sausages (down 12.6 percent).

### Points Contribution to Food Price Index

June 2008



Index Points Contribution		
Subgroup	April 2008 to May 2008	May 2008 to June 2008
Fruit and vegetables	5.26	7.28
Meat, poultry and fish	0.37	2.43
Grocery food	2.28	2.15
Restaurant meals and ready-to-eat food	1.30	1.66
Non-alcoholic beverages	2.55	-0.33
<b>Food Price Index</b>	<b>11.76</b>	<b>13.19</b>

**Note:** 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 May and June 2008. The Food Price Index (FPI) has been partitioned into those national item-level indexes that increased, showed no change, or decreased.

<b>Distribution of Item-level Index Movements</b>		
<b>National item-level index movements</b>	<b>April 2008 to May 2008</b>	<b>May 2008 to June 2008</b>
<b>Increase in price</b>		
Number of items	92	102
Percentage of all items	59.7	66.2
Percentage of expenditure weight	64.4	66.7
Index points contribution	23.1	23.8
Weighted average price increase (percent)	3.3	3.2
<b>No change in price</b>		
Number of items	3	2
Percentage of all items	1.9	1.3
Percentage of expenditure weight	1.6	1.4
<b>Decrease in price</b>		
Number of items	59	50
Percentage of all items	38.3	32.5
Percentage of expenditure weight	35.0	31.9
Index points contribution	-11.3	-10.7
Weighted average price decrease (percent)	3.0	3.0

The distribution of item-level movements shows that:

- the percentage expenditure weight of items that increased in price rose while percentage expenditure weight of items that decreased in price fell.
- the percentage expenditure weight of items that increased in price is much greater than the percentage expenditure weight of items that decreased in price.

This resulted in an increase of 1.3 percent in the June 2008 FPI, compared with an increase of 1.0 percent in May 2008.

## Annual movements

Food prices increased 8.2 percent in the year to June 2008, the highest annual increase since June 1990. The annual June 2008 price increase follows increases of 6.8 percent and 6.0 percent in the years to May 2008 and April 2008.

All five of the food subgroups increased in the year to June 2008. The most significant upward contribution came from higher prices for the grocery food subgroup (up 12.1 percent), followed by restaurant meals and ready-to-eat food (up 5.5 percent), fruit and vegetables (up 8.7 percent), meat, poultry and fish (up 4.4 percent), and non-alcoholic beverages (up 4.9 percent).

Within these subgroups, the most significant upward contributions came from higher prices for fresh milk (up 22.0 percent), cheddar cheese (up 61.9 percent), bread (up 15.2 percent), and butter (up 86.6 percent).

The most significant downward contribution came from lower prices for tomatoes (down 25.1 percent), and avocados (down 54.2 percent).

<b>Annual Index Points Contribution</b>	
<b>Subgroup</b>	<b>June 2007 to June 2008</b>
Grocery food	46.62
Restaurant meals and ready-to-eat food	12.96
Fruit and vegetables	11.76
Meat, poultry and fish	7.87
Non-alcoholic beverages	4.59
<b>Food Price Index</b>	<b>83.80</b>

**Note:** Points contribution may not sum to totals due to rounding.

## Fruit and vegetables

Prices for the fruit and vegetable subgroup increased 5.2 percent in June 2008, following an increase of 3.8 percent in May 2008 and a decrease of 1.4 percent in April 2008.

Other similar monthly increases in seasonally unadjusted prices for fruit and vegetables have occurred in July 2007 (up 6.8 percent) and June 2006 (up 9.1 percent).

Fruit prices increased 9.7 percent in June 2008, while vegetable prices increased 2.6 percent.

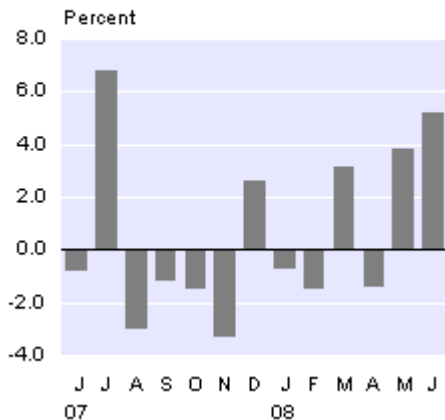
The most significant upward contributions came from higher prices for lettuce (up 34.4 percent), oranges (up 28.9 percent), apples (up 13.1 percent), and peaches (up 79.0 percent).

Significant downward contributions came from lower prices for tomatoes (down 18.8 percent).

For the year to June 2008, fruit and vegetable prices increased 8.7 percent. The most significant upward contributions came from higher prices for lettuce (up 58.7 percent), potatoes (up 26.7 percent), and broccoli (up 87.5 percent). The most significant downward contributions came from tomatoes (down 25.1 percent), and avocados (down 54.2 percent).

### Fruit and Vegetables Subgroup

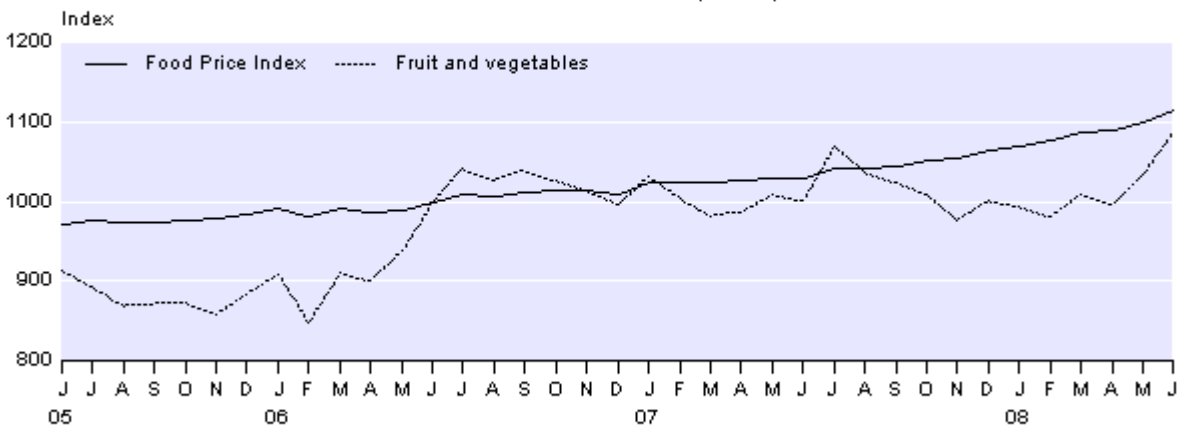
*Monthly change*



### Monthly Index Numbers

*Movement in fruit and vegetable prices, and overall food prices*

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.

## Meat, poultry and fish

Prices for the meat, poultry and fish subgroup increased 1.3 percent in June 2008, following increases of 0.2 percent in both May 2008 and April 2008.

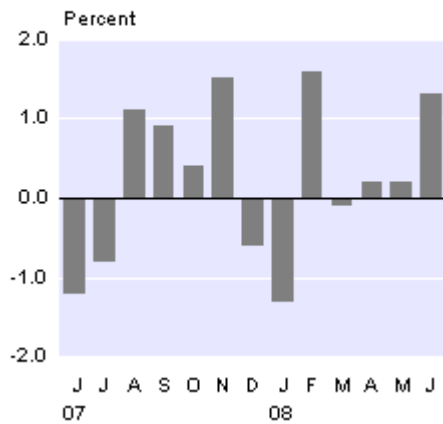
The most significant upward contribution came from higher prices for poultry (up 4.8 percent).

Significant downward contributions came from lower prices for sausages (down 12.6 percent), and ham (down 3.9 percent).

For the year to June 2008, prices for the meat, poultry and fish subgroup increased 4.4 percent. The most significant upward contributions came from higher prices for poultry (up 11.2 percent), bacon (up 9.0 percent), and minced beef (up 7.7 percent). Significant downward contributions came from lower prices for ham (down 11.0 percent), and sausages (down 5.8 percent).

### Meat, Poultry and Fish Subgroup

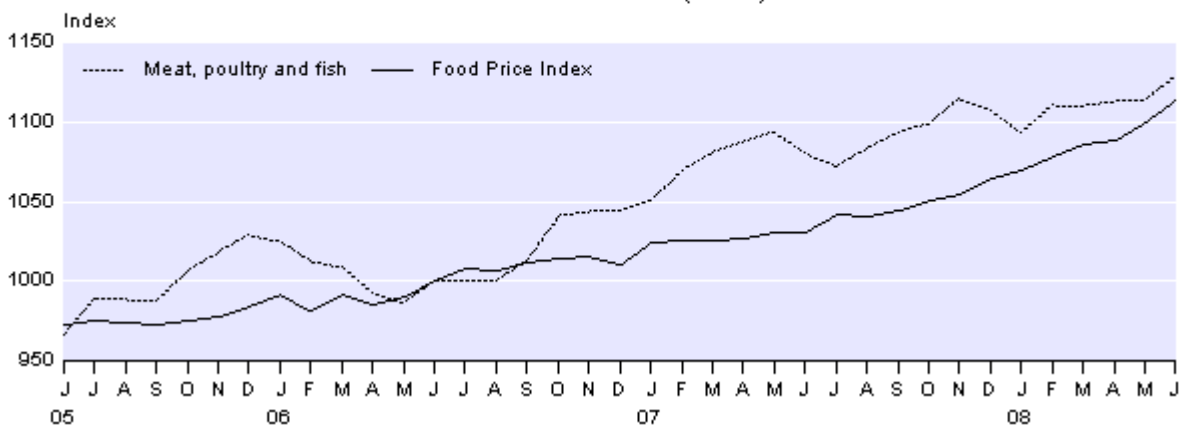
*Monthly change*



### Monthly Index Numbers

*Movement in meat, poultry and fish prices, and overall food prices*

Base: June 2006 month (=1000)



## Grocery food

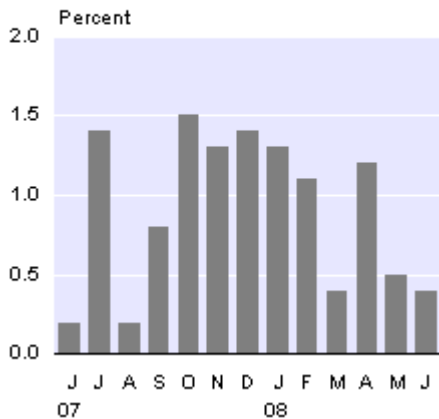
Prices for the grocery food subgroup increased 0.4 percent in June 2008, following increases of 0.5 percent and 1.2 percent in May 2008 and April 2008, respectively.

The most significant upward contributions came from higher prices for bread (up 1.5 percent), boxed chocolate (up 9.8 percent), and ice cream and edible ices (up 2.0 percent).

The most significant downward contribution came from lower prices for chocolate biscuits (down 2.8 percent).

For the year to June 2008, prices for the grocery food subgroup increased 12.1 percent. The most significant upward contributions came from higher prices for fresh milk (up 22.0 percent), cheddar cheese (up 61.9 percent), bread (up 15.2 percent), butter (up 86.6 percent), and potato crisps (up 15.7 percent).

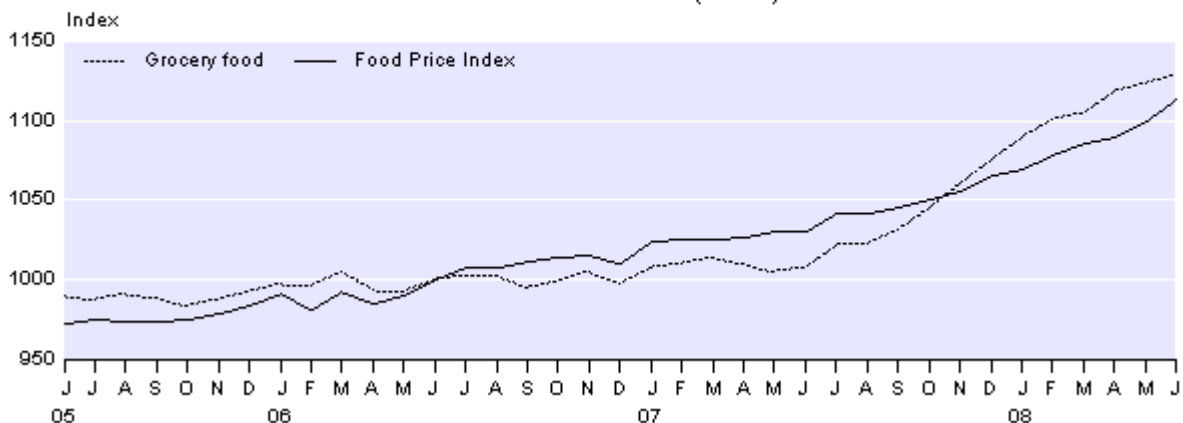
**Grocery Food Subgroup**  
*Monthly change*



**Monthly Index Numbers**

*Movement in grocery food prices, and overall food prices*

Base: June 2006 month (=1000)

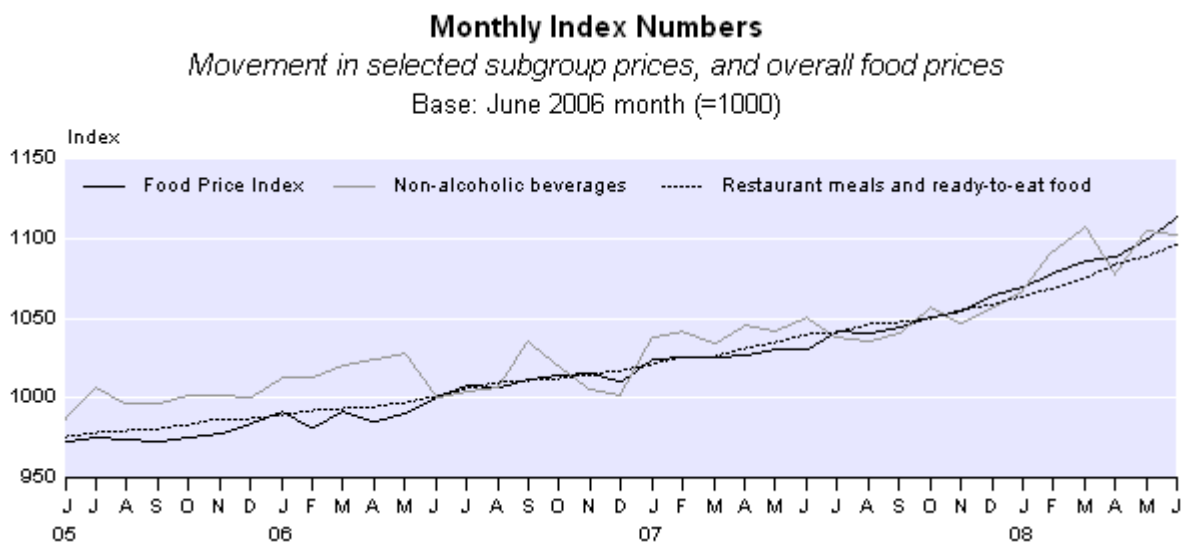


## Other subgroups

In June 2008, higher prices were recorded for the restaurant meals and ready-to-eat food subgroup (up 0.6 percent), while lower prices were recorded for the non-alcoholic beverages subgroup (down 0.3 percent).

Within these subgroups, the most significant upward contributions came from higher prices for ready-to-eat food (up 0.7 percent), and restaurant meals (up 0.6 percent).

The most significant individual downward contribution came from lower prices for fruit juices (down 2.1 percent).



## Release of the reweighted FPI for July 2008

The release of the July 2008 FPI will be later than usual, due to the implementation of a regular review of the index. The index will incorporate:

- an updated basket of goods and services
- an updated expenditure weighting pattern.

The July FPI will be released on 25 August 2008. The August 2008 FPI will be released on 11 September 2008, and the September 2008 FPI on 21 October, the same day as the reweighted Consumers Price Index (CPI) for the September 2008 quarter.

Subsequent CPI and FPI releases will be published at the usual times.

For technical information contact:  
Peter McGinty or Daniel Griffiths  
Wellington 04 931 4600

**Email:** [info@stats.govt.nz](mailto:info@stats.govt.nz)

### Next release ...

*Food Price Index: July 2008 will be released on 25 August 2008.*

## **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 index is prepared quarterly.

### **Detailed information**

Details of monthly and annual changes can be found in the tables attached to this Hot Off The Press. Analysis of fresh fruit and vegetable prices are shown in table 3.

### **Distribution of item-level index movements**

The Distribution of Item-level Index Movements table in the commentary of this release 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 when 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 provided for the grocery food and non-alcoholic beverage subgroups in the Commentary section of this release. 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.

### **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 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. Because the earliest monthly reference in table 3 of this release is now at least one year after the June 2006 month, all annual movements in the table are now based on fully seasonally unadjusted index numbers.

The fully seasonally unadjusted analytical series previously supplied in table 3 are available on INFOS (Statistics New Zealand's publicly accessible online database) and by request.

## **Review of the Food Price Index**

A review of the FPI was undertaken as part of a wider CPI review. The 2004 CPI Revision Advisory Committee met in June 2004 to undertake an independent review of the practices and methods used to compile the CPI. The committee's recommendations have played a major part in shaping the current major review of the index.

### **Sample review**

The sample of retail outlets from which prices are collected has been reselected for the first time since the 1999 FPI review. The sample of 15 pricing centres remains unchanged. However, price collection effort is being redistributed to align more closely with the population shares of the regions. This has resulted in more prices being collected in the larger pricing centres, particularly Auckland. The objective of this re-allocation has been to maximise the accuracy of the national FPI while taking into account a secondary requirement to produce regional indexes of good quality.

Item specifications have been updated and the sample of product sizes, brands and varieties has been reselected.

For each grouping of similar goods and services in the basket, price collectors in each of the 15 regional centres were given target numbers of outlets to select, broken down by storetype (such as 'supermarket' and 'convenience store'). Storetype information from the Household Economic Survey was used to determine the main storetypes for each group of similar goods and services in the basket. In some cases, price collectors were also given some further guidance about specific chains to include in the sample. Price collectors then used their judgement to select representative retail outlets in the pricing centres, to meet the target numbers of outlets.

Summary information collated from supermarket transaction data, obtained from ACNielsen, was used to:

- determine representative specifications for goods in the basket
- provide price collectors with information about the market shares of the main brands
- provide price collectors with specific brand-share targets for selected goods, to ensure that the mix of brands in the FPI price samples reflected market shares.

The new FPI samples of outlets and products were selected in March 2006. Price collection for the existing and new samples ran alongside each other until June 2006, when collection for the old index ceased.

### **Pricing coverage**

Prices are surveyed in 15 urban areas. These are: 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.

## Regional population weights

As part of the review of the FPI and the CPI, the regional population weights have been updated. These population weights are used to allocate the national expenditure weights of goods and services derived from the Household Economic Survey and other sources to the FPI pricing centres. The population weights ensure that a given price change in Auckland, for example, with a population weight of 32.63 percent, would have nearly three times the effect on the national FPI than would the same movement in Christchurch, which has a population weight of 11.46 percent.

Prior to the current review, the FPI population weights were derived by allocating the usually resident population to pricing centres in a way that took into account the availability of retail services, communities of interest and geographical ease of access. By comparison, the new population weights, which appear in table 6, have been calculated by making direct use of local government boundaries. The weights were derived by assigning the usually resident population as at June 2005 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.

Four regions do not contain a pricing centre. 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.

Table 6 includes the June 2002 regional population weights based on the old method (used in the FPI until June 2006) and also based on the new method. This shows that while the Auckland population weight used in the FPI has declined slightly over the four years, based on the new method it has actually increased from 31.27 percent to 32.63 percent. Although a new method has been used to derive the population weights, changes are reasonably modest. The pricing centre having the greatest absolute gain is Hamilton (up from 7.99 percent to 9.39 percent).

In addition to allocating population weights to the 15 FPI pricing centres, Statistics New Zealand is 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 regions are given in table 7.

## New elementary aggregate formula

Prior to the review, the FPI used a 'ratio of arithmetic mean prices' (or Dutot) formula to combine surveyed prices at the first (or elementary) stage of aggregation. The Dutot formula is:

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

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).

For the rebased FPI, the 'geometric mean of price relatives' (or Jevons) formula has been introduced for all goods and services in the basket, except for fresh fruit and fresh vegetables. 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).

The Dutot formula will continue to be used for fresh fruit and fresh vegetables, as the first stage of aggregation is across both outlets within each region and across weeks within each month.

The Dutot formula assumes that households purchase the same quantities at each surveyed outlet in each period. By comparison, 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. Use of the Jevons formula is recommended by the International Labour Office for goods and services where households are able to substitute towards outlets showing lower relative price change.

## **Average prices of selected food items (table 4)**

Table 4 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 for the June 2006 month. They are not statistically accurate measures of average transaction price levels, but do provide a reliable indicator of percentage changes in prices.

As part of the FPI review, the selection of items appearing in the table has been reviewed, and the items have been grouped under their corresponding subgroup headings. There is now an indication of the types of retail outlets prices are collected from, and whether the prices are based on the cheapest available brand or variety in each retail outlet at the time of price collection. For other items, a specific brand or variety is selected in each retail outlet and the price of that good is collected each period, subject to availability.

With the adoption of the Jevons elementary aggregate formula as part of the current review, the average prices in table 4 are calculated differently for some items. For fresh fruit and vegetables, a weighted arithmetic mean price is calculated for each of the 15 FPI pricing centres. The weights reflect the relative importance of sampled outlets. These regional arithmetic mean prices are then weighted by the population weights assigned to pricing centres (see table 6) to calculate a national weighted arithmetic mean price. For other food items, a weighted geometric mean price is calculated for each of the 15 FPI pricing centres. The weights reflect the relative importance of sampled outlets. These regional geometric mean prices are then weighted by the pricing centre population weights to calculate a national mean price using a weighted arithmetic mean formula.

For any given set of prices, a geometric mean price is less than or equal to an arithmetic mean price. This means that the June 2006 month average prices in table 4 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. Other factors that have caused the new June 2006 average prices to differ from the previously published ones include:

- the sample of retail outlets has been updated
- the relative importance of sampled outlet types (eg supermarkets and convenience stores) and sample outlets (eg supermarket chains) has been updated
- the mix of surveyed brands, varieties and sizes has been updated
- the reference size in the 'unit' column of table 4 has changed for some items.

For further information please contact:

Daniel Griffiths or Chris Pike

Wellington 04 931 4600

Email: [info@stats.govt.nz](mailto:info@stats.govt.nz)

## More information

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

## Copyright

Information obtained from Statistics NZ may be freely used, reproduced, or quoted unless otherwise specified. In all cases Statistics NZ must be acknowledged as the source.

## Liability

While care has been used in processing, analysing and extracting information, Statistics NZ gives no warranty that the information supplied is free from error. Statistics NZ shall not be liable for any loss suffered through the use, directly or indirectly, of any information, product or service.

## 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, non-standard series – index numbers and percentage changes
4. Food price index, weighted average retail prices of selected food items
5. Food price index, expenditure weights, subgroup and class
6. Food price index, population weights, pricing centre
7. Food price index, population weights, region