

# Consumers Price Index: March 2013 quarter

Embargoed until 10:45am – 17 April 2013

## Key facts

In the March 2013 quarter compared with the December 2012 quarter:

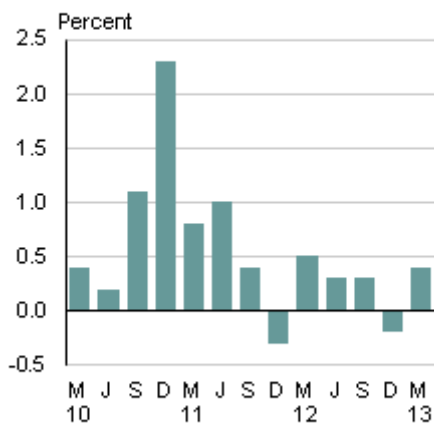
- The consumers price index (CPI) rose 0.4 percent.
- The main upward contribution came from the alcoholic beverages and tobacco group (up 4.4 percent), reflecting an increase in the excise duty for cigarettes and tobacco.
- Prices for the housing and household utilities group rose 0.6 percent, reflecting higher prices for rentals for housing, purchase of newly built houses, and property maintenance services.
- Recreation and culture prices fell 1.6 percent, reflecting seasonally lower prices for package holidays.

From the March 2012 quarter to the March 2013 quarter:

- The CPI increased 0.9 percent.

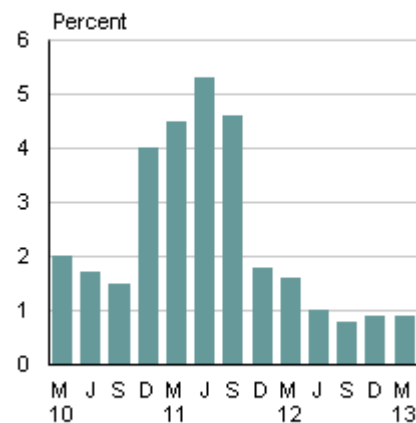
The CPI measures the rate of price change of goods and services purchased by New Zealand households. Statistics NZ visits 3,000 shops around New Zealand to collect prices for the CPI and check product sizes and features.

**Consumers price index**  
Quarterly change



Source: Statistics New Zealand

**Consumers price index**  
Annual change



Source: Statistics New Zealand

Geoff Bascand  
Government Statistician

17 April 2013  
ISSN 1178-0452

## Commentary

- [CPI rises 0.4 percent in March 2013 quarter](#)
- [CPI shows 0.9 percent annual increase](#)
- [Alcoholic beverage and tobacco prices rise](#)
- [Housing and household utilities up 0.6 percent](#)
- [Recreation and culture falls 1.6 percent for the quarter](#)
- [Summary of other group movements in the CPI](#)
- [CPI analytical series](#)
- [Impact of items that rose and fell in price](#)
- [We are seeking feedback on the CPI](#)
- [CPI rolling review of retail outlets](#)
- [New CPI series available from the March 2013 quarter](#)

### CPI rises 0.4 percent in March 2013 quarter

The consumers price index (CPI) rose 0.4 percent in the March 2013 quarter. This follows a fall of 0.2 percent in the December 2012 quarter and a rise of 0.3 percent in the September 2012 quarter.

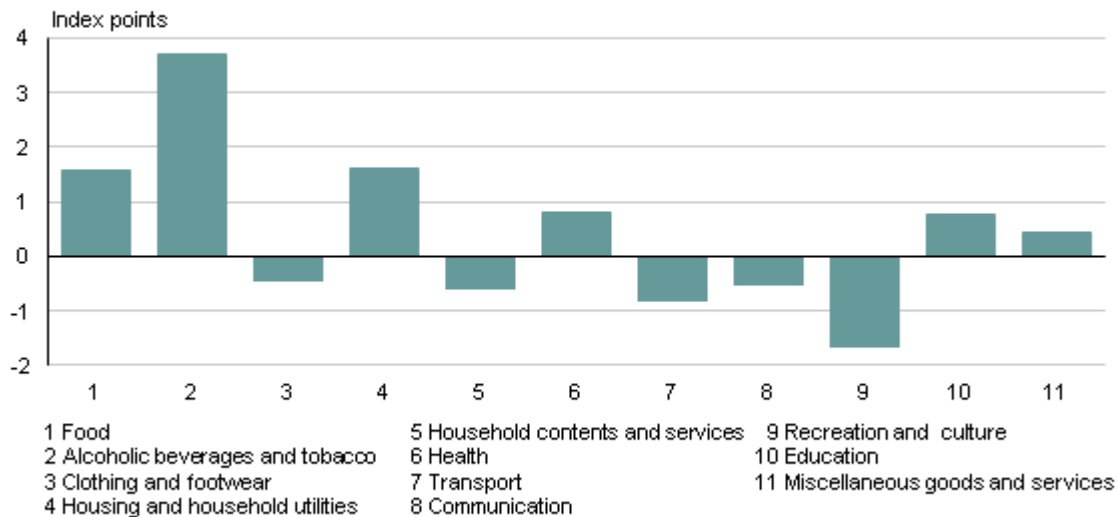
Six groups increased in price in the March 2013 quarter. The alcoholic beverages and tobacco group (up 4.4 percent) made the main upward contribution. Higher prices were also recorded for the housing and household utilities (up 0.6 percent) and food (up 0.7 percent) groups.

The key individual upward contribution came from higher prices for cigarettes and tobacco (up 12 percent). Higher prices were also recorded for petrol (up 1.5 percent), rentals for housing (up 0.7 percent), and pharmaceutical products (up 9.3 percent).

Five groups decreased in price. The largest group contribution came from recreation and culture (down 1.6 percent).

The most significant individual downward contributions came from seasonally lower prices for international air fares (down 9.9 percent) and package holidays (down 10 percent). Lower prices were also recorded for vegetables (down 5.4 percent).

### Index points contribution to consumers price index March 2013 quarter



Source: Statistics New Zealand

## CPI shows 0.9 percent annual increase

The CPI increased 0.9 percent in the year to the March 2013 quarter, following increases of 0.9 percent and 0.8 percent in the years to the December 2012 and September 2012 quarters, respectively.

Six of the 11 groups in the CPI made upward contributions in the year to the March 2013 quarter.

By group, the main upward contribution came from housing and household utilities (up 2.9 percent). Higher prices were also recorded for:

- alcoholic beverages and tobacco (up 5.0 percent)
- health (up 3.7 percent)
- miscellaneous goods and services (up 2.4 percent).

By group, the main downward contributions came from:

- communication (down 7.2 percent)
- recreation and culture (down 1.5 percent)
- transport (down 0.4 percent)
- household contents and services (down 2.6 percent).

Individually, the main upward contribution came from higher prices for cigarettes and tobacco (up 12 percent). Higher prices were also recorded for:

- electricity (up 5.2 percent)
- rentals for housing (up 2.2 percent)
- purchase of newly built houses (up 3.3 percent)
- local authority rates (up 4.3 percent).

The main individual downward contributions came from lower prices for:

- telecommunication services (down 7.2 percent)
- audio-visual and computing equipment (down 12 percent)
- domestic air fares (down 9.9 percent)
- fresh milk (down 7.7 percent).

## **Alcoholic beverage and tobacco prices rise**

Alcoholic beverage and tobacco prices rose 4.4 percent in the March 2013 quarter, following a 0.4 percent fall in the December 2012 quarter and a 0.3 percent rise in the September 2012 quarter.

Cigarette and tobacco prices (up 12 percent) made the most significant upward contribution to the March 2013 quarter. The annual adjustment to the excise duty on cigarettes and tobacco occurred on 1 January 2013. The excise duty rose 10.86 percent. The increase was based on a 0.86 percent rise in the 'CPI less credit services' index between the September 2011 and September 2012 quarter. The 1 January rise also included a fourth successive 10 percent increase – as set out in the Excise and Excise-equivalent Duties Table (Tobacco Products) Amendment Order 2012.

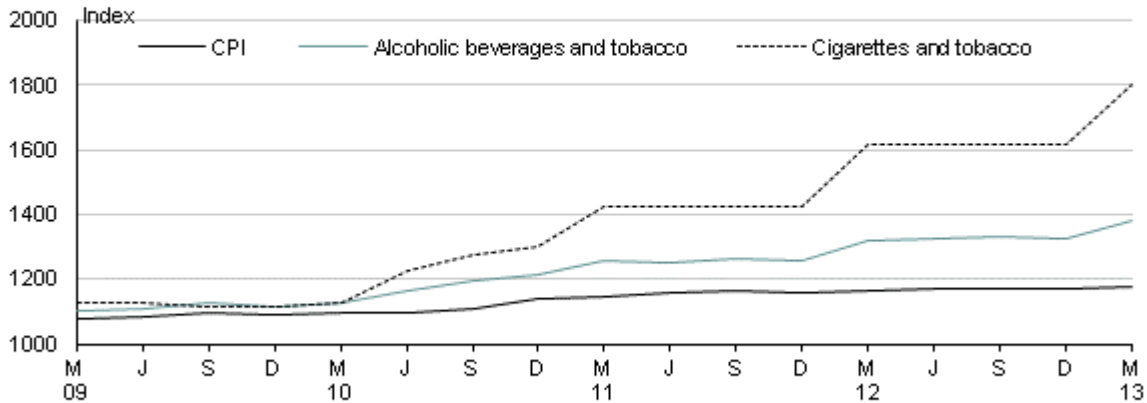
Alcoholic beverage prices also rose in the March 2013 quarter, by 0.8 percent. This was influenced by higher prices for wine (up 1.9 percent) and beer (up 0.6 percent).

### **Annual prices**

The alcoholic beverages and tobacco group increased 5.0 percent from the March 2012 quarter to the March 2013 quarter. The most significant increase came from cigarettes and tobacco (up 12 percent). This increase was influenced by the rise in excise duty of cigarettes and tobacco on 1 January 2013.

## Alcoholic beverages and tobacco group and selected indexes

Quarterly indexes  
Base: June 2006 quarter (=1000)



Source: Statistics New Zealand

### Housing and household utilities up 0.6 percent

The housing and household utilities group rose 0.6 percent in the March 2013 quarter, following rises of 0.6 and 0.8 percent in the December and September 2012 quarters, respectively.

Higher prices for rentals for housing (up 0.7 percent) made the most significant upward contribution, influenced by a rise in Canterbury (up 2.1 percent).

Other key upward contributions came from:

- the purchase of newly built houses (up 0.9 percent), reflecting an increase in Canterbury (up 3.3 percent)
- property maintenance services (up 1.1 percent).

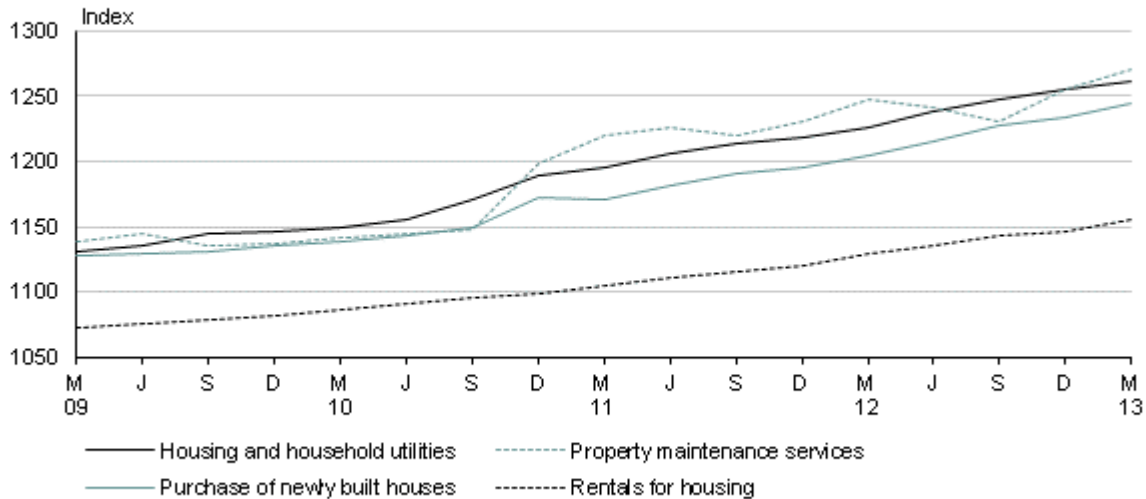
### Annual prices

In the year to the March 2013 quarter, the housing and household utilities group increased 2.9 percent. The key contributions were:

- electricity (up 5.2 percent)
- rentals for housing (up 2.2 percent), influenced by rises in Canterbury (up 3.7 percent) and Auckland (up 2.7 percent)
- purchase of newly built houses (up 3.3 percent), reflecting an increase in Canterbury (up 12 percent)
- local authority rates (up 4.3 percent).

## Housing and household utilities group and selected classes

Quarterly indexes  
Base: June 2006 quarter (=1000)



Source: Statistics New Zealand

## Recreation and culture falls 1.6 percent for the quarter

The recreation and culture group fell 1.6 percent in the March 2013 quarter. The main individual downward contribution came from seasonally lower package holidays (down 10 percent).

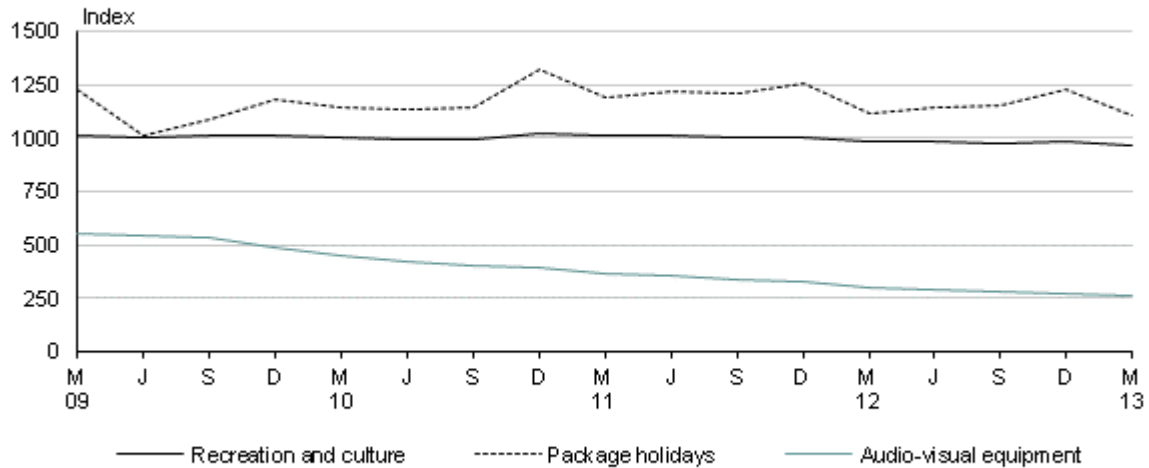
Prices for books (down 11 percent, following a 9.4 percent rise in the December quarter) and audio-visual equipment (down 4.4 percent) also fell.

### Annual prices

In the year to the March 2013 quarter, the recreation and culture group decreased 1.5 percent. The main individual downward contribution came from audio-visual and computing equipment (down 12 percent).

## Recreation and culture group and selected classes

Quarterly indexes  
Base: June 2006 quarter (=1000)



Source: Statistics New Zealand

## Summary of other group movements in the CPI

In the March 2013 quarter, the following groups increased:

- food (up 0.7 percent)
- health (up 1.2 percent)
- education (up 3.5 percent)
- miscellaneous goods and services (up 0.5 percent).

Combined, these groups contributed 3.58 index points to the overall CPI increase of 4.93 index points.

In the March 2013 quarter, the following groups decreased:

- transport (down 0.4 percent)
- household contents and services (down 1.2 percent)
- communication (down 1.3 percent)
- clothing and footwear (down 0.9 percent).

Combined, these groups contributed -2.34 index points to the overall CPI increase of 4.93 index points.

Within the food group, the most significant upward contribution came from higher prices for the grocery food subgroup (up 1.4 percent). This rise reflected higher prices for bread and cereals (up 2.6 percent). Higher prices were also recorded for fruit (up 4.9 percent).

The increase in the health group came from higher prices for pharmaceutical products (up 9.3 percent), reflecting an increase in prescription charges. The increase in prescription charges came into effect on 1 January 2013. These charges are paid for prescription medicines and oral contraceptives. From 1 January 2013, prescription charges increased from \$3 to \$5 per item for fully subsidised medicines, apart from children under six whose prescriptions remain free.

The rise in the education group reflected increases in primary and secondary education (up 4.7 percent), and in tertiary and other post-school education prices (up 3.8 percent). These prices are collected in only the March quarter of each year.

The household contents and services group decreased due to lower prices for furniture and furnishings (down 2.9 percent). Lower prices were also recorded for household textiles (down 5.1 percent) and major household appliances (down 0.9 percent). These were influenced by an increase in the level of discounting.

The decrease in the transport group reflected seasonally lower prices for international air fares (down 9.9 percent). This was partly countered by higher prices for petrol (up 1.5 percent) and second-hand cars (up 1.8 percent).

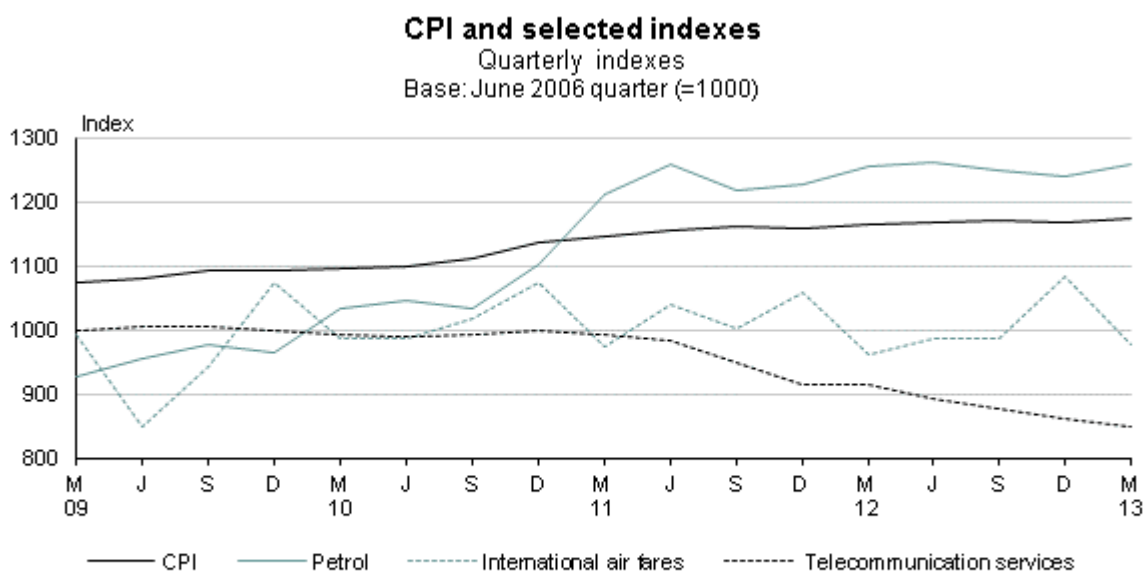
Within the communication group, the most significant downward contribution came from lower prices for telecommunication services (down 1.4 percent). This fall reflected better-value cellphone services and Internet services.

## Annual prices

In the year to the March 2013 quarter, prices increased for:

- fruit and vegetables (up 5.3 percent)
- insurance (up 4.2 percent)
- medical services (up 3.4 percent)
- pharmaceutical products (up 11 percent).

The main downward contribution for the year to the March 2013 quarter came from telecommunication services (down 7.2 percent). This fall reflected better-value cellphone services and Internet services. Lower prices were also recorded for domestic air fares (down 9.9 percent) and fresh milk (down 7.7 percent).



Source: Statistics New Zealand



## CPI analytical series

In the March 2013 quarter, the tradable component of the CPI fell 0.5 percent and the non-tradable component of the CPI rose 1.1 percent.

The tradable component was mainly influenced by seasonally lower prices for international air fares and package holidays. Lower prices were also recorded for vegetables, books, and furniture and furnishings.

The main upward contribution to the tradable component came from higher prices for petrol. Higher prices were also recorded for fruit and second-hand cars.

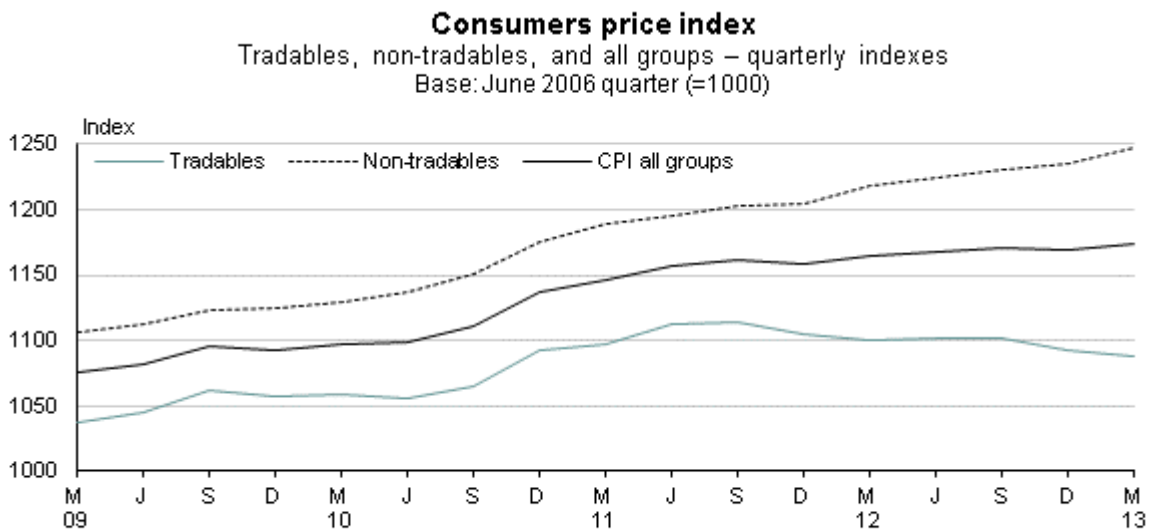
The rise in the non-tradable component was mainly influenced by increases in cigarette and tobacco prices. Higher prices were also recorded for rentals for housing and prescription medicines.

Lower prices for telecommunication services were the main downward contributor for the non-tradable component.

## Annual

For the year to the March 2013 quarter, the tradable component decreased 1.1 percent. The main downward movement came from audio-visual and computing equipment. Other decreases came from dairy products, second-hand cars, and furniture and furnishings. Higher prices were recorded for fruit and vegetables and for international air fares.

Prices for the non-tradable component increased 2.4 percent, reflecting higher prices for cigarettes and tobacco, electricity, and rentals for housing. Higher prices were also recorded for the purchase of newly built houses and local authority rates. The main downward contributor came from telecommunication services. Lower prices were also recorded for domestic air fares.



Source: Statistics New Zealand

In the March 2013 quarter, the trimmed mean measures – which exclude extreme price rises and falls – recorded quarterly rises ranging from 0.4 percent to 0.5 percent. This indicates the underlying price change was the same or slightly above the rise in the all groups CPI.

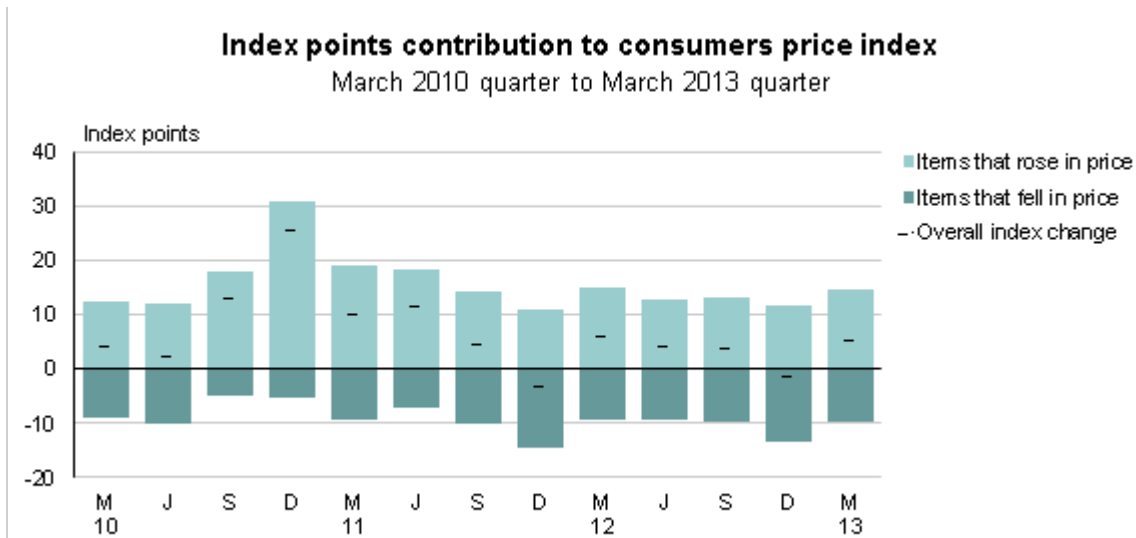
For the March 2013 quarter, the annual trimmed mean measures showed increases of between 0.9 percent and 1.2 percent. This indicates the underlying price change for the year was the same or above the annual rise in the all groups CPI.



Source: Statistics New Zealand

## Impact of items that rose and fell in price

The graph below shows the impact of the items that rose and fell in price. Comparing the March 2013 quarter with the December 2012 quarter, the impact of the items that rose in price is larger, and the impact of items that fell in price is smaller. This led to a 0.4 percent rise for the March 2013 quarter CPI, following a 0.2 percent fall in the December 2012 quarter.



Source: Statistics New Zealand

Further information is now included in table 13 of the release.

## **We are seeking feedback on the CPI**

We are convening a CPI advisory committee in May to undertake an independent review of the concepts, methods, and practices used to compile the CPI, and to advise the Government Statistician on the CPI.

We have prepared a discussion paper and a background paper for the committee and the wider CPI user community. These papers will help to inform the topics the committee will consider.

See [CPI Advisory Committee 2013](#) to read the papers.

We invite you to make a submission on the topics in the papers, and other topics concerning the CPI. We are also happy to meet with you if you would like to discuss a topic, or a potential submission. The committee will consider submissions when it meets in May.

### **Submissions close on 24 April 2013.**

You can email your submission to [cpireview@stats.govt.nz](mailto:cpireview@stats.govt.nz), or ring Peter Campion on 04 931 4600 or 0508 525 525.

Following the meeting, we will publish a report from the committee (including its recommendations) in July 2013.

The committee's recommendations will inform the next three-yearly CPI review, which will be implemented when the September 2014 quarter CPI is released in October 2014.

## **CPI rolling review of retail outlets**

We are continuing our ongoing rolling review of the retail outlets we collect prices from for the CPI. The third group of changes were implemented in this release. See [CPI rolling review of retail outlets](#) in the Data quality section of this release for further details.

## **New CPI series available from the March 2013 quarter**

From the March 2013 quarter and onwards, the following additional series will be available from Infoshare:

- All groups less rentals for housing subgroup (series identifier: CPIQ.SE9NS1500)
- All groups less food group, household energy subgroup, vehicle fuels, and government charges (series identifier: CPIQ.SE9NS1510)
- All groups tradables less food group (series identifier: CPIQ.SE9NS6020)
- All groups tradables less food group and vehicle fuels (series identifier: CPIQ.SE9NS6030)
- All groups non-tradables less rentals for housing, home ownership, and property maintenance subgroups (series identifier: CPIQ.SE9NS6530)

These series go back to either the June 1999 quarter or the June 2006 quarter.

For more detailed data from the CPI, see the Excel tables in the 'Downloads' box.

## Definitions

### About the consumers price index

The consumers price index (CPI) measures the changing price of a fixed basket of goods and services purchased by New Zealand households. The selection and relative importance of the goods and services in the CPI basket represents the overall expenditure pattern of New Zealand households.

The aim of the CPI is to measure price changes of the same sample of products at each outlet over time. When there is a change in the size or quality of any of the goods or services in the basket, an adjustment is made to ensure that the price change shown in the CPI is not affected by the change in size or quality.

The CPI represents \$88.9 billion spent on goods and services by New Zealand households, at June 2011 quarter prices. This is based on information from the 2009/10 Household Economic Survey and other sources.

The CPI is used to help set monetary policy and for monitoring economic performance. It is used by the government to adjust New Zealand Superannuation and unemployment benefit payments once a year, to help ensure that these payments maintain their purchasing power. Employers and employees use the CPI in wage negotiations.

The CPI is published quarterly. The food group is the only CPI group for which an index is published each month.

A listing of the representative goods and services monitored in the CPI basket is available in the 'Available files' of [Consumers price index review: 2011](#).

The sources and methods used to compile various parts of the CPI basket of goods and services are listed in the [CPI sources and methods articles](#) available on the Statistics NZ website.

### More definitions

A **price index** measures the change in price between time periods for a given set of goods and services. It summarises a set of prices for a variety of goods and services collected from a number of outlets.

The **index reference period** is the benchmark to which prices in other periods are compared (eg if the index number in a later period is 1150, prices have increased by 15.0 percent since the index reference period). Prices for later periods can also be compared in similar fashion. The CPI has an index reference period of the June 2006 quarter (=1000).

**Upward/downward contributions:** items mentioned in this release are often those that made a large contribution to the overall movement in the CPI. An item's contribution is a combination of its weight in the index (ie its relative importance, based on its share of household spending on goods and services covered by the CPI) and the magnitude of price movement. For example, for two items recording the same percentage rise in price, the item with the larger weight in the CPI will make a larger contribution to the overall movement. This contribution is also referred to as points (or index points) contribution.

**Tradable and non-tradable component series:** the tradable component series contains goods and services that are imported or in competition with foreign goods, either in domestic or foreign markets. Movements in the tradables component (tradable inflation) demonstrate how international price movements and exchange rates are affecting consumer prices.

The non-tradable series contains goods and services that do not face foreign competition. It shows how domestic demand and supply conditions are affecting consumer prices.

**Analytical measures of inflation:** over the long term, the CPI captures the broad pattern of price change, but can be influenced by one-off events when analysing price change over shorter timeframes. To remove such influences, analytical measures of price change are calculated in an attempt to isolate the more persistent – or underlying – component of general price-level changes. Several analytical measures are constructed to give a good guide to underlying price-level change. These are a range of 'trimmed means' and a range of 'weighted percentiles' including a weighted median. Trimmed means and weighted percentiles are given in table 11 and table 12 of this release.

**Trimmed means:** exclude the influence of the largest price increases and decreases in the CPI. This is done at the item level of about 700 goods and services in the CPI basket (eg 91 octane petrol or strawberries). The trimmed means progressively remove the influence of the largest increases and decreases.

**Weighted percentiles:** highlight the movement of lower-level indexes at points in the distribution of price changes for a particular time period.

## **Related links**

### **Upcoming releases**

The *Consumers Price Index: June 2013 quarter* will be released on 16 July 2013.

To subscribe to our information releases, including this one, please complete the online subscription form.

The release calendar lists all our upcoming information releases by date of release.

### **Past releases**

Consumers Price Index – information releases has links to past releases.

### **Related information**

The food price index measures price change of food goods and services purchased by New Zealand households.

For more information about the basket of goods and services, and the sources and methods used to compile individual components of the CPI, please see the CPI sources and methods articles page on the Statistics NZ website.

Electronic Card Transactions measure the number and value of electronic card transactions with New Zealand-based merchants.

The Retail Trade Survey measures sales of a range of household and personal goods and services.

## Data quality

### Period-specific information

This section has information that has changed since the last release.

- [Reference period](#)
- [Data influencers](#)
- [Response rates](#)
- [Sample size](#)

### General information

This section has information that does not generally change between releases.

- [Imputation](#)
- [Review of the CPI](#)
- [Impact of GST rise on the CPI](#)
- [Care required when using the CPI to adjust monetary values](#)
- [Reference population](#)
- [Expenditure weights](#)
- [Collection methods](#)
- [Pricing frequency](#)
- [Accuracy of the data](#)
- [Key concepts](#)
- [Consistency with other periods or datasets](#)
- [Interpreting the data](#)
- [Timing of published data](#)
- [CPI rolling review of retail outlets](#)
- [More information](#)

## Period-specific information

### Reference period

Prices were collected during the period January to March 2013. Visits by Statistics NZ staff to retail outlets were made during 1–15 February in the 10 smallest consumers price index (CPI) regions and during 1–20 February for the five largest CPI regions. Prices for food and non-food groceries were collected each month, usually between the 8th and 16th of the month. Petrol, fresh fruit, and fresh vegetable prices were collected weekly. Quarterly postal survey prices were collected at 15 February.

### Data influencers

Price changes may be influenced by specific events. Factors that affected the March 2013 quarter CPI are listed below.

- The quarterly and annual increases in cigarette and tobacco prices of 12 percent were influenced by a rise in excise duty of 10.86 percent that took effect on 1 January 2013.
- The quarterly and annual increases in pharmaceutical products reflected the rise in prescription charges from \$3 to \$5 per item for fully subsidised medicines that took effect on 1 January 2013.

- Schools and tertiary education institutions usually set their fees annually, and these are normally shown in the March quarter.
- The fall in the recreation and culture group reflected seasonally lower prices for package holidays.
- The fall in international air transport in the March 2013 quarter was influenced by seasonally lower fares. International air fares usually fall in March quarters after seasonal peaks in December quarters, and often fall by 8 or 9 percent and sometimes more.

## **Response rates**

### **Postal**

Target: 93 percent  
Achieved: 95.0 percent

### **Field collection**

Prices are collected directly from retail outlets by Statistics NZ price collectors.

### **Sample size**

About 120,000 prices were collected from about 3,000 retail outlets and 2,400 other businesses and landlords.

## **General information**

### **Imputation**

Due to unavailability at the time of price collection, on average 1–2 percent of prices (not including seasonal items such as winter clothing) are imputed each quarter. This is often done by carrying forward the previous quarter's price. Other imputation is done by applying the movements of similar categories of items.

### **Review of the CPI**

Reviews of the CPI are undertaken every three years. The latest review was implemented with the publication of the September 2011 quarter CPI. The review involved reselecting the basket of representative goods and services, updating the new national expenditure weights, and updating regional population weights.

See [Consumers price index review: 2011](#) for more information.

### **Impact of GST rise on the CPI**

GST rose from 12.5 percent to 15 percent on 1 October 2010. However, the rise in GST was not immediately reflected in the prices of some seasonally available goods and services in the CPI basket. The rise was reflected when prices for these items were next collected. These items make up about 3 percent of expenditure on goods and services in the CPI. Of this 3 percent, nearly half was reflected in the March 2011 quarter CPI, nearly half in the June 2011 quarter, and the remainder was shown in the September 2011 quarter.



The table below shows what the quarterly and annual percentage changes would have been if prices collected for the December 2010, and March, June, and September 2011 quarters had been processed with GST of 12.5 percent for goods and services that are subject to GST. The CPI would have risen 0.4 percent in the September 2011 quarter, and 2.5 percent for the year to the September 2011 quarter.

<b>CPI processed with GST at 12.5 percent</b>			
<b>Quarter</b>	<b>Percentage change from previous quarter</b>	<b>Percentage change from same quarter of previous year</b>	<b>Adjusted index number</b>
Dec 2010	0.5	2.1	1116
Mar 2011	0.8	2.6	1125
Jun 2011	0.9	3.3	1135
Sept 2011	0.4	2.5	1139

### **Care required when using the CPI to adjust monetary values**

The CPI is used to adjust monetary values, such as those in legislation and contracts. Care is required when using the CPI to adjust monetary values during the year-long period in which the rise in GST is reflected in the CPI. Some goods and services in the CPI are not subject to GST, some are zero-rated for GST purposes (meaning the applicable rate of GST is zero), and the rise in GST was not immediately reflected for all goods and services in the CPI that are subject to GST.

Special care is required when the monetary values being adjusted exclude GST.

It would not be appropriate to adjust prices or monetary values that exclude GST (but which are subject to GST) by the CPI movement during the period in which the increase in GST is reflected in the CPI. This would mean that the GST increase is counted twice. Another common use of the CPI is to adjust housing rentals. Housing rentals are not subject to GST. Using the CPI to adjust rental values during the period in which the increase in GST is reflected in the CPI would mean that the adjustments would include the overall impact of the GST increase on the CPI.

### **Reference population**

The reference population of the CPI covers approximately 98 percent of the usually-resident New Zealand population living in permanent dwellings.

### **Expenditure weights**

Expenditure weights give the relative importance of the goods and services in the CPI basket.

The CPI represents about \$88.9 billion spent on goods and services by New Zealand households, at June 2011 quarter prices. Information on spending is sourced from the Household Economic Survey and other sources.

New Zealand households spent \$83.9 billion on goods and services in the year to June 2010 (which is the latest period available). Once the effect of price change between the year to June 2010 and the June 2011 quarter is taken into account (called 'price updating'), spending on household goods and services measured in the CPI rises to \$88.9 billion.

The relative importance of the CPI subgroups shows that about \$23.55 of every \$100 spent by households on goods and services covered by the CPI is spent on housing and household

utilities. About \$18.79 is spent on food and about \$15.12 is spent on transport. More information on the relative importance of CPI groups, subgroups, and classes is given in table 9 of this release.

## **Collection methods**

Prices used in the CPI are collected through three main methods: visiting retail outlets, postal surveys, and the Internet.

Statistics NZ price collectors personally visit over 3,000 different shops in 15 main centres throughout the country. The types of outlets visited include supermarkets, department stores, and appliance stores. Prices are collected weekly for motor fuels and for fresh fruit and vegetables; monthly for food, non-food groceries, alcoholic beverages, and newspapers; and quarterly for other goods and services.

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.

In addition to prices obtained by price collectors, about 70 different postal surveys are sent out each month, quarter, or year. These surveys are used primarily to collect prices for services, such as electricity and bus fares. The surveys are sent directly to service providers. In some cases, for sampling and collection reasons, these prices are aggregated to the national level or to broad regions such as Auckland, Wellington, Canterbury, rest of North Island, and rest of South Island. Items where movements for five broad regions are used include: the purchase of second-hand cars; purchase of new housing; and rentals for housing. In these cases, price movements for the five broad regions are used for the corresponding 15 regions.

Postal surveys are sent to service providers who set prices nationally or with little variation according to location, such as prices for telephone homeline rental.

Prices for products and services (such as digital downloads, package holidays, and air fares) are also collected each month or quarter from the Internet.

## **Pricing frequency**

Prices are collected weekly, monthly, quarterly, or annually, depending on the expected frequency of price changes exhibited by the goods or service.

## Accuracy of the data

### Elementary aggregate formula

Average prices in the CPI are called elementary aggregates. These elementary aggregates are the first level of the index aggregation. Regional elementary aggregates are calculated for each of the 15 pricing centres where price collection supports regional estimation. In other cases, regional elementary aggregates are calculated for five CPI broad regions (Auckland, Wellington, rest of North Island, Canterbury, rest of South Island) or, where prices do not support regional estimation, directly to a national elementary aggregate. Since the 2006 review of the CPI, the geometric mean, or Jevons, formula has been used to calculate the elementary aggregate indexes for items where outlet substitution is possible (eg for groceries and appliances).

The 'ratio of arithmetic mean prices', or Dutot, formula is used for items where outlet substitution is not possible (eg local authority rates), where prices are subsidised and may fall to zero (eg GPs' fees), for fresh fruit and vegetables (as the first stage of aggregation is across both outlets within each region, and across weeks within each month), and where it is not currently practical to adopt the Jevons formula (eg when prices are aggregated directly to a national elementary aggregate, rather than aggregated to a regional level).

For more information on the Jevons and Dutot formulae see '[Elementary aggregate formula](#)' in [Information about the Consumers Price Index](#).

### Method of aggregating monthly collected prices from the monthly to the quarterly level

Prices are collected monthly for the food group and a number of non-food items in the CPI, including electricity, cigarettes and tobacco, alcoholic drinks, and air travel. These prices are averaged over the quarter for inclusion in the CPI.

The method for calculating these averages is to obtain monthly regional average prices for the item by outlet-weighting the prices collected at different outlets within each region. The monthly regional average prices are used to calculate quarterly regional average prices by weighting each monthly regional average price by the number of days in the month in which it was collected. This is called day weighting. All the regions are aggregated to obtain the national quarterly index by weighting together regional price movements from the base (ie June 2011) quarter to the current quarter, using the regional population weights.

Petrol and diesel prices are collected weekly, usually on Fridays. The CPI petrol price index measures price changes of 91 octane petrol and 95/98 octane petrol. Within each CPI region, an average price per 10 litres of each fuel is calculated from the prices surveyed each week from individual service stations. Monthly regional average prices for each fuel are then calculated as simple averages of the averages for the weeks within each month. Quarterly regional average prices for each fuel are then calculated as the day-weighted averages of the averages for the three months within the quarter. Regional price movements from the base (ie June 2011) quarter to the current quarter are then weighted by the regional population-weighted share of the national expenditure weight, to calculate the national petrol and diesel price indexes for the current quarter.

Since petrol and diesel prices are collected either 12 or 13 times within each quarter, a price change that occurs during the quarter is only partly reflected in that quarter, with the remainder being reflected in the following quarter. This is also the case for commodities that are priced monthly, such as cigarettes and tobacco.

## Population weights

Population weights are used to allocate the national expenditure weights of goods and services to the CPI pricing centres. For example, the population weights ensure that a price change in Auckland (which has 33.43 percent of the population weight) would have about three times the effect on the national CPI than the same price change in Wellington (which has 11.07 percent of the population weight).

The latest subnational population estimates, which are published annually, are used to calculate the population weights at each CPI review. Estimates at 30 June 2010 were the latest figures available at the time of the 2011 CPI review. This means that any potential population movements following the Christchurch earthquakes are not reflected in these weights. Population weights will be monitored, and if considered necessary, updated to maintain the accuracy of the CPI.

Statistics NZ publishes CPI price indexes for five broad regions based on regional council area boundaries. These indexes are available from [Infoshare](#). These regions are Auckland, Wellington, rest of North Island, Canterbury, and rest of South Island.

For the population weights of each region in the CPI, see table 7 of this release.

## Outlet weights

Outlets are given appropriate weights to reflect their relative importance in terms of household spending.

## 'On special' prices

Items that are 'on special' are included in the CPI at the price levels observed at the time of price collection. Quantity specials (such as a 15-pack of beer at a cheaper shelf price than the 12-pack) are also taken into account where appropriate (as the price per bottle for the special is lower).

## Key concepts

### Standard and non-standard series

CPI series that contribute to the hierarchical structure of the overall CPI are known as standard series. For example, the clothing index, combined with the footwear index, contributes to the clothing and footwear index, which in turn contributes to the all groups index. Components of this pyramid-like structure are known as standard index series. In addition, a selection of non-standard series is published in the information release tables, and additional series can be accessed free of charge from the online [Infoshare](#) database. Examples of these non-standard series include:

- all groups CPI less each of the 11 CPI groups
- all groups CPI plus interest
- interest.

The CPI is published at the following levels: group, subgroup, and class – all at the national level. Selected sections within the food group are also published.

### Tradable and non-tradable non-standard series

The tradable and non-tradable component series that appear in table 1 allow users to

decompose CPI goods and services into two components: one contains goods and services that are imported or in competition with foreign goods, either in domestic or foreign markets (tradables); the other contains goods and services that do not face foreign competition (non-tradables).

Movements in the tradables component (tradable inflation) demonstrate how international price movements and exchange rates are affecting consumer prices. The non-tradables component shows how domestic demand and supply conditions are affecting consumer prices.

The June 2011 quarter expenditure weight of the tradables component is 44.01 percent, compared with 45.78 percent in 2008. The June 2011 quarter weight of non-tradables is 55.99 percent, compared with 54.22 percent in 2008.

The June 2011 quarter tradable/non-tradable weights for each group, subgroup, and class are included in table 5 of the [Consumers price index review: 2011](#).

An information paper on the methodology used to categorise the tradable and non-tradable series, [Consumers Price Index Tradable and Non-tradable Series](#), is available on the Statistics NZ website.

### **Trend measures of price-level change**

Over the long term, the CPI captures the broad pattern of price change, but can be influenced by one-off events when analysing price change over shorter timeframes (such as a supply disturbance affecting petrol prices). To remove such influences, analytical measures of price change are calculated in an attempt to isolate the more persistent – or underlying – component of general price-level changes. Several analytical measures are constructed to give a good guide to underlying price-level change. These are a range of 'trimmed means' and a range of 'weighted percentiles' including a weighted median. Trimmed means and weighted percentiles are given in table 11 and table 12 of this release.

### **Trimmed means**

Trimmed means exclude the influence of the largest increases and decreases in the CPI. This is done at the item level of about 700 goods and services in the CPI basket (eg 91 octane petrol or strawberries). The trimmed means progressively remove the influence of the largest increases and decreases. **Weighted percentiles** highlight the movement of lower-level indexes at points in the distribution of price changes for a particular time period.

For detailed information regarding the methodology and compilation of trimmed means and weighted medians, see [Trend measures of price level change](#).

The **central and local government charges index**, which appears in tables 3.01, 3.02, and 3.03, made up 10.46 percent of the CPI at the June 2011 quarter.

Central and local government charges non-standard series includes items such as:

- Housing New Zealand and local authority rentals
- land transfer registration fees
- local authority rates
- water supply and part of refuse disposal, electricity
- prescription charges and oral contraception, general practitioner fees
- vehicle relicensing fees, road user charges, driver licensing fees
- postage
- State and integrated schools, tertiary education, other education

- cheque duty, and official passports, licences and certificates.

The **goods and services component series** that appear in tables 3.01, 3.02, and 3.03 allow users to decompose the CPI into its goods and services components, respectively. The goods component made up 60.04 percent, and the services component 39.96 percent at the June 2011 quarter.

The **goods component** comprises:

- the food group (except restaurant meals)
- alcoholic beverages and tobacco group
- clothing and footwear group (except clothing services)
- purchase of new housing, property maintenance materials, water supply, and household energy
- household contents and services group (except repair and hire of household appliances, hire of major tools and equipment, and other household services)
- medical products, appliances and equipment; dentures
- purchase of vehicles, vehicle parts and accessories, petrol, other vehicle fuels and lubricants
- telecommunication equipment
- recreation and culture group (except recreational and cultural services, accommodation services, and package holidays)
- miscellaneous goods and services group (except hairdressing and personal grooming services, jewellery and watch repair, insurance, credit services, and other miscellaneous services).

The **services component** comprises all items not included in the goods component.

## **Consistency with other periods or datasets**

### **Impact of the Christchurch earthquakes on price collection**

There was no material impact on CPI movements from the Christchurch earthquakes in 2010 and 2011.

For goods and services prices collected quarterly from shops in February 2011, collection was completed in all regions before the earthquake. In March, food (and non-food grocery) prices were not collected by Statistics NZ staff in Christchurch city. For Christchurch, price movements for the rest of New Zealand were used to calculate the March 2011 food price index, which represents one-third of the food group in the March 2011 quarter CPI. This approach was also taken for non-food grocery prices for the March month.

For goods and services prices collected quarterly by postal survey (and posted in early February 2011), there were lower-than-usual response rates for Canterbury respondents. The overall response rate for quarterly postal surveys was about 96 percent, compared with about 98 percent over the previous eight quarters. For most parts of the basket, the usual treatment for missing prices in the current quarter is to use the last reported price. With the lower response rate in the March 2011 quarter, there was the potential for the higher level of non-response to slightly flatten the quarterly movement. Therefore, price movements for responding businesses were used to bring the Christchurch response rate up to its usual level.

Statistics NZ began collecting prices again in Christchurch in April 2011.

For goods and services prices collected quarterly from shops for the June 2011 quarter, collection was completed in May. While the June monthly collection of food and non-food grocery prices was put on hold for the remainder of the week following the Monday 13 June earthquakes, pricing was completed on Monday 20 and Tuesday 21 June.

For goods and services prices collected quarterly by postal survey (and posted in early May), the overall response rate for quarterly postal surveys was about 98 percent, which compares well with previous quarters.

By November 2011, when quarterly collection was undertaken, almost all outlets that had not been replaced had reopened.

### **Index reference period**

All CPI indexes have an index reference period of the June 2006 quarter (=1000), except where additional indexes were added in subsequent reviews of the CPI.

Additions to the CPI basket at the June 2008 quarter resulted in the publication of two new indexes at the class level of the New Zealand Household Expenditure Classification (NZHEC). These classes are clothing accessories, and other education. Before the 2008 review, expenditure on goods and services within these two classes was allocated to other apparel and education items, respectively. There was also one new subgroup, for other education. As the two classes and one subgroup were new, they are expressed on the June 2008 quarter (=1000). Similarly, other property related services were added to the CPI in 2011. The other property related services class is expressed on the June 2011 quarter (=1000).

### **Reconciling the FPI and food group of the CPI**

When comparing the FPI and the food group of the CPI, strictly speaking, the quarterly food group index number is not the average of the relevant three monthly FPI numbers. There are some technical differences between the monthly FPI indexes and quarterly indexes.

See [Food prices in the consumers price index and food price index](#) for more information.

### **Treatment of fresh fruit and fresh vegetables – removal of seasonal adjustment**

Until the June 2006 quarter, fresh fruit and fresh 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 September 2006 quarter onwards, the CPI incorporates seasonally unadjusted prices for fresh fruit and fresh vegetables. This is in line with a recommendation made by the [2004 CPI Revision Advisory Committee](#).

The ongoing, fully unadjusted CPI is linked at the June 2006 quarter to the previously published CPI, which is partly seasonally adjusted. As such, annual movements calculated over the annual period encompassing the June 2006 quarter are based on fully unadjusted index numbers for the latest quarter, compared with partly adjusted index numbers for the same quarter of the previous year. However, analytical time series provided annual movements on a fully unadjusted basis during the year-long transition of the official CPI. During this time, annual movements were based on fully unadjusted index numbers for the latest quarter, compared with partly adjusted index numbers for the same quarter of the previous year.

## **Availability of regional indexes**

Indexes are published for five broad regions: Auckland, Wellington, Canterbury (encompasses Christchurch and Timaru), rest of North Island, and rest of South Island. These series are considered to be fit for purpose and do not make significant use of national pricing indicators in their compilation.

Until the June 2006 quarter, indexes were published for 15 regions. These series were not considered 'fit for purpose', as price movements from national or broad-region price collection were used to compile them. Series for the 15 regions continue to be calculated and are available only upon request.

## **Interpreting the data**

### **Rounding of index numbers and calculation of percentage changes**

Percentage changes are published to one decimal place and are calculated from index numbers rounded to the nearest index point. For comparisons that cross the index reference period, rounded index numbers (for the later period) should be compared to unrounded index numbers (for the earlier period).

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

The Distribution of item-level index movements table in this release gives additional information on the distribution of price movements for the current quarter's CPI. The analytical statistics in the table give an indication of how widespread price changes are, and their relative magnitude when compared with previous quarters.

The weighted average price increase and decrease uses unrounded index numbers for the previous and current periods to calculate item-level price movements from the previous period, and these are weighted using previous period expenditure weights. The previous period expenditure weight for an item is calculated by updating base-period expenditure weights, using the price change for the item from the base period to the previous period.

Movements based on unrounded index numbers are used to determine whether items have increased, showed no change, or decreased in price. Previous period expenditure weights are used to indicate the proportion of the expenditure weight that has increased, showed no change, or decreased.

### **Detailed contribution information tables**

Tables 8.01 and 8.02 include supplementary analytical information for group, subgroup, and class contributions to the overall change in the all groups CPI. The contribution information is given as index points, percentage points, and percentage contributions from the previous quarter and from the same quarter of the previous year. These tables are included to provide a broader perspective of the categories contributing to the movement in the all groups CPI. Where there is only one class within a subgroup, the class is omitted to avoid unnecessary duplication.

The index points, percentage points, and percentage contribution information in tables 8.01 and 8.02 is calculated from unrounded index numbers. Percentage changes are calculated from index numbers rounded to the nearest index point (see 'Rounding of index numbers and calculation of percentage changes', above). As such, the sum of each of the group, subgroup, or



class percentage point contributions may differ from the overall percentage change in the CPI all groups.

### Weighted average retail prices of selected food items

A selection of average retail prices for the current and previous quarter is included in table 5 of this release. The weighted average prices are calculated by applying index movements to weighted average prices for the June 2006 quarter CPI. They are not statistically accurate measures of average transaction price levels, but do provide a reliable indicator of percentage changes in prices.

### Determining the effect of a specified change in a lower-level index

As the CPI and FPI were reweighted at the June 2011 quarter, but continue to be published on an index reference period of June 2006 quarter (=1000), the method used to determine the effect that a specified change in a lower-level index would have on a higher-level index to which it contributes has been modified for the September 2011 quarter and subsequent quarters.

The index points effect and percentage contribution on a higher-level index of a specified percentage change in a lower-level index that contributes to the higher-level index can be determined by:

1. Adjusting the lower-level index for the previous period ( $I_{n-1,low}$ ) by the specified percentage change ( $PC_{n,low}$ ) to derive the index number for the current period:

$$I_{n,low} = I_{n-1,low} \times \left( 1 + \left( \frac{PC_{n,low}}{100} \right) \right)$$

2. Calculating the index points effect on the higher-level index of the specified change in the lower-level index:

$$PE_{low-on-high} = \left( \frac{I_{Jun11,high}}{I_{Jun11,low}} \right) \times \left( \frac{W_{Jun11,low}}{W_{Jun11,high}} \right) \times (I_{n,low} - I_{n-1,low})$$

3. Calculating the percentage change in the higher-level index that would be caused by the specified change in the lower-level index:

$$PC_{n,high} = \left( \left( \frac{I_{n-1,high} + PE_{low-on-high}}{I_{n-1,high}} \right) - 1 \right) \times 100$$

**I** : index

**n** : period n, where n is the September 2011 quarter or a subsequent quarter (CPI), or the July 2011 month or a subsequent month (FPI)

**n-1** : period n-1

**Jun11** : June 2011 quarter (CPI) or June 2011 month (FPI)

**low** : lower-level index

**high** : higher-level index

**W** : expenditure weight, expressed as a percentage of the all groups (CPI) or group (FPI) index

**PC** : percentage change

**PE** : index points effect

**low-on-high** : lower-level index on higher-level index

**Example:**

The effect that a 5.0 percent increase in the petrol index (which has a weight of 5.27 percent in the CPI) from the June 2011 quarter to the September 2011 quarter would have on the all groups CPI index can be calculated by:

1. Increasing the petrol index for the June 2011 quarter by 5.0 percent to derive the index number for the September 2011 quarter:

$$\begin{aligned} I_{\text{Sept11,low}} &= I_{\text{Jun11,low}} \times \left( 1 + \left( \frac{PC_{\text{Sept11,low}}}{100} \right) \right) \\ &= 1259 \times \left( 1 + \left( \frac{5.0}{100} \right) \right) \\ &= 1321.95 \end{aligned}$$

2. Calculating the index points effect on the all groups CPI index of the 5.0 percent increase in the petrol index:

$$\begin{aligned} PE_{\text{low-on-high}} &= \left( \frac{I_{\text{Jun11,high}}}{I_{\text{Jun11,low}}} \right) \times \left( \frac{W_{\text{Jun11,low}}}{W_{\text{Jun11,high}}} \right) \times (I_{n,low} - I_{n-1,low}) \\ &= \left( \frac{1157}{1259} \right) \times \left( \frac{5.27}{100} \right) \times (1321.95 - 1259) \\ &= 3.05 \end{aligned}$$

3. Calculating the percentage change in the all groups CPI index that would be caused by a 5.0 percent change in the petrol index:

$$\begin{aligned} PC_{n,high} &= \left( \left( \frac{I_{n-1,high} + PE_{\text{low-on-high}}}{I_{n-1,high}} \right) - 1 \right) \times 100 \\ &= \left( \left( \frac{1157 + 3.05}{1157} \right) - 1 \right) \times 100 \\ &= 0.3 \text{ percent} \end{aligned}$$

### **Timing of published data**

The CPI is published 12 working days after the reference quarter.

### **CPI rolling review of retail outlets**

We are continuing our ongoing rolling review of the retail outlets we collect prices from for the CPI .

The [July 2012 issue of Price Index News](#) has more information on the review's scope.

Changes to the first two review groups are:

- Group 1 (clothing, footwear, and furniture) – implemented in the Consumers Price Index: September 2012 quarter
- Group 2 (services, vehicles, and personal goods) – implemented in the Consumers Price Index: December 2012 quarter.

Changes made to the third review group (sports and stationery goods) have been implemented in this release.

The sample of retail outlets we visit has been reallocated, to better reflect market shares, for the following items:

- outdoor furniture
- barbecues
- stationery
- books.

We have also expanded price collection for CDs, books, and magazines to include online retailers.

For more information on the review, please contact:

Nick Martelli  
Wellington  
04 931 4600  
[info@stats.govt.nz](mailto:info@stats.govt.nz)

## **More information**

More information about the Consumers Price Index is available on our website.

## **Liability**

While all care and diligence has been used in processing, analysing, and extracting data and information in this publication, Statistics NZ gives no warranty it is error-free and will not be liable for any loss or damage suffered by the use directly, or indirectly, of the information in this publication.

## **Timing**

Our information releases are delivered electronically by third parties. Delivery may be delayed by circumstances outside our control. Statistics NZ does not accept responsibility for any such delay.

## **Crown copyright©**



This work is licensed under the Creative Commons Attribution 3.0 New Zealand licence. You are free to copy, distribute, and adapt the work, as long as you attribute the work to Statistics NZ and abide by the other licence terms. Please note you may not use any departmental or governmental emblem, logo, or coat of arms in any way that infringes any provision of the Flags,

Emblems, and Names Protection Act 1981. Use the wording 'Statistics New Zealand' in your attribution, not the Statistics NZ logo.

## Contacts

**For media enquiries contact:**

Chris Pike

Wellington 04 931 4600

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

**For technical information contact:**

Russell Hewitt or Sarah Williams

Wellington 04 931 4600

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

**For general enquiries contact our Information Centre:**

Phone: 0508 525 525 (toll free in New Zealand)

+64 4 931 4600 (outside New Zealand)

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

**Subscription service:**

Subscribe to information releases, including this one, by completing the online subscription form.

**Correction notifications:**

Subscribe to receive an email if a correction notice is published for Consumers Price Index.

Unsubscribe to correction notifications for Consumers Price Index.

Subscribe to all to receive an email if a correction notice is published for any of our information releases.

Unsubscribe to all if you change your mind.

## Tables

The following tables are available in Excel format from the 'Downloads' box. If you have problems viewing the files, see [opening files and PDFs](#).

From the June 2012 quarter, the consumers price index table formatting has been updated.

1. Consumers price index, tradables, non-tradables, and all groups – index numbers and percentage changes
- 2.01. Consumers price index, groups and subgroups – index numbers
- 2.02. Consumers price index, groups and subgroups, percentage change from previous quarter
- 2.03. Consumers price index, groups and subgroups, percentage change from same quarter of previous year
- 3.01. Consumers price index, selected groupings – index numbers
- 3.02. Consumers price index, selected groupings, percentage change from previous quarter
- 3.03. Consumers price index, selected groupings, percentage change from same quarter of previous year
4. International comparisons of consumer price indexes, excluding housing and household utilities group and credit services class – index numbers and percentage change
5. Weighted average retail prices of selected items
6. Consumers price index, expenditure weights, by group
7. Consumers price index, population weights, by region/pricing centre
- 8.01. Contribution to all groups and percentage change from previous quarter, by group, subgroup, or class
- 8.02. Contribution to all groups and percentage change from same quarter of previous year, by group, subgroup, or class
9. Consumers price index, expenditure weights, by group, subgroup, or class
10. Consumers price index, COICOP divisions – index numbers and percentage changes
11. Consumers price index, trimmed means and all groups – percentage changes
12. Consumers price index, weighted percentiles and all groups – percentage changes
13. Distribution of national item-level index movements from previous quarter

## Supplementary tables

These tables provide longer time-series information than the tables above. Given the long time-series nature of the tables, they are not suitable for printing. See the 'Downloads' box.

1. Consumers price index, tradables, non-tradables, and all groups – index numbers and percentage changes
- 2.01. Consumers price index, groups and subgroups – index numbers
- 2.02. Consumers price index, groups and subgroups, percentage change from previous quarter
- 2.03. Consumers price index, groups and subgroups, percentage change from same quarter of previous year
- 3.01. Consumers price index, selected groupings – index numbers
- 3.02. Consumers price index, selected groupings, percentage change from previous quarter
- 3.03. Consumers price index, selected groupings, percentage change from same quarter of previous year
- 4.01. Consumers price index, purchase of housing class, selected regions – index numbers and percentage changes
- 4.02. Consumers price index, actual rentals for housing subgroup, selected regions – index numbers and percentage changes

## Access more data on Infoshare

Use [Infoshare](#), a free, online tool to access time-series data specific to your needs.

To access the CPI time series, select the following from the homepage:

Subject category: **Economic indicators**

Group: **Consumers Price Index**

The CPI series provide additional information to that included in this release, including:

- index series for the CPI and its groups, subgroups, classes, and selected sections
- indexes compiled under the international classification of Classification of Individual Consumption according to Purpose (COICOP)
- the CPI, and selected groups, for the five broad regions
- non-standard aggregations of indexes (for example, alcoholic beverages consumed off licensed premises)
- analytical measures of price change
- historical seasonally unadjusted index series
- average prices for a selection of items in the CPI basket.

The time series can be downloaded in Excel or comma delimited format. 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 on our website.