

Consumers price index review: 2020

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Consumers price index review: 2020 outlines the changes we made to the basket of goods and services as a result of a review of the consumers price index (CPI).

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2020#methods) Upcoming CPI work (methods/consumers-price-index-review-2020#upcoming)

() Purpose and summary

Purpose

Consumers price index review: 2020 outlines the changes we made as a result of the review of the consumers price index (CPI). These changes are implemented in the *Consumers price index: September 2020 quarter* release.

Summary of key points

- We added 4 items to the CPI basket and removed 13 items.
- The relative importance of the housing and household utilities group has increased. This was influenced by higher expenditure on home ownership (purchase of new housing), which had the largest sub-group increase, and actual rentals for housing.
- The relative importance of the health, and alcoholic beverages and tobacco groups also increased.
- The relative importance of the transport group has decreased. This was largely influenced by our decision to decrease the weight for international airfares because New Zealand's border is currently closed due to COVID-19 and is likely to re-open in a limited way. We have also made a smaller decrease to the weight for domestic air transport.
- The relative importance of the recreation and culture group also decreased, where we decreased the weight for overseas accommodation costs prepaid in New Zealand.

About the CPI

The CPI measures the changes in prices that households pay for goods and services. Price change is measured by tracking the prices of individual items that make up a representative basket of goods and services.

Each quarter we collect about 100,000 prices. We visit retail outlets such as supermarkets, department stores, and clothing shops. We send about 1,700 surveys to a range of businesses each quarter, including construction firms, insurance companies, and used car yards. We visit websites to collect prices for things like streaming services, software, and private accommodation rented from others. We also collect data from various other sources, including scanner data (data recorded by retailers when consumers make purchases) for consumer electronics and from some supermarkets.

The CPI has a broad range of users. The Reserve Bank may adjust the official cash rate based on the CPI, which may mean banks adjust their interest rates. This will affect mortgage interest rates

and returns on investments for those saving money. Other government agencies may use the CPI in transfer adjustment calculations such as Superannuation. The CPI also helps to inform wage negotiations between employers, employees, and trade unions by reflecting the cost of living.

About the CPI review

We review the CPI every three years to ensure the index remains relevant. Household spending patterns change over time as tastes, lifestyles, and incomes change, and as the range of goods and services available for households to purchase changes.

Spending patterns also change as a result of relative price change. Households tend to buy more of goods and services that become relatively cheaper and less of goods and services that become relatively more expensive. For example, if apple prices increased a lot but pear prices increased only a little, consumers might be expected to purchase more pears and fewer apples than before.

The 2020 review has reselected the basket and updated the relative importance of the items within it. This is to reflect spending patterns for the year to June 2019 (2018/19). Previous weights were based on spending patterns for the year to June 2016 (2015/16).

Figure 1 compares the new June 2020 weights for the 11 CPI groups with the September 2017 and June 2014 weights.



Consumers price index weights, by group, 2014, 2017, and 2020

Impact of COVID-19 on the 2020 CPI reweight

Ordinarily, a three yearly reweight of the CPI is sufficient to pick up changing consumer expenditure patterns. As a consequence of COVID-19, supply and demand factors are likely to speed up this rate of change – with some items more affected than others.

We considered what, if anything, we should do about this. We have taken on board guidance from international bodies like Eurostat, the International Labour Organization (ILO), and the International Monetary Fund (IMF). We have talked to other national statistical agencies and some key customers and stakeholders, and undertaken some sensitivity analysis.

The general advice from international bodies is that weights should only be adjusted based on solid evidence and should not be adjusted for short-term fluctuations.

Taking these factors into consideration, we decided to take a conservative approach. We have adjusted the weights for domestic airfares, international airfares, and overseas accommodation costs prepaid in New Zealand only. Historically, domestic airfares, international airfares, and overseas accommodation costs prepaid in New Zealand have had a relatively high weight in the CPI (accounting for just over 3 percent of CPI expenditure), but there is very little expenditure on these items at the moment, with New Zealand's borders being closed. When the borders do reopen, this is likely to be in a limited way, and prices could be higher – especially if social distancing is still in place.

We have used a mixture of administrative data and internally sourced data to estimate the weights for domestic airfares, international airfares, and overseas accommodation costs prepaid in New Zealand. These weights aim to reflect expected expenditure for the next year, allowing for some gradual growth (this can be further finessed in the CPI through imputation). We intend to adjust the weights for these three items annually.

This means that the relative weight of all other CPI basket items will scale in association with the annual reweight of these three items.

() Changes to the CPI basket

As part of the 2020 basket review we have:

- added 4 items
- removed 13 items
- changed specifications for items
- consolidated items.

There are now 649 items in the CPI basket, down from 701 after accounting for additions, removals, and changes to product specifications.

Table 1 lists the items added to the basket.

Table 1 Items added to the CPI basket in 2020

ltem	Details
E-cigarette devices	Have grown in relative importance.
E-cigarette juices	Have grown in relative importance.
Surgeon fees	Significant household expenditure. Added to the basket as we are now better able to price this item.
Exercise equipment	Added to improve coverage of equipment for sport, camping, and outdoor recreation which has grown in relative weight.

Table 2 lists the items removed from the basket.

Table 2 Items removed from the CPI basket in 2020

Item	Details		
Boys' sweatshirts	Relatively low expenditure. Other items of boys' clothing will remain in the basket.		
Boys' underpants	Relatively low expenditure. Other items of boys' clothing will remain in the basket.		
Girls' summer nightwear	Relatively low expenditure. Girls' winter nightwear will remain in the basket.		
Entertainment units	Relatively low expenditure.		
Long distance train services	Relatively low expenditure.		
Telephones, cordless	Declining expenditure.		
Home telephone international call services	Declining expenditure. Home telephone national call services will remain in the basket.		
Home telephone homeline to cellphone call services	Declining expenditure. Home telephone national call services will remain in the basket.		
Home theatre and stereo systems	Relatively low expenditure.		
Pre-recorded compact discs, top 10	Declining expenditure.		
Digital camera memory cards	Declining expenditure.		
Travel guides	Relatively low expenditure. Books are still represented in the basket.		
Computer printer paper, one ream	Relatively low expenditure.		

Table 3 summarises the changes to product specifications.

Table 3 Changes to CPI basket item specifications in 2020

ltem	Details
Cakes, iced	Item classification changed from 'Cakes, sponge' to 'Cakes, iced'
GP fees (youth)	GP fee age ranges have been readjusted from '6–12 years' to '6–13 years', and from '13–17 years' to '14– 17 years' to reflect current policy.

Table 4 summarises the items that have been reviewed and updated to consolidate multiple items into one broad item. This has been done so it is easier for us to make more frequent model and

weight updates rather than being locked into a reference specification that is only updated every three years.

Table 4 Consolidated sub-items in CPI basket 2020

Item	Detail
Rent paid for primary property	A single sub-item now replaces five sub-items.
New cars	A single sub-item now replaces 19 sub-items.
Insurance on buildings (dwelling indemnity)	A single sub-item now replaces four sub-items.
Insurance on buildings (dwelling replacement)	A single sub-item now replaces four sub-items.
Insurance on house contents (indemnity)	A single sub-item now replaces four sub-items.
Insurance on house contents (replacement)	A single sub-item now replaces four sub-items.
Insurance on cars and station wagons	A single sub-item now replaces nine sub-items.

100 years of CPI – Basket changes

(http://archive.stats.govt.nz/cpichanges/cpibasketchanges/index.html) provides an interactive visualisation of selected basket additions and removals in the CPI over the 100 years from 1914 to 2014.

'Consumers price index review: 2020 – basket item list' under <u>Download data</u> (methods/consumers-price-index-review-2020#Download) provides a full list of items in the 2020 CPI basket.

Criteria for selecting basket items

Basket items are selected to represent the range of goods and services that households purchase.

We include particular items in the basket to ensure there is good representation across groups, subgroups, classes, and sections. We select more items for classes and sections where there is relatively high variation in price change (that is, where the prices of items in a class or section tend to move differently), than for classes and sections with little variation (that is, where prices move similarly).

We typically add items that have grown in relative importance to the point where they account for a significant share of household spending. We remove items that have declined in relative importance to the point where they no longer have a significant share of household spending. Another aim of the basket review is to add new goods and services that have become available since the previous review, provided household spending has reached a significant level. We may also add items that have historically made up a significant share of household spending but have been excluded from the basket due to difficulty collecting prices and/or adjusting the collected prices to account for changes in quality of the products.

Updating item specifications

We made some changes to the specifications (for example, models, varieties) of items as a result of reviewing the basket (see table 3 above). However, we did not explicitly review basket items' specifications as part of the 2020 CPI review.

New price collection methods

Between the 2017 and 2020 CPI reviews we trialled and implemented new price collection techniques from alternate data sources. By adopting collection from secondary data sources, we are able to increase the scope and accuracy of our pricing while reducing respondent burden.

We have expanded the collection of prices for certain items such as golf green fees and cinema admission tickets, using web-scraping and API (application programming interface) querying. This reduces manual processing time and the chance of human error. In general, we are working towards replacing more surveys and field-collected prices with web-scraped data and online collection where feasible.

The June 2020 quarter was the first time we incorporated point of sale (checkout scanner) price data supplied directly by some supermarkets as an alternative data source. This data replaced all the items that would have previously been manually priced in-store from these supermarkets. This represents a great improvement over in-store price collection, and we intend to continue this method in future.

We will continue to explore new approaches and data sources for the CPI. This includes continuing web-scraping and testing new ways of calculating the index with big data sets and new methods.

Information sources for the basket review

The 2020 basket review was informed by the lower-level 2015/16 household economic survey (HES) and 2018/19 HES expenditure data, feedback from CPI price collectors, supermarket scanner data from the Nielsen Company, retail transaction data obtained from market research company GfK, and information provided directly by businesses and government organisations.

The HES was filled out by a sample of about 3,900 households. The number of households represented by the HES sample increased by about 4 percent, from about 1,690,400 households in 2015/16 to 1,757,700 households in 2018/19. For the 2018/19 HES, the diary-keeping period was reduced from two weeks to one week. This is likely to have impacted on the quality of information collected in the diary, particularly for items that are not regular purchases, such as garden tools, cellphones and accessories, and applications for computers and cellphones.

() Analysing the expenditure weights

This chapter analyses changes to the CPI weights.

The following analysis provides graphs of the new CPI weights, compared with 2017 and 2014. Note that the 2020 weights are for June 2020 while the 2017 weights are for September 2017. The 2014 weights are for June 2014.

Tables 1 and 2 in 'Consumers price index review: 2020' under <u>Download data</u> (methods/consumers-price-index-review-2020#Download) give the new CPI expenditure weights at the June 2020 quarter. The tables also include the expenditure weights at the September 2017 and June 2014 quarters.

We publish the expenditure weights and indexes at group, subgroup, and class level. These weights are usually fixed, down to the class level, until the next reweight (scheduled for 2023). Expenditure for the year to June 2019 (the weight reference period) was price updated to the June 2020 quarter (the price reference period). Expenditure on the goods and services purchased in 2018/19 is 2.43 percent higher after price updating to the June 2020 quarter.

The effect of price updating is to calculate how much households would have to spend in the June 2020 quarter to purchase the same quantity (volume) of goods and services purchased in the year to June 2019.

We aim to monitor shifting expenditure patterns for other expenditure items over the next three years and would only consider changing weights for additional items where there is a clear-cut case for doing so. In addition, we monitor the relative weights below the class level of the New Zealand household expenditure classification and may adjust them where necessary to reflect volume-related shifts in relative importance.

Main changes to CPI weights

The 2020 CPI weights show increases (from 2017 to 2020) in the relative importance of:

• restaurant meals and ready-to-eat food (from 4.93 percent in 2017 to 5.09 percent in 2020)

- cigarettes and tobacco (from 2.63 percent to 3.21 percent)
- purchase of new housing (from 5.50 percent to 8.65 percent)
- actual rentals for housing (from 9.20 to 10.26 percent)
- out-patient services (from 2.00 percent to 2.36 percent)
- other recreational equipment and supplies (from 2.40 percent to 2.78 percent)
- insurance (from 3.00 percent to 3.16 percent).

The 2020 CPI weights show decreases (from 2017 to 2020) in the relative importance of:

- fruit and vegetables (from 2.92 percent in 2017 to 2.37 percent in 2020)
- alcoholic beverages (from 4.48 percent to 4.28 percent)
- clothing (from 3.60 percent to 3.38 percent)
- household energy (from 4.14 percent to 3.60 percent)
- property rates and related services (from 3.54 percent to 3.23 percent)
- passenger transport services (from 2.97 percent to 1.56 percent)
- accommodation services (from 1.71 percent to 1.08 percent)
- personal care (from 2.37 percent to 2.26 percent).

Food

The food group in the June 2020 quarter has a relative importance of 18.72 percent, down from 19.25 percent in the September 2017 quarter.

The main information source we used to reweight the food group was the 2018/19 HES. However, some food items are not accurately captured in HES (for example, confectionery and soft drinks). We supplemented HES by using information from food and beverage manufacturers and distributors as well as using supermarket scanner data (the Nielsen Company).

The fruit and vegetables subgroup was the main driver in the expenditure decrease. The relative importance of the fruit and vegetables subgroup decreased from 2.92 percent to 2.37 percent.

Spending on fruit and vegetables was down 6.06 percent. All other food subgroups showed growth in total expenditure levels, but subgroups with weaker expenditure growth lost some of their relative importance.

Spending on restaurant and ready-to-eat food increased by 19.84 percent, which led to a relative weight increase from 4.93 percent in 2017 to 5.09 percent in 2020.

Figure 2 compares the June 2020 expenditure weights for the food subgroups with those for 2014 and 2017.



Food expenditure weights, by subgroup, 2014, 2017, and 2020

Alcoholic beverages and tobacco

The alcoholic beverages and tobacco group has a relative importance of 7.49 percent in the June 2020 quarter, up from 7.11 percent in the September 2017 quarter.

The relative weight of alcoholic beverages decreased from 4.48 percent in 2017 to 4.28 percent in 2020. This is due to decreases in the relative weight for the beer and wine classes.

The relative weight of cigarettes and tobacco increased from 2.63 percent in 2017 to 3.21 percent in 2020. Prices have been incrementally rising since the June 2014 quarter due to regular increases in excise taxes. E-cigarette devices and e-cigarette liquids have been added to the cigarettes and tobacco subgroup as basket items.

Figure 3 compares the June 2020 expenditure weights for the alcoholic beverages and tobacco classes with those for 2014 and 2017.



Alcoholic beverages and tobacco expenditure weights, by class, 2014, 2017, and 2020

Clothing and footwear

The clothing and footwear group has a June 2020 quarter relative importance of 4.10 percent, down from 4.36 percent in the September 2017 quarter.

Compared with the September 2017 quarter, the relative weights for both clothing and footwear were down in the June 2020 quarter, from 3.60 percent to 3.38 percent (clothing) and from 0.76 percent to 0.72 percent (footwear).

Figure 4 compares the June 2020 expenditure weights for the clothing subgroups with those for 2014 and 2017.



Clothing and footwear expenditure weights, by subgroup, 2014, 2017, and 2020

Housing and household utilities

The housing and household utilities group has a June 2020 quarter relative importance of 28.00 percent, up from 24.51 percent in the September 2017 quarter. This group had the highest increase in relative weight.

At the class level the largest increase came from purchase of new housing, where spending increased by 82.50 percent in the June 2020 quarter, compared with the September 2017 quarter. The change in purchase of new housing was mainly driven by an increase in the number of new dwellings being constructed. Additionally, there has also been an increase in average house prices.

There was also a large increase in the relative weight for housing rentals, which increased from 9.20 percent in the September 2017 quarter to 10.26 percent in the June 2020 quarter. Spending on housing rentals increased by 29.25 percent.

Spending on local authority rates and payments increased by 5.42 percent. However, the growth in expenditure was not as strong as other classes within the group, which influenced the decrease in relative importance of this class.

Spending on household energy increased by 0.62 percent, but due to other areas having stronger growth, the relative weight for household energy showed an overall decrease from 4.14 percent in the September 2017 quarter to 3.60 percent in the June 2020 quarter.

Figure 5 compares the June 2020 expenditure weights for the housing and household utilities subgroups with those for 2014 and 2017.

Figure 5



Housing and household utilities expenditure weights, by subgroup, 2014, 2017, and 2020

Household contents and services

The household contents and services group has a June 2020 quarter relative importance of 4.30 percent, showing little change from the September 2017 quarter (4.38 percent).

The largest decrease came from the tools and equipment for house and garden subgroup, which decreased from 0.59 percent in 2017 to 0.47 percent in 2020.

Figure 6 shows the June 2020 expenditure weights for the household contents and services subgroups with those for 2014 and 2017.



Household contents and services expenditure weights, by subgroup, 2014, 2017, and 2020

Health

The health group has a June 2020 quarter relative importance of 4.24 percent, up from 3.78 percent in the September 2017 quarter.

The largest increase in relative weight came from out-patient services subgroup, rising from 2.00 percent in 2017 to 2.36 percent in 2020. Both medical services and dental services contributed to this increase. Spending on medical services increased by 35.61 percent. Spending on dental services increased by 45.62 percent.

The medical services class now includes surgeon fees, which were added to the basket in this review. Previously, expenditure on surgeon fees was classified under the hospital services subgroup.

Figure 7 compares the June 2020 expenditure weights for the health subgroups with those for 2014 and 2017.



Health expenditure weights, by subgroup, 2014, 2017, and 2020

Transport

The transport group has a June 2020 quarter relative importance of 11.93 percent, down from 13.97 percent in the September 2017 quarter.

Most of this decrease in relative weight came from international air travel, which fell from 1.82 percent in 2017 to 0.60 percent in 2020 due to our decision to adjust the weight for the impact of COVID-19. The published weight aims to reflect expected expenditure for the next year, allowing for some gradual growth, and will be updated annually. The weight for domestic air transport has also been adjusted slightly for the same reason.

A smaller decrease came from petrol which had a relative weight of 4.06 percent in 2017 and 3.57 percent in 2020. Petrol prices have changed little, increasing just 0.46 percent since the 2017 review, while overall expenditure increased by 1.86 percent. Due to other areas with stronger growth in expenditure, the relative weight for petrol has decreased.

There was also a slight decrease from purchase of vehicles. The weight for purchase of vehicles decreased from 4.47 percent in 2017 to 4.26 percent in 2020. Both new and second-hand motor cars decreased in relative importance.

Figure 8 compares the June 2020 expenditure weights for the transport subgroups with those for 2014 and 2017.

Figure 8



Transport expenditure weights, by subgroup, 2014, 2017, and 2020

Communication

The communication group has a June 2020 quarter relative importance of 3.11 percent, down from 3.20 percent in the September 2017 quarter.

Most of the decrease in relative weight in this group came from telecommunication equipment, which decreased from 0.61 percent in 2017 to 0.54 percent in 2020. Prices decreased by 23.54 percent for cellphones and accessories between September 2017 and June 2020.

Figure 9 compares the June 2020 expenditure weights for the communication subgroups with those for 2014 and 2017.



Communication expenditure weights, by subgroup, 2014, 2017, and 2020

Recreation and culture

The recreation and culture group has a June 2020 quarter relative importance of 8.46 percent, down from 9.40 percent in the September 2017 quarter.

The largest decrease came from accommodation services, where spending fell 26.87 percent. The relative importance of accommodation services was down from 1.71 percent in 2017 to 1.08 percent in 2020. Overseas accommodation costs have been adjusted to reflect the impact of COVID-19. The published weight aims to reflect expected expenditure for the next year, allowing for some gradual growth, and will be updated annually.

Figure 10 compares the June 2020 expenditure weights for the recreation and culture subgroups with those for 2014 and 2017.



Recreation and culture expenditure weights, by subgroup, 2014, 2017, and 2020

Education

The education group has a June 2020 quarter relative importance of 1.80 percent, down from 2.01 percent in the September 2017 quarter.

The largest decrease came from tertiary and other post-school education, with spending falling by 24.71 percent between the September 2017 quarter and the June 2020 quarter. This was influenced by the fees-free tertiary education and training policy introduced on 1 January 2018. Eligible students qualified for the equivalent of one years' fees-free provider-based study or two years' industry training.

There was a smaller, partially off-setting, increase in the relative weight for early childhood education.

Figure 11 compares the June 2020 expenditure weights for the education subgroups with those for 2014 and 2017.



Education expenditure weights, by subgroup, 2014, 2017, and 2020

Miscellaneous goods and services

The miscellaneous goods and services group has a June 2020 quarter relative importance of 7.85 percent, down from 8.02 percent in the September 2017 quarter.

The relative importance for most of the subgroups within this group decreased, except for the insurance subgroup (up from 3.00 percent in 2017 to 3.16 percent in 2020).

Within the insurance subgroup, higher spending was on life insurance (up 19.08 percent), dwelling insurance (up 48.38 percent), health insurance (up 7.81 percent), and vehicle insurance (up 49.46 percent), while spending on contents insurance was down by 31.86 percent.

Figure 12 compares the June 2020 expenditure weights for the miscellaneous goods and services subgroups with those for 2014 and 2017.



Miscellaneous goods and services expenditure weights, by subgroup, 2014, 2017, and 2020

CPI all groups plus interest

We have excluded interest payments from the CPI since 1999, but have produced an analytical CPI all groups plus interest series since then. The interest component of this index has a June 2020 quarter relative weight of 5.72 percent, down from 7.34 in the September 2017 quarter.

The main source of information for interest expenditure weights was the money, credit, and financial statistics published by the Reserve Bank of New Zealand.

Our household living-costs price indexes (HLPI) also include interest.

Tradables and non-tradables

Tradables are goods and services that are imported or that are in competition with foreign goods and services, either in domestic or foreign markets. Non-tradables are goods and services that do not face foreign competition.

Table 5 shows which of the items added to the basket of goods and services this year are tradable and non-tradable.

Table 5 Tradable and non-tradable items added to the CPI basket 2020

Tradable	Non-tradable	
E-cigarette devices	Surgeon fees	
E-cigarette juices		
Exercise equipment		

The June 2020 quarter expenditure weight of the tradables component is 39.92 percent compared with 43.58 percent in 2017. The June 2020 quarter expenditure weight of the non-tradables component is 60.08 percent, compared with 56.42 percent in 2017.

See table 6 in 'Consumers price index review: 2020' under <u>Download data</u> (methods/consumers-price-index-review-2020#Download) for the 2020 tradables/non-tradables CPI weights.

() CPI pricing centres and regional expenditure weights

This chapter describes the structure of our regional pricing centres and the regional expenditure weights.

CPI prices are collected from 12 regional pricing centres within five broad regions (Auckland, Wellington, rest of North Island, Canterbury and rest of South Island).

We use regional weights to ensure price changes in a region with a large population (for example, Auckland) will have a greater effect on the national CPI than price changes in a region with a smaller population (for example, Wellington). Instead of using the population weight of a region to determine its regional weight in the CPI, we base our regional weights on regional household spending from the HES.

Regional pricing centres

The 12 regional pricing centres are: Whangarei, Auckland, Hamilton, Tauranga, Napier-Hastings, New Plymouth, Palmerston North, Wellington, Nelson, Christchurch, Dunedin, and Invercargill.

Regional expenditure weights versus population weights

Regional expenditure weights use each region's share of national expenditure to weight regional price change. Regional spending patterns were used to weight individual basket items within each

region.

In contrast, regional population weights use the region's share of the population to weight regional price change. National spending patterns were used to weight the individual basket items in each region.

Regional expenditure weights give a higher weight to regions with more spending per person compared with regional population weights. For example, a price change in Auckland (which has 33.41 percent of the population and a CPI regional expenditure weight of 35.98 percent) would have about three times the effect on the national CPI as Canterbury (which has 12.79 percent of the population and a CPI regional expenditure weight of 12.99 percent).

Regional expenditure weights also give higher weights to items within a region where relative expenditure is higher than the national average. For example, housing and household utilities has a national expenditure weight of 28.00 percent, but makes up 31.59 percent of household expenditure in Auckland. This means price change for housing and household utilities in Auckland has more influence on the Auckland index using regional expenditure weights, than regional population weights, which use the national average weight. This produces more accurate regional indexes.

Calculating regional expenditure weights

We calculated regional expenditure weights as proportions of national expenditure for each CPI class or section (the lowest published level) using HES regional expenditure. We applied class/section level proportions to the individual items within that class or section to derive regional expenditure on each individual item within that class or section. For example, the regional proportions for fruit were applied to the national expenditure on each fruit item so we can derive the spending on apples in Auckland.

In some cases, HES data was not available and/or the household sample sizes were too small to provide reliable regional breakdowns. Where this was the case, we used data from other sources or population shares.

Regional expenditure was then expressed in June 2020 quarter prices for the respective region (for example, apple expenditure in Auckland was expressed in June 2020 quarter apple prices collected in Auckland).

For broad regions with multiple pricing centres (rest of North Island and rest of South Island), we used population shares to allocate the regional expenditure weight to the pricing centres.

Figure 13 compares each region's share of national expenditure with its share of the population.

Figure 13



CPI – expenditure and share of population, by region, 2020

See tables 3 and 4 in 'Consumers price index review: 2020' under <u>Download data</u> (methods/consumers-price-index-review-2020#download) for the CPI regional expenditure weight by CPI group.

() Reweighting the CPI basket

This chapter explains how we reweighted the CPI basket.

Background to reweighting

We reweight the CPI every three years, on average, as part of regularly scheduled CPI reviews. Reweighting ensures that the relative importance (expenditure weights) of the goods and services in the CPI basket continue to reflect up-to-date household spending patterns. The frequency of reweights is within the International Labour Organization (ILO) recommendation of at least once every five years.

The 2020 reweight was based on data from the 2018/19 HES and other sources. The previous reweight, completed in 2017, was based on the 2015/16 HES and other sources.

Data sources for reweighting the CPI basket

The HES is the primary information source for reweighting the basket. However, other sources are also required, as the HES does not provide accurate expenditure estimates for some goods and services.

HES respondents tend to under-report expenditure on some goods and services (for example, tobacco and alcohol). Large, infrequent purchases (for example, new cars) may not be reported frequently enough by the 3,900 households in the survey to provide accurate estimates of total household expenditure.

We complemented the HES data with information from other sources, including Stats NZ surveys, government administrative data, retail transaction data, and information provided by businesses.

In the 2020 review, 64.1 percent of the CPI weights were derived from the HES. In the 2017 review, 66.4 percent of the CPI weights were derived from the HES. Since the 2014 review, we have changed our approach, to make use of more HES data when estimates from other data sources are close to the HES estimates.

See table 5 in 'Consumers price index review: 2020' under <u>Download data</u> (methods/consumers-price-index-review-2020#download) for a breakdown of the group-level CPI weights by data source.

What the basket represents

The goods and services in the CPI basket are a sample that represents the wider range of goods and services households buy. The expenditure weights assigned to the 649 individual goods and services in the new 2020 basket represent expenditure on those goods and services. In addition, the expenditure weights also represent expenditure on similar goods and services not directly included in the basket but expected to experience a similar price change. For example, oranges and mandarins are in the basket but lemons are not. Expenditure on lemons (and other citrus fruit not in the basket) is allocated to oranges and to mandarins in proportion to spending directly on each of these two citrus fruits.

Excluding out-of-scope expenditure

When we use other data sources for expenditure estimates, we often have to adjust the data so that it matches the CPI's reference population.

The HES (and CPI) reference population is New Zealand-resident, private households living in permanent private dwellings. This means that the reference population does not include:

• overseas visitors who expect to be a resident in New Zealand for fewer than 12 months

- people living in non-private dwellings such as hotels, motels, boarding houses, hostels, motor camps, and homes for the elderly which provide medical care and services
- patients in hospital
- residents of psychiatric and penal institutions
- members of the permanent armed forces
- members of the non-New Zealand armed forces
- overseas diplomats.

Children, including those at boarding schools, are not surveyed in the HES. Expenditure on behalf of those children by their parent or guardian is included.

For survey purposes, a 'household' is a group of people who share a private dwelling and normally spend four or more nights a week in that household. They must share food consumption or contribute some portion of income towards the essentials of living as a group.

How we exclude out-of-scope data

The HES and CPI reference populations are the same. Therefore, we do not need to adjust HES expenditure when using HES to estimate expenditure weights.

However, when we use other data sources to estimate expenditure weights, we must adjust our estimates to only include expenditure within the scope of the HES/CPI reference population. If we don't adjust the data, weights derived from other sources could be too high relative to weights sourced from the HES. In addition to the people who are not covered by HES and CPI, we also exclude expenditure by business and government.

We source other information from a wide range of providers. We asked data suppliers to report expenditure information that closely matches the scope of the CPI where possible. However, many providers were not able to break their data down to this level of detail, and instead provided data with a wider scope. To account for this, we estimate what proportion of that expenditure falls within the scope of the CPI.

We derived a set of specific adjustment ratios for various areas of the basket to exclude out-ofscope expenditure. Appropriate ratios were then applied to the corresponding independently sourced expenditures. For example, the ratios considered the relative share of expenditure by visitors from overseas.

Table 6 shows the information sources used to derive the out-of-scope adjustment factors.

Table 6 Information sources for out-of-scope adjustment factors

Type of out-of-scope expenditure	Information source	Breakdown
Business and government	National accounts household consumption expenditure	Estimates proportion of total retail spending by the business sector, by retail store type
Non-private and non- permanent households	2018 Census	Resident population
Non-residents (overseas visitors)	Tourism satellite account	International visitor expenditure as a proportion of total supply, by product

Price updating expenditure

For the 2020 review, the 'weight reference' period is the year to June 2019, which coincides with 2018/19 HES. However, HES expenditure on some goods and services is collected in the HES on a one-year recall basis in the expenditure questionnaire, meaning that purchases can span the two-year period from July 2017 to June 2019. When we used other sources to derive expenditure weights, we used information for the year to June 2019 where possible.

Expenditure information from the 2018/19 HES and other sources has been 'price updated' to the 'price reference' period of the June 2020 quarter. Price updating is recommended for CPIs by the ILO and is common international practice. The effect of price updating is to express the quantities underlying the 2018/19 expenditure values in the price of the June 2020 quarter (the price reference period). In general, we used lower-level CPI indexes that corresponded to the goods and services in the new basket to price-update the expenditure weights.

Effect of price updating

After price updating to the June 2020 quarter, the new CPI expenditure weights were 2.43 percent higher.

Price updating increased expenditure weights for 66.10 percent of the basket items. Prices for dwelling insurance increased by about 3.38 percent from 2018/19 to the June 2020 quarter. Prices for cigarettes and tobacco increased by about 14.88 percent over the same period.

Price updating decreased expenditure weights for 31.43 percent of the basket items. Prices for petrol decreased by about 13.25 percent from 2018/19 to the June 2020 quarter.

The remaining 2.47 percent of basket items experienced no change from price updating.

Table 7 in 'Consumers price index review: 2020' under <u>Download data</u> (methods/consumers-priceindex-review-2020#download) sets out the CPI group weights price updated to the March 2020 quarter (before COVID-19) and the June 2020 quarter (includes the impact of COVID-19).

Volume adjustments

CPIs are generally calculated using a base-weighted Laspeyres (or Lowe) formula that measures the changing cost of acquiring a fixed basket of goods and services. The underlying quantities of the basket's contents relate to an earlier period (the 'weight reference' period) and are held fixed.

We fix the underlying 2018/19 quantities in the Laspeyres price index formula over the life of the index (from 2020 to 2023). We assume that these quantities will be broadly representative of household purchases during the three-year life of the index (although we expect that consumers may substitute towards goods and services which experience lower relative price change during the period).

We also know that there can be significant shifts in quantities for some goods and services between the 2018/19 weight reference period and the June 2020 quarter price reference period.

We made volume adjustments to some of the underlying quantities as part of the reweight. Volume adjustments were made in circumstances where there was strong evidence that item volumes had changed between the weight reference period and the price reference period.

Applying selected volume adjustments can introduce a level of subjectivity into the reweighting process. However, we only do this when necessary to retain accurate underlying 2018/19 quantities across the whole basket.

The volume adjustments were incorporated into the factor used to price update the 2018/19 expenditures.

Table 7 lists the volume adjustments made, the reasons for making them, and the data sources used for the adjustments. Note that volume change includes not only change in physical quantities (such as the number of computers), but also the change in quality.

Goods or service	Reason for adjustment	Information source
Telecommunication equipment, audio visual equipment, and computing equipment	To reduce the downward effect of price updating due to quality adjustments	Volume and sales information available from GfK administrative data

Table 7 Volume adjustments for CPI items

Managing cyclical or volatile expenditure

Expenditure for some goods and services is highly cyclical or highly volatile. Two highly weighted examples are the purchase of newly constructed dwellings, and insurance services.

For the 2020 review, we extended the weight reference period to three years (ending the same date as the HES) for purchase of housing, life insurance, and health insurance. We extended the weight reference period to five years for general insurance (house, contents, car). These extensions make it possible to partially smooth the impact of cyclical highs or lows (housing) or unusual claims years (insurance). This is in line with what was done in previous reviews.

In cases where we made volume adjustments, and for housing and insurance (where we used an average of more than one year for the weight reference period), we adjusted volumes for periods after or before the weight reference period of 2018/19 to remove the effect of growth in the usually resident population.

() Methods for deriving expenditure weights

This chapter outlines the methods we used to derive expenditure weights for key parts of the CPI.

The HES is the primary source of weighting information. We use HES estimates where expenditure estimates using other data sources come out similarly to HES estimates, or for goods and services where the HES information is the best available. We use other information sources to calculate expenditure weights or to validate HES estimates for items with significant expenditure.

Purchase of new housing

The 'net' approach

Under the 'acquisition' conceptual approach used to compile the New Zealand CPI, the expenditure weight allocated to purchases of housing represents the value of the net increase in the stock of owner-occupied housing during the weight reference period. We include both expenditure on newly constructed dwellings by owner-occupiers and alterations and additions to existing owner-occupied dwellings.

The net change in the number of owner-occupied dwellings reflects the overall effect of households:

- acquiring newly constructed dwellings for occupation
- demolishing established owner-occupied dwellings
- selling established owner-occupied dwellings to landlords, small businesses, developers, or government

• acquiring established dwellings (for owner-occupation) from landlords, small businesses, developers, or government.

Sales between households of established owner-occupied dwellings do not add to the stock of owner-occupied dwellings, as netting results in each purchase (positive expenditure) being cancelled out by a corresponding sale (negative expenditure). However, any net shift of dwellings in either direction between owner-occupation and renting or small-business use should be included. This shift results in either a net addition (towards owner-occupation) or net reduction (towards renting or business use) to the stock of owner-occupied housing.

Calculating the expenditure weight

We use dwelling tenure statistics, which are based on data from the Census of Population and Dwellings, to get the change in the overall number of new dwellings being constructed. Comparing the annual stock change used in the 2017 review to the 2020 review, we saw a 164 percent increase.

The availability of 2018 Census data resulted in the dwelling estimates figures being revised between the 2013 Census and 2018 Census. The effect of this revision was to increase the 2017 estimate significantly. In other words, this review incorporates a 'catch-up' component relating back to the estimate used in 2017. The 2020 dwelling estimates have increased by 40 percent when compared with the revised 2017 dwelling estimates.

We use a weight reference period of three years (to the end of the HES period) to derive annual average CPI expenditure weights for the purchase of housing to partially smooth the effect of cyclical highs or lows in activity. For the 2020 review, we used information for the three years to June 2019.

We used the time-series estimates of the number of owner-occupied dwellings for the years to June 2017, 2018, and 2019 to calculate the net annual change for each of the three years to June 2019. We multiplied these net annual changes by the average cost of constructing a new dwelling during each of these years (derived from building work put in place statistics). The average costs for the years to June 2017 and 2018 were price updated to the year to June 2019 using the CPI index for home ownership. We averaged figures for each of the three years to June 2019.

The value of additions and alterations to established owner-occupied dwellings was derived from HES. Examples of additions and alterations include large-scale expenditure on plumbing, carpentry, landscaping, double glazing, heating installation, and building an annex (such as a new kitchen, an out-house, or adding additional rooms onto an existing dwelling).

The final step was to price update to the June 2020 quarter. The price-updating indicator we used for the part of the estimate relating to new dwellings was the CPI index for the purchase of new

housing. Information from the Census of Population and Dwellings, HES, and other sources indicates a trend over a lengthy period towards lower home-ownership rates. However, the number of new owner-occupied dwellings is still increasing at a steady rate.

Calculating regional expenditure on purchase of housing

We calculated regional expenditure weights for the purchase of housing using a combination of HES and information from other sources. We used regional expenditure on property alterations and additions, and the estimated change in the number of owner-occupied dwellings, broken down by region, combined with regional average prices for newly consented dwellings.

Note

- To derive the CPI expenditure weight for purchase of housing, households holding the homes they occupy in family trusts were treated as being owner-occupied (even though this might not be true in a strict legal sense).
- The CPI does not include expenditure by landlords on, or relating to, the properties they rent out.

Purchase of new motor cars

We used information from other sources to estimate expenditure on new vehicles. This is because HES estimates for vehicles can be unreliable as vehicles are large, infrequent purchases and therefore may not be reported frequently enough by the approximately 3,900 households in the survey.

Calculating the expenditure weight

We used information on new motor cars registered by individuals for private use (broken down by make and model) in the year to June 2019, in conjunction with list prices (by make and model) for the same period. Prices were multiplied by the number of registrations to derive the expenditure weight for new motor cars. We made adjustments to exclude out-of-scope expenditure and to reflect discounts for cash purchases.

Reselecting car makes and models

We reselected the sample of new car makes and models. The reselection was based on registrations (broken down by make and model) for the year to June 2019. We increased the number of new cars in our sample from 19 to 29. The new sample has 19 petrol, 6 diesel, 3 hybrid, and 1 electric vehicles. This compares with 14 petrol, 3 diesel, 1 hybrid, and 1 electric vehicles in the 2017 basket.

Structural changes

In this review we have changed how our system deals with new cars. We now have a single basket entry for this item, and have moved the relative weights for fuel type, make, and model to the elementary aggregate level. This allows us to make sample changes, or update trends in car types or brands between reviews to better reflect what consumers are purchasing.

What the vehicle expenditure weights represent

The expenditure weight allocated to the purchase of new cars represents gross expenditure on new cars for private use by households.

The expenditure weight for the purchase of second-hand cars, derived from HES, represents net purchases of second-hand cars (that is, purchases of second-hand cars minus sales and trade-ins of second-hand cars, including trade-ins on purchases of new cars).

Domestic air transport

As part of the 2020 review the travel routes were reweighted to reflect the changing relative importance of routes. No routes were added or removed from the sample.

We used a mixture of administrative and internally sourced data to estimate total revenue from domestic passengers carried for the year to June 2019, and made a small adjustment to account for the impact of COVID-19 on this item. We intend to update the weight for domestic airfares annually.

Since domestic air transport trips in New Zealand are also taken by the non-CPI reference population, we need to adjust for out-of-scope trips. This involved removing estimated expenditure on domestic air transport by business users, tourists, and people who are not part of private households living in permanent dwellings (using information sources listed in the 'excluding out-of-scope expenditure' section above).

International air transport

We used multiple data sources to estimate the expenditure weight for international air transport in the 2020 CPI review, and made a final adjustment to account for the impact of COVID-19 on this item. No routes were added or removed from the sample.

The expenditure weight estimate involves two key steps. First, we estimated the volume of inscope trips (broken down by routes) taken by the CPI population, Second, we combined these volumes with average prices, which were weighted by the importance of routes.

We derived passenger volumes largely from external migration statistics. We used information on short-term overseas trips taken by New Zealand residents in conjunction with port-of-embarkation

data to derive passenger volumes at the route level. We then removed out-of-scope trips, such as where the main purpose of travel was business, or conventions and conferences.

We used information collected as part of the CPI monthly survey of international air transport to derive a set of weighted average prices. These average prices took into account the relative importance of airlines for each route, and included the taxes and levies payable on each journey.

Finally, after combining the volumes with their corresponding weighted average prices, we removed out-of-scope expenditure by people who are not part of private households living in permanent dwellings (using information sources listed in the 'excluding out-of-scope expenditure' section above), and made a final adjustment to reflect that New Zealand's borders are currently closed due to COVID-19, and are likely to re-open in a limited way. We intend to update the weight for international airfares annually.

Alcoholic beverages

Households filling out the HES tend to under-report expenditure on alcoholic beverages, so other information sources are required to calculate their CPI expenditure weights.

We used the quantities of alcoholic beverages available for consumption within New Zealand, in the year to June 2019, as a proxy for purchases in the weight reference period. These were available at the detailed level (for example, by type of spirit for full-strength spirits).

We calculated expenditure estimates by multiplying the quantities available for consumption by the average prices derived from CPI price collections. The quantities were split into beverages consumed on and off licensed premises, using industry information (beer) and HES (wine, spirits, and liqueurs). This is an important step, since prices for alcoholic beverages consumed on licensed premises are much higher than for beverages consumed in off licensed premises. The beer information was available in quantities. However, because the HES breakdown by store-type related to expenditure shares, spending on wine and on spirits and liqueurs had to be converted to quantity shares by using corresponding average prices.

We used the disaggregated alcohol available for consumption figures, and supermarket scanner information on the relative shares of different types of wine, to allocate quantities to a representative sample of beverages in the CPI basket.

We have removed out-of-scope expenditure from international visitors, businesses, and people living in non-private dwellings (using information from the sources listed in the 'excluding out-ofscope expenditure' section above). In dollar-value terms the expenditure weight of alcoholic beverages before price updating was more than double what it would have been if based simply on information reported in the 2018/19 HES.

Cigarettes and tobacco

HES respondents also tend to under-report expenditure on cigarettes and tobacco, so other information sources are required to calculate their CPI expenditure weights.

We used the quantities of cigarettes and tobacco available for consumption within New Zealand in the year to June 2019 in the calculations.

We calculated expenditure estimates by multiplying the quantities available for consumption by average prices derived from CPI price collection. These prices show that cigarette and tobacco price levels from different store types are relatively similar.

We have removed out-of-scope expenditure from international visitors and people living in nonprivate dwellings (using information from the sources listed in the 'excluding out-of-scope expenditure' section above).

We used supermarket scanner data to review the relative importance of the brands in the sample.

HES data was used as the expenditure weight for e-cigarette devices and e-cigarette juices.

Insurance services

We estimate expenditure weights for various types of insurance service on a 'net' basis. Under a net approach, the cost of insurance is only the cost associated with the insurance companies providing administration and risk-pooling services.

The insurance industry is viewed as providing an intermediation services in which the contributions made by policy holders are pooled and managed. The part of premiums that does not pay for the intermediation service goes into pools. The pools are managed by the insurance companies, invested to best advantage, and provide a source of funds for policyholders to use when they need to repair or replace insured property, pay for medical services, or obtain income.

The 'net' approach

Under the net approach, the weight given to insurance relates to the administrative costs of providing the service (that is, collecting premiums and paying claims), and the profits of insurance companies.

We define the value of the insurance as:

- gross insurance premiums payable by households
- plus premium supplements (income earned on investing prepaid premiums and actuarial reserves)
- less claims
- less changes in actuarial services.

Under the net approach for insurance services, the weights of goods and services covered by insurance represent total expenditure on goods and services, whether funded by insurance or other means.

The national accounts take a similar view of insurance services.

General insurance

The general insurance method covers dwelling, contents, and vehicle insurance.

The first step involved using industry information on total claims and premiums to estimate an 'expected' service-charge ratio.

We calculated the service-charge ratio using industry information on the value of claims and premiums. Previously, in the 2011 and 2014 CPI reviews, we had to adjust the claims to account for the 'abnormal' level of claims from the Canterbury earthquakes. The adjustment involved spreading earthquake-related claims over a 20-year period, in line with treatment in the national accounts. The adjusted claims values therefore included 'normal' claims not related to the earthquakes for the weight reference period, and one-twentieth of the claims related to the earthquakes. We continued to use this methodology in the 2020 CPI review.

For the second step, we applied the service charge ratio to HES expenditure on gross insurance premiums. This gave us net expenditure on insurance services. This approach is consistent with the recommended approach in the ILO Consumer price index manual.

Our decision to use the HES expenditure, rather than industry information on premium income, was to better align the scope of the estimates with the CPI's scope. HES provides reliable estimates of gross premiums paid by households, whereas industry information needs to be further adjusted to remove out-of-scope expenditure (e.g. expenditure by landlords on dwelling and contents insurance relating to properties they rent out). The decision was not related to effects from the Canterbury earthquakes.

Health and life insurance

The CPI expenditure weights for life insurance and health insurance were based on service charges derived from industry information.

We needed to adjust the industry information service charges to bring them in line with the scope of the CPI. The information for health insurance includes a proportion that is funded by employers, which was excluded from the CPI weight calculations (the value of fringe benefits, or income paid in kind, has not traditionally been included in the CPI weights). We obtained information from the industry on the share of premiums funded by employers.

Some types of life insurance are excluded from the CPI because they represent savings and investment, rather than consumption. However, 'term' life insurance provides risk-only cover and has no surrender or residual value. Claims are paid out only in the event of death, disability, or personal accident. For the CPI, the service provided by term life insurance is regarded as protection against the risk of disability, personal accident, or loss of life. Given that there is no investment element in this type of life insurance, it is appropriate to include it in the CPI, and therefore only information on term life insurance was used in our expenditure estimate.

We also made adjustments to exclude the estimated shares of health and life insurance service charges attributable to people who are not part of private households living in permanent dwellings (using information from the sources listed in the 'excluding-out-of-scope expenditure' section above).

Allocating claims to goods and services

Using the net approach for insurance services, we allocate spending on goods and services that are funded by insurance claims to the expenditure weights of those goods and services. When insurance providers pay claims directly to households, the resulting expenditure made by households to repair or replace insured property is captured directly in the HES. However, when insurance providers pay claims directly to the goods and service providers who repair or replace insured property is captured directly in the HES. However, when insurance providers pay claims directly to the goods and service providers who repair or replace insured property, this expenditure on behalf of households is not captured in the HES.

We obtained information on the proportion of claims paid directly to service providers for the different types of general insurance from the industry. These proportions were applied to the claims figures used to derive the service charge weights. We added the resulting amounts to the expenditure weights of appropriate insurable goods and services. The total estimated amount of general insurance claims paid directly to goods and service providers was about \$964 million (about half related to vehicle insurance).

Health services

The expenditure weights allocated to the various health services represent out-of-pocket spending by private households, and spending on claims made on behalf of private households

by health insurance companies to health service providers.

In 2020, within the health group, we derived most of the expenditure weights allocated to the hospital services subgroup from sources other than the HES. This was the same approach to hospital services in the 2017 review. We used the annual enterprise survey (AES) data to provide information on the total income of hospital service providers. We then removed government funding and employer contributions to health insurance.

In contrast, for the out-patient services subgroup we derived most of the expenditure weights using the HES supplemented by insurance claims data. We did this for items where we deemed the HES to be a reliable source for capturing expenditure. This is in line with the 2017 review methodology.

Education

The 2018/19 HES appears to provide accurate estimates for some, but not all, types of education. Expenditure for primary, intermediate, and secondary education subgroup was estimated using other sources.

We estimated parents' contributions to state and integrated schools using Ministry of Education information. We estimated the weight for private school fees using pupil enrolment numbers supplied by the Ministry of Education and average prices from the CPI survey of private school fees.

The expenditure weight for the remaining education subgroups (early childhood education, tertiary and other post-school education, and other educational fees) came from HES. However, we used information from the Ministry of Education, such as enrolment numbers and income from fees, to reallocate the HES expenditure in a way that better aligns with these other data sources.

Clothing and footwear

HES estimates of expenditure on clothing and footwear appear to be significantly understated. This may reflect under-reporting by respondents and/or issues with how the information is collected. The 2020 weight was based on retail trade survey (RTS) sales figures for the year to June 2019. We used a similar approach for the previous reviews.

The approach we used to derive the CPI clothing and footwear expenditure weights involved five steps:

1. use the HES to determine the proportion of sales at clothing stores, department stores, footwear stores, and other stores that sell clothing and footwear

- 2. apply these proportions to RTS sales figures for the equivalent store types
- 3. add GST to the RTS expenditure
- 4. remove out-of-scope spending (for example, spending by international visitors and businesses)
- 5. increase the HES expenditure for individual clothing and footwear items by the ratio of HES expenditure to adjusted RTS expenditure, at the store-type level.

() Upcoming CPI work

Household living-costs price indexes review

We will publish Household living-costs price indexes review: 2020 on 4 November 2020.

The new HLPI weights will be implemented in the September 2020 quarter release, to be published on 4 November 2020.

Retrospective superlative index

We will update our analytical retrospective superlative index series and analysis by mid-2021.

The publication will include an update to the analysis of how the CPI might have tracked had CPI reweighting been less frequent.

COVID-19 and annual reweighting

We reweight the CPI every three years. Ordinarily, a three-yearly reweight is sufficient to pick up changing consumer expenditure patterns. Due to COVID-19, supply and demand factors are likely to speed up this rate of change, with some items more affected than others.

As indicated in previous sections of this report, we intend to adjust the weights of international air transport, domestic air transport, and overseas accommodation costs prepaid in New Zealand annually to account for the impact of COVID-19. This means that the relative weight of all other CPI basket items will scale in association with the annual reweight of these three items.

In addition, we aim to watch shifting expenditure patterns for other CPI basket items over the next three years. However, we would only consider changing the weights for other items where there is a clear-cut case for doing so.

2023 CPI review

The next three-yearly CPI review will begin in June 2022. We will implement changes from the review in October 2023 when *Consumers price index: September 2023 quarter* is released.

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