OFFICIAL

AUSTRALIAN BUREAU OF STATISTICS SUBMISSION – MEASUREMENT OF PRICE INDEXES

Senate Economics References Committee

September 2024

BACKGROUND

The Australian Bureau of Statistics (ABS) is responsible for producing the Consumer Price Index (CPI) and the Selected Living Cost Indexes (SLCIs) for Australia. The ABS has been invited by the Senate Economics References Committee to discuss how these indexes are produced.

Australia's CPI and SLCIs substantially align with the recommended international standards and methods set out by the International Monetary Fund in Consumer Price Index Manual, 2020 – Concepts and Methods | IMF eLibrary and Consumer Price Index Manual – Theory and Practice | IMF eLibrary. The exception to these standards is that Australia currently publishes CPI on a quarterly basis while the standard is that it should be monthly. As noted later in this submission, Australia is moving to a fully monthly CPI in late 2025.

Complementing these sources, is Australia's Consumer Price Index: Concepts, Sources and Methods, 2018 | Australian Bureau of Statistics (abs.gov.au). The ABS also publishes a very wide range of articles, information papers and methods documentation to support users in understanding how the CPI and SLCIs are produced.

The following summarises some of the key elements of these documents.

WHAT IS THE CONSUMER PRICE INDEX (CPI)?

The CPI is a general measure of inflation based on the prices of goods and services purchased by Australian households. It is widely used to inform governments, businesses, and the community about the changes in inflation facing Australian households. The CPI provides policy and decision-makers with data and insights necessary to inform monetary and fiscal policy settings. The CPI is the measure used by the Reserve Bank of Australia for its inflation target.

The CPI measures changes in the price of a 'basket' of goods and services, which account for expenditure by households in capital cities. This 'basket' covers the following 11 categories of goods and services:

- Food and non-alcoholic beverages
- Alcohol and tobacco
- Clothing and footwear
- Housing
- Furnishings, household equipment and services
- Health
- Transport
- Communication
- Recreation and culture

- Education
- Insurance and financial services.

THE DESIGN OF THE CPI

The CPI is designed to provide a summary measure of how the prices of goods and services purchased by Australian households change over time. The prices for a representative 'basket' of goods and services are combined to form indexes using weights derived from the amounts spent by all capital city households on each item. As such, the CPI is not designed to represent any specific type of household, family or individual. For example, the CPI includes both rental and owner-occupier house purchase costs in the basket, which would not be typical for a single household. It is, therefore, unlikely that any individual experience will correspond precisely with either the national CPI or the CPI for specific capital cities.

PRICES USED IN THE CPI AND SLCIS

The ABS collects thousands of prices each quarter to produce the CPI and SLCIs. The ABS uses a variety of sources to collect these prices including online and phone collection, web-scraping, third party data providers and transactions 'scanner' data.

Currently the CPI and SLCIs use prices collected weekly, monthly, quarterly, or in some cases, once per year. The frequency of price collection is determined by how often prices typically change and the availability of data. Where price change occurs frequently, such as for food and petrol, weekly and monthly price data is collected. Where price change is typically less frequent, such as for restaurant meals and hairdressing services, price change is measured quarterly. In the case of education fees and property rates, prices are collected once per year, as it is known that prices change on an annual basis at a set time each year.

The ABS has moved to collecting most prices monthly in preparation for the move to a complete monthly measure of the CPI in late 2025 (see Measuring Inflation Monthly below).

Treatment of taxes, subsidies and rebates

The concept used in the indexes is the 'out-of-pocket' expense paid by the household. This means that the price used includes taxes that add to the price and subsidies or rebates that lower the price (or cost) for households. Examples of taxes that are included in the price are the GST and excise taxes on petrol, alcohol and tobacco. Examples of subsidies or rebates that reduce the price are the Child Care Subsidy, Commonwealth Rent Assistance, First Home Buyer grants and the Energy Bill Relief Fund rebates.

For a tax, subsidy or rebate to be captured in the indexes it must have a direct impact on the price paid by households and be linked to the purchase or consumption of the good or service.

Quality adjustment

The indexes measure *pure price change* over time, reflecting the change in the cost of buying a 'fixed basket' of goods and services of constant quality. Pure price change is the change in the price of a good or service of which the characteristics (quality) are unchanged; or the change in the price after adjusting for any change in quality.

While the indexes are often thought of as being based on a fixed basket, in practice the basket is regularly updated where goods and services (or items) exit the basket and are replaced by new items. Items are replaced in the basket for a range of reasons, including: a new model replacing an older model; the item being no longer available; or consumer preferences changing.

As these new items have different characteristics, or 'quality', compared to their predecessors, it is necessary to remove any change in price that is attributable to the change in quality. For more details on quality adjustment see Quality change in the Australian CPI.

Shrinkflation

Shrinkflation is a particular type of quality adjustment made to the indexes in cases where the quantity (or volume) of a product falls, but the price remains the same and is particularly prevalent in food items. When the volume falls but the price remains the same, consumers are essentially paying the same price but receiving less. The use of transactions 'scanner' data in the indexes, which provides detailed information about each product sold, enables the ABS to identify and adjust where shrinkflation has occurred. For example, if a packet size decreases from 150g to 100g and the price stays the same, a 50 per cent increase in the price is made in the indexes.

More details about scanner data and the CPI can be found in Attachment A, the submission that the ABS made to the Senate Select Committee on Supermarket Prices.

WEIGHTS USED IN THE CPI

CPI weights are needed in order to combine the price change for the different goods and services to produce a single CPI measure. The weights used in the CPI are based on household expenditure data in relation to the 11 categories of goods and services.

The ABS's Household Expenditure Survey (HES) is used to produce the CPI weights in the years where it is available, with the most recent HES (2015-16) being used to update weights in 2017. In years when new HES data is not produced, the ABS uses Household Final Consumption Expenditure (HFCE) data from the National Accounts to update the CPI weights each year. This is done to ensure the CPI basket is based on contemporary household spending patterns and is consistent with international best practice.

More details on the CPI weight update process is available in the following link: Annual weight update of the CPI.

Some weights in the food and grocery category are updated each month using supermarket scanner data. The sales information included in the scanner data is used to adjust for product substitution within an expenditure class. For example, the sales data can be used to adjust weights where consumers are switching from expensive cuts of beef to cheaper cuts of beef or from fruit that is not in season to fruit that is in season. These adjustments are particularly important when an unusual event occurs causing dramatic price increases and leading consumers to change their spending patterns. For example, when lettuce availability and prices were severely impacted by floods, people switched their spending to a similar, alternative product and CPI weights were adjusted to match this change at the time. Substitution effects are not captured each month across expenditure classes, such as switching from beef to chicken. These changes are captured as part of the annual weight update.

The 2024 CPI weight update

The biggest change in the CPI 2024 weight update was for Recreation and culture, due to an increase in international holiday travel. The outbreak of COVID-19 and the shutting of international borders resulted in expenditure falling to near zero for International holiday travel. This saw the weight for International holiday travel in the CPI fall from 3.38% in 2019 to 0.08% in 2020 and 2021. With the re-opening of borders in late 2021, Overseas Arrivals and Departures (OAD) data show that the number of people travelling has returned to around 90% of pre-COVID (2019) levels. The CPI weight for International travel in 2024 was 2.77% of the CPI, up from 1.85% in 2023, but still below the pre-COVID-19 2019 level of 3.38%.

	Weights (%)			Difference 2023 to 2024
Group	2019 (pre-Covid)	2023 (footnote)	2024	Percentage points change
Food and non-alcoholic beverages	15.75	17.18	17.15	-0.03
Alcohol and tobacco	7.71	7.87	6.98	-0.89
Clothing and footwear	3.23	3.37	3.40	0.03
Housing	22.93	22.24	21.74	-0.50
Furnishings, household equipment & services	8.56	8.94	8.43	-0.51
Health	5.88	6.25	6.43	0.18
Transport	10.68	10.99	11.42	0.43
Communication	2.41	2.31	2.14	-0.17
Recreation and culture	12.81	10.84	12.55	1.71
Education	4.44	4.43	4.34	-0.09
Insurance and financial services	5.59	5.56	5.43	-0.13

LIVING COST INDEXES

The CPI is designed as a measure of price inflation for the household sector as a whole. The CPI differs in important ways from the living cost measures. The Selected Living Cost Indexes produced by the ABS reflect changes over time in the purchasing power of the after-tax incomes of different types of households. The Living Cost Indexes are similar to the CPI, but differ in two important ways:

1. The Living Costs Indexes are produced for four different types of households based on the primary source of income. Each household has its own distinct basket (weights) that represents the average spending for that type of household. The four households are: employee; age pensioner; other government transfer recipients; and self-funded retirees.

2. The CPI is measured using the 'acquisitions' approach while the Living Cost Indexes use an 'outlays' approach. The acquisitions approach measures price change for all those consumer goods and services actually acquired by households during the base period. The outlays (or payments) approach measures changes in the actual amounts paid (or outlayed) by households to maintain a certain standard of living. The biggest difference between the two approaches is the measurement of housing costs. The Living Cost Indexes include mortgage interest charges as a measure of owner-occupied housing, whereas the CPI includes the cost to build a new dwelling.

The exclusion of mortgage interest charges from the CPI and the introduction of the Living Cost Indexes followed a major review of the CPI conducted in 1997 (see 6453.0 - Information Paper: Outcome of The 13th Series Australian Consumer Price Index Review, 1997 (abs.gov.au)). This review found that the CPI needed to change from being a measure of the changing living costs of wage and salary earner households to a measure of price change for the household sector. This reflected a change in the primary use of the CPI away from being a key input into centralised wage setting processes to being used for monetary policy purposes and inflation targeting. If the CPI basket had continued to include mortgage interest charges, an increase in the cash rate by the RBA, leading to increases in mortgage interest rates would have a direct upward impact on the CPI, when the purpose of the higher cash rate is to lower inflation. This circular feature would make it difficult for the RBA to use the CPI as an inflation target. The Living Cost Indexes were introduced by the ABS in recognition that no single index could adequately fulfill all identified uses and in recognition of the widespread interest in the extent to which the impact of price change varies across different groups in the community.

More details about the differences between the CPI and the SLCIs are provided here: Measurement of housing in the CPI and the SLCIs.

ADDITIONAL MEASURES OF INFLATION

The ABS publishes a suite of additional measures of inflation that provide insights into the trend or underlying nature of inflation. The most well-known measure of underlying inflation is the Trimmed mean, which is designed to reduce the impact of irregular or temporary price changes that can impact the CPI. More details on the Trimmed mean are available here: Explaining the Trimmed Mean.

MEASURING INFLATION MONTHLY

The monthly CPI indicator

The ABS currently produces the CPI on a quarterly basis. The quarterly CPI has served Australia well over many decades; however, Australia is one of the only developed countries not to produce the CPI on a monthly basis. In response to long-standing calls for more timely data on inflation, in October 2022, the ABS started producing a monthly CPI indicator.

While the CPI is published quarterly, it is common for the ABS to collect prices for goods and services more frequently. Currently half the CPI basket is measured on a monthly basis. When combined with the half of the basket that is measured once per quarter to produce the monthly CPI indicator, around two-thirds of the CPI basket is updated each month. While not a complete monthly measure of inflation, the monthly indicator provides policy makers and the community with timelier inflation data during a period of high inflation, and more recently, disinflation. For more details on the design of the monthly CPI indicator see Introducing a monthly CPI indicator for Australia.

The ABS is undertaking work to produce a complete monthly CPI

In the 2023-24 Budget, the ABS was provided with funding by the Government to implement phase 2 of the *Big Data, Timely Insights* transformation program. A key outcome from phase 2 of this program will be the delivery of a complete monthly measure of the CPI by the end of 2025. This will require the ABS to both build the required tools, processes and data processing systems in the ABS' new scaled analytic cloud environment, as well as collecting additional data on a monthly basis. The intent is to produce a complete monthly CPI that will serve as Australia's headline measure of inflation.

ATTACHMENT A – ABS SUBMISSION TO SENATE SELECT COMMITTEE ON SUPERMARKET PRICES

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Dear Senator McKim

Submission to the Senate Select Committee on Supermarket Prices

The ABS submission to the Select Committee on Supermarket Prices provides details on what is included in the ABS's measure of the Consumer Price Index (CPI), analysis of price change of food and non-food grocery categories and a comparison of price change for Food and non-alcoholic beverages with other countries.

The CPI is the principal measure of inflation in Australia. The CPI is used as the inflation target by the Reserve Bank of Australia, for indexation purposes and analysed closely by economists and financial markets. The CPI is a measure of the change in prices for 11 broad categories of household spending. Food and non-alcoholic beverages is one of these categories and it contributes 17% of the weight of the CPI basket. This can be interpreted as spending on food and non-alcoholic beverages being, on average, 17% of total household spending on goods and services.

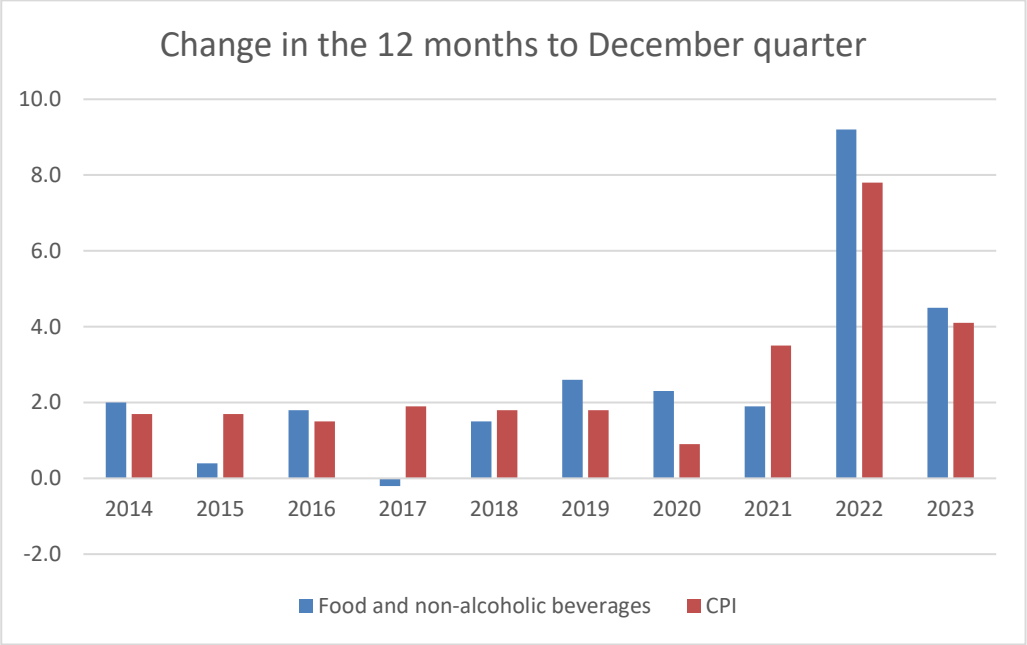
The CPI includes price changes for food and non-food grocery products. The ABS makes use of supermarket scanner data to measure the price change of tens of thousands of grocery products purchased in supermarkets in each of the 8 capital cities. The use of scanner data ensures the coverage of food and non-food products is comprehensive in terms of the products included and prices used to measure the CPI. The data and methods used in the CPI are effective at capturing challenging areas of measurement such as changing household spending patterns, product substitution, the phenomenon of 'shrinkflation'[1] and the inclusion of new products.

Within the Food and non-alcoholic beverage category, the ABS publishes CPI data for 30 food grocery sub-categories and 5 non-food grocery sub-categories. A list of these categories is provided in the appendix and comprehensive time series data is available through our website at www.abs.gov.au.

[1] Shrinkflation is where the quantity or volume of a product falls but the price remains the same.

Chart 1 compares the end of year annual inflation for Food and non-alcoholic beverages with the CPI over the last 10 years. The chart shows it is not unusual for inflation for Food and non-alcoholic beverages to differ from overall CPI inflation. In 2022, inflation for both Food and non-alcoholic beverages and the CPI increased at their fastest rate in over 30 years[2].

Chart 1: Annual inflation for Food and non-alcoholic beverages and the CPI



Looking more closely at the last four years, which covers the periods prior, during and post the COVID-19 pandemic, shows some of the key trends in prices that may be of assistance to you. Chart 2 shows the price change for the key food and non-food categories over different periods of time for the weighted average of the eight capital cities. Please note, the category 'Food and non-alcoholic beverages' includes Restaurant and Takeaway meals.

Chart 2 displays the cumulative price change over a 1-4 year period for the CPI, food and non-food categories. For example, the Food and non-alcoholic beverages category increased 4.5% in the 12 months to the December quarter 2023, increased 14.1% in the two years to the December quarter 2023, and increased 16.2% and 18.8% in the three and four years to the December quarter 2023.

Over the last four years, the largest price increase has been recorded for Dairy and related products (+26.7%) and Bread and cereal products (+24.0%). The smallest increase over the last four years was recorded for Fruit and vegetables (+12.0%) and Meat and seafoods (+15.2%). Looking at price change over the 12 months to the December 2023 quarter, price increases have been highest for Bread and cereal products (+8.2%) and Food products n.e.c (not elsewhere classified)[3] (+6.5%). Price change has been flat (0.0%) for Meat and seafoods and fell 0.2% for Fruit and vegetables.

Compared to the headline CPI increase of 17.1% over the last four years, the increase for Food and non-alcoholic beverages is higher at 18.8%.

[2] This excludes the inflation of 10.1% in 2006, which was largely due to the effects of Cyclone Larry and the price of bananas.
[3] Food products n.e.c includes products such as eggs, oil, jam and honey, condiments, snacks and confectionery

Chart 2: Price change for the CPI, food and non-food categories

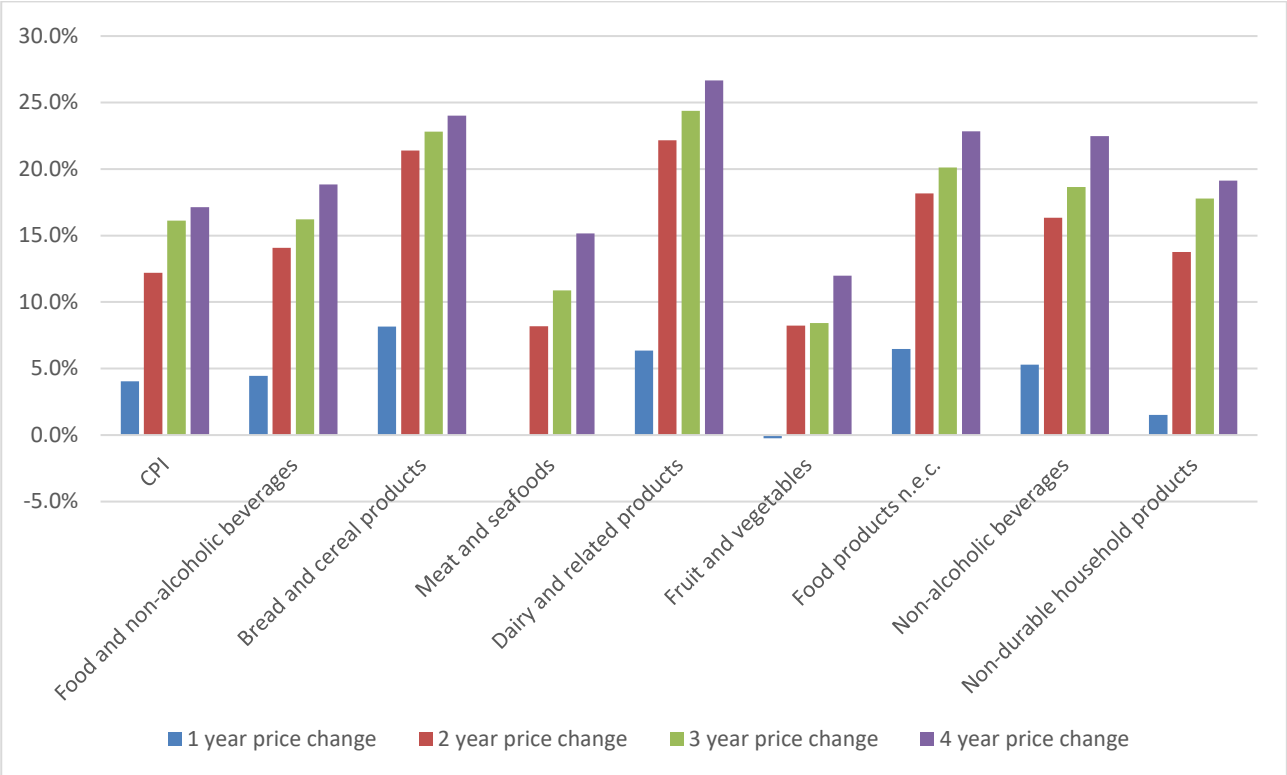


Chart 3 compares the inflation of the 11 CPI Groups over the last four years. Food and non-alcoholic beverages had the fourth largest increase in inflation. Groups that recorded higher inflation over this period were Alcohol and tobacco, Housing and Transport.

Chart 3: Price change from 2019-2023 for CPI Groups

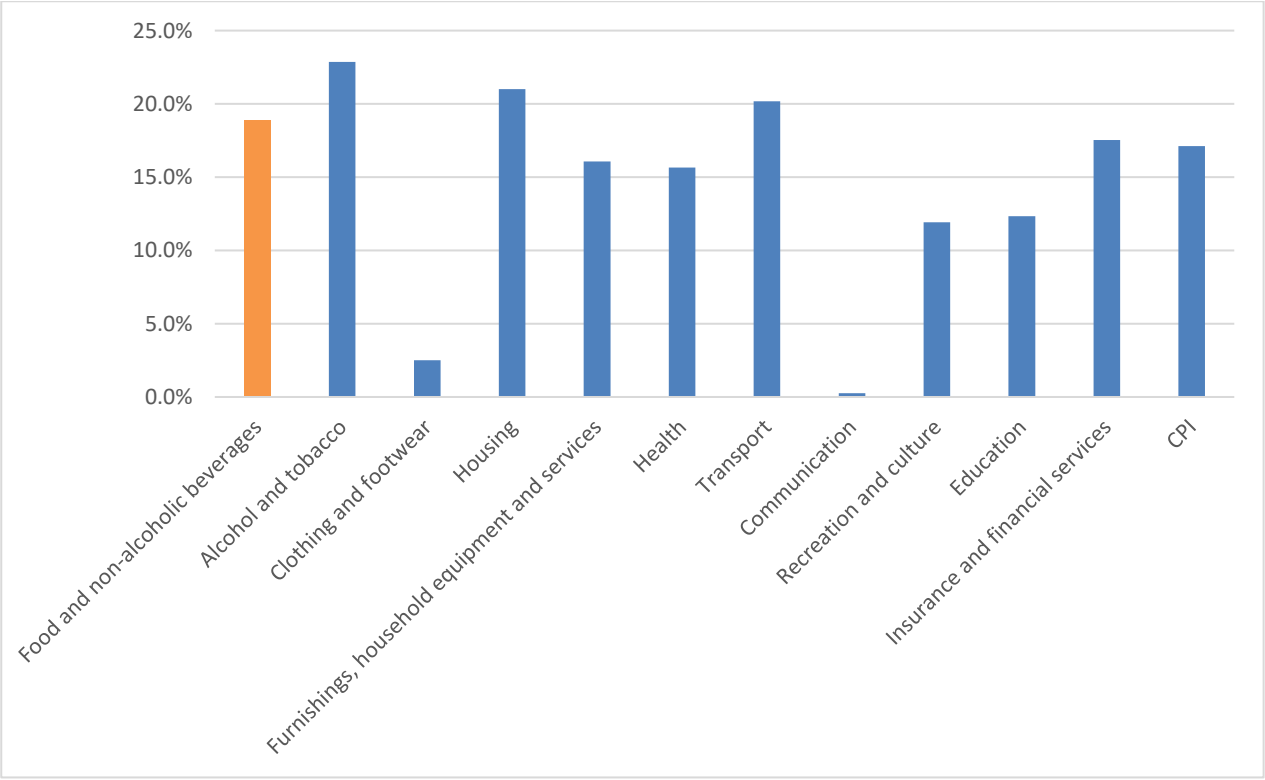
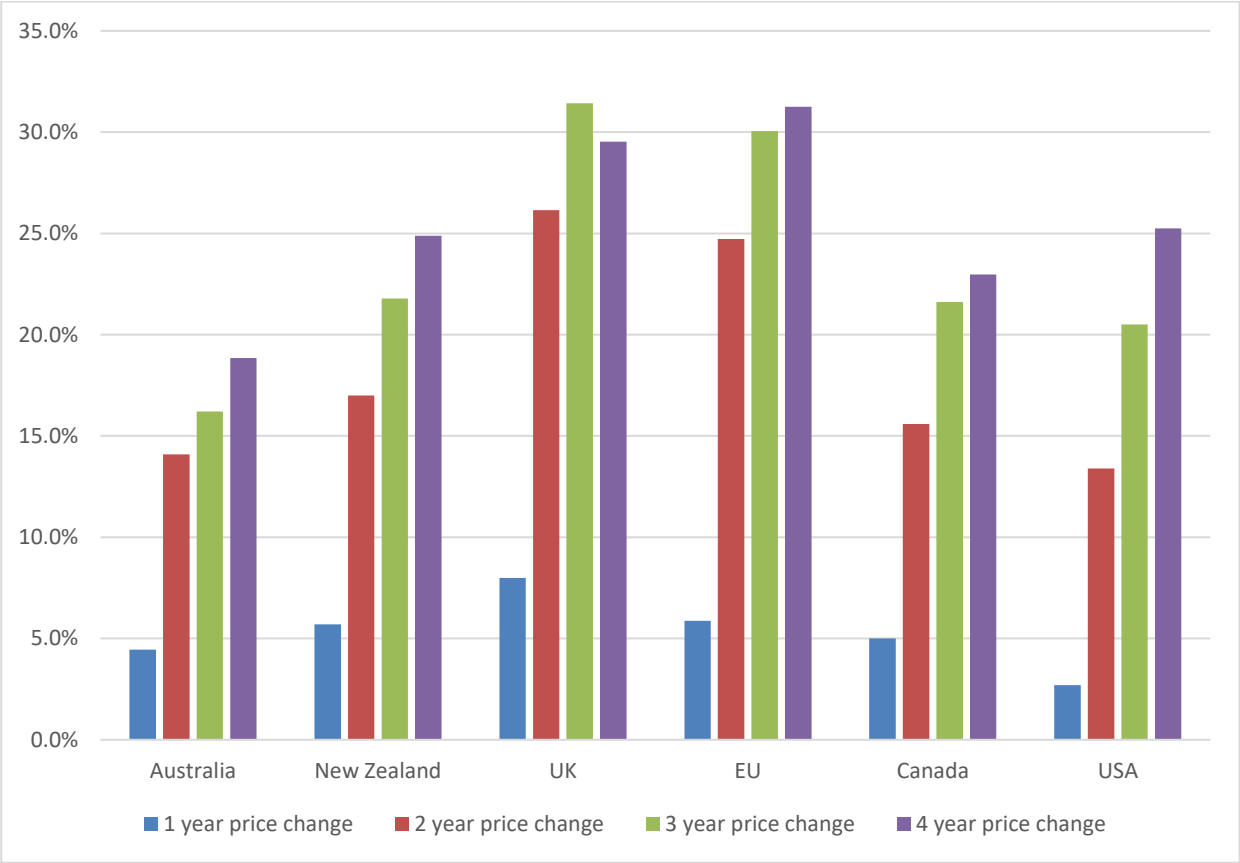


Chart 4 provides a comparison of price change for Food and non-alcoholic beverages with other countries. Similar to chart 1, it shows the cumulative price change over a 1-4 year period. The chart shows that over the last four years, prices for food and non-alcoholic beverages increased in Australia by 18.8%, which is lower compared to New Zealand, the UK, Canada and the US, as well as the EU, where prices have increased between 23-31%.

Chart 4: Price change for Food and non-alcoholic beverages in Australia and select countries[4].



Yours sincerely,

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Australian Bureau of Statistics
29 February 2024

[4] In Australia, the 'Food and non-alcoholic beverages' category includes price change for Restaurant and Takeaway meals. This is consistent with New Zealand, the USA and Canada, whereas the UK and the EU have a separate category for Restaurant and Takeaway meals.

Appendix: Food and Non-food categories published in the CPI data

Food categories	Non-food categories
Food and non-alcoholic beverages	Non-durable household products
Bread and cereal products	Cleaning and maintenance products
Bread	Personal care products
Cakes and biscuits	Other non-durable household products
Breakfast cereals	Pets and related products
Other cereal products	
Meat and seafoods	
Beef and veal	
Pork	
Lamb and goat	
Poultry	
Other meats	
Fish and other seafood	
Dairy and related products	
Milk	
Cheese	
Ice cream and other dairy products	
Fruit and vegetables	
Fruit	
Vegetables	
Food products n.e.c.	
Eggs	
Jams, honey and spreads	
Food additives and condiments	
Oils and fats	
Snacks and confectionery	
Other food products n.e.c.	
Non-alcoholic beverages	
Coffee, tea and cocoa	
Waters, soft drinks and juices	