BULLETIN

24 August 2022



Deeper Insights on the Upcoming Monthly CPI Indicator A more timely source of information on evolutionary inflation forces even if it is not a perfect guide to the CPI.

- What it does do: Provides a timely, transparent and public data set on inflationary pressures at a fairly granular level. It also outperforms market economists forecasts of the quarterly CPI, particularly during the recent inflationary turning point of late 2021 and early 2022.
- What it does not do: Provide a perfect estimate of the next quarterly CPI. The Monthly Indicator will also not produce estimates of the core measures trimmed mean and weighted median.
- Adjusting the Monthly Indicator to a quarterly profile will require some judgment due less frequent (quarterly or annual) price adjustments to a significant proportion of the CPI. Westpac will provide updated forecasts of core inflation based on the latest information in the Monthly Indicator release.
- The ABS notes that data collections underpinning the Monthly Indicator were not designed with monthly reporting in mind. Thus, the Monthly Indicator has some deficiencies relative to the quarterly CPI. The frequency of price collection, and the way the two indexes are compiled, results in differences between the Monthly Indicator and the quarterly CPI.
- The breakdown of the data set highlights the issue only 43% of the CPI is available on a monthly basis. The rest is available quarterly or annually.

Monthly CPI to June 2022

Weighted average of capital cities - Annual change (%)			
Item		May '21 to May '22	
All groups CPI	5.5	6.2	6.8
Food & non-alcoholic beverages	4.7	5.3	6.4
Meat & seafood	5.7	6.2	6.5
Fruit & vegetables	6.6	4.5	9.1
Alcohol and tobacco	2.3	1.8	2.3
Alcohol	1.5	1.0	1.4
Tobacco	3.6	2.9	3.7
Clothing and footwear	0.4	2.6	1.8
Housing	8.9	9.1	9.3
Rents	1.0	1.6	1.6
New dwellings purchased	19.6	19.5	21.0
Furnishings, household equip. & services	5.9	6.4	6.2
Health	2.2	2.2	2.5
Transport	9.2	13.8	16.4
Automotive fuel	19.5	33.7	43.3
Communication	-0.7	-0.1	-0.1
Recreation and culture	4.4	4.3	4.9
Holiday travel & accommodation	8.2	6.7	8.6
Education	4.6	4.6	4.6
Insurance & financial services	2.7	2.5	3.3
Sources: ABS, Westpac Banking Corporation.			

- Where prices are not collected in a particular month, prices collected in previous months will be 'carried forward'. Where prices are updated in month 2 or 3 of any given quarter, the previous months in the quarter will not be revised.
- As such, a simple average of the three months of the quarter in question will not generate the same index level, nor the same percentage change in that quarter, as the CPI.
- Visually, if you take the mid month of the quarter rather than the end month you get a much better fit between the CPI and the Monthly Indicator. However, this does not improve the accuracy of the quarterly changes, meaning a standard three month average for the quarter is the best method to compare the Monthly Indicator to the quarterly CPI.
- The quarterly CPI remains Australia's key measure of inflation; the monthly CPI indicator is a timely supplement.
- In the data back to March 2018 the average error for market economists is +/-0.2ppt, while for the Monthly Indicator it is +/- 0.1ppt; so the Monthly Indicator is an improvement on economists' median estimates and, in particular, the recent inflationary inflection point of late 2021 and early 2022. If available at that time this new series may have seen market (that is economists') inflationary expectations lift earlier than they otherwise did.

Inflation forecasts

		Sep-22	Dec-22	Mar-23	Jun-23
CPI	(a)	127.3	130.5	131.8	132.7
	(%qtr)	1.0	2.5	1.0	0.7
	(%yr)	6.3	7.6	6.4	5.2
Trimmed mean#	(%qtr)	1.5	1.2	0.8	0.7
	(%yr)	5.5	5.8	5.0	4.2



Introducing a monthly CPI

On Tuesday, 16th of August 2022, the ABS published an information paper <u>"Introducing a monthly Consumer Price</u> <u>Index (CPI) Indicator for Australia"</u> outlining the research and methodology behind the new monthly CPI.

The ABS will publish the first monthly CPI on October 26th 2022 which will occur alongside the release of the quarterly CPI. Thereafter, the monthly CPI indicator will be published around four weeks after the end of the reference month, starting with the October release on the 30th of November. The exception to this will be November data, which will be published in January.

The monthly CPI indicator will provide a timelier guide to unfolding inflationary pressures using the same data collected for the quarterly CPI. Due to the mix of weekly, monthly and quarterly data collection for the various goods and services, each monthly release will not have a full update of all prices. Each month will have an update of prices for between 62% and 73% of the weight of the CPI basket.

The introduction of the monthly series does not impact the existing CPI as there will be no changes to the quarterly CPI outputs nor its release schedule.

The quarterly CPI remains the key inflation measure

Until recently, the cost of producing a monthly CPI has been prohibitive. Enhancements to the quarterly CPI, through new data sources and reduced data collection costs made it possible to produce a more frequent measure of inflation. In particular, the use of scanner and web-scraping collection techniques provide high frequency data at a lower cost.

The recent acquisition of a new monthly data series for rental price information means the ABS now has monthly price data for 43% of the weight of the CPI basket.

When combined with quarterly and annual price collections, the new monthly CPI indicator represents up-to-date prices for between 62% and 73% of the weight of the CPI basket, depending on the month in the quarterly cycle.

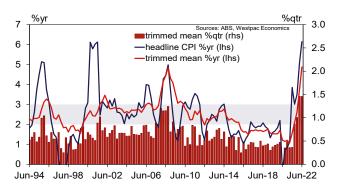
The quarterly CPI remains Australia's key measure of inflation because:

- It enables consistent comparisons to be made over time back to 1948;
- Prices are updated at least once during the quarter for everything in the CPI basket where a price change could have occurred noting that prices for some items, such as education, change only once per year;
- Is revised only in exceptional circumstances, such as to correct a significant error or, in the case of all price indexes, when the reference base is changed periodically; and
- It is more comprehensive than the monthly CPI indicator as it publishes data for all 87 expenditure classes and each of the eight capital cities.

Frequency of price collection varies between the items

The ABS determines the frequency of price collection by how often prices typically change plus what data is available. Where price change occurs frequently, such as for food and petrol, weekly and monthly price data is collected for use in the quarterly CPI. Where price change is typically less frequent, such as for restaurant meals and hairdressing services, price data is collected quarterly. In practice, this means that prices

Inflation; headline and core



collected once a quarter are assumed to reflect the prices for the entire quarter. For series with annual price changes, prices are collected once a year, as in the case of education fees and property rates.

The ABS recognised the value in providing more timely CPI insights, particularly given the current high rate of inflation and so it has derived a monthly indicator. While it will be fit for purpose, the ABS noted the data collections underpinning it were not designed with monthly reporting in mind. As such, the monthly CPI indicator has some deficiencies relative to the quarterly CPI. In particular, the frequency of price collection and the methods used to compile the two indexes will lead to differences between the monthly CPI indicator and the quarterly CPI.

The table below shows the frequency with which data is collected by the proportion of the quarterly CPI basket that these represent. Conceptually, the monthly indicator will include all the items of the quarterly CPI basket. However, not all items in the basket will be updated with new prices each month.

Where prices are not collected in a particular month, prices collected in previous months will be 'carried forward'. Where prices are updated in month 2 or 3 of any given quarter, the new prices data will not be used to revise previous months in the quarter.

Timing of data collection by weight in CPI

CPI for month of	Data updated month- ly (%)	Data updated once per quarter (%)	Data updated annually (%)	Prices not updated (carried for- ward) (%)
Jan, Apr, Jul & Oct	43	9	10	38
Feb, May, Aug & Nov	43	20	10	27
Mar, Jun, Sep & Dec	43	18	10	29



Variation in collection timing means an average of the Monthly Indicator won't equal the quarterly CPI.

Including data that is collected once per year:

- January, April, July and October includes up-to-date price information for 62% of the weight of the quarterly CPI.
- February, May, August and November includes up-to-date price information for 73% of the weight of the quarterly CPI.
- March, June, September and December includes up-to-date price information for 71% of the weight of the quarterly CPI.

It is important to note that for the above factors, a three month average of the monthly CPI will not equal the quarterly CPI.

Westpac's research confirms it is not easy to translate the monthly series into a quarterly series that matches the CPI.

You can track the history of the monthly series against the quarterly series and see that just as the ABS notes, it does not have a perfect relationship with the quarterly CPI. The ABS noted that simply taking a three month average of the monthly series does not generate the same outcome as the quarterly change in the CPI. With an average error of +/- 0.1ppt it is not a bad guide, and better than anything we have had to date, but note in the table over in some quarters the error is larger; +0.3ppt in June 2018 and June 2020, +0.2ppt in December 2020 and June 2022 and -0.2ppt in March 2021.

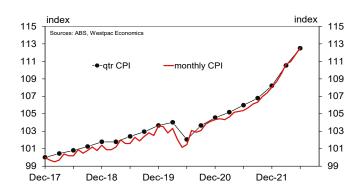
Our past research with the Melbourne Institute Inflation Gauge suggests shifting the timing to the mid of the quarter, rather than the end month of the quarter, can improve the fit of Gauge to the CPI. And so it is the case for the Monthly Indicator, at least visually, as shown in the chart over.

However, you can see in the table below while it may be visually appealing the actual results for quarterly change can be worse. The average error is +/- 0.3ppt and the largest signal error was +1.3ppt in September 2020 which followed a +0.8ppt in June 2020. Using a three month change to the month in question

Monthly indicator vs CPI - quarterly

	qtr CPI	monthly indi- cator quarter (3 mth ave)	monthly indi- cator		
ltem	% qtr	% qtr based on mid month	3mth change % mid month		
Mar-18	0.4	n/a	0.2		
Jun-18	0.4	0.4	0.7		
Sep-18	0.4	0.4	0.3		
Dec-18	0.5	0.4	0.3		
Mar-19	0.0	0.1	0.1		
Jun-19	0.6	0.5	0.7		
Sep-19	0.5	0.3	0.3		
Dec-19	0.7	0.6	0.6		
Mar-20	0.3	0.7	0.3		
Jun-20	-1.9	-1.1	-1.6		
Sep-20	1.6	0.3	1.7		
Dec-20	0.9	1.2	1.2		
Mar-21	0.6	0.7	0.2		
Jun-21	0.8	0.6	0.9		
Sep-21	0.8	0.7	0.8		
Dec-21	1.3	1.1	1.2		
Mar-22	2.1	1.7	2.0		
Jun-22	1.8	2.2	2.0		

CPI monthly indicator vs. qtr CPI



Monthly indicator vs CPI - quarterly

qtr CPI	monthly indi- cator quarter (3 mth ave)	monthly indi- cator
% qtr	% qtr	end month 3mth change %
0.4	n/a	-0.3
0.4	0.6	0.5
0.4	0.5	0.6
0.5	0.4	0.6
0.0	-0.1	-0.2
0.6	0.7	0.4
0.5	0.5	0.8
0.7	0.8	1.2
0.3	0.2	-0.3
-1.9	-1.6	-1.8
1.6	1.4	1.6
0.9	1.0	1.2
0.6	0.4	0.3
0.8	0.8	0.7
0.8	0.7	0.9
1.3	1.3	1.6
2.1	2.0	2.4
1.8	1.9	1.7
	% qtr 0.4 0.4 0.4 0.5 0.0 0.6 0.5 0.7 0.3 -1.9 1.6 0.9 0.6 0.8 0.8 0.8 1.3 2.1	(3 mth ave) % qtr % qtr 0.4 n/a 0.4 0.6 0.4 0.5 0.5 0.4 0.0 -0.1 0.6 0.7 0.5 0.5 0.7 0.8 0.3 0.2 -1.9 -1.6 1.6 1.4 0.9 1.0 0.6 0.4 0.8 0.7 0.8 0.7 1.3 1.3 2.1 2.0 1.8 1.9

Sources: ABS, Westpac Banking Corporation

CPI monthly indicator vs. qtr CPI



Sources: ABS, Westpac Banking Corporation.



produces an average error of +/- 0.2ppt. It is a +/- 0.3ppt error if you take the end month three month change. So for a three month change to the month in question it does improve the outcome, compared to the quarterly CPI, if you take the mid month in question but at an error average of 0.2ppt it is still inferior to the quarterly average with an error of 0.1ppt.

Monthly CPI outputs

For the new CPI Monthly Indicator, the ABS will publish a subset of the CPI quarterly outputs on a monthly basis. All data is at the national level, derived as a weighted average of the eight capital cities. The monthly publication will include:

- All groups,
- Each of the eleven CPI groups, and
- Selected expenditure classes including: automotive fuel, new dwellings, rents, domestic holiday travel, international holiday travel and some food categories. These expenditure classes represent the majority of goods and services where monthly price data are available.

More detailed data for capital cities and expenditure classes, along with the core measures trimmed mean and weighted median, will be available in the quarterly publication.

A significant improvement but still not perfect

The Monthly Indicator significantly improves the availability of timely, transparent and public information on inflationary pressures at a quite granular level. And while a simple quarterly average of the monthly series produces a reasonable estimate of the quarterly change in the CPI it is not perfect and sometimes it can be quite a miss.

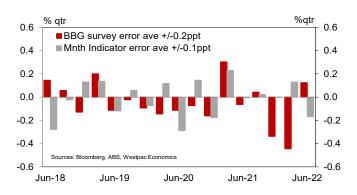
But an important question is: does the Monthly Indicator outperform market economist median estimates from the Bloomberg Survey? Yes it does.

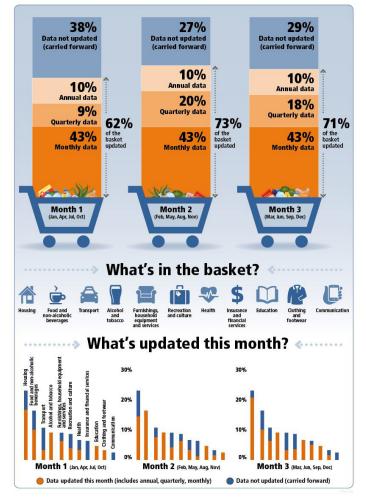
In the data back to March 2018 the average error for market economists is +/-0.2ppt. For the Monthly Indicator it is +/-0.1ppt; not a significant improvement but as you can see in the chart over the Monthly Indicator correctly picked the up-tick in inflation in December 2021 and March 2022; the median of market economist completely missed it. So while the average error for the Monthly Indicator is not significantly better than that for Market Economists median estimate, the Monthly Indicator appears to be much better at picking turning points in inflation than market economists.

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For further information please refer to the ABS Research Paper <u>"Introducing a monthly Consumer Price Index (CPI) indicator for</u> <u>Australia</u>" 16 Aug 2022.







Source: ABS Introducing a monthly Consumer Price Index (CPI) indicator for Australia

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