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Submission to the 16th Series Consumer Price Index Review

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Overview

We welcome the opportunity provided by the Bureau of Statistics to make a submission to its review of the CPI. In our view, the principal purpose of the CPI should remain a measure of inflation given that the Reserve Bank's inflation target is framed in terms of the CPI. It should also be published monthly to allow a better analysis of inflation trends and to finally bring it into line with international convention. A monthly CPI would involve some transitional costs for the inflation market, but most capital indexed bonds would be unaffected and investors in indexed annuity bonds and the CPI legs of inflation swaps would be slightly better off assuming a positive inflation curve. The deposit and loan facility series should be removed from the CPI because of the great difficulty in measuring the price of financial services and the fact that the series has an undesirable positive relationship with interest rates. The weights of the CPI should be updated more often to capture shifting spending patterns, perhaps by making more use of scanner and industry data. The Bureau should continue to publish measures of underlying inflation, taking its cue from the Reserve Bank, which uses underlying inflation as the operational target for monetary policy.

The principal purpose of the CPI should remain a measure of inflation

1. The principal purpose of the CPI should remain a measure of inflation given that the Reserve Bank's inflation target is framed in terms of the CPI. The Bank's target has been in place since 1993 and the maintenance of low and relative stable inflation has contributed to Australia's outperformance of most other industrialised countries, particularly over the course of the past ten years.

2. Having inflation as the principal purpose of the CPI means that the existing acquisitions approach to measuring prices should be maintained. Reverting to using the outlays approach would be a backward step for policy-makers because it would reintroduce some form of interest payments in the CPI, thereby re-establishing an undesirable positive relationship between interest rates and the CPI. That is, when the Reserve Bank raised interest rates to control rising inflation, it would lift interest payments and hence inflation, thereby making it harder for the Bank to do its job by destabilising inflation expectations.

3. The undesirability of including interest payments in the CPI is accepted international convention. As the Bureau notes, the International Labor Office argues that, "given the complexity of interest flows and the fact that the different flows need to be treated differently, there seems to be little justification for

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including payments of nominal interest in a CPI, especially in inflationary conditions".[1]

4. Community interest in alternative measures of prices would be better met by separating such measures from the CPI report. This is true for prices relating to different segments of the population. The Bureau notes that it already constructs such byproducts of the CPI and publishes them separately. Separate publication seems the best approach as it would reduce confusion with the CPI.

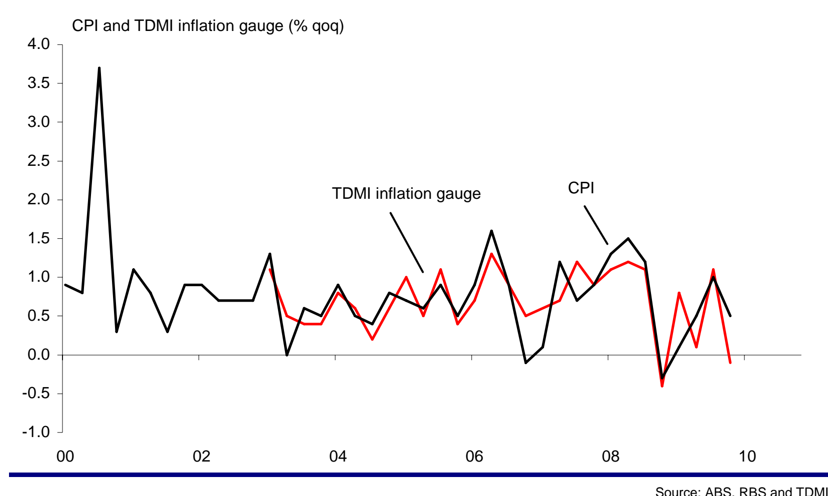
5. A demand for alternative measures of prices does not mean that the CPI is less relevant. The same argument can be made fro the National Accounts, where the fact that the Bureau publishes different measures of national activity does not detract from the importance of GDP. Similarly, in the case of the Labour Force Survey the Bureau also publishes measures of underemployment that do not detract from the unemployment rate.

The CPI should be compiled on a monthly basis

6. The CPI should be compiled on a monthly basis given its principal purpose as a measure of inflation, which justifies the additional cost. A monthly CPI would provide more timely and relevant information on price trends for the Reserve Bank and financial markets. This is especially important given that the Bank's 2-3% inflation objective is framed in terms of the headline CPI, with the measures of underlying inflation in the CPI report being the operational targets for monetary policy.

7. The TD Securities and Melbourne Institute monthly inflation gauge highlights the demand for a monthly CPI, but it is a poor substitute for an official series. The inflation gauge is meant to replicate the CPI and had a good relationship with the CPI for several years, but the relationship has broken down over recent years despite overhauls of the gauge. It is unclear whether this reflects measurement or weighting difficulties in mimicking the CPI.

The TDMI inflation gauge shows that there is demand for a monthly CPI, but its relationship with the CPI has broken down over recent years



Source: ABS, RBS and TDMI

8. A monthly CPI would bring Australia into line with international convention. As the Bureau acknowledges, the International Monetary Fund recommends in its Special Data Dissemination Standard that countries should publish monthly CPIs.

[1] See International Labor Office, Consumer price index manual: Theory and practice, p46.

Of the thirty-three countries that the Fund classes as advanced economies, only Australia and New Zealand publish quarterly rather than monthly CPIs. Many emerging economies also now publish monthly CPIs.

Australia and New Zealand are the only two advanced economies not publishing a monthly CPI

Quarterly CPI	Monthly CPI
Australia	Austria
New Zealand	Belgium
	Canada
	Cyprus
	Czech Republic
	Denmark
	Finland
	France
	Germany
	Greece
	Hong Kong
	Iceland
	Ireland
	Israel
	Italy
	Japan
	Luxembourg
	Malta
	Netherlands
	Norway
	Portugal
	Singapore
	Slovak Republic
	Slovenia
	South Korea
	Spain
	Sweden
	Switzerland
	Taiwan
	United Kingdom
	United States

Source: Bloomberg, IMF and RBS

9. For that matter, a monthly CPI would also bring the CPI into line with the Bureau's employment data. The Bureau of Statistics used to compile the Labour Force Survey on a quarterly basis, but shifted to a monthly report in the late 1970s.

10. A monthly CPI could be constructed, say, by reducing the sample size for two months of the quarter. The Bureau reports that about 50% of the CPI by expenditure weight is current collected every month, although it no longer provides information on when different goods and services are priced during the quarter. The sample could be reduced by collecting the remaining prices in fewer cities for two months of the quarter.

11. Alternatively, some prices could be collected monthly and other prices could be imputed until they are collected each quarter (or annually). A judgment could be made on the volatility of different prices and/or the access to scanner data that

would likely reduce the reporting burden for companies and the cost to the Bureau of sending staff into shops to collect price information. Presumably, though, not every price would be collected monthly. For example, our understanding is that education prices and property rates and charges are only collected annually.

12. A monthly CPI should be seasonally adjusted if seasonality is present. This seems likely given that there is clear seasonality already in several goods and services included in the CPI, as well as in variations of the CPI, with mild evidence of seasonality in the CPI itself.

13. Potential volatility in a monthly CPI can be ameliorated by the publication of existing measures of underlying inflation on a monthly basis and/or by users smoothing the data. Volatility in the quarterly CPI is sometimes considerable and is handled by a focus on a range of underlying measures. These measures need to be included in a monthly report. Alternatively, users could smooth the data a little by running a three-month-average through the series, which is what the Reserve Bank advocated in its previous support of a monthly CPI.

14. A shift to a monthly CPI would involve some transitional cost for the inflation market and most investors would be slightly better off. Our Head of CPI and Structured Product Trading, Denise Wong judges that the impact would be manageable for Capital indexed bonds given their coupon dates and mechanics of indexing these bonds for inflation, although some securities would be affected. All indexed annuity bonds would be affected, as would inflation swap contracts. Investors in indexed annuity bonds and the CPI legs of inflation swaps would be slightly better off assuming a positive inflation curve. Denise discusses the impact on the inflation market in detail in the appendix.

15. We imagine that there would also be manageable transition costs for legal contracts that are indexed to the CPI. The CPI is still used for indexation purposes, including for some Government payments, although the proportion of wage agreements with a CPI clause is now relatively low.

16. A monthly CPI would allow the production of a monthly real retail trade series. Other countries, such as the US and UK, already publish real retail sales on a monthly basis and the information in a monthly CPI could be used to do the same in Australia.

The deposit and loan facility series should be removed from the CPI

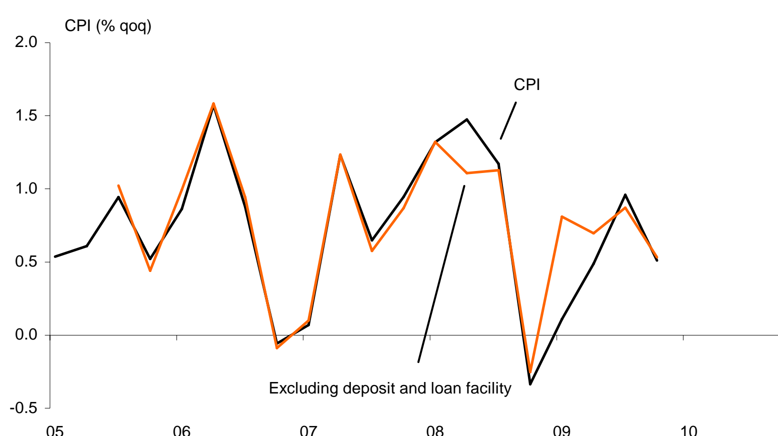
17. The deposit and loan facility series should be removed from the CPI because it is extremely difficult to measure. We can understand the attraction of including the price of financial services in the CPI, especially when the Reserve Bank had supported its introduction, but measurement problems appear significant for the deposit and loan facility series, with the Bureau acknowledging that Australia is the only country to include it in the CPI.

18. The difficulty in measuring the price of financial services is shown in the undesirable positive relationship the deposit and loan facility series has with interest rates. That is, our modelling work shows that the series can be best explained by lagged interest rates. This is similar to the problem of including interest payments in the CPI, where the Reserve Bank raises interest rates to control rising inflation and this lifts inflation further.

19. We might be mistaken, but the methodology for the deposit and loan facility series also introduces inertia into the CPI. It seems to us that if there is no change in bank fees, charges and interest rates, the method used to measure financial series would have the loan and deposit facility growing at the same rate as lagged headline inflation over the past year. It is not clear to us why introducing this inertia to the CPI is desirable.

20. Measurement problems also affect the volatility of the CPI given the importance of financial services to the CPI. The deposit and loan facility has a weight in the CPI of 4%, double the 2% calculation that the Reserve Bank made when it advocated including financial services in the CPI. The series is volatile, which in itself is no reason to exclude it from the CPI, but some of this volatility reflects measurement problems. For example, the big Q2 2008 rise of 9.5% in the series included a correction for underestimation in previous quarters.

The deposit and loan facility can have a significant effect on the CPI



Source: ABS and RBS

The weights of the CPI should be updated more often to capture shifting spending patterns

21. The weights of the CPI should be updated more often to capture shifting spending patterns. The Bureau's six-yearly Household Expenditure Survey will no doubt remain the benchmark for the CPI's weights, but we would strongly encourage the use of other data sources, such as scanner and industry data, as an important supplement to the survey.

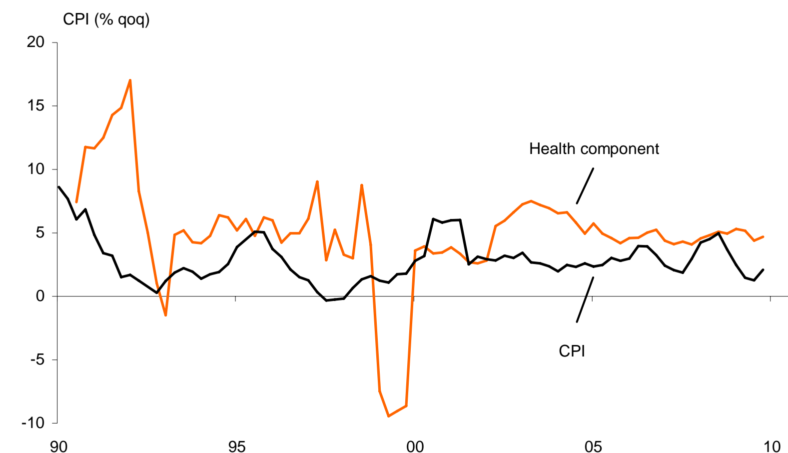
22. Similarly, we would encourage more investigation into the bundling of goods and services. As the Bureau notes, telephone and computer services are often bundled at a discount. More investigation of the extent and use of bundling is important as pricing individual items is likely to overstate inflation.

23. New goods and services should be introduced earlier to the CPI. The Bureau takes a "conservative" approach to introducing news goods and services into the CPI, adding them only after they are deemed to have become widely available and a permanent part of household spending, with their price no longer including "high premiums due to novelty value or scarcity". We think that the ease of buying new things has changed with internet shopping, making this approach harder to justify (we assume that some products and services are yet to be added to the CPI, like music downloading). This conservative style contrasts with the cutting-edge approach of being the only country to include the price of financial

services in the CPI and we would be interested to know how the Bureau compares with other statistical agencies for the introduction of electronic items like high-definition televisions, blu-ray players, etc.

24. Although not explicitly mentioned in the review, we assume the price of medical services deserves careful attention. Medical services are extremely difficult to measure and our understanding is that they are not usually adjusted for changes in quality, presumably overstating inflation as a result. Even so, their rapid growth in excess of headline inflation and the ageing of the population suggest that they should be investigated by the Bureau, perhaps by making use of any work done by overseas statistical agencies.

Medical services warrant investigation to see if they can be adjusted for quality changes given their growing importance



Source: ABS and RBS

The Bureau of Statistics should continue to publish measures of underlying inflation, taking its cue from the Reserve Bank

25. The headline CPI should remain the main focus of the CPI report, but the Bureau should continue to publish different measures of underlying inflation as analytical series. The Reserve Bank uses underlying inflation as the operational target for monetary policy in order to abstract from the volatility in headline inflation and track the underlying price pressures in the economy. Unfortunately, there is no unique measure of underlying inflation and the Bank has changed its preference for different measures over time (exclusion-based measures of underlying inflation used to dominate, then statistical measures like the weighted median and trimmed mean CPIs, and now the pendulum seems half-way between these two approaches). This no doubt frustrates the Bureau, but the solution is to continue to publish the measures favoured by the Bank as analytical series in the CPI report.

Appendix

Issues for the inflation market from moving from a quarterly to a monthly CPI

Denise Wong

The Bureau of Statistics is considering a move to monthly CPI releases, which would affect all facets of the Australian inflation market. In the discussion below, we use the Reserve Bank's bond pricing formulas and Australian Financial Market Association (AFMA) definitions as the market standards for Australian bond and swap market contracts. We analyse the impact of shifting from quarterly to monthly CPI releases for capital indexed and indexed annuity bonds, which are the two main types of bonds in the market, and assess the impact on inflation swap contracts.

The impact on Capital Indexed Bonds

Capital indexed bonds (CIBs) are inflation-indexed securities that pay inflation-indexed interest amounts throughout the life of the bond. The inflation-indexed principal is repaid on maturity.

There are two styles of indexation for the Australian capital indexed bonds.

(1) p-style, where the indexation factor is calculated as the average of the two most recent CPI releases as at the start of the payment date, which is defined in the Reserve Bank's pricing formula as "half the semi-annual change in the Consumer Price Index over the two quarters ending in the quarter which is two quarters prior to that in which the next interest payment falls (for example, if the next interest payment is in November, p is based on the movement in the Consumer Price Index over the two quarters ending the preceding June quarter)"; and

(2) j-style, where the indexation factor is calculated as the most recent CPI release as at the start of the payment date which is defined as "CPI_t/CPI_{t-1} where CPI_t is the last available quarterly CPI prior to the start of the relevant floating CPI payment period".

With "p-style" indexation, the Reserve Bank's pricing formula assumes that CPI indices are published in a March/June/September/December quarterly cycle. A move towards monthly CPI releases would change the reference CPI that is known at the start of the period from this quarterly cycle to the most recently published monthly one.

Assuming the same publication lag between the end of the CPI reference period and the CPI's release date of approximately 25 days, the table below shows more clearly the impact of adopting a monthly CPI. Grouping the bonds by their coupon date, it shows which bonds currently on issue may be affected by the change in the reference CPI as a result of moving from quarterly to monthly releases.

The securities affected by a shift to a monthly CPI are only a small part of the total universe of capital indexed bonds

Coupon payment date	CPI quarter	Market value of bonds on issue	Which bond would be affected?
February/May/ August/November	September/December/ March/June	$20.1bn	Most capital indexed Bonds, except those noted below
March/June/ September/December	July/October/ January/April	$4.3bn	CGL0925 and WBC0318
January/April/ July/October	August/November/ February/May	$0.1mn	ANZ0418

Source: RBS

This indicates that the proportion of bonds on issue that are affected by a shift to a monthly CPI is small. It is worth noting, though, that one of the most liquid bonds in the market, namely the CGL0925, is affected, requiring consideration from the Australian Office of Financial Management and investors and other issuers in the inflation-linked bond market.

Looking at the shift to a monthly CPI in more detail, the "K_t" of a capital indexed bond is the indexation factor for the security. That is, the definition states that "K_t is the indexation factor at the next interest payment date and K_{t-1} is the indexation factor at the previous interest payment date". The relationship between successive K_t values varies according to the style of bond, with $K_t = K_{t-1} \times (1 + p/100)$ for p-style bonds, and $K_t = K_{t-1} \times (1 + j/100)$ for j-style bonds.

Reading more closely into the RBA pricing formula, it appears that there does not need to be a recalculation of the K_t, or indexation factor, to account for the shift from a quarterly to a monthly CPI. This is because K_t references the value as at the most recent interest payment period. By the same token, for investors this means there is no additional pick-up due to rebasing or re-indexation in the transition from a quarterly to a monthly series.

Shifting to a monthly CPI would also require changes to the systems used to price/book/hold the existing bonds. For the handful of bonds that would be affected by the shift to a monthly CPI, the market would have to factor in that there may be less trading/liquidity in the CGL0925 bond for a period of time, as systems are developed to accommodate this change.

Issuers may also consider the re-documentation of existing transactions that explicitly link the indexation calculation to the March/June/September/December CPI quarterly releases as a method of getting around the need to develop new systems to price/book/hold the existing bonds. Such a change would require the approval of bond-holders.

For new issues, the links between coupon dates and the CPI publication cycle should also be considered, particularly if the Bureau of Statistics does produce a monthly CPI in the future.

The impact on Indexed Annuity Bonds

Unlike capital indexed bonds, which transmit the CPI impact with a slight delay, Indexed annuity bonds (IABs) are immediately affected by any change to the frequency of the publication of the CPI. Specifically, the standard market formula for valuing these bonds calculates the indexation factor as CPI_t/CPI_o, where CPI_t

is defined as the highest CPI index inclusive from CPI_o to the full calendar quarter preceding the annuity payment date.

The impact of a CPI release on the pricing/valuation of IABs is immediate, which means that B_t, or the indexed annuity payment amount, would need to be updated monthly, although coupon payments would continue to be paid quarterly. The AFMA definition is not sufficiently "tight" with respect to a monthly CPI in that it implies that the frequency of the coupon cycle is linked to the payment frequency. A literal interpretation of this is that it implies a quarterly recalculation of the indexation factor, with B_t calculated monthly.

This means that the transition from quarterly to monthly CPI releases would provide investors with an uplift in terms of the indexed annuity payment amount, assuming a positive inflation curve. Perhaps, though, the AFMA market standard formula would need to be updated to clarify the frequency of the recalculation of B_t.

Note that the more frequent change to the indexed annuity payment amount also implies a greater likelihood of the inflation floor being exercised.

Comparing the indexed annuity bond market with the market for capital indexed bonds, there are approximately $4b of IABs on issue, comprising both semi-government and credit issuance.

The effect on Inflation Swaps

Zero coupon swaps (ZCSs) are the most common form of inflation swap traded in the interbank market. Standardised terms have agreed for the Australian market and final exchange payments on the CPI leg are explicitly linked to the reference CPI date. Currently, ZCS contracts roll to the new quarter start date when the CPI is released. This means that monthly releases will imply more frequent roll dates.

In the case of more structured inflation swap contracts, a shift to a monthly CPI would require counterparties to review their own individual term sheets in order to assess the impact on swap pricing/valuations. In the transactions that RBS has been involved in, where the definition of CPI_t is "the most recently available CPI index at the time of the payment date", and in light of a positive inflation curve and more frequent inflation data releases, this would mean that there would usually be an uplift in the valuation of the CPI leg (relative to a quarterly release cycle).

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