

## The PriceStats price index

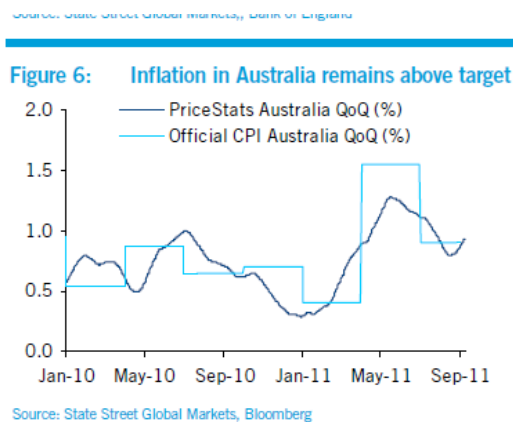
This is the summary of the information regarding the PriceStats inflation indices that have been collected from a range of online sources, included ones not associated with the Billion Prices Projects or PriceStats.

PriceStats (commercial spin-off from Billion Prices Project) collects online daily price data on approximately 5 million products sold by 300 retailers across 70 countries. The data mainly covers goods, including categories such as food and beverages, apparel, electronics, energy, personal care, real estate and furniture. Services are not included at this point of time. Further, the 'basket' of goods is constantly changing as all products sold by the covered retailers are included. Consequently there is no product substitution in the normal sense.

Using the collected data PriceStats reports daily price indices (with a three-day lag) calculated using the arithmetic average of the changes to all prices that have been collected. The daily price indices are used to estimate monthly and annual inflation rates.

There is no public information regarding the coverage of the Australian economy, including lack of disclosure of the number of goods and retailers included. PriceStats state:

'Third, because we are protecting the companies from which we collect information we cannot reveal which retailers are included, or the weights. Which makes our index less transparent, but until we incorporate more companies, we will keep it that way.'



Some limited information on methodology can be found on <http://bpp.mit.edu/usa/>

The benefit of using this type of high-frequency data would be that changes in short-term inflation trends could potentially be noted sooner than what is possible from using official quarterly CPI data or monthly survey data.

'PriceStats monitors the prices of ~5 million products sold by ~300 online retailers across 70 countries. We cover key industries like: food and beverages, apparel, electronics, energy, personal care, real estate, furniture, and more. Our approach targets the collection of a broad scope of information by item, including: prices, product descriptions, product attributes, and sale information that is cleaned, screened, classified and used in the development of our daily inflation statistics.'

The reported data is an arithmetic average across all recorded price changes.

Does not include data on services.

Questions:

- What retailers are included for Australia?
- What is the number of goods included?
- How well does it predict CPI?

Issues (potential)

- Appears to include some volatile items (food, energy)

<http://bpp.mit.edu/blog-2/>

Linus Gustafsson

Prices, Wages and Labour Market section

21 September 2011

## The PriceStats index of Australian prices – a summary

- PriceStats currently produces daily price indices for eleven countries, including Australia. Price indices are published daily (with a two-day lag), along with daily, quarterly and annual inflation rates.
- The data used to calculate the price indices are collected from the websites of online retailers. The data collection is undertaken by specialised software that downloads individual web pages, and then analyses the underlying code, ‘scraping’ for key data about each available product.
- Because data is collected daily for all available products PriceStats can automatically detect entry and exit of products and adjust their data set accordingly.
- For the Australian market, price data has been collected since 2008; however, PriceStats has only recently started to publish inflation indices for the Australian market. The history of price data is used by PriceStats to analyse pricing behaviours for individual retailers/products and to develop an understanding of the specifics of each market. According to PriceStats, this gives them the ability to differentiate between different types of price changes, such as sales, seasonal pricing variations and pre-discontinuation price decreases.
- For some categories for which prices are not directly observable online – including health, education, financial services and housing - prices are imputed using available online price data.
- Certain specific details about the methodology applied by PriceStats are not publically available, including the weighting methodology used for calculating price indices.

Linus Gustafsson

Prices, Wages and Labour Market Section

3 November 2011

---

**From:** D'ARCY, Patrick  
**Sent:** Monday, 14 November 2011 5:49 PM  
**To:** Duggan, Simon; LEWIS, Christine  
**Cc:** Di Marco, Katrina; Reporter, Iyanoosh  
**Subject:** RE: PriceStats [SEC=UNCLASSIFIED]

Simon, Christie is on leave this week. My understanding from her is that State Street are holding the micro data quite tightly so not sure it is for sale, but worth asking nonetheless. The Irving Fischer Committee on statistics at the BIS are looking into it, so we'll keep you posted if anything comes out of that forum.

Cheers.  
Patrick.

---

**From:** Duggan, Simon  
**Sent:** Friday, 11 November 2011 18:52  
**To:** LEWIS, Christine  
**Cc:** D'ARCY, Patrick; Di Marco, Katrina; Reporter, Iyanoosh  
**Subject:** RE: PriceStats [SEC=UNCLASSIFIED]

Many thanks Christie, very helpful.

It looks promising. The charts suggest that there is a reasonable, although by no means perfect, correlation with the quarterly CPI

We have less need for real time price monitoring than yourselves, but there are times when it would be very useful to have. As you say, the micro level data would be particularly handy, including to see how individual components track with their CPI counterparts.

We plan to contact State Street to see how we can access the aggregate series and the cost of obtaining the micro level data (I assume that it's available for a price?). I suspect that the cost of the micro level data will exceed the benefits, but it's worth finding out. Are you planning to purchase the micro level data?

Cheers,  
Simon

---

**From:** LEWIS, Christine  
**Sent:** Friday, 11 November 2011 2:20 PM  
**To:** Duggan, Simon  
**Cc:** D'ARCY, Patrick  
**Subject:** PriceStats [SEC=UNCLASSIFIED]

Hi Simon

Sorry for the delay in getting this to you. Some background info on PriceStats is below. Roberto Rigabon came to the Bank for a meeting but (aside from a few more details and examples) most of the

information below was conveyed at a lunch State Street held for clients and via the PriceStats portal at State Street. As Pat would have mentioned, we are still assessing it as an indicator of inflation. Part of the difficulty in assessing it is that we don't have access to the underlying data so we can't understand drivers of the series beyond any analysis that PriceStats may provide from time-to-time. There are certainly exciting opportunities for research for those who are able to access the micro data.

Let me know if you have any follow-up questions.

Regards

Christie

- PriceStats currently produces daily price indices for eleven countries, including Australia. Price indices are published along with quarterly and annual inflation rates, with a two-day lag.
- The data used to calculate the indices are collected from the websites of online retailers. The data collection is undertaken by specialised software that downloads individual web pages, and then analyses the underlying code, 'scraping' for key data about each available product. Because data are collected daily for all available products, PriceStats can automatically detect entry and exit of products, and adjust the data set accordingly.
- This history of prices and product details is used by PriceStats to analyse pricing behaviours for individual retailers/products and to develop an understanding of the specifics of each market. According to PriceStats, this gives them the ability to differentiate between different types of price changes, such as sales, seasonal pricing variations and pre-discontinuation price decreases etc.

- 

Details of the weighting methodology are not publicly available.

- For the Australian market, price data have been collected since 2008; however, PriceStats has only recently started to publish inflation indices for the Australian market.

- 

Inflation rates for expenditure groups aren't available on the website.

**Christine Lewis** | Senior Economist | Prices, Wages & Labour Market  
RESERVE BANK OF AUSTRALIA | 65 Martin Place, Sydney NSW 2000  
w: [www.rba.gov.au](http://www.rba.gov.au)

---

This e-mail message (along with any attachments) is intended only for the named addressee and could contain information that is confidential or privileged. If you are not the intended recipient you are notified that any dissemination, copying or use of any of the information is prohibited. Please notify us immediately by return e-mail if you are not the intended recipient and delete all copies of the original message and attachments.

This footnote also confirms that this message has been checked for computer viruses.

---

**Please Note:** The information contained in this e-mail message and any attached files may be confidential information and may also be the subject of legal professional privilege. If you are not the intended recipient, any use, disclosure or copying of this e-mail is unauthorised. If you have received this e-mail by error please notify the sender immediately by reply e-mail and delete all copies of this transmission together with any attachments.

---