RETAIL TRADE TRENDS *AUSTRALIA*

Monthly turnover
Trend estimates
% change
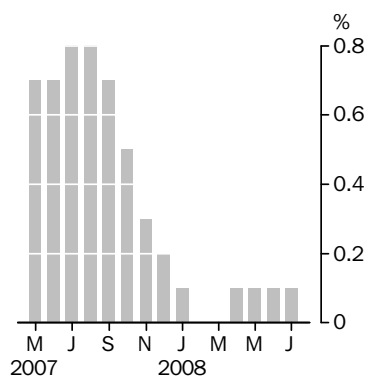
KEY FIGURES

	Jul 08 $m	Jun 08 to Jul 08 % change	Jul 07 to Jul 08 % change
Turnover at current prices			
Trend estimates	18 231.5	0.1	3.1

KEY POINTS

- The trend estimate of turnover for the Australian Retail series increased by 0.1% in July 2008. This follows a revised increase of 0.1% for each of the last three months (as at June 2008 the trend estimates on the new survey basis would have been 0.0%, for each of the last three months).

- In July 2008, industries that had an increase in trend estimate were Food retailing (+0.2%), Department stores (+0.1%), Household good retailing (+0.6%) and Other retailing (+0.3%). Clothing and soft good retailing (-0.3%) and Cafes, restaurants and takeaway food services (-0.7%) had a decline in the trend estimate.

- All States, except New South Wales (-0.2%) and the Australian Capital Territory (-1.1%), had an increase in the trend estimate. States with the largest increase in the trend estimate were Northern Territory (+1.2%), Western Australia, Tasmania (both +0.7%) and South Australia (+0.6%).

- The trend estimate for the Australian retail series increased by 3.1% for July 2008 compared with July 2007.

- The trend estimate for Chains and other large retailers (which are completely enumerated) increased by 0.3% in July 2008 compared to June 2008 and 5.7% for July 2008 compared to July 2007.

CAUTION:
Significant changes have been made to the Retail Business Survey design. See pages 2 and 5.

INQUIRIES

For further information about these and related statistics, contact the National Information and Referral Service on 1300 135 070 or Rod Cowie on Canberra (02) 6252 6720.

NOTES

CHANGES IN THIS ISSUE

Major changes have been implemented in this issue, reducing the level of detail available monthly. For more information, refer to *Changes to monthly retail trade statistics* on Page 5.

These changes have resulted in revisions to original series from January 2003 to June 2008. In addition, the seasonally adjusted and trend series have been updated following the normal annual review of the seasonal adjustment process.

TIME SERIES DATA

The following trend, seasonally adjusted and original series are available from the Downloads tab of this issue:

- Retail turnover by state
- Retail turnover by industry
- Retail turnover completely enumerated sector, total level.

Also available are standard errors by state and industry.

INTERPRETING MONTHLY MOVEMENTS

Due to the smaller sample size and new sampling methodology introduced from July 2008, there will be increased volatility in all series. The original and seasonally adjusted series will be most affected, as a result, the original and seasonally adjusted series are considered of limited use for measuring month to month movements. The ABS recommends using the trend series for this analysis.

NEW QUARTERLY PUBLICATION

More detailed quarterly industry and state estimates will be available from *Retail Trade Quarterly Indicators, Australia* (cat. no. 8502.0). The first issue of this publication, September quarter 2008, is scheduled for release on 17 November 2008.
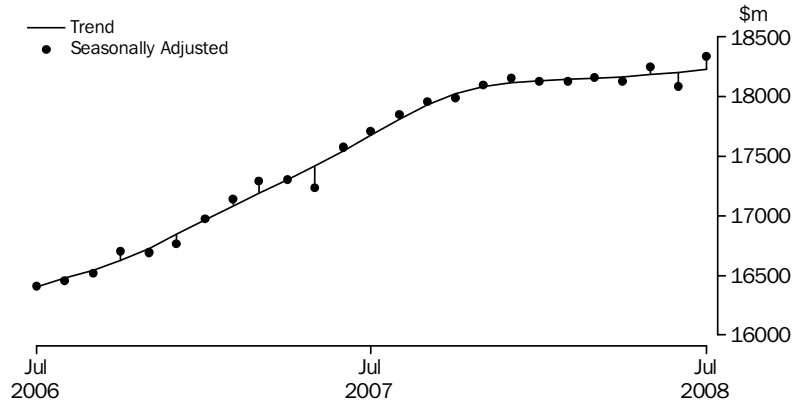
Brian Pink
Australian Statistician

TREND ANALYSIS

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TOTAL RETAIL

There have been four months of weak trend growth. This follows a slowing in the rate of trend growth from strong growth in August 2007 to no change in the trend estimate for February and March 2008.

RETAIL TURNOVER(a), Australia

(a) Estimates to June 2008 are derived from previous sampling methods.

INDUSTRY TRENDS

Clothing and soft good retailing (five months) and Cafes, restaurants and takeaway food services (nine months) have had a decline in the trend estimate. Household good retailing has had three months of moderate trend growth. Other retailing has had three months of moderate growth and three months of weak growth over the last six months. Food retailing has had nine months of weak trend growth. Department stores had weak growth in July 2008 after being in decline from March to May 2008.

STATE TRENDS

The trend estimate has been in decline in New South Wales (seven months) and the Australian Capital Territory (four months). There has been weak trend growth in Victoria (two months) and Queensland (nine months). All other states have had at least five months of moderate or strong trend growth with:

- South Australia, moderate growth in five out of the last six months preceded by five months of strong growth
- Western Australia, moderate growth for four out of the last five months
- Tasmania, moderate growth for the last six months
- Northern Territory, four months of strong growth preceded by three months of moderate growth.

REVISIONS TO TREND

The chart above indicates the level of volatility in the seasonally adjusted series. With the new survey design, it is anticipated that the volatility level will increase from July 2008. This increased volatility will contribute to revisions to trend estimates that are larger on average than those produced under the previous sampling methods. The likelihood of revisions needs to be considered when analysing retail trends.

What-if analysis can be used to assess the reliability of the trend estimate at the end points of the series. The following what-if chart presents the possible change in the trend estimates under two different scenarios. The two scenarios for the next month's seasonally adjusted estimates have been derived from the 25th and 75th percentiles of the historical seasonally adjusted movement distribution. The historical seasonally

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REVISIONS TO TREND
continued

adjusted movements have been adjusted to reflect the expected increase in volatility from the new survey design.

Note that the what-if analysis does not show the unknown impact of revisions to seasonal factor estimates that could arise when the original estimate for the next time period becomes available. For more information see the trend estimates section of the Explanatory Notes.

1 The August seasonally adjusted estimate of retail turnover is 1.39% higher than the July estimate.

2 The August seasonally adjusted estimate of retail turnover is 0.04% higher than the July estimate.
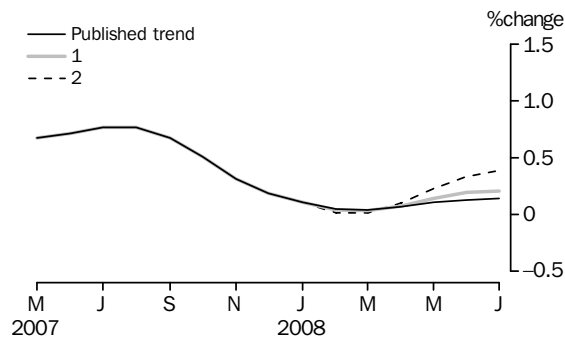
FEATURE ARTICLE

CHANGES TO MONTHLY RETAIL TRADE STATISTICS

INTRODUCTION

Notes in the April to June 2008 issues of *Retail Trade, Australia* (cat. no. 8501.0) advised of forthcoming changes to the Retail Business Survey (RBS).

This article provides consolidated information about those changes. From the July 2008 survey month there has been a 59% reduction in the monthly RBS sample relative to the June 2008 sample size.

Clients should understand the changes and their impact on time series when analysing the information in this publication and related time series spreadsheets.

REASON FOR 2008-09 SAMPLE REDUCTION

The ABS is facing a tight budget situation in 2008–09. As a result, the ABS has identified a number of savings initiatives for 2008–09 to ensure it can deliver its work program within its allocated budget. One of the initiatives is to reduce the RBS sample size in 2008–09. The ABS has implemented this sample reduction in such a way that the sample can be increased again in the future should the ABS funding position change.

OBJECTIVE OF SURVEY REDESIGN

The principal objective of the sample design up to June 2008 was to show month to month movement of retail turnover and provide corresponding quarterly movements used in the compilation of household final consumption expenditure in the quarterly national accounts. This objective has changed with the survey redesign. The emphasis has moved to producing a quarterly series with similar detail to that released in the June 2008 monthly publication whilst maintaining a broad level monthly trend series.

IMPLEMENTATION

The ABS implemented the full sample reduction in July 2008 in order to maximise savings in 2008–09. The Hotels and licensed clubs and Selected service industries are now excluded from the RBS as these industries have a relatively lower priority given broad user interests and an alternative quarterly data source.

In order to produce both quarterly estimates and broad level monthly trend estimates within the available resources, a 'one-in, two-out' strategy has been adopted for collecting data from sampled units. Businesses in the sample sector are allocated evenly across the three months of a quarter with approximately 900 sample sector businesses included each month. These businesses will be required to provide a monthly estimate of turnover for the month of the quarter to which they have been allocated. They will then not be required to report data for the next two months; i.e. a business allocated to the first month of a quarter will be required to report a monthly estimate for the July, October, January and April reference months.

SAMPLE SIZE

Table 1 shows the actual number of businesses selected in the RBS sample for June 2008 under the 2007 sample redesign; the number in the June 2008 sample with Hotels and licensed clubs and selected services excluded; and the number in July 2008, following the sample reduction.

1. COMPARISON OF PRE AND POST JUNE 2008 SAMPLE SIZES

	JUNE 2008 SAMPLE		JULY 2008 SAMPLE	SEPTEMBER QUARTER 2008 SAMPLE
	Total per month	*Reduced scope per month*	*Total per month*	*Total per quarter*
	No.	No.	No.	No.
Completely enumerated sector	730	640	500	(a) 500
Sample sector	3 214	2 775	901	(b) 2 702
Total	**3 944**	**3 415**	**1 401**	**3 202**

(a)   Reporting each month in the quarter
(b)   Reporting for one month in the quarter

MONTHLY PUBLICATION

Only trend data (level, percentage change from previous month and percentage change from same month in the previous year) for Australia, states and industry groups are presented in the tables included in this publication. State by industry estimates and detailed industry estimates are not included in the publication. This is because the sampling error and rotation patterns of the one-in, two-out sampling methodology, which do not reflect real economic behaviour, could dominate the monthly estimates. However, these factors have less impact on broader level industry groups and state estimates.

The monthly publication has been renamed *Retail Trade Trends, Australia* but has retained catalogue number 8501.0 and includes:
- commentary focussing on the trend series
- trend estimates at broader level industry groups:
    - a new industry group, Cafes, restaurants and takeaway food services, has been introduced
    - the industry group, Recreational good retailing, has been combined with Other retailing
- trend estimates for state totals.

For analytical purposes, seasonally adjusted and original estimates are available in the time series spreadsheets from the Downloads tab of this publication. However, these series are considered of limited use for measuring month-to-month estimates because of the increased volatility in these series due to the smaller sample size and the rotation effect of having a different third of the sample reporting each month.

IMPACT ON THE ESTIMATES

The introduction of survey scope changes and a new sampling methodology, including a reduction in the number of completely enumerated and sampled businesses and changes to the industry groupings, has resulted in a shift in the level of a series. Because these changes are measurement changes rather than reflecting real economic events, it is necessary to minimise the impact of the changes on time series. This has been achieved by measuring the impact of the change and revising (backcasting) the time series to maintain the continuity of the time series.

The size of the level shift induced by the measurement change was assessed using regression analysis techniques on the ratios between the published estimates produced by the existing sampling methodology and simulated estimates produced by the new sampling methodology over the period from July 2007 to June 2008. The level shift was found to be significant with a decrease of 0.3% in the seasonally adjusted level for the Australian total for June 2008. Differences at the lower levels vary. As a result, the historical series have been backcast to make the time series of estimates as continuous as possible while maintaining, as far as possible, the integrity of the month to month seasonally adjusted movements.

The following tables compare estimates for June 2008 as published in the June 2008 issue (with the reduced scope) and the estimates as published in the July 2008 issue.

2. DIFFERENCES BETWEEN INDUSTRY TOTALS FOR JUNE 2008: Original

Industry group	*June 2008 estimate published in June 2008 issue*	*June 2008 estimate published in July 2008 issue*	*Difference*
	$m	$m	%
Food retailing	6 940.9	6 921.7	–0.3
Department stores	1 401.6	1 401.6	0.0
Clothing and soft good retailing	1 209.7	1 206.0	–0.3
Household good retailing	3 063.5	3 052.6	–0.4
Other retailing	2 525.8	2 510.8	–0.6
Cafes, restaurants and takeaway food services	2 102.8	2 098.0	–0.2
Australia	**17 244.1**	**17 190.7**	**–0.3**

3. DIFFERENCES BETWEEN STATE TOTALS FOR JUNE 2008: Original

States and territories	*June 2008 estimate published in June 2008 issue*	*June 2008 estimate published in July 2008 issue*	*Difference*
	$m	$m	%
New South Wales	5 366.2	5 358.6	–0.1
Victoria	4 255.4	4 239.6	–0.4
Queensland	3 519.5	3 511.0	–0.2
South Australia	1 238.9	1 234.9	–0.3
Western Australia	1 951.0	1 940.9	–0.5
Tasmania	372.1	370.9	–0.3
Northern Territory	198.2	196.3	–0.9
Australian Capital Territory	342.9	338.5	–1.3
Australia	**17 244.1**	**17 190.7**	**–0.3**

To facilitate comparisons over time, the level shifts have been smoothed into the series from June 2008 back to January 2003. The level shifts were estimated and applied at the lowest possible level, the state by industry sub-group level, even though monthly series are not published at this level. This approach maintains the additivity of time series at all

IMPACT ON THE
ESTIMATES *continued*

levels in original terms as higher level aggregate time series are derived from the more detailed backcast series. This approach also ensures that the state and industry group totals in the monthly series will sum to the comparable quarterly series.

The revisions to the historical series in original terms, and the annual seasonal reanalysis have resulted in revisions to the trend series. The following table compares the trend estimate for recent months as published in the June 2008 issue with data for the same period with the reduced scope. The table also shows the trend for the same period after the incorporation of data for July 2008. The table shows that at the total level the introduction of the new survey design did not change the trend as at June 2008 (i.e. before data for July 2008 were incorporated).

4. RETAIL TURNOVER, Australia: **Trend**

	JUNE 2008 SURVEY DESIGN	JULY 2008 SURVEY DESIGN	
	As published in June 2008	*As at June 2008*	*As published in July 2008*
Month	%	%	%
2008			
January	0.1	0.1	0.1
February	0.1	0.1	0.0
March	0.0	0.0	0.0
April	0.0	0.0	0.1
May	0.0	0.0	0.1
June	0.0	0.0	0.1

IMPACT ON THE QUALITY
OF ESTIMATES

The most common way to quantify the volatility in the original series is to examine the relative standard errors (RSEs). Tables 5 and 6 compare RSEs for June 2008 based on the previous sample design and for July 2008 under the new sample methodology.

5. MONTHLY RSE, By Industry group

Industry group	*June 2008*(a)	*July 2008*
	%	%
Food retailing	1.0	2.1
Department stores	. .	. .
Clothing and soft good retailing	2.3	4.3
Household good retailing	2.0	3.4
Other retailing	3.5	4.7
Cafes, restaurants and takeaway food services	2.5	5.0
Australia	0.8	1.1

. .   not applicable

(a)   The June 2008 RSEs have not been adjusted for the reduced scope.

IMPACT ON THE QUALITY
OF ESTIMATES *continued*

6. MONTHLY RSE, By State

States and territories	June 2008(a) %	July 2008 %
New South Wales	1.5	2.1
Victoria	1.6	2.3
Queensland	1.8	2.5
South Australia	1.7	2.3
Western Australia	1.7	2.6
Tasmania	2.0	2.9
Northern Territory	1.6	2.4
Australian Capital Territory	2.0	2.8
Australia	0.8	1.1

(a) The June 2008 RSEs have not been adjusted for the reduced scope.

INCREASED VOLATILITY
IN SEASONALLY
ADJUSTED ESTIMATES

While the historical series have been adjusted for the one-off level shift caused by the introduction of the new methodology, the reliability of the past estimates have not been affected. However, the new methodology will result in increased volatility in the Retail trade series from July 2008.

As a result of this increased volatility, this publication focuses on the trend series.

It is also possible that having each third of the sample report one month each quarter may change the currently observed seasonal patterns. This may result in increased revisions to the seasonally adjusted series as any changes to seasonal patterns are reflected in seasonal factors. The impact of the increased volatility will not be significant in the quarterly series.

QUARTERLY OUTPUT

A new, separate quarterly publication will be introduced which will include seasonally adjusted and original estimates and more detailed state by industry estimates. The quarterly publication will be titled *Retail Trade Quarterly Indicators, Australia* (cat. no. 8502.0) and will be released about two weeks after the last monthly publication for the quarter e.g. the September quarter 2008 issue is scheduled for release on 17 November 2008.

It is likely that the quarterly output will include:
- the same six industry groups as in the monthly publication described above but at the state level - original, seasonally adjusted and trend
- 15 more detailed industry sub-groups at the state level - original, seasonally adjusted and trend
- retail turnover percentage change from previous quarter by state by industry sub-group - original, seasonally adjusted and trend
- retail turnover percentage change from same quarter in the previous year by state by industry sub-group - original, seasonally adjusted and trend
- retail turnover relative standard errors by industry group and industry sub-group - original
- retail turnover relative standard errors by state - original
- retail turnover completely enumerated sector total level - original, seasonally adjusted and trend

Changes to monthly Retail trade statistics continued

QUARTERLY OUTPUT
continued

■ chain volume measures estimates at a similar level of detail as currently provided quarterly but estimates will be directly seasonally adjusted rather than aggregated from monthly seasonally adjusted estimates (as is currently done).

RETAIL TURNOVER, By Industry Group(a): **Trend**

Month	Food retailing(b)	Department stores	Clothing and soft good retailing	Household good retailing	Other retailing(c)	Cafes, restaurants and takeaway food services	Total
				$ MILLION			
2007							
May	7 003.8	1 473.5	1 250.1	3 006.7	2 494.1	2 191.3	17 419.5
June	7 058.2	1 485.0	1 260.7	3 021.1	2 512.9	2 205.4	17 543.3
July	7 116.4	1 494.5	1 270.0	3 037.0	2 542.2	2 217.2	17 677.3
August	7 173.7	1 501.2	1 277.1	3 056.1	2 579.6	2 225.7	17 813.3
September	7 219.8	1 506.1	1 282.0	3 073.9	2 622.2	2 229.6	17 933.6
October	7 253.1	1 509.1	1 283.8	3 085.2	2 664.7	2 228.7	18 024.7
November	7 274.6	1 511.0	1 283.9	3 087.6	2 700.6	2 223.3	18 080.9
December	7 286.4	1 515.9	1 285.5	3 081.8	2 730.2	2 215.3	18 115.2
2008							
January	7 295.3	1 520.1	1 288.2	3 071.2	2 752.0	2 208.2	18 135.0
February	7 305.4	1 521.3	1 288.5	3 062.2	2 766.0	2 200.2	18 143.6
March	7 319.7	1 519.5	1 285.7	3 060.3	2 775.6	2 190.2	18 151.0
April	7 338.1	1 517.3	1 281.3	3 064.8	2 785.1	2 176.9	18 163.6
May	7 357.1	1 516.3	1 276.4	3 076.2	2 795.4	2 161.9	18 183.2
June	7 375.2	1 516.7	1 271.6	3 090.6	2 806.2	2 145.9	18 206.1
July	7 391.4	1 518.0	1 267.4	3 109.0	2 814.2	2 131.5	18 231.5
			% CHANGE FROM PRECEDING MONTH				
2007							
May	0.7	0.8	1.0	0.5	0.3	0.8	0.7
June	0.8	0.8	0.8	0.5	0.8	0.6	0.7
July	0.8	0.6	0.7	0.5	1.2	0.5	0.8
August	0.8	0.4	0.6	0.6	1.5	0.4	0.8
September	0.6	0.3	0.4	0.6	1.7	0.2	0.7
October	0.5	0.2	0.1	0.4	1.6	0.0	0.5
November	0.3	0.1	0.0	0.1	1.3	–0.2	0.3
December	0.2	0.3	0.1	–0.2	1.1	–0.4	0.2
2008							
January	0.1	0.3	0.2	–0.3	0.8	–0.3	0.1
February	0.1	0.1	0.0	–0.3	0.5	–0.4	0.0
March	0.2	–0.1	–0.2	–0.1	0.3	–0.5	0.0
April	0.3	–0.1	–0.3	0.1	0.3	–0.6	0.1
May	0.3	–0.1	–0.4	0.4	0.4	–0.7	0.1
June	0.2	0.0	–0.4	0.5	0.4	–0.7	0.1
July	0.2	0.1	–0.3	0.6	0.3	–0.7	0.1
		% CHANGE FROM CORRESPONDING MONTH OF PREVIOUS YEAR					
2007							
May	8.6	4.0	8.6	9.6	1.4	9.5	7.4
June	8.9	4.9	8.6	9.1	1.7	9.2	7.5
July	9.2	6.0	8.3	8.7	2.6	9.1	7.8
August	9.5	6.8	7.8	8.7	3.9	9.0	8.1
September	9.5	7.3	7.5	8.8	5.6	8.8	8.4
October	9.3	7.3	7.2	8.5	7.3	8.3	8.4
November	8.8	6.8	6.7	7.7	8.7	7.3	8.1
December	8.1	6.2	6.5	6.4	9.8	6.0	7.5
2008							
January	7.4	5.6	6.4	5.0	10.7	4.6	6.9
February	6.7	5.1	5.9	3.7	11.3	3.2	6.2
March	6.1	4.5	4.8	2.9	11.7	1.7	5.6
April	5.6	3.8	3.5	2.5	12.0	0.1	5.0
May	5.0	2.9	2.1	2.3	12.1	–1.3	4.4
June	4.5	2.1	0.9	2.3	11.7	–2.7	3.8
July	3.9	1.6	–0.2	2.4	10.7	–3.9	3.1

(a) See paragraph 6 of Explanatory Notes.

(b) From the July 2008 issue, Food retailing excludes Takeaway food retailing for all time periods.

(c) From the July 2008 issue, Other retailing includes Recreational good retailing for all time periods.

Month	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Northern Territory	Australian Capital Territory	Australia

$ MILLION

2007

Month	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Northern Territory	Australian Capital Territory	Australia
May	5 516.7	4 301.4	3 538.3	1 187.2	1 972.8	384.9	173.9	344.4	17 419.5
June	5 559.6	4 321.4	3 581.7	1 192.2	1 980.5	387.1	174.9	346.1	17 543.3
July	5 607.6	4 348.6	3 622.2	1 198.5	1 988.9	388.1	176.2	347.1	17 677.3
August	5 655.2	4 382.6	3 656.4	1 207.3	1 997.9	388.4	178.0	347.6	17 813.3
September	5 695.0	4 418.4	3 680.6	1 218.1	2 005.1	388.4	180.3	347.8	17 933.6
October	5 720.5	4 450.9	3 695.1	1 230.3	2 008.6	388.5	182.8	348.0	18 024.7
November	5 729.3	4 476.0	3 702.3	1 242.7	2 008.3	388.8	185.0	348.6	18 080.9
December	5 727.1	4 494.3	3 706.7	1 254.5	2 006.4	389.5	186.8	349.8	18 115.2

2008

Month	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Northern Territory	Australian Capital Territory	Australia
January	5 720.5	4 503.4	3 710.2	1 264.9	2 005.7	390.7	188.0	351.7	18 135.0
February	5 709.7	4 502.6	3 713.4	1 274.2	2 009.4	392.3	188.8	353.2	18 143.6
March	5 695.6	4 497.3	3 718.1	1 283.2	2 019.0	394.5	189.8	353.5	18 151.0
April	5 679.7	4 492.9	3 724.8	1 292.7	2 032.8	397.1	191.3	352.1	18 163.6
May	5 663.7	4 492.9	3 732.8	1 302.4	2 048.4	400.1	193.4	349.5	18 183.2
June	5 647.9	4 496.5	3 741.6	1 311.7	2 063.7	403.0	195.6	346.1	18 206.1
July	5 634.5	4 502.9	3 750.9	1 319.5	2 077.7	405.7	198.0	342.4	18 231.5

% CHANGE FROM PRECEDING MONTH

2007

Month	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Northern Territory	Australian Capital Territory	Australia
May	0.7	0.3	1.3	0.4	0.4	0.9	0.6	0.6	0.7
June	0.8	0.5	1.2	0.4	0.4	0.6	0.6	0.5	0.7
July	0.9	0.6	1.1	0.5	0.4	0.3	0.8	0.3	0.8
August	0.8	0.8	0.9	0.7	0.5	0.1	1.0	0.1	0.8
September	0.7	0.8	0.7	0.9	0.4	0.0	1.3	0.1	0.7
October	0.4	0.7	0.4	1.0	0.2	0.0	1.3	0.1	0.5
November	0.2	0.6	0.2	1.0	0.0	0.1	1.2	0.2	0.3
December	0.0	0.4	0.1	0.9	–0.1	0.2	1.0	0.4	0.2

2008

Month	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Northern Territory	Australian Capital Territory	Australia
January	–0.1	0.2	0.1	0.8	0.0	0.3	0.6	0.5	0.1
February	–0.2	0.0	0.1	0.7	0.2	0.4	0.4	0.4	0.0
March	–0.2	–0.1	0.1	0.7	0.5	0.5	0.5	0.1	0.0
April	–0.3	–0.1	0.2	0.7	0.7	0.7	0.8	–0.4	0.1
May	–0.3	0.0	0.2	0.8	0.8	0.7	1.1	–0.8	0.1
June	–0.3	0.1	0.2	0.7	0.7	0.7	1.1	–0.9	0.1
July	–0.2	0.1	0.2	0.6	0.7	0.7	1.2	–1.1	0.1

% CHANGE FROM CORRESPONDING MONTH OF PREVIOUS YEAR

2007

Month	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Northern Territory	Australian Capital Territory	Australia
May	6.3	4.8	9.9	7.4	11.5	5.5	10.5	9.5	7.4
June	6.7	4.7	10.4	7.1	11.0	6.2	9.7	9.3	7.5
July	7.3	4.9	10.9	7.0	10.5	6.3	9.4	8.6	7.8
August	7.9	5.4	11.4	7.1	10.0	6.1	9.8	7.6	8.1
September	8.4	5.8	11.7	7.4	9.3	6.0	10.6	6.7	8.4
October	8.5	6.1	11.9	7.9	8.3	5.8	11.3	5.9	8.4
November	8.0	6.1	11.6	8.3	7.0	5.8	11.7	5.3	8.1
December	7.2	6.0	11.0	8.6	5.6	5.7	11.7	5.0	7.5

2008

Month	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Northern Territory	Australian Capital Territory	Australia
January	6.3	5.8	10.1	8.8	4.4	5.4	11.4	4.8	6.9
February	5.4	5.5	9.0	8.9	3.7	5.0	10.9	4.6	6.2
March	4.6	5.1	7.8	9.1	3.4	4.5	10.6	4.0	5.6
April	3.7	4.8	6.6	9.3	3.5	4.1	10.7	2.9	5.0
May	2.7	4.5	5.5	9.7	3.8	4.0	11.2	1.5	4.4
June	1.6	4.1	4.5	10.0	4.2	4.1	11.8	0.0	3.8
July	0.5	3.5	3.6	10.1	4.5	4.5	12.3	–1.4	3.1

EXPLANATORY NOTES

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INTRODUCTION

1 This publication presents monthly trend estimates of the value of turnover of retail businesses classified by industry, and by state and territory. The estimates of turnover are compiled from the Retail Business Survey (RBS).

2 With a sample design introduced in the July 2008 reference month, the aim of the survey is to produce quarterly estimates at the industry group by state level and monthly estimates at a broader level. The survey includes about 3,200 retail and selected service businesses each quarter. About 500 'large' businesses are included in the survey every month. A quarterly sample of about 2700 'smaller' businesses is selected, with about 900 of these smaller businesses are allocated to each month of the quarter. The 'large' business' contribution of approximately 62% of the total estimate ensures a highly reliable Australian total turnover estimate.

3 Quarterly estimates are presented in *Retail Trade Quarterly Indicators, Australia* (Cat. No. 8502.0). This publication includes industry sub group by state and chain volume measures at state and industry level.

SCOPE AND COVERAGE

4 The scope of the RBS is all employing businesses with at least one retail outlet. Like most Australian Bureau of Statistics (ABS) economic surveys, the frame used for the RBS is taken from the ABS Business Register which includes registrations to the Australian Taxation Office's (ATO) pay-as-you-go withholding (PAYGW) scheme. Each statistical unit (as defined below) included on the ABS Business Register is classified to the Australian and New Zealand Standard Industrial Classification (ANZSIC) industry in which it mainly operates. The frame is supplemented with information about businesses which are classified as non-retail but which have significant retail activity.

5 The frame is updated quarterly to take account of new businesses, businesses which have ceased employing, changes in industry and other general business changes. The estimates include an allowance for the time it takes a newly registered business to get on to the survey frame. Businesses which have ceased employing are identified when the ATO cancels their Australian Business Number (ABN) and/or PAYGW registration. In addition, businesses with less than 50 employees which do not remit under the PAYGW scheme in each of the previous five quarters are removed from the frame.

6 The following industries included in the survey are as defined in ANZSIC:
- Food retailing
    - Supermarkets and grocery stores (5110) and non-petrol sales of convenience stores of selected petrol stations
    - Liquor retailing (5123)
    - Other food retailing
        - Fresh meat, fish and poultry retailing (5121)
        - Fruit and vegetable retailing (5122)
        - Bread and cake retailing (5124)
        - Specialised food retailing n.e.c. (5129)
- Department stores (5210)
- Clothing and soft good retailing
    - Clothing retailing (5221)
    - Footwear, fabric and other soft good retailing
        - Footwear retailing (5222)
        - Fabric and other soft good retailing (5223)

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SCOPE AND COVERAGE

continued

- Household good retailing
    - Furniture and floor covering retailing
        - Furniture retailing (5231)
        - Floor covering retailing (5232)
    - Domestic hardware and houseware retailing (5233)
    - Domestic appliance and recorded music retailing
        - Domestic appliance retailing (5234)
        - Recorded music retailing (5235)
- Other retailing
    - Newspaper, book and stationery retailing (5243)
    - Other recreational goods retailing
        - Sport and camping equipment retailing (5241)
        - Toy and game retailing (5242)
        - Photographic equipment retailing (5244)
    - Pharmaceutical, cosmetic and toiletry retailing (5251)
    - Other retailing n.e.c.
        - Antique and used good retailing (5252)
        - Garden supplies retailing (5253)
        - Flower retailing (5254)
        - Watch and jewellery retailing (5255)
        - Retailing n.e.c. (5259)
- Cafes, restaurants and takeaway food services
    - Takeaway food retailing (5125)
    - Cafes and restaurants (5730).

STATISTICAL UNITS DEFINED ON THE ABS BUSINESS REGISTER

7 The ABS uses an economic statistics units model on the ABS Business Register to describe the characteristics of businesses, and the structural relationships between related businesses. The units model is also used to break groups of related businesses into relatively homogeneous components that can provide data to the ABS.

8 The units model allocates businesses to one of two sub-populations. The vast majority of businesses are in what is called the ATO Maintained Population, while the remaining businesses are in the ABS Maintained Population. Together, these two sub-populations make up the ABS Business Register population.

ATO Maintained Population

9 Most businesses and organisations in Australia need to obtain an ABN, and are then included on the ATO Australian Business Register. Most of these businesses have simple structures; therefore the unit registered for an ABN will satisfy ABS statistical requirements. The businesses with simple structures constitute the ATO Maintained Population, and the ABN unit is used as the statistical unit for all economic collections.

ABS Maintained Population

10 For the population of businesses where the ABN unit is not suitable for ABS statistical requirements, the ABS maintains its own units structure through direct contact with each business. These businesses constitute the ABS Maintained Population. This

ABS Maintained Population
continued

population consists typically of large, complex and diverse businesses. The statistical units model described below is used for these businesses.

> *Enterprise Group:* This is a unit covering all the operations in Australia of one or more legal entities under common ownership and/or control. It covers all the operations in Australia of legal entities which are related in terms of the current Corporations Law (as amended by the *Corporations Legislation Amendment Act 1991*), including legal entities such as companies, trusts, and partnerships. Majority ownership is not required for control to be exercised.

> *Enterprise:* The enterprise is an institutional unit comprising (i) a single legal entity or business entity, or (ii) more than one legal entity or business entity within the same Enterprise Group and in the same institutional subsector (i.e. they are all classified to a single Standard Institutional Sector Classification of Australia subsector).

> *Type of Activity Unit (TAU):* The TAU is comprised of one or more business entities, sub-entities or branches of a business entity within an Enterprise Group that can report production and employment data for similar economic activities. When a minimum set of data items are available, a TAU is created which covers all the operations within an industry subdivision (and the TAU is classified to the relevant subdivision of the ANZSIC). Where a business cannot supply adequate data for each industry, a TAU is formed which contains activity in more than one industry subdivision.

SURVEY METHODOLOGY

11 The survey is conducted monthly primarily by telephone interview although a small number of questionnaires are mailed to businesses. The businesses included in the survey are selected by random sample from a frame stratified by state, industry and business size. The survey uses annualised turnover as the measure of business size. For the ATO Maintained Population, the annualised turnover is based on the ATO's Business Activity Statement item Total sales and for the ABS Maintained Population a modelled annualised turnover is used. For stratification purposes the annualised turnover allocated to each business is not updated each quarter as to do so would result in increased volatility in the estimates.

12 Generalised regression estimation methodology is used for estimation. For estimation purposes, the annualised turnover allocated to each business is updated each quarter.

13 The July 2008 issue saw the introduction of a 'one in two out' strategy for collecting data from sampled units. Businesses in the sample sector are allocated evenly across the three months of a quarter with approximately 900 sample sector businesses included each month. These businesses are required to provide a monthly estimate of turnover for the month of the quarter to which they have been allocated. They will then not be required to report data for the next two months i.e. a business allocated to the first month of a quarter will be required to report a monthly estimate for the July, October, January and April reference months.

14 Each quarter, some businesses in the sample are replaced, at random, by other businesses so that the reporting load can be spread across smaller retailers.

15 Most businesses can provide turnover on a calendar month basis and this is how the data are presented. When businesses cannot provide turnover on a calendar month basis, the reported data and the period they relate to are used to estimate turnover for the calendar month.

16 Most retailers operate in a single state/territory. For this reason, estimates of turnover by state/territory are only collected from the larger retailers which are included in the survey each month. These retailers are asked to provide turnover for sales from

SURVEY METHODOLOGY
continued

each state/territory in which the business operates. Turnover for the smaller businesses is allocated to the state of their head office or main outlet.

DEFINITION OF TURNOVER

17 Turnover includes retail sales; wholesale sales; takings from repairs, meals and hiring of goods (except for rent, leasing and hiring of land and buildings); commissions from agency activity (e.g. commissions received from collecting dry cleaning, selling lottery tickets, etc.). From July 2000, turnover includes the goods and services tax.

COMPARABILITY OF ESTIMATES

18 Due to the increased sampling error and rotation of the 'one in two out' sampling methodology, the original and seasonally adjusted estimates are considered of limited use for measuring month to month movements. Due to the independent sample sectors selected for each month in a quarter, the monthly estimates can differ due to the businesses included in each sample. However this methodology enables reliable quarterly estimates to be derived from a small sample while providing reliable broad level monthly trend estimates.

SEASONAL ADJUSTMENT AND TREND ESTIMATION

19 Seasonally adjusted estimates are derived by estimating and removing systematic calendar related effects from the original series. In the Retail trade series, these calendar related effects are known as seasonal (e.g. increased spending in December as a result of Christmas) and trading day influences (arising from the varying length of each month and the varying number of Sundays, Mondays, Tuesdays, etc. in each month). Each influence is estimated by separate seasonal and trading day factors which, when combined, are referred to as the combined adjustment factors.

20 The seasonally adjusted estimates also have an allowance for an Easter proximity effect, which is caused when Easter falls late in March or early in April. This effect, when present, is combined with the seasonal and trading day factors to form the combined adjustment factors. There is also a similar allowance for the variable timing of Father's Day. See the Appendix of the July 2001 and August 2002 issues, respectively, of this publication for more information.

21 The Retail series uses a concurrent seasonal adjustment methodology to derive the combined adjustment factors. This means that data from the current month are used in estimating seasonal and trading day factors for the current and previous months. For more information see *Information Paper: Introduction of Concurrent Seasonal Adjustment into the Retail Trade Series* (cat. no. 8514.0).

22 Autoregressive integrated moving average (ARIMA) modelling can improve the revision properties of the seasonally adjusted and trend estimates. ARIMA modelling relies on the characteristics of the series being analysed to project future period data. The projected values are temporary, intermediate values, that are only used internally to improve the estimation of the seasonal factors. The projected data do not affect the original estimates and are discarded at the end of the seasonal adjustment process. The retail collection uses an individual ARIMA model for each of the industry totals and state totals published monthly. The ARIMA model is assessed as part of the annual reanalysis. For more information on ARIMA modelling see *Feature article: Use of ARIMA modelling to reduce revisions in the October 2004* issue of *Australian Economic Indicators* (cat. no. 1350.0).

23 The seasonal and trading day factors are reviewed annually at a more detailed level than possible in the monthly processing cycle. The annual reanalysis will not normally result in significant changes. For Retail Trade, the results of the latest review are normally included in the July issue.

24 A "two-dimensional reconciliation" methodology has been used on the seasonally adjusted time series in this publication to force additivity - that is, to force the sum of fine-level (state and industry) estimates to be equal to the Australian total.

SEASONAL ADJUSTMENT AND
TREND ESTIMATION *continued*

25 In the seasonal adjustment process, both the seasonal and trading day factors evolve over time to reflect changes in spending and trading patterns. Examples of this evolution include the slow move in spending from December to January; and, increased trading activity on weekends and public holidays. The seasonally adjusted estimates still reflect the sampling and non-sampling errors to which the original estimates are subject. This is why it is recommended that trend series be used to analyse month-to-month movements.

26 The monthly trend estimates are derived by applying a 13-term Henderson moving average to the seasonally adjusted estimates (7-term for quarterly series). The Henderson moving average is symmetric, but as the end of a time series is approached, asymmetric forms of the moving average have to be applied. The asymmetric moving averages have been tailored to suit the particular characteristics of individual series and enable trend estimates for recent periods to be produced. Due to the ABS Retail survey sample decrease starting from July 2008 and to reflect the measurement volatility level increase, a standard end-weight parameter 3.5 of the asymmetric moving average is used to produce trend estimates for all monthly Retail series. Estimates of the trend will be improved at the current end of the time series as additional observations become available. This improvement is due to the combined effect of the concurrent seasonal adjustment methodology and the application of different asymmetric moving averages for the most recent six months (or three quarters). As a result of the improvement, most revisions to the trend estimates will be observed for the most recent six months (or three quarters).

27 Trend estimates are used to analyse the underlying behaviour of the series over time. As a result of the introduction of The New Tax System, a break in the monthly trend series has been inserted between June and July 2000. Care should therefore be taken if comparisons span this period. For more details refer to the Appendix in the December 2000 issue of this publication.

28 For further information on trend estimates, see *Information Paper: A Guide to Interpreting Time Series - Monitoring Trends, 2003* (cat. no. 1349.0) or contact the Assistant Director, Time Series Analysis on Canberra (02) 6252 6345 or by email at <time.series.analysis@abs.gov.au>.

ANALYSING TREND
ESTIMATES

29 The following terms are used in this publication to describe month to month movements in the trend series:
- in decline - percentage change in trend estimate less than zero
- no change or flat - percentage change in the trend estimate equal to zero
- weak growth - percentage change in the trend estimate of 0.1 to 0.3%
- moderate growth - percentage change in the trend estimate of 0.4 to 0.7%
- strong growth - percentage change in the trend estimate greater than 0.7%.

RELIABILITY OF ESTIMATES

30 There are two types of error possible in estimates of retail turnover:
Sampling error which occurs because a sample, rather than the entire population, is surveyed. One measure of the likely difference resulting from not including all establishments in the survey is given by the standard error, see below. Sampling error for each month will be influenced by the rotation effect of having a different third of the sample reporting each month and by some businesses in each month being replaced by other businesses so that the reporting load can be spread across retailers.
Non sampling error which arises from inaccuracies in collecting, recording and processing the data. The most significant of these errors are: misreporting of data items; deficiencies in coverage; non-response; and processing errors. Every effort is made to minimise reporting error by the careful design of questionnaires,

STANDARD ERRORS

intensive training and supervision of interviewers, and efficient data processing procedures.

31 Seasonally adjusted and trend estimates and chain volume measures are also subject to sampling variability. For seasonally adjusted estimates, the standard errors are approximately the same as for the original estimates. For trend estimates, the standard errors are likely to be smaller. For quarterly chain volume measures, the standard errors may be up to 10% higher than those for the corresponding current price estimates because of the sampling variability contained in the prices data used to deflate the current price estimates.

32 Estimates, in original terms, are available from the Downloads tab of this publication. Estimates that have an estimated relative standard error (RSE) between 10% and 25% are annotated with the symbol '^'. These estimates should be used with caution as they are subject to sampling variability too high for some purposes. Estimates with a RSE between 25% and 50% are annotated with the symbol '*', indicating that the estimates should be used with caution as they are subject to sampling variability too high for most practical purposes. Estimates with a RSE greater than 50% are annotated with the symbol '**' indicating that the sampling variability causes the estimates to be considered too unreliable for general use.

33 To further assist users in assessing the reliability of estimates, key data series has been given a grading of A to C. Where:
- A represents a relative standard error on level of less than 2%. The published estimates are highly reliable for movement analysis.
- B represents a relative standard error on level between 2% and 5%, meaning the estimates is reliable for movement analysis purposes.
- C represents a relative standard error on level between 5% and 10%, meaning users are advised to exercise some caution in interpreting movements for such series.

34 The tables below provide an indicator of reliability for the estimates in original terms. The reliability indicator is based on an average RSE derived over four years.

RELATIVE STANDARD ERRORS, By Industry Group

	Food retailing	Department Stores	Clothing and soft good retailing	Household good retailing	Other retailing	Cafes, restaurants and takeaway food services	Total
RSE (%)	B	A	B	B	B	C	A

RELATIVE STANDARD ERRORS, By State

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
RSE (%)	B	B	B	B	B	B	B	B	A

RELIABILITY OF TREND ESTIMATES

35 The trending process dampens the volatility in the original and seasonally adjusted estimates. However, trend estimates are subject to revisions as future observations become available. An indication of the possible revisions to the latest month is included in a What-if chart in 'Trend Analysis'.

ABS DATA AVAILABLE ON REQUEST

36 As well as the statistics included in this and related publication, the ABS may have other relevant data available. Inquires should be made to the Retail Business Survey contact officer on (02) 6252 5990 or any ABS office.

EXPLANATORY NOTES *continued*

RELATED PUBLICATIONS

37 Current publications and other products released by the ABS are available from the Statistics View of the ABS web site <http://www.abs.gov.au>. The ABS also issues a daily Release Advice on the web site which details products to be released in the week ahead.

ABBREVIATIONS

ABN	Australian Business Number
ABS	Australian Bureau of Statistics
ANZSIC	Australian and New Zealand Standard Industrial Classification
ARIMA	autoregressive integrated moving average
ATO	Australian Taxation Office
n.e.c.	not elsewhere classified
PAYGW	pay-as-you-go withholding
RBS	Retail Business Survey
RSE	relative standard error
TAU	type of activity unit

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