Monthly Turnover
Current prices
Seasonally adjusted


I N Q U I R I E S

For further information about these and related statistics, contact the National Information and Referral Service on 1300135070 or Neil Hamilton on Canberra (02) 62525990.

## KEY FIGURES

|  | Jul 09 <br> $\$ \boldsymbol{m}$ | Jun 09 to Jul 09 <br> $\%$ change |
| :--- | ---: | ---: |
| Turnover at current prices |  | na |
| Trend estimates | na | -1.0 |

na not available

## KEY POINTS

## SUSPENSION OF TREND ESTIMATES

- The retail trade current price trend series have been suspended as at November 2008 as it is not possible to determine the trend in retail turnover through the period affected by the Government's stimulus package and other influences associated with global economic conditions. For further details refer to the December 2008 issue of this publication.


## NEW INDUSTRY CLASSIFICATION

- The Retail trade statistics in this publication are based on the 2006 edition of Australian and New Zealand Industrial Classification (ANZSIC) replacing the ANZSIC 1993 edition. For more information on this change see page 3 of this issue.


## CURRENT PRICE

- The seasonally adjusted estimate of Australian turnover decreased 1.0\% in July 2009. This follows a decrease of $0.8 \%$ in June 2009 and an increase of $1.2 \%$ in May 2009.

■ In original terms, Australian turnover increased 2.3\% in July 2009 compared with June 2009. Chains and other large retailers (which are completely enumerated) increased 3.2\% and the estimate for 'smaller' retailers increased $0.8 \%$. Australian turnover increased $5.1 \%$ in July 2009 compared with July 2008.

- In seasonally adjusted terms, Food retailing ( $-1.9 \%$ ), Household goods retailing ( $-3.6 \%$ ) and Clothing, footwear and personal accessory retailing ( $-0.6 \%$ ) decreased in July 2009 while Department stores $(+2.5 \%)$, Other retailing $(+0.8 \%)$ and Cafes, restaurants and takeaway food services $(+1.0 \%)$ increased.
- In seasonally adjusted terms, all states, except the Northern Territory, decreased in July 2009. States with the largest decreases were Queensland and South Australia (both $-1.4 \%)$ and New South Wales (-1.2\%).

FORTHCOMING ISSUES

REVISIONS

TIME SERIES DATA

SAMPLING ERRORS

ISSUE
August 2009
September 2009
October 2009
November 2009
December 2009
January 2010

## RELEASE DATE

30 September 2009
4 November 2009
3 December 2009
7 January 2010
4 February 2010
2 March 2010

With the introduction of Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (cat. no. 1292.0), all estimates in original terms, except Department stores, have been revised for all time series. For more information on this change see page 3 of this issue.

Data available from the Downloads tab of this issue on the ABS website include longer time series of tables in this publication and the following additional current price monthly series:

- Retail turnover by state and 15 industry subgroups in trend, seasonally adjusted and original terms.

Completely enumerated and sample sector time series normally released with this publication are not available with this issue. Further analysis is being undertaken to validate the historical series which has been recalculated on an ANZSIC 2006 basis. This does not impact on the series released with this issue. The following series will be released with the August 2009 issue:

- Retail turnover completely enumerated and sample sector, by six industry groups in original terms
- Retail turnover completely enumerated and sample sector, by state in original terms
- Retail turnover completely enumerated sector, total level in trend, seasonally adjusted and original terms.

Standard errors for the Australian estimates (original data) for July 2009 contained in this publication are:

| Data Series | Estimate | Standard error |
| :---: | :---: | :---: |
| Level of retail turnover (\$m) | 19335.7 | 140.3 |
| Change from preceding month (\$m) | 432.8 | 86.5 |
| \% change from preceding month (\%) | 2.3 | 0.5 |

For more information see the Explanatory Notes, paragraphs 34-37.

Brian Pink
Australian Statistician

INTRODUCTION

SCOPE OF RETAIL TRADE STATISTICS UNDER
ANZSIC 2006

From this issue, the series presented in this publication will be compiled and presented according to a revised industry classification. Previous issues of this publication were based on Australian and New Zealand Standard Industrial Classification (ANZSIC), 1993 (cat. no. 1292.0). Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (cat. no. 1292.0) will be used for this and future issues. This issue includes monthly current price estimates with quarterly chain volume measures, up to June quarter 2009, to be first released on an ANZSIC 2006 basis in the August 2009 issue.

Information paper: ANZSIC 2006 Implementation in Retail Trade Statistics, July 2009 (cat no. 8501.0.55.006) advised of the introduction of the revised industry classification, provided background to the change and described the impact on the presentation of statistics in this publication. The information paper also provided mock-ups of the publication and time series spreadsheets as they will appear from this issue and a concordance between the current and new time series identifiers.

This article provides information on the scope of Retail trade statistics under ANZSIC 2006 and the impact on time series and seasonal adjustment.

The scope of the Retail trade series will align with the Retail trade Division of ANZSIC 2006 with several exceptions. First, Retail trade statistics will continue to include selected food services (Cafes, restaurants and takeaway food services) which under ANZSIC 2006 are included in the Accommodation and food services Division. Second, the ANZSIC 2006 Retail trade Division includes the following industries which will continue to be excluded from Retail trade statistics:

- Motor vehicle retailing
- Motor vehicle parts and tyre retailing
- Fuel retailing
- Marine equipment retailing.

Household equipment repair services are included in the ANZSIC 1993 Retail trade Division but were out-of-scope of Retail trade statistics. Under ANZSIC 2006 these services are not included in the Retail trade Division and remain out-of-scope of the statistics.

Paragraph 5 in the Explanatory notes defines the industry groupings used to present statistics in this publication and defines each Retail trade industry subgroup in terms of ANZSIC 2006 classes.

Further details on the classification changes impacting on Retail trade are described in Information paper ANZSIC 2006 Implementation in Retail Trade Statistics, July 2009 (cat. no. 8501.0.55.006).

Introducing ANZSIC 2006 had several impacts on the Retail trade time series. Some businesses in an industry class or part of a class moved into-scope or out-of-scope of Retail trade or the industry subgroup to which they contribute may have changed. These changes impacted on:

- the population of businesses included in Retail trade
- the way these businesses are grouped together for sampling purposes
- the sample selected
- the industries used to present the statistics.

IMPACT ON TIME SERIES AND SEASONAL

ADJUSTMENT continued

Creating a historical ANZSIC 2006 series

In addition, the benchmarks used to group businesses on the Retail trade survey frame have been updated to reflect more up-to-date information, primarily Total sales reported to the Australian Taxation Office on Business Activity Statements. The number of businesses selected in the Retail trade sample has not changed significantly. However, the sample has been redesigned to take into account the updated industry and benchmark information. These changes resulted in only 1,500 of the 2,700 'smaller' businesses selected in the ANZSIC 1993 sample also being selected in the ANZSIC 2006 sample. All the most significant 'larger businesses' that remain in-scope were selected in both the ANZSIC 1993 and ANZSIC 2006 samples.

The ABS constructed an interim historical series based on the ANZSIC 2006 industry classification at the state by industry subgroup level from the beginning of the series (in 1982) up until June 2009. Because data were not collected on an ANZSIC 2006 basis for this whole period, this interim historical series are based on ratios applied to the existing ANZSIC 1993 series. The ratios account for businesses moving between industries, and businesses coming into or out of scope of the series. These ratios were calculated separately at the Total and completely enumerated levels for each state by industry subgroup and applied to the ANZSIC 1993 series.

This resulted in an interim historical series on an ANZSIC 2006 industry basis that represented a first estimate of what the series would have looked like if they were collected using the new industry definition. To refine this interim estimate the ABS conducted the Retail Business Survey on both an ANZSIC 1993 and ANZSIC 2006 basis for three months (April to June 2009). The difference between the actual series based on the Survey and the initial historical series was measured for these three months. This difference has been backcast through the monthly interim historical series to July 1994 to create the final historical series.

The same process was used to calculate a historical series for the completely enumerated sector. The historical series for the sample sector was created by deducting the completely enumerated sector series from the Total series.

The aim of the above process was to create a time series of estimates on an ANZSIC 2006 basis as continuous and comparable as possible and to maintain, as far as possible, the integrity of the period to period seasonally adjusted movements. This has been achieved at the Australia and broader industry and state levels but the process can result in some volatility at the more detailed state by industry subgroup level.

Estimates for April to July 2009 are based on the ANZSIC 2006 Retail Business Survey conducted for these months and do not incorporate backcast data.

The seasonal pattern for the ANZSIC 2006 estimates will initially be unknown and the ANZSIC 1993 seasonal pattern will be used as a proxy. It is possible that with the introduction of ANZSIC 2006 the ANZSIC 1993 seasonal patterns may not be as relevant to some series. For example Watch and jewellery retailing moved from the Other retailing n.e.c. industry subgroup under ANZSIC 1993 to the Footwear and other personal accessory retailing industry subgroup under ANZSIC 2006. The seasonal patterns for watch and jewellery retailers appear to differ from other businesses in the Footwear and other personal accessory retailing industry subgroup. As a result, seasonal

## CHANGES TO MONTHLY RETAIL TRADE STATISTICS continued

## Seasonal adjustment continued

Summary of impact
breaks have been inserted into the Footwear and other personal accessory retailing industry subgroup to minimise the impact on this series of the different seasonal patterns for Watch and jewellery retailing. There is not currently sufficient information to assess if seasonal breaks are required for other series. The combined adjustment factors will evolve over time to reflect any new seasonal or trading day patterns but there may be increased volatility in some seasonally adjusted series in the short term. The series will be assessed for seasonal breaks in the 2010 annual seasonal reanalysis.

The Retail trade trend series have been suspended as at November 2008 as it is not possible to determine the trend in retail turnover through the period affected by the Government's stimulus packages and other influences associated with global economic conditions.

The following chart compares Australian turnover on an ANZSIC 1993 basis (as published in the June 2009 issue of this publication) and an ANZSIC 2006 basis (as published in this issue).

RETAIL TURNOVER, Australia-Seasonally adjusted


In original terms, there is one industry subgroup, Department stores, that has had no change to estimates due to the introduction of ANZSIC 2006. Some industry subgroups had little change to their estimates, e.g. Supermarket and grocery stores series is $1 \%$ higher for June 2009 on an ANZSIC 2006 basis. Some industry subgroups had larger changes due to changes in the scope of the industry subgroup. For example, the level estimate for Other specialised food retailing is $28 \%$ lower for June 2009 on an ANZSIC 2006 basis due to businesses that manufacture bread, cakes and pastries on premises now being out-of-scope and tobacconists now being included in Other retailing.

If you have any queries about the changes described in this paper please contact Rod Cowie on (02) 62526720.

## ANALYSIS

TOTAL RETAIL—MONTHLY
The chart below shows the trend series, to November 2008, and seasonally adjusted series, to July 2009.

The current price, monthly seasonally adjusted series are estimated using forward seasonal factors based on data to the November 2008 reference month. Therefore, the seasonal adjustment factors have not been influenced by spending associated with the stimulus packages.

In current price seasonally adjusted terms, Australian turnover decreased by $1.0 \%$ in July 2009 following a decline of $0.8 \%$ in June. Australian turnover has increased in seven of the eight months prior to June 2009 including a $4.3 \%$ increase in December 2008.

All industry and state seasonally adjusted estimates for July 2009 are above the level of the comparable trend estimate at November 2008.

RETAIL TURNOVER(a), Australia

(a) Estimate for July to October 2008 are derived from the one-in, two-out sampling method. (b) Trend series suspended as at November 2008.

| Month | Food retailing | Household goods retailing | Clothing, footwear \& personal accessory retailing | Department stores | Other retailing | Cafes, restaurants \& takeaway food services | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ORIGINAL (\$ million) |  |  |  |  |  |  |  |
| 2008 |  |  |  |  |  |  |  |
| May | 7163.6 | 3349.2 | 1541.9 | 1421.1 | 2530.9 | 2176.7 | 18183.5 |
| June | 6761.8 | 3443.7 | 1402.5 | 1401.6 | 2378.4 | 2089.9 | 17477.9 |
| July | 7240.5 | 3413.8 | 1460.4 | 1582.3 | 2521.7 | 2172.6 | 18391.2 |
| August | 7355.4 | 3411.0 | 1419.4 | 1268.4 | 2540.0 | 2204.0 | 18198.2 |
| September | 7095.7 | 3327.8 | 1468.3 | 1383.3 | 2485.9 | 2124.2 | 17885.2 |
| October | 7642.8 | 3530.5 | 1547.4 | 1452.4 | 2668.9 | 2302.4 | 19144.5 |
| November | 7630.1 | 3595.6 | 1594.1 | 1675.9 | 2740.0 | 2242.8 | 19478.5 |
| December | 8784.9 | 4908.6 | 2308.7 | 2886.1 | 3816.6 | 2479.4 | 25184.3 |
| 2009 |  |  |  |  |  |  |  |
| January | 7985.3 | 3560.7 | 1543.2 | 1451.0 | 2525.9 | 2318.3 | 19384.5 |
| February | 7151.3 | 2968.2 | 1259.1 | 1056.6 | 2349.1 | 2069.5 | 16853.8 |
| March | 7832.4 | 3301.6 | 1518.6 | 1386.9 | 2585.3 | 2303.2 | 18927.9 |
| April | 7710.6 | 3203.9 | 1579.8 | 1509.1 | 2519.0 | 2326.9 | 18849.3 |
| May | 7763.2 | 3379.7 | 1709.3 | 1519.4 | 2624.2 | 2401.7 | 19397.5 |
| June | 7399.3 | 3620.6 | 1568.0 | 1500.5 | 2551.6 | 2263.0 | 18902.9 |
| July | 7700.6 | 3452.3 | 1514.7 | 1570.7 | 2682.3 | 2415.1 | 19335.7 |

SEASONALLY ADJUSTED (\$ million)

| 2008 |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| May | 7200.1 | 3491.3 | 1533.3 | 1524.0 | 2618.4 | 2178.5 | 18545.6 |
| June | 7230.9 | 3506.7 | 1469.6 | 1428.1 | 2578.8 | 2184.0 | 18398.1 |
| July | 7324.7 | 3494.0 | 1519.6 | 1530.7 | 2594.3 | 2185.3 | 18648.7 |
| August | 7407.4 | 3478.9 | 1528.9 | 1509.3 | 2608.2 | 2191.4 | 18724.1 |
| September | 7335.6 | 3415.7 | 1503.0 | 1527.2 | 2581.4 | 2176.3 | 18539.2 |
| October | 7420.7 | 3430.6 | 1503.3 | 1507.1 | 2609.7 | 2198.1 | 18669.5 |
| November | 7510.5 | 3392.7 | 1508.7 | 1501.6 | 2600.4 | 2202.8 | 18716.6 |
| December | 7686.4 | 3701.6 | 1594.6 | 1604.6 | 2685.0 | 2254.2 | 19526.5 |
| 200 |  |  |  |  |  |  |  |
| January | 7817.2 | 3556.3 | 1599.7 | 1599.8 | 2671.3 | 2317.6 | 19561.8 |
| February | 7775.2 | 3413.7 | 1559.2 | 1438.8 | 2664.7 | 2284.4 | 19136.0 |
| March | 7819.8 | 3480.9 | 1640.1 | 1631.7 | 2702.8 | 2317.8 | 19593.1 |
| April | 7832.5 | 3590.5 | 1688.3 | 1574.9 | 2704.7 | 2352.7 | 19743.7 |
| May | 7896.8 | 3538.4 | 1723.1 | 1676.4 | 2745.5 | 2409.5 | 19989.8 |
| June | 7907.3 | 3660.4 | 1626.5 | 1513.8 | 2738.7 | 2374.7 | 19821.3 |
| July | 7759.7 | 3528.7 | 1616.9 | 1552.0 | 2760.7 | 2398.0 | 19616.0 |

TREND (\$ million) (b)

| 2008 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| May | 7209.3 | 3497.3 | 1513.9 | 1528.2 | 2589.1 | 2178.3 | 18493.5 |
| June | 7253.4 | 3492.5 | 1511.9 | 1527.2 | 2592.4 | 2180.4 | 18532.9 |
| July | 7300.7 | 3481.7 | 1510.3 | 1524.7 | 2594.8 | 2183.5 | 18573.8 |
| August | 7347.7 | 3463.9 | 1509.6 | 1520.9 | 2596.9 | 2186.9 | 18610.9 |
| September | 7393.5 | 3443.7 | 1509.2 | 1516.1 | 2598.6 | 2190.2 | 18644.1 |
| October | 7438.4 | 3423.3 | 1508.2 | 1511.2 | 2600.3 | 2193.4 | 18674.6 |
| November | 7477.9 | 3402.9 | 1507.8 | 1507.2 | 2599.5 | 2197.2 | 18699.3 |
| December | na | na | na | na | na | na | na |
| 2009 |  |  |  |  |  |  |  |
| January | na | na | na | na | na | na | na |
| February | na | na | na | na | na | na | na |
| March | na | na | na | na | na | na | na |
| April | na | na | na | na | na | na | na |
| May | na | na | na | na | na | na | na |
| June | na | na | na | na | na | na | na |
| July | na | na | na | na | na | na | na |

na not available
(b) Trend calculated on data up to November 2008.
(a) See paragraph 4 of Explanatory Notes.

| Month | Food retailing | Household goods retailing | Clothing, footwear \& personal accessory retailing | Department stores | Other retailing | Cafes, restaurants \& takeaway food services | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | ORIGINAL (\% change from preceding month) |  |  |  |  |  |  |
| 2008 |  |  |  |  |  |  |  |
| May | 4.1 | 3.4 | 3.7 | 1.8 | 5.9 | 1.3 | 3.7 |
| June | -5.6 | 2.8 | -9.0 | -1.4 | -6.0 | -4.0 | -3.9 |
| July | 7.1 | -0.9 | 4.1 | 12.9 | 6.0 | 4.0 | 5.2 |
| August | 1.6 | -0.1 | -2.8 | -19.8 | 0.7 | 1.4 | -1.0 |
| September | -3.5 | -2.4 | 3.4 | 9.1 | -2.1 | -3.6 | -1.7 |
| October | 7.7 | 6.1 | 5.4 | 5.0 | 7.4 | 8.4 | 7.0 |
| November | -0.2 | 1.8 | 3.0 | 15.4 | 2.7 | -2.6 | 1.7 |
| December | 15.1 | 36.5 | 44.8 | 72.2 | 39.3 | 10.5 | 29.3 |
| 2009 |  |  |  |  |  |  |  |
| January | -9.1 | -27.5 | -33.2 | -49.7 | -33.8 | -6.5 | -23.0 |
| February | -10.4 | -16.6 | -18.4 | -27.2 | -7.0 | -10.7 | -13.1 |
| March | 9.5 | 11.2 | 20.6 | 31.3 | 10.1 | 11.3 | 12.3 |
| April | -1.6 | -3.0 | 4.0 | 8.8 | -2.6 | 1.0 | -0.4 |
| May | 0.7 | 5.5 | 8.2 | 0.7 | 4.2 | 3.2 | 2.9 |
| June | -4.7 | 7.1 | -8.3 | -1.2 | -2.8 | -5.8 | -2.5 |
| July | 4.1 | -4.6 | -3.4 | 4.7 | 5.1 | 6.7 | 2.3 |

SEASONALLY ADJUSTED (\% change from preceding month)

| 2008 |  |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| May | 1.0 | -0.3 | 0.5 | -0.6 | 2.2 | -0.1 | 0.6 |
| June | 0.4 | 0.4 | -4.2 | -6.3 | -1.5 | 0.3 | -0.8 |
| July | 1.3 | -0.4 | 3.4 | 7.2 | 0.6 | 0.1 | 1.4 |
| August | 1.1 | -0.4 | 0.6 | -1.4 | 0.5 | 0.3 | 0.4 |
| September | -1.0 | -1.8 | -1.7 | 1.2 | -1.0 | -0.7 | -1.0 |
| October | 1.2 | 0.4 | 0.0 | -1.3 | 1.1 | 1.0 | 0.7 |
| November | 1.2 | -1.1 | 0.4 | -0.4 | -0.4 | 0.2 | 0.3 |
| December | 2.3 | 9.1 | 5.7 | 6.9 | 3.3 | 2.3 | 4.3 |
| 209 |  |  |  |  |  |  |  |
| January | 1.7 | -3.9 | 0.3 | -0.3 | -0.5 | 2.8 | 0.2 |
| February | -0.5 | -4.0 | -2.5 | -10.1 | -0.2 | -1.4 | -2.2 |
| March | 0.6 | 2.0 | 5.2 | 13.4 | 1.4 | 1.5 | 2.4 |
| April | 0.2 | 3.1 | 2.9 | -3.5 | 0.1 | 1.5 | 0.8 |
| May | 0.8 | -1.5 | 2.1 | 6.4 | 1.5 | 2.4 | 1.2 |
| June | 0.1 | 3.4 | -5.6 | -9.7 | -0.2 | -1.4 | -0.8 |
| July | -1.9 | -3.6 | -0.6 | 2.5 | 0.8 | 1.0 | -1.0 |

TREND (\% change from preceding month)(b)
2008

| May | 0.5 | -0.1 | -0.1 | 0.0 | 0.2 | -0.1 | 0.2 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| June | 0.6 | -0.1 | -0.1 | -0.1 | 0.1 | 0.1 | 0.2 |
| July | 0.7 | -0.3 | -0.1 | -0.2 | 0.1 | 0.1 | 0.2 |
| August | 0.6 | -0.5 | 0.0 | -0.3 | 0.1 | 0.2 | 0.2 |
| September | 0.6 | -0.6 | 0.0 | -0.3 | 0.1 | 0.1 | 0.2 |
| October | 0.6 | -0.6 | -0.1 | -0.3 | 0.1 | 0.1 | 0.2 |
| November | 0.5 | -0.6 | 0.0 | -0.3 | 0.0 | 0.2 | 0.1 |
| December | na | na | na | na | na | na | na |
| 009 |  |  |  |  |  |  |  |
| January | na | na | na | na | na | na | na |
| February | na | na | na | na | na | na | na |
| March | na | na | na | na | na | na | na |
| April | na | na | na | na | na | na | na |
| May | na | na | na | na | na | na | na |
| June | na | na | na | na | na | na | na |
| July | na | na | na | na | na | na | na |

na not available
(a) See paragraph 4 of Explanatory Notes.
(b) Trend calculated on data up to November 2008.

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


| ORIGINAL (\$ million) |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2008 |  |  |  |  |  |  |  |  |  |
| May | 5588.5 | 4517.8 | 3734.9 | 1335.1 | 2058.9 | 400.8 | 197.0 | 350.5 | 18183.5 |
| June | 5376.1 | 4313.1 | 3622.1 | 1292.3 | 1962.5 | 377.3 | 198.9 | 335.6 | 17477.9 |
| July | 5498.5 | 4483.8 | 3965.5 | 1375.0 | 2105.3 | 405.7 | 219.9 | 337.5 | 18391.2 |
| August | 5446.9 | 4477.7 | 3919.0 | 1345.7 | 2051.2 | 401.2 | 220.1 | 336.4 | 18198.2 |
| September | 5371.9 | 4373.5 | 3862.6 | 1323.5 | 2021.4 | 390.9 | 211.2 | 330.2 | 17885.2 |
| October | 5763.7 | 4774.8 | 4042.6 | 1430.5 | 2135.5 | 426.9 | 214.0 | 356.6 | 19144.5 |
| November | 5945.4 | 4897.4 | 4050.0 | 1432.9 | 2143.1 | 433.3 | 207.8 | 368.6 | 19478.5 |
| December | 7733.9 | 6379.8 | 5186.4 | 1854.0 | 2749.0 | 571.1 | 246.9 | 463.1 | 25184.3 |
| 2009 |  |  |  |  |  |  |  |  |  |
| January | 5990.9 | 4818.1 | 4064.0 | 1422.5 | 2110.0 | 430.5 | 195.5 | 353.0 | 19384.5 |
| February | 5189.9 | 4244.2 | 3453.3 | 1229.6 | 1842.4 | 391.6 | 182.3 | 320.6 | 16853.8 |
| March | 5751.0 | 4804.1 | 3932.4 | 1389.9 | 2053.4 | 431.8 | 210.6 | 354.6 | 18927.9 |
| April | 5795.8 | 4770.4 | 3890.2 | 1374.9 | 2028.6 | 428.1 | 205.7 | 355.7 | 18849.3 |
| May | 5943.7 | 4852.4 | 4038.8 | 1412.8 | 2129.3 | 429.8 | 217.6 | 373.1 | 19397.5 |
| June | 5799.4 | 4717.1 | 3952.6 | 1373.2 | 2066.7 | 412.2 | 220.5 | 361.2 | 18902.9 |
| July | 5877.2 | 4793.7 | 4096.8 | 1401.3 | 2134.2 | 432.4 | 240.0 | 360.0 | 19335.7 |

## SEASONALLY ADJUSTED (\$ million)

| 2008 |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| May | 5714.5 | 4589.9 | 3854.9 | 1359.6 | 2072.7 | 409.1 | 194.9 | 349.9 | 18545.6 |
| June | 5660.0 | 4514.1 | 3822.8 | 1374.2 | 2078.5 | 406.7 | 196.2 | 345.6 | 18398.1 |
| July | 5652.0 | 4613.6 | 3916.0 | 1389.1 | 2118.4 | 412.9 | 199.9 | 346.8 | 18648.7 |
| August | 5663.2 | 4645.9 | 3938.3 | 1396.9 | 2118.2 | 415.3 | 202.2 | 344.1 | 18724.1 |
| September | 5568.2 | 4613.1 | 3911.6 | 1391.4 | 2089.3 | 415.8 | 204.7 | 345.3 | 18539.2 |
| October | 5649.6 | 4662.7 | 3913.6 | 1392.2 | 2078.5 | 418.2 | 205.2 | 349.5 | 18669.5 |
| November | 5643.7 | 4707.6 | 3922.7 | 1390.9 | 2071.3 | 421.2 | 208.2 | 351.0 | 18716.6 |
| December | 5918.7 | 4906.0 | 4109.6 | 1431.1 | 2133.5 | 441.8 | 219.8 | 366.0 | 19526.5 |
| 2009 |  |  |  |  |  |  |  |  |  |
| January | 6038.4 | 4889.4 | 4056.2 | 1419.5 | 2149.5 | 424.8 | 218.0 | 366.0 | 19561.8 |
| February | 5898.9 | 4789.0 | 3961.0 | 1386.5 | 2089.3 | 430.7 | 217.7 | 362.8 | 19136.0 |
| March | 5968.3 | 4888.7 | 4116.2 | 1430.4 | 2151.1 | 443.3 | 228.3 | 366.7 | 19593.1 |
| April | 6059.6 | 4958.1 | 4160.2 | 1435.8 | 2096.8 | 444.6 | 219.0 | 369.6 | 19743.7 |
| May | 6118.1 | 4959.3 | 4227.0 | 1461.9 | 2185.4 | 445.5 | 219.1 | 373.5 | 19989.8 |
| June | 6114.2 | 4958.5 | 4123.6 | 1434.0 | 2165.8 | 439.9 | 214.5 | 370.8 | 19821.3 |
| July | 6040.5 | 4924.8 | 4064.8 | 1413.4 | 2146.8 | 436.9 | 218.8 | 370.0 | 19616.0 |

TREND (\$ million)(a)

| 2008 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| May | 5686.9 | 4565.3 | 3852.4 | 1361.8 | 2077.0 | 406.3 | 195.0 | 348.8 | 18493.5 |
| June | 5669.9 | 4575.5 | 3870.2 | 1372.9 | 2090.5 | 409.3 | 197.2 | 347.4 | 18532.9 |
| July | 5654.4 | 4593.8 | 3888.0 | 1382.3 | 2097.3 | 412.0 | 199.6 | 346.5 | 18573.8 |
| August | 5641.3 | 4616.2 | 3904.0 | 1388.9 | 2098.0 | 414.3 | 201.8 | 346.4 | 18610.9 |
| September | 5631.4 | 4640.2 | 3916.9 | 1393.2 | 2095.2 | 416.5 | 204.0 | 346.8 | 18644.1 |
| October | 5624.4 | 4664.6 | 3927.2 | 1396.1 | 2090.2 | 418.6 | 206.0 | 347.6 | 18674.6 |
| November | 5619.6 | 4687.9 | 3933.9 | 1397.2 | 2083.5 | 420.5 | 208.0 | 348.7 | 18699.3 |
| December | na | na | na | na | na | na | na | na | na |
| 2009 |  |  |  |  |  |  |  |  |  |
| January | na | na | na | na | na | na | na | na | na |
| February | na | na | na | na | na | na | na | na | na |
| March | na | na | na | na | na | na | na | na | na |
| April | na | na | na | na | na | na | na | na | na |
| May | na | na | na | na | na | na | na | na | na |
| June | na | na | na | na | na | na | na | na | na |
| July | na | na | na | na | na | na | na | na | na |

[^0](a) Trend calculated on data up to November 2008.

RETAIL TURNOVER, By State

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


| ORIGINAL (\% change from preceding month) |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2008 |  |  |  |  |  |  |  |  |  |
| May | 3.2 | 3.2 | 4.5 | 3.6 | 4.0 | 4.0 | 7.9 | 3.7 | 3.7 |
| June | -3.8 | -4.5 | -3.0 | -3.2 | -4.7 | -5.9 | 0.9 | -4.2 | -3.9 |
| July | 2.3 | 4.0 | 9.5 | 6.4 | 7.3 | 7.5 | 10.6 | 0.6 | 5.2 |
| August | -0.9 | -0.1 | -1.2 | -2.1 | -2.6 | -1.1 | 0.1 | -0.3 | -1.0 |
| September | -1.4 | -2.3 | -1.4 | -1.6 | -1.5 | -2.6 | -4.0 | -1.8 | -1.7 |
| October | 7.3 | 9.2 | 4.7 | 8.1 | 5.6 | 9.2 | 1.3 | 8.0 | 7.0 |
| November | 3.2 | 2.6 | 0.2 | 0.2 | 0.4 | 1.5 | -2.9 | 3.4 | 1.7 |
| December | 30.1 | 30.3 | 28.1 | 29.4 | 28.3 | 31.8 | 18.8 | 25.6 | 29.3 |
| 2009 |  |  |  |  |  |  |  |  |  |
| January | -22.5 | -24.5 | -21.6 | -23.3 | -23.2 | -24.6 | -20.8 | -23.8 | -23.0 |
| February | -13.4 | -11.9 | -15.0 | -13.6 | -12.7 | -9.0 | -6.8 | -9.2 | -13.1 |
| March | 10.8 | 13.2 | 13.9 | 13.0 | 11.5 | 10.3 | 15.6 | 10.6 | 12.3 |
| April | 0.8 | -0.7 | -1.1 | -1.1 | -1.2 | -0.9 | -2.4 | 0.3 | -0.4 |
| May | 2.6 | 1.7 | 3.8 | 2.8 | 5.0 | 0.4 | 5.8 | 4.9 | 2.9 |
| June | -2.4 | -2.8 | -2.1 | -2.8 | -2.9 | -4.1 | 1.4 | -3.2 | -2.5 |
| July | 1.3 | 1.6 | 3.6 | 2.0 | 3.3 | 4.9 | 8.8 | -0.3 | 2.3 |

## SEASONALLY ADJUSTED (\% change from preceding month)

| 2008 |  |  |  |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| May | 0.3 | 0.8 | 0.8 | 1.3 | 0.4 | 1.1 | 0.4 | -0.2 | 0.6 |
| June | -1.0 | -1.6 | -0.8 | 1.1 | 0.3 | -0.6 | 0.7 | -1.2 | -0.8 |
| July | -0.1 | 2.2 | 2.4 | 1.1 | 1.9 | 1.5 | 1.9 | 0.4 | 1.4 |
| August | 0.2 | 0.7 | 0.6 | 0.6 | 0.0 | 0.6 | 1.1 | -0.8 | 0.4 |
| September | -1.7 | -0.7 | -0.7 | -0.4 | -1.4 | 0.1 | 1.2 | 0.3 | -1.0 |
| October | 1.5 | 1.1 | 0.1 | 0.1 | -0.5 | 0.6 | 0.3 | 1.2 | 0.7 |
| November | -0.1 | 1.0 | 0.2 | -0.1 | -0.3 | 0.7 | 1.5 | 0.4 | 0.3 |
| December | 4.9 | 4.2 | 4.8 | 2.9 | 3.0 | 4.9 | 5.5 | 4.3 | 4.3 |
|  |  |  |  |  |  |  |  |  |  |
| January | 2.0 | -0.3 | -1.3 | -0.8 | 0.8 | -3.9 | -0.8 | 0.0 | 0.2 |
| February | -2.3 | -2.1 | -2.3 | -2.3 | -2.8 | 1.4 | -0.1 | -0.9 | -2.2 |
| March | 1.2 | 2.1 | 3.9 | 3.2 | 3.0 | 2.9 | 4.9 | 1.1 | 2.4 |
| April | 1.5 | 1.4 | 1.1 | 0.4 | -2.5 | 0.3 | -4.1 | 0.8 | 0.8 |
| May | 1.0 | 0.0 | 1.6 | 1.8 | 4.2 | 0.2 | 0.1 | 1.0 | 1.2 |
| June | -0.1 | 0.0 | -2.4 | -1.9 | -0.9 | -1.3 | -2.1 | -0.7 | -0.8 |
| July | -1.2 | -0.7 | -1.4 | -1.4 | -0.9 | -0.7 | 2.0 | -0.2 | -1.0 |

TREND (\% change from preceding month)(a)

| 2008 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| May | -0.3 | 0.0 | 0.4 | 0.9 | 0.7 | 0.7 | 1.0 | -0.3 | 0.2 |
| June | -0.3 | 0.2 | 0.5 | 0.8 | 0.6 | 0.7 | 1.2 | -0.4 | 0.2 |
| July | -0.3 | 0.4 | 0.5 | 0.7 | 0.3 | 0.6 | 1.2 | -0.3 | 0.2 |
| August | -0.2 | 0.5 | 0.4 | 0.5 | 0.0 | 0.6 | 1.1 | 0.0 | 0.2 |
| September | -0.2 | 0.5 | 0.3 | 0.3 | -0.1 | 0.5 | 1.1 | 0.1 | 0.2 |
| October | -0.1 | 0.5 | 0.3 | 0.2 | -0.2 | 0.5 | 1.0 | 0.2 | 0.2 |
| November | -0.1 | 0.5 | 0.2 | 0.1 | -0.3 | 0.5 | 1.0 | 0.3 | 0.1 |
| December | na | na | na | na | na | na | na | na | na |
| 2009 |  |  |  |  |  |  |  |  |  |
| January | na | na | na | na | na | na | na | na | na |
| February | na | na | na | na | na | na | na | na | na |
| March | na | na | na | na | na | na | na | na | na |
| April | na | na | na | na | na | na | na | na | na |
| May | na | na | na | na | na | na | na | na | na |
| June | na | na | na | na | na | na | na | na | na |
| July | na | na | na | na | na | na | na | na | na |

na not available
(a) Trend calculated on data up to November 2008

INTRODUCTION

DEFINING RETAIL TRADE

1 This publication presents estimates of the value of turnover of "retail trade" businesses classified by industry, and by state and territory. For the purposes of this publication "retail trade" includes those industries as defined in paragraphs 4 and 5.

2 The estimates of turnover are compiled from the monthly Retail Business Survey. About 500 'large' businesses are included in the survey every month, while a sample of about 2,750 'smaller' businesses is selected. The 'large' business' contribution of approximately $62 \%$ of the total estimate ensures a highly reliable Australian total turnover estimate.
3 Monthly estimates are presented in current price terms. Quarterly chain volume measures at the state and industry levels are updated with the March, June, September and December issues of this publication.

4 The industries included in the survey are as defined in the Australian and New Zealand Standard Industrial Classification (ANZSIC) 2006 (cat. no. 1292.0). Industry statistics in this publication are presented at two levels of detail:

- Industry group - the broadest industry level comprising 6 industry groups. This level is used to present monthly current price and quarterly chain volume measure estimates in this publication.
- Industry subgroup - the most detailed industry level comprising 15 industry subgroups. This level is used to present monthly current price estimates in time series spreadsheets.

5 The following shows the level at which retail trade statistics are released and defines each industry subgroup in terms of ANZSIC 2006 classes:

- Food retailing

Supermarket and grocery stores and non-petrol sales (convenience stores) of selected fuel retailing

Supermarket and grocery stores (4110)
non-petrol sales (convenience stores) of selected Fuel retailing (4000)
Liquor retailing
Liquor retailing (4123)
Other specialised food retailing
Fresh meat, fish and poultry retailing (4121)
Fruit \& vegetable retailing (4122)
Other specialised food retailing (4129)

- Household goods retailing

Furniture, floor coverings, houseware and textile goods retailing
Furniture retailing (4211)
Floor coverings retailing (4212)
Houseware retailing (4213)
Manchester and other textile goods retailing (4214)
Electrical and electronic goods retailing
Electrical, electronic and gas appliance retailing (4221)
Computer and computer peripheral retailing (4222)
Other electrical and electronic goods retailing (4229)
Hardware, building \& garden supplies retailing
Hardware and building supplies retailing (4231)
Garden supplies retailing (4232)

## EXPLANATORY NOTES continued

DEFINING RETAIL TRADE continued

- Clothing, footwear and personal accessory retailing

Clothing retailing Clothing retailing (4251)
Footwear and other personal accessory retailing
Footwear retailing (4252)
Watch and jewellery retailing (4253)
Other personal accessory retailing (4259)

- Department stores (4260)
- Other retailing

Newspaper and book retailing
Newspaper and book retailing (4244)
Other recreational goods retailing
Sport and camping equipment retailing (4241)
Entertainment media retailing (4242)
Toy and game retailing (4243)
Pharmaceutical, cosmetic and toiletry goods retailing
Pharmaceutical, cosmetic and toiletry goods retailing (4271)
Other retailing n.e.c
Stationery goods retailing (4272)
Antique and used goods retailing (4273)
Flower retailing (4274)
Other-store based retailing n.e.c (4279)
Non-store retailing (4310)
Retail commission-based buying and/or selling (4320)

- Cafes, restaurants and takeaway food services

Cafes, restaurants and catering services
Cafes and restaurants (4511)
Catering services (4513)
Takeaway food services
Takeaway food services (4512)
SCOPE AND COVERAGE

6 The scope of the Retail Business Survey is all employing retail trade businesses who predominantly sell to households. Like most Australian Bureau of Statistics (ABS) economic surveys, the frame used for the Survey 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 included on the ABS Business Register is classified to the ANZSIC industry in which it mainly operates. The frame is supplemented with information about a small number of businesses which are classified to a non-retail trade industry but which have significant retail trade activity.

7 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.

8 To improve coverage and the quality of the estimates and to reduce the cost to the business community of reporting information to the ABS, turnover for franchisees is collected directly from a number of franchise head offices. The franchisees included in this reporting are identified and removed from the frame.

9 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.

10 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.

11 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 most economic collections.

12 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 population consists typically of large, complex and diverse businesses. The statistical unit used in the Retail Business Survey for this population is the Type of Activity Unit. The Type of Activity Unit 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 Type of Activity Unit is created which covers all the operations within an ANZSIC subdivision and the unit is classified to that subdivision. Where a business cannot supply adequate data for each industry, a Type of Activity Unit is formed which contains activity in more than one industry subdivision.

13 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.
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. This sample replacement occurs in the first month of each quarter which may increase the volatility of estimates between this month and the previous month especially at the state by industry subgroup level.

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

16 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.

SURVEY METHODOLOGY
continued

DEFINITION OF TURNOVER

SEASONAL ADJUSTMENT AND
TREND ESTIMATION

17 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 each state/territory in which the business operates. Turnover for the smaller businesses is allocated to the state of their mailing address as recorded on the ABS Business Register.

18 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.); and
- from July 2000, the goods and services tax.

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. annual patterns in sales, such as increased spending in December as a result of Christmas
- trading day influences arising from weekly patterns in sales and the varying length of each month and the varying number of Sundays, Mondays, Tuesdays, etc. in each month
- an Easter proximity effect, which is caused when Easter, a moveable holiday, falls late in March or early in April
- a Father's Day effect, which is caused when the first Sunday in September falls in the first few days of the month and Father's Day shopping occurs in August.

20 Each of these influences is estimated by separate factors which, when combined, are referred to as the combined adjustment factors. The combined adjustment factors are based on observed patterns in the historical data. It is possible that with the introduction of ANZSIC 2006 from July 2009 the historical patterns may not be as relevant to some series. For example Watch and jewellery retailing moved from the Other retailing n.e.c industry subgroup to the Footwear and other personal accessory retailing industry subgroup under ANZSIC 2006. The seasonal patterns for other businesses in the Footwear and other personal accessory retailing industry subgroup appear to differ from watch and jewellery retailers. The combined adjustment factors will evolve over time to reflect any new seasonal or trading day patterns, although in this example, an estimate for this impact (seasonal break) has been implemented in the combined adjustment factors.
21 The following Retail trade series are directly seasonally adjusted:

- Australian turnover
- each state total
- each Australian industry subgroup total
- each state by industry subgroup.

22 A "two-dimensional reconciliation" methodology is used on the seasonally adjusted time series to force additivity - that is, to force the sum of fine-level (state by industry subgroup) estimates to equal the Australian, state and industry subgroup totals. The industry group totals are derived from the lower level estimates.
23 Quarterly seasonally adjusted series used in the compilation of the chain volume measures are the sum of their applicable monthly series.

24 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. The ARIMA model is assessed as part of the annual reanalysis.

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. Due to external forces affecting the Retail Trade spending patterns, forward factors (based on data up to November 2008) have been used to seasonally adjust the Retail series from December 2008 onwards. It is expected that the concurrent seasonal adjustment methodology will be reintroduced in the September 2009 issue.

26 The seasonal and trading day factors are reviewed annually at a more detailed level than possible in the monthly processing cycle. The annual reanalysis can result in relatively higher revisions to the seasonally adjusted series than during normal monthly processing. For Retail Trade, the results of the latest review are normally included in the July issue based on data up to June. However for ANZSIC 2006 series, the seasonal reanalysis was based on data up to November 2008 and a further seasonal reanalysis will be undertaken when the concurrent seasonal adjustment methodology is re-introduced.

27 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 with the seasonally adjusted series to analyse underlying month-to-month movements.

28 The trend estimates are derived by applying a 13-term Henderson moving average to the seasonally adjusted monthly series and a 7-term Henderson moving average to the seasonally adjusted 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. An end-weight parameter 2.0 of the asymmetric moving average is used to produce trend estimates for the Australia, State and Australian industry group totals. For the other series a standard end-weight parameter 3.5 of the asymmetric moving average is used. 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 application of different asymmetric moving averages for the most recent six months for monthly series and three quarters for quarterly series. As a result of the improvement, most revisions to the trend estimates will be observed in the most recent six months or three quarters.

29 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.

30 For further information on seasonally adjusted and trend estimates, see: Feature article: Use of ARIMA modelling to reduce revisions in the October 2004 issue of Australian Economic Indicators (cat. no. 1350.0)
Information Paper: Introduction of Concurrent Seasonal Adjustment into the Retail Trade Series (cat. no. 8514.0)
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) 62526345 or by email at [time.series.analysis@abs.gov.au](mailto:time.series.analysis@abs.gov.au).

31 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 $0.7 \%$.

32 Monthly current price estimates presented in this publication reflect both price and volume changes. However, the quarterly chain volume estimates measure changes in value after the direct effects of price changes have been eliminated and hence only reflect volume changes. The chain volume measures of retail turnover appearing in this publication are annually reweighted chain Laspeyres indexes referenced to current price values in a chosen reference year. The reference year is advanced each September issue and is currently 2006-07. Each year's data in the Retail chain volume series are based on the prices of the previous year, except for the quarters of the 2008-09 financial year which will initially be based upon price data for the 2006-07 financial year. Comparability with previous years is achieved by linking (or chaining) the series together to form a continuous time series. Further information on the nature and concepts of chain volume measures is contained in the ABS publication Information Paper: Introduction of Chain Volume Measures in the Australian National Accounts (cat. no. 5248.0).

33 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. Sampling error may be influenced by the sample replacement that occurs in the first month of each quarter. This may increase the volatility of estimates between this month and the previous month especially at the state by industry subgroup level.
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, intensive training and supervision of interviewers, and efficient data processing procedures.

34 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.

RELIABILITY OF TREND ESTIMATES

COMPARABILITY WITH OTHER ABS ESTIMATES

35 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 ' $\wedge$ '. 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 ${ }^{\prime} *$ ', 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.

36 To further assist users in assessing the reliability of estimates, key data series have been given a grading of A to B . 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 are reliable for movement analysis purposes.
37 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 | Household good retailing | Clothing and soft good retailing | Department stores | Other retailing | Cafes, restaurants and takeaway food senvices | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| RSE (\%) | A | A | B | A | B | B | A |

RELATIVE STANDARD ERRORS BY STATE

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

38 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.

39 The estimates of Retail turnover in this publication will differ from sales of goods and services by the Retail trade industry in Business Indicators, Australia (cat. no. 5676.0). This publication presents monthly estimates of the value of turnover of retail businesses, is sourced from the Retail Business Survey, includes the Goods and Services Tax and includes some retail trade businesses classified to a non-retail trade industry but which have significant retail trade activity. Estimates for sales of goods and services in Business Indicators, Australia are sourced from the economy wide Quarterly Business Indicators Survey and exclude the Goods and Services Tax. In addition, the Retail Business Survey does not include all classes in the ANZSIC Retail trade Division but includes Cafes, restaurants and take-away food services from the Accommodation and Food Services Division. The use of different samples in the two surveys also contributes to differences.

## EXPLANATORY NOTES continued

COMPARABILITY WITH OTHER ABS ESTIMATES continued

RELATED PUBLICATIONS

## ABBREVIATIONS

40 Quarterly Retail trade chain volume estimates contribute to the quarterly national accounts in two main areas. First, they are an indicator of Household Final Consumption Expenditure in the expenditure side of Gross domestic product. Historically Retail trade estimates contribute about $55-60 \%$ of Household Final Consumption Expenditure but this relative contribution can vary from quarter to quarter as household expenditure shifts between retail trade and areas like personal services, travel and leisure activities which are outside the scope of retail trade. Second, Retail trade estimates, along with estimates from Business Indicators, Australia, contribute to estimates for the Retail trade Division in the production side of Gross domestic product.

41 Current publications and other products released by the ABS are available from the Statistics View. The ABS also issues a daily Release Advice on the web site which details products to be released in the week ahead. Users may also wish to refer to the following publications:

- Australian National Accounts: National Income, Expenditure and Product (cat. no. 5206.0)
- Australian Industry (cat. no. 8155.0)
- Business Indicators, Australia (cat. no. 5676.0).

42 As well as the statistics included in this and related publications, the ABS may have other relevant data available. Inquires should be made to the National Information and Referral Service on 1300135070.

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
RSE relative standard error

## FOR MORE INFORMATION

INTERNET
www.abs.gov.au the ABS website is the best place for data from our publications and information about the ABS.

INFORMATION AND REFERRAL SERVICE
Our consultants can help you access the full range of information published by the ABS that is available free of charge from our website. Information tailored to your needs can also be requested as a 'user pays' service. Specialists are on hand to help you with analytical or methodological advice.

PHONE 1300135070
EMAIL client.services@abs.gov.au
FAX $\quad 1300135211$
POST Client Services, ABS, GPO Box 796, Sydney NSW 2001

FREE ACCESS TO STATISTICS
All statistics on the ABS website can be downloaded free of charge.

WEB ADDRESS www.abs.gov.au


[^0]:    na not available

