

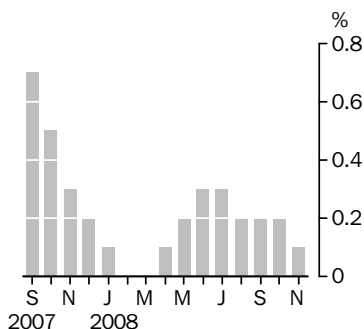
# RETAIL TRADE

AUSTRALIA

EMBARGO: 11.30AM (CANBERRA TIME) WED 4 FEB 2009

## Monthly turnover

Trend estimates (a)  
% change



(a) Trend series suspended as at Nov 2008.

## KEY FIGURES

|                                   | Dec 08<br>\$m | Nov 08 to Dec 08<br>% change |
|-----------------------------------|---------------|------------------------------|
| <b>Turnover at current prices</b> |               |                              |
| Trend estimates                   | np            | np                           |
| Seasonally adjusted estimates     | 19 162.8      | 3.8                          |

np not available for publication but included in totals where applicable, unless otherwise indicated

## KEY POINTS

### SUSPENSION OF TREND ESTIMATES

- The Federal Government Economic Security Strategy Package implemented in December 2008 has impacted on Australian retail turnover. If the trend estimates in this publication were to be calculated without fully accounting for this irregular event, they would be likely to provide a misleading view of the underlying trend in retail activity. Until data is available in future months, it is not possible to determine the trend in retail turnover through the period affected by the stimulus package. As a result, the retail trend series have been suspended as at November 2008. See page 3 for details.

### AUSTRALIA

- The seasonally adjusted estimate increased by 3.8% in December 2008. This follows increases of 0.4% in November and 1.0% in October 2008. It should be noted that the full retail sample was reinstated from November 2008.
- December 2008 is the largest monthly seasonally adjusted percentage increase since August 2000 following the introduction of the GST.
- In original terms, Australian turnover increased by 29.0% in December 2008 compared with November 2008. Chains and other large retailers (which are completely enumerated) increased by 34.0% while the estimate for 'smaller' retailers increased by 20.1%. Australian turnover increased by 5.7% in December 2008 compared with December 2007. Chains and other large retailers increased by 8.7% while the estimate for 'smaller' retailers increased by 0.3%.

### INDUSTRIES

- In seasonally adjusted terms, all industries had an increase in December 2008, with Food retailing (+1.4%), Department stores (+8.3%), Clothing and soft good retailing (+5.8%), Household good retailing (+9.9%), Other retailing (+2.6%) and Cafes, restaurants and takeaway food services (+1.7%).

### STATES

- In seasonally adjusted terms, all states had an increase in December 2008, with New South Wales (+4.9%), Victoria (+3.9%), Queensland (+3.2%), South Australia (+2.4%), Western Australia (+2.8%), Tasmania (+4.2%), Northern Territory (+4.8%) and Australian Capital Territory (+3.0%).

## INQUIRIES

For further information about these and related statistics, contact the National Information and Referral Service on 1300 135 070 or Neil Hamilton on Canberra (02) 6252 5990.

# NOTES

## FORTHCOMING ISSUES

| <i>ISSUE</i>  | <i>RELEASE DATE</i> |
|---------------|---------------------|
| January 2009  | 3 March 2009        |
| February 2009 | 1 April 2009        |
| March 2009    | 6 May 2009          |
| April 2009    | 1 June 2009         |
| May 2009      | 1 July 2009         |
| June 2009     | 3 August 2009       |

## SUSPENSION OF TREND ESTIMATES

Details of the suspension of trend estimates due to the impact of the Federal Government's economic stimulus package are presented on page 3.

## CHANGES IN THIS AND FUTURE ISSUES

Details of changes in this and future issues resulting from the reinstatement of the full monthly retail survey sample from November 2008 are presented on page 4.

## TIME SERIES DATA

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 series:

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

## 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   |

Ian Ewing  
Acting Australian Statistician

## SUSPENSION OF TREND ESTIMATES

### SUSPENSION OF TREND ESTIMATES

For December 2008, the original and seasonally adjusted estimates include consumer spending resulting from payments received by families and pensioners as part of the Federal Government Economic Security Strategy Package. The full amount of these payments is unlikely to have been spent in December. In addition to contributing to retail turnover in December, the one-off payments may be spent in the retail industry in future months, be spent on non-retail activities, or may be used to reduce debt or to contribute to savings (which may in turn impact on future spending patterns).

The trend series attempts to measure underlying behaviour in retail activity. In the short term, this measurement may be significantly affected by an unusual influence in the original and seasonally adjusted data like that observed in December 2008. If the trend estimates in this publication were to be calculated without fully accounting for this irregular event, they would be likely to provide a misleading view of the underlying trend in retail activity.

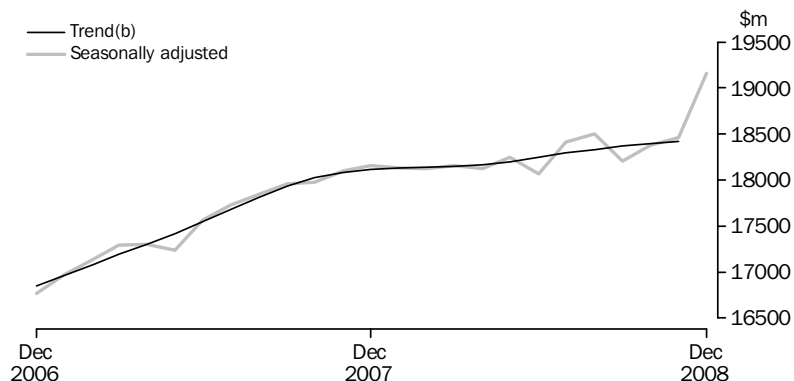
Spending behaviour in subsequent months may also be influenced by the December stimulus package and it may be some time before the underlying behaviour of the series can be accurately estimated. The retail trend series has therefore been suspended as at November 2008. The trend series will be reintroduced when more certainty emerges in the underlying trend in retail turnover.

As the seasonally adjusted series (except for the completely enumerated total series) are currently estimated using forward seasonal factors based on data to the June 2008 reference month, the seasonal adjustment factors have not been influenced by spending associated with the stimulus package.

Some seasonally adjusted and trend series may differ slightly from those published in the November 2008 issue due to a minor refinement to the seasonal adjustment process.

The following chart shows the trend series, to November 2008, and seasonally adjusted series, to December 2008.

RETAIL TURNOVER(a), Australia



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

## CHANGES IN THIS AND FUTURE ISSUES

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### CHANGES TO THE DISSEMINATION OF RETAIL TRADE STATISTICS

Changes have been made to the dissemination of Retail Trade statistics as a result of the reinstatement of the full monthly sample. An information paper *Changes to the Dissemination of Retail Trade Statistics, January 2009* (cat. no. 8501.0.55.005), released on 21 January 2009, summarised the changes occurring with this and future issues. The main changes include:

- this publication has reverted to the previous title of *Retail Trade, Australia* and presents detailed monthly current price trend, seasonally adjusted and original estimates
- detailed industry by state data in original and seasonally adjusted terms are not currently available for the July to October 2008 reference months. These estimates will be modelled and will be available with the March 2009 issue of this publication
- detailed industry by state data in trend terms are not currently available from July 2008 reference month onwards
- seasonal adjustment (except for the completely enumerated total series) is being undertaken using forward factors until the July 2009 issue of this publication
- quarterly chain volume measures will be included in the December quarter 2008 issue of *Retail Trade Quarterly Indicators* (cat. no. 8502.0) to be released on 18 February 2009, which will be the final release of that publication. In future, quarterly chain volume measures will be published in the last reference month of each quarter in this publication.



## RETAIL TURNOVER, By Industry Group(a)

| Month                            | Food<br>retailing | Department<br>stores | Clothing<br>and soft<br>good<br>retailing | Household<br>good<br>retailing | Other<br>retailing | Cafes,<br>restaurants<br>and<br>takeaway<br>food services | Total    |
|----------------------------------|-------------------|----------------------|---|--------------------------------|--------------------|---|----------|
| ORIGINAL (\$ million)            |                   |                      |   |                                |                    |   |          |
| <b>2007</b>                      |                   |                      |   |                                |                    |   |          |
| October                          | 7 340.9           | 1 440.6              | 1 326.6                                   | 3 125.5                        | 2 726.1            | 2 264.8   | 18 224.6 |
| November                         | 7 436.8           | 1 687.9              | 1 349.6                                   | 3 291.5                        | 2 916.7            | 2 292.4   | 18 974.9 |
| December                         | 8 370.9           | 2 747.0              | 1 796.1                                   | 4 058.4                        | 3 952.8            | 2 466.1   | 23 391.4 |
| <b>2008</b>                      |                   |                      |   |                                |                    |   |          |
| January                          | 7 381.9           | 1 397.8              | 1 258.0                                   | 3 095.2                        | 2 604.8            | 2 167.2   | 17 904.9 |
| February                         | 6 959.5           | 1 140.5              | 1 062.9                                   | 2 736.2                        | 2 545.5            | 2 093.6   | 16 538.2 |
| March                            | 7 493.2           | 1 351.7              | 1 136.2                                   | 2 802.2                        | 2 592.8            | 2 164.5   | 17 540.6 |
| April                            | 7 051.7           | 1 396.6              | 1 287.0                                   | 2 836.0                        | 2 545.9            | 2 154.2   | 17 271.3 |
| May                              | 7 331.4           | 1 421.1              | 1 323.2                                   | 2 928.4                        | 2 710.5            | 2 184.0   | 17 898.6 |
| June                             | 6 921.7           | 1 401.6              | 1 206.0                                   | 3 052.6                        | 2 510.8            | 2 098.0   | 17 190.7 |
| July                             | 7 338.6           | 1 582.3              | 1 244.0                                   | 3 104.3                        | 2 757.2            | 2 083.0   | 18 109.3 |
| August                           | 7 552.2           | 1 268.4              | 1 231.5                                   | 2 958.6                        | 2 588.3            | 2 322.4   | 17 921.4 |
| September                        | 7 338.3           | 1 383.3              | 1 233.4                                   | 2 892.0                        | 2 657.9            | 2 110.2   | 17 615.0 |
| October                          | 7 842.5           | 1 452.4              | 1 313.9                                   | 3 026.4                        | 3 066.9            | 2 141.8   | 18 844.0 |
| November                         | 7 817.3           | 1 675.9              | 1 317.2                                   | 3 138.9                        | 2 974.6            | 2 243.5   | 19 167.4 |
| December                         | 9 013.9           | 2 886.1              | 1 880.7                                   | 4 285.5                        | 4 183.0            | 2 468.0   | 24 717.2 |
| SEASONALLY ADJUSTED (\$ million) |                   |                      |   |                                |                    |   |          |
| <b>2007</b>                      |                   |                      |   |                                |                    |   |          |
| October                          | 7 254.2           | 1 508.6              | 1 282.3                                   | 3 050.5                        | 2 693.7            | 2 186.7   | 17 976.0 |
| November                         | 7 267.0           | 1 511.0              | 1 293.4                                   | 3 074.1                        | 2 716.5            | 2 232.4   | 18 094.4 |
| December                         | 7 296.3           | 1 509.8              | 1 282.1                                   | 3 120.5                        | 2 715.4            | 2 228.6   | 18 152.6 |
| <b>2008</b>                      |                   |                      |   |                                |                    |   |          |
| January                          | 7 286.5           | 1 528.1              | 1 272.0                                   | 3 095.3                        | 2 755.5            | 2 193.5   | 18 130.9 |
| February                         | 7 272.2           | 1 527.4              | 1 297.1                                   | 3 017.9                        | 2 789.5            | 2 218.0   | 18 122.2 |
| March                            | 7 381.5           | 1 509.0              | 1 268.3                                   | 3 063.7                        | 2 765.0            | 2 171.1   | 18 158.6 |
| April                            | 7 283.6           | 1 530.0              | 1 298.8                                   | 3 080.1                        | 2 746.6            | 2 186.9   | 18 126.1 |
| May                              | 7 369.2           | 1 516.3              | 1 291.2                                   | 3 062.4                        | 2 819.0            | 2 190.2   | 18 248.3 |
| June                             | 7 361.9           | 1 436.8              | 1 227.4                                   | 3 087.2                        | 2 762.9            | 2 190.0   | 18 066.2 |
| July                             | 7 424.0           | 1 594.1              | 1 293.2                                   | 3 158.4                        | 2 852.5            | 2 091.2   | 18 413.4 |
| August                           | 7 662.9           | 1 492.7              | 1 345.4                                   | 3 021.1                        | 2 666.9            | 2 311.2   | 18 500.3 |
| September                        | 7 557.3           | 1 533.7              | 1 265.1                                   | 2 932.9                        | 2 764.9            | 2 149.8   | 18 203.6 |
| October                          | 7 613.8           | 1 503.2              | 1 259.1                                   | 2 960.4                        | 2 992.8            | 2 048.3   | 18 377.7 |
| November                         | 7 750.0           | 1 476.4              | 1 269.5                                   | 2 960.3                        | 2 796.9            | 2 204.4   | 18 457.5 |
| December                         | 7 857.4           | 1 599.5              | 1 342.6                                   | 3 252.3                        | 2 869.3            | 2 241.7   | 19 162.8 |
| TREND (\$ million) (b)           |                   |                      |   |                                |                    |   |          |
| <b>2007</b>                      |                   |                      |   |                                |                    |   |          |
| October                          | 7 256.7           | 1 511.2              | 1 284.0                                   | 3 083.0                        | 2 690.3            | 2 221.7   | 18 024.0 |
| November                         | 7 277.2           | 1 511.8              | 1 282.3                                   | 3 086.8                        | 2 713.5            | 2 218.4   | 18 079.9 |
| December                         | 7 288.1           | 1 516.0              | 1 282.7                                   | 3 083.1                        | 2 733.1            | 2 213.1   | 18 114.9 |
| <b>2008</b>                      |                   |                      |   |                                |                    |   |          |
| January                          | 7 296.0           | 1 519.2              | 1 284.6                                   | 3 074.0                        | 2 748.9            | 2 208.5   | 18 134.0 |
| February                         | 7 300.2           | 1 519.9              | 1 283.4                                   | 3 067.6                        | 2 764.0            | 2 199.8   | 18 137.8 |
| March                            | 7 308.9           | 1 517.0              | 1 280.8                                   | 3 070.3                        | 2 776.3            | 2 190.6   | 18 145.1 |
| April                            | 7 329.2           | 1 513.9              | 1 279.9                                   | 3 078.0                        | 2 778.9            | 2 185.9   | 18 165.7 |
| May                              | 7 361.9           | 1 513.2              | 1 281.5                                   | 3 083.2                        | 2 777.0            | 2 183.6   | 18 200.4 |
| June                             | 7 409.7           | 1 514.3              | 1 283.8                                   | 3 079.7                        | 2 776.4            | 2 182.0   | 18 245.9 |
| July                             | 7 468.9           | 1 515.8              | 1 285.1                                   | 3 062.5                        | 2 782.0            | 2 178.1   | 18 292.4 |
| August                           | 7 532.9           | 1 515.7              | 1 285.0                                   | 3 033.3                        | 2 794.5            | 2 171.8   | 18 333.1 |
| September                        | 7 596.7           | 1 512.7              | 1 282.6                                   | 3 000.7                        | 2 811.1            | 2 163.7   | 18 367.5 |
| October                          | 7 658.8           | 1 507.1              | 1 278.1                                   | 2 969.2                        | 2 830.0            | 2 155.3   | 18 398.3 |
| November                         | 7 713.7           | 1 501.9              | 1 274.3                                   | 2 939.6                        | 2 846.0            | 2 147.9   | 18 423.1 |
| December                         | np                | np                   | np  | np                             | np                 | np  | np       |

np not available for publication but included in totals  
where applicable, unless otherwise indicated

(a) See paragraph 6 of Explanatory Notes.

(b) Trend calculated on data up to November 2008.

See Note on page 3.

## RETAIL TURNOVER PERCENTAGE CHANGE, By Industry Group(a)

| Month   | Food<br>retailing | Department<br>stores | Clothing<br>and soft<br>good<br>retailing | Household<br>good<br>retailing | Other<br>retailing | Cafes,<br>restaurants<br>and<br>takeaway<br>food services | Total |
|---|-------------------|----------------------|---|--------------------------------|--------------------|---|-------|
| ORIGINAL (% change from preceding month)            |                   |                      |   |                                |                    |   |       |
| <b>2007</b>   |                   |                      |   |                                |                    |   |       |
| October   | 4.4               | 6.5                  | 8.0                                       | 3.5                            | 9.3                | 3.4   | 5.2   |
| November  | 1.3               | 17.2                 | 1.7                                       | 5.3                            | 7.0                | 1.2   | 4.1   |
| December  | 12.6              | 62.7                 | 33.1                                      | 23.3                           | 35.5               | 7.6   | 23.3  |
| <b>2008</b>   |                   |                      |   |                                |                    |   |       |
| January   | -11.8             | -49.1                | -30.0                                     | -23.7                          | -34.1              | -12.1   | -23.5 |
| February  | -5.7              | -18.4                | -15.5                                     | -11.6                          | -2.3               | -3.4  | -7.6  |
| March   | 7.7               | 18.5                 | 6.9                                       | 2.4                            | 1.9                | 3.4   | 6.1   |
| April   | -5.9              | 3.3                  | 13.3                                      | 1.2                            | -1.8               | -0.5  | -1.5  |
| May   | 4.0               | 1.8                  | 2.8                                       | 3.3                            | 6.5                | 1.4   | 3.6   |
| June  | -5.6              | -1.4                 | -8.9                                      | 4.2                            | -7.4               | -3.9  | -4.0  |
| July  | 6.0               | 12.9                 | 3.2                                       | 1.7                            | 9.8                | -0.7  | 5.3   |
| August  | 2.9               | -19.8                | -1.0                                      | -4.7                           | -6.1               | 11.5  | -1.0  |
| September   | -2.8              | 9.1                  | 0.2                                       | -2.2                           | 2.7                | -9.1  | -1.7  |
| October   | 6.9               | 5.0                  | 6.5                                       | 4.6                            | 15.4               | 1.5   | 7.0   |
| November  | -0.3              | 15.4                 | 0.2                                       | 3.7                            | -3.0               | 4.8   | 1.7   |
| December  | 15.3              | 72.2                 | 42.8                                      | 36.5                           | 40.6               | 10.0  | 29.0  |
| SEASONALLY ADJUSTED (% change from preceding month) |                   |                      |   |                                |                    |   |       |
| <b>2007</b>   |                   |                      |   |                                |                    |   |       |
| October   | -0.2              | 1.0                  | 1.6                                       | -1.9                           | 3.8                | -1.9  | 0.1   |
| November  | 0.2               | 0.2                  | 0.9                                       | 0.8                            | 0.8                | 2.1   | 0.7   |
| December  | 0.4               | -0.1                 | -0.9                                      | 1.5                            | 0.0                | -0.2  | 0.3   |
| <b>2008</b>   |                   |                      |   |                                |                    |   |       |
| January   | -0.1              | 1.2                  | -0.8                                      | -0.8                           | 1.5                | -1.6  | -0.1  |
| February  | -0.2              | 0.0                  | 2.0                                       | -2.5                           | 1.2                | 1.1   | 0.0   |
| March   | 1.5               | -1.2                 | -2.2                                      | 1.5                            | -0.9               | -2.1  | 0.2   |
| April   | -1.3              | 1.4                  | 2.4                                       | 0.5                            | -0.7               | 0.7   | -0.2  |
| May   | 1.2               | -0.9                 | -0.6                                      | -0.6                           | 2.6                | 0.1   | 0.7   |
| June  | -0.1              | -5.2                 | -4.9                                      | 0.8                            | -2.0               | 0.0   | -1.0  |
| July  | 0.8               | 10.9                 | 5.4                                       | 2.3                            | 3.2                | -4.5  | 1.9   |
| August  | 3.2               | -6.4                 | 4.0                                       | -4.3                           | -6.5               | 10.5  | 0.5   |
| September   | -1.4              | 2.7                  | -6.0                                      | -2.9                           | 3.7                | -7.0  | -1.6  |
| October   | 0.7               | -2.0                 | -0.5                                      | 0.9                            | 8.2                | -4.7  | 1.0   |
| November  | 1.8               | -1.8                 | 0.8                                       | 0.0                            | -6.5               | 7.6   | 0.4   |
| December  | 1.4               | 8.3                  | 5.8                                       | 9.9                            | 2.6                | 1.7   | 3.8   |
| TREND (% change from preceding month) (b)           |                   |                      |   |                                |                    |   |       |
| <b>2007</b>   |                   |                      |   |                                |                    |   |       |
| October   | 0.5               | 0.1                  | 0.0                                       | 0.4                            | 3.4                | 0.0   | 0.5   |
| November  | 0.3               | 0.0                  | -0.1                                      | 0.1                            | 0.9                | -0.1  | 0.3   |
| December  | 0.2               | 0.3                  | 0.0                                       | -0.1                           | 0.7                | -0.2  | 0.2   |
| <b>2008</b>   |                   |                      |   |                                |                    |   |       |
| January   | 0.1               | 0.2                  | 0.1                                       | -0.3                           | 0.6                | -0.2  | 0.1   |
| February  | 0.1               | 0.0                  | -0.1                                      | -0.2                           | 0.5                | -0.4  | 0.0   |
| March   | 0.1               | -0.2                 | -0.2                                      | 0.1                            | 0.4                | -0.4  | 0.0   |
| April   | 0.3               | -0.2                 | -0.1                                      | 0.2                            | 0.1                | -0.2  | 0.1   |
| May   | 0.4               | 0.0                  | 0.1                                       | 0.2                            | -0.1               | -0.1  | 0.2   |
| June  | 0.6               | 0.1                  | 0.2                                       | -0.1                           | 0.0                | -0.1  | 0.3   |
| July  | 0.8               | 0.1                  | 0.1                                       | -0.6                           | 0.2                | -0.2  | 0.3   |
| August  | 0.9               | 0.0                  | 0.0                                       | -1.0                           | 0.4                | -0.3  | 0.2   |
| September   | 0.8               | -0.2                 | -0.2                                      | -1.1                           | 0.6                | -0.4  | 0.2   |
| October   | 0.8               | -0.4                 | -0.4                                      | -1.1                           | 0.7                | -0.4  | 0.2   |
| November  | 0.7               | -0.4                 | -0.3                                      | -1.0                           | 0.6                | -0.3  | 0.1   |
| December  | np                | np                   | np  | np                             | np                 | np  | np    |

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) See paragraph 6 of Explanatory Notes.

(b) Trend calculated on data up to November 2008. See Note on page 3.

## RETAIL TURNOVER, By state

| Month                            | New South Wales | Victoria | Queensland | South Australia | Western Australia | Tasmania | Northern Territory | Australian Capital Territory | Australia |
|----------------------------------|-----------------|----------|------------|-----------------|-------------------|----------|--------------------|------------------------------|-----------|
| ORIGINAL (\$ million)            |                 |          |            |                 |                   |          |                    |                              |           |
| <b>2007</b>                      |                 |          |            |                 |                   |          |                    |                              |           |
| October                          | 5 770.4         | 4 465.9  | 3 789.8    | 1 246.5         | 2 024.3           | 387.0    | 188.6              | 352.1                        | 18 224.6  |
| November                         | 6 010.1         | 4 703.2  | 3 863.8    | 1 304.6         | 2 135.8           | 407.7    | 186.5              | 363.1                        | 18 974.9  |
| December                         | 7 521.8         | 5 850.1  | 4 660.2    | 1 607.2         | 2 593.4           | 505.2    | 213.8              | 439.8                        | 23 391.4  |
| <b>2008</b>                      |                 |          |            |                 |                   |          |                    |                              |           |
| January                          | 5 647.3         | 4 454.5  | 3 692.5    | 1 268.7         | 1 948.8           | 392.4    | 165.4              | 335.2                        | 17 904.9  |
| February                         | 5 206.1         | 4 119.9  | 3 352.5    | 1 181.6         | 1 819.4           | 369.9    | 162.6              | 326.1                        | 16 538.2  |
| March                            | 5 502.5         | 4 367.4  | 3 578.2    | 1 245.0         | 1 941.0           | 387.0    | 174.4              | 345.2                        | 17 540.6  |
| April                            | 5 403.1         | 4 307.7  | 3 470.8    | 1 233.2         | 1 955.6           | 379.4    | 180.3              | 341.3                        | 17 271.3  |
| May                              | 5 574.5         | 4 443.4  | 3 625.2    | 1 278.1         | 2 034.8           | 394.0    | 194.6              | 353.9                        | 17 898.6  |
| June                             | 5 358.6         | 4 239.6  | 3 511.0    | 1 234.9         | 1 940.9           | 370.9    | 196.3              | 338.5                        | 17 190.7  |
| July                             | 5 463.2         | 4 461.9  | 3 839.5    | 1 317.0         | 2 080.5           | 401.6    | 224.3              | 321.3                        | 18 109.3  |
| August                           | 5 505.4         | 4 345.6  | 3 900.5    | 1 279.7         | 1 940.1           | 406.8    | 208.3              | 335.0                        | 17 921.4  |
| September                        | 5 318.1         | 4 338.6  | 3 664.0    | 1 270.0         | 2 082.7           | 372.7    | 213.1              | 355.9                        | 17 615.0  |
| October                          | 5 716.6         | 4 714.1  | 3 921.3    | 1 376.1         | 2 136.6           | 415.7    | 213.2              | 350.4                        | 18 844.0  |
| November                         | 5 932.4         | 4 827.1  | 3 921.3    | 1 369.6         | 2 111.8           | 427.4    | 206.0              | 371.9                        | 19 167.4  |
| December                         | 7 706.5         | 6 257.4  | 4 994.3    | 1 772.5         | 2 715.2           | 562.7    | 245.1              | 463.5                        | 24 717.2  |
| SEASONALLY ADJUSTED (\$ million) |                 |          |            |                 |                   |          |                    |                              |           |
| <b>2007</b>                      |                 |          |            |                 |                   |          |                    |                              |           |
| October                          | 5 698.7         | 4 431.4  | 3 697.3    | 1 232.9         | 1 996.4           | 387.4    | 182.2              | 349.8                        | 17 976.0  |
| November                         | 5 699.8         | 4 484.4  | 3 720.2    | 1 238.8         | 2 026.9           | 390.1    | 186.2              | 348.0                        | 18 094.4  |
| December                         | 5 743.0         | 4 508.1  | 3 708.9    | 1 250.9         | 2 011.6           | 393.0    | 191.0              | 346.0                        | 18 152.6  |
| <b>2008</b>                      |                 |          |            |                 |                   |          |                    |                              |           |
| January                          | 5 713.8         | 4 527.6  | 3 691.1    | 1 275.2         | 1 996.0           | 389.4    | 185.8              | 352.0                        | 18 130.9  |
| February                         | 5 728.6         | 4 480.7  | 3 708.8    | 1 276.6         | 1 994.3           | 389.6    | 187.8              | 355.9                        | 18 122.2  |
| March                            | 5 678.2         | 4 502.6  | 3 741.1    | 1 279.9         | 2 022.8           | 391.1    | 188.3              | 354.4                        | 18 158.6  |
| April                            | 5 686.4         | 4 466.6  | 3 706.3    | 1 284.3         | 2 038.9           | 397.5    | 191.7              | 354.4                        | 18 126.1  |
| May                              | 5 709.1         | 4 506.5  | 3 731.7    | 1 302.3         | 2 049.1           | 402.7    | 192.3              | 354.5                        | 18 248.3  |
| June                             | 5 646.2         | 4 422.9  | 3 698.0    | 1 308.9         | 2 051.1           | 398.4    | 192.7              | 347.9                        | 18 066.2  |
| July                             | 5 637.2         | 4 592.8  | 3 806.7    | 1 335.7         | 2 096.8           | 410.6    | 204.0              | 329.6                        | 18 413.4  |
| August                           | 5 721.7         | 4 518.7  | 3 945.9    | 1 335.3         | 2 020.1           | 424.4    | 192.1              | 342.0                        | 18 500.3  |
| September                        | 5 491.0         | 4 548.2  | 3 709.0    | 1 334.4         | 2 150.2           | 395.7    | 207.2              | 368.0                        | 18 203.6  |
| October                          | 5 602.4         | 4 616.3  | 3 786.5    | 1 338.7         | 2 076.9           | 408.5    | 204.0              | 344.4                        | 18 377.7  |
| November                         | 5 634.1         | 4 648.1  | 3 823.9    | 1 331.3         | 2 040.0           | 416.8    | 207.8              | 355.5                        | 18 457.5  |
| December                         | 5 910.7         | 4 829.8  | 3 944.4    | 1 363.1         | 2 096.7           | 434.2    | 217.9              | 366.0                        | 19 162.8  |
| TREND (\$ million) (a)           |                 |          |            |                 |                   |          |                    |                              |           |
| <b>2007</b>                      |                 |          |            |                 |                   |          |                    |                              |           |
| October                          | 5 709.1         | 4 454.4  | 3 697.7    | 1 230.0         | 2 008.6           | 389.0    | 183.0              | 347.9                        | 18 024.0  |
| November                         | 5 718.0         | 4 478.4  | 3 705.9    | 1 242.3         | 2 008.6           | 389.0    | 185.0              | 348.8                        | 18 079.9  |
| December                         | 5 719.3         | 4 495.0  | 3 710.1    | 1 254.3         | 2 007.3           | 389.4    | 186.7              | 350.2                        | 18 114.9  |
| <b>2008</b>                      |                 |          |            |                 |                   |          |                    |                              |           |
| January                          | 5 717.8         | 4 501.5  | 3 711.6    | 1 264.8         | 2 007.0           | 390.3    | 187.8              | 352.2                        | 18 134.0  |
| February                         | 5 711.6         | 4 498.6  | 3 708.4    | 1 273.8         | 2 011.6           | 391.3    | 188.6              | 353.8                        | 18 137.8  |
| March                            | 5 704.5         | 4 491.8  | 3 710.2    | 1 282.7         | 2 019.7           | 393.4    | 189.5              | 353.8                        | 18 145.1  |
| April                            | 5 695.2         | 4 485.8  | 3 722.1    | 1 292.3         | 2 031.2           | 396.8    | 190.8              | 352.0                        | 18 165.7  |
| May                              | 5 681.4         | 4 485.9  | 3 741.5    | 1 303.0         | 2 045.9           | 400.8    | 192.6              | 349.3                        | 18 200.4  |
| June                             | 5 664.6         | 4 497.0  | 3 763.7    | 1 313.8         | 2 060.5           | 404.5    | 195.0              | 346.9                        | 18 245.9  |
| July                             | 5 646.1         | 4 517.9  | 3 783.3    | 1 323.4         | 2 070.9           | 407.2    | 197.5              | 346.0                        | 18 292.4  |
| August                           | 5 627.6         | 4 543.9  | 3 798.0    | 1 330.7         | 2 076.9           | 409.0    | 200.0              | 346.9                        | 18 333.1  |
| September                        | 5 611.1         | 4 572.1  | 3 807.3    | 1 335.5         | 2 079.8           | 410.3    | 202.5              | 348.9                        | 18 367.5  |
| October                          | 5 597.8         | 4 601.2  | 3 813.2    | 1 338.9         | 2 079.9           | 411.4    | 204.9              | 351.1                        | 18 398.3  |
| November                         | 5 586.9         | 4 629.2  | 3 816.0    | 1 340.4         | 2 077.4           | 412.4    | 207.3              | 353.5                        | 18 423.1  |
| December                         | np              | np       | np         | np              | np                | np       | np                 | np                           | np        |

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) Trend calculated on data up to November 2008. See Note on page 3.



## RETAIL TURNOVER PERCENTAGE CHANGE, By state

| Month   | New South Wales | Victoria | Queensland | South Australia | Western Australia | Tasmania | Northern Territory | Australian Capital Territory | Australia |
|---|-----------------|----------|------------|-----------------|-------------------|----------|--------------------|------------------------------|-----------|
| ORIGINAL (% change from preceding month)            |                 |          |            |                 |                   |          |                    |                              |           |
| <b>2007</b>   |                 |          |            |                 |                   |          |                    |                              |           |
| October   | 4.4             | 6.4      | 4.4        | 8.7             | 4.6               | 7.0      | 2.7                | 4.2                          | 5.2       |
| November  | 4.2             | 5.3      | 2.0        | 4.7             | 5.5               | 5.4      | -1.1               | 3.1                          | 4.1       |
| December  | 25.2            | 24.4     | 20.6       | 23.2            | 21.4              | 23.9     | 14.6               | 21.1                         | 23.3      |
| <b>2008</b>   |                 |          |            |                 |                   |          |                    |                              |           |
| January   | -24.9           | -23.9    | -20.8      | -21.1           | -24.9             | -22.3    | -22.6              | -23.8                        | -23.5     |
| February  | -7.8            | -7.5     | -9.2       | -6.9            | -6.6              | -5.7     | -1.7               | -2.7                         | -7.6      |
| March   | 5.7             | 6.0      | 6.7        | 5.4             | 6.7               | 4.6      | 7.3                | 5.8                          | 6.1       |
| April   | -1.8            | -1.4     | -3.0       | -0.9            | 0.8               | -2.0     | 3.4                | -1.1                         | -1.5      |
| May   | 3.2             | 3.2      | 4.4        | 3.6             | 4.1               | 3.9      | 7.9                | 3.7                          | 3.6       |
| June  | -3.9            | -4.6     | -3.1       | -3.4            | -4.6              | -5.9     | 0.9                | -4.3                         | -4.0      |
| July  | 2.0             | 5.2      | 9.4        | 6.6             | 7.2               | 8.3      | 14.3               | -5.1                         | 5.3       |
| August  | 0.8             | -2.6     | 1.6        | -2.8            | -6.7              | 1.3      | -7.2               | 4.2                          | -1.0      |
| September   | -3.4            | -0.2     | -6.1       | -0.8            | 7.4               | -8.4     | 2.3                | 6.2                          | -1.7      |
| October   | 7.5             | 8.7      | 7.0        | 8.4             | 2.6               | 11.5     | 0.1                | -1.6                         | 7.0       |
| November  | 3.8             | 2.4      | 0.0        | -0.5            | -1.2              | 2.8      | -3.4               | 6.1                          | 1.7       |
| December  | 29.9            | 29.6     | 27.4       | 29.4            | 28.6              | 31.7     | 19.0               | 24.6                         | 29.0      |
| SEASONALLY ADJUSTED (% change from preceding month) |                 |          |            |                 |                   |          |                    |                              |           |
| <b>2007</b>   |                 |          |            |                 |                   |          |                    |                              |           |
| October   | -0.2            | 0.3      | 0.3        | 1.3             | -0.9              | 0.7      | 1.8                | 0.6                          | 0.1       |
| November  | 0.0             | 1.2      | 0.6        | 0.5             | 1.5               | 0.7      | 2.2                | -0.5                         | 0.7       |
| December  | 0.8             | 0.5      | -0.3       | 1.0             | -0.8              | 0.7      | 2.6                | -0.6                         | 0.3       |
| <b>2008</b>   |                 |          |            |                 |                   |          |                    |                              |           |
| January   | -0.5            | 0.4      | -0.5       | 1.9             | -0.8              | -0.9     | -2.7               | 1.7                          | -0.1      |
| February  | 0.3             | -1.0     | 0.5        | 0.1             | -0.1              | 0.1      | 1.1                | 1.1                          | 0.0       |
| March   | -0.9            | 0.5      | 0.9        | 0.3             | 1.4               | 0.4      | 0.3                | -0.4                         | 0.2       |
| April   | 0.1             | -0.8     | -0.9       | 0.3             | 0.8               | 1.6      | 1.8                | 0.0                          | -0.2      |
| May   | 0.4             | 0.9      | 0.7        | 1.4             | 0.5               | 1.3      | 0.3                | 0.0                          | 0.7       |
| June  | -1.1            | -1.9     | -0.9       | 0.5             | 0.1               | -1.0     | 0.3                | -1.9                         | -1.0      |
| July  | -0.2            | 3.8      | 2.9        | 2.0             | 2.2               | 3.1      | 5.8                | -5.3                         | 1.9       |
| August  | 1.5             | -1.6     | 3.7        | 0.0             | -3.7              | 3.4      | -5.8               | 3.8                          | 0.5       |
| September   | -4.0            | 0.7      | -6.0       | -0.1            | 6.4               | -6.8     | 7.9                | 7.6                          | -1.6      |
| October   | 2.0             | 1.5      | 2.1        | 0.3             | -3.4              | 3.2      | -1.6               | -6.4                         | 1.0       |
| November  | 0.6             | 0.7      | 1.0        | -0.5            | -1.8              | 2.0      | 1.9                | 3.2                          | 0.4       |
| December  | 4.9             | 3.9      | 3.2        | 2.4             | 2.8               | 4.2      | 4.8                | 3.0                          | 3.8       |
| TREND (% change from preceding month)(a)            |                 |          |            |                 |                   |          |                    |                              |           |
| <b>2007</b>   |                 |          |            |                 |                   |          |                    |                              |           |
| October   | 0.4             | 0.7      | 0.5        | 1.0             | 0.2               | 0.0      | 1.3                | 0.2                          | 0.5       |
| November  | 0.2             | 0.5      | 0.2        | 1.0             | 0.0               | 0.0      | 1.1                | 0.3                          | 0.3       |
| December  | 0.0             | 0.4      | 0.1        | 1.0             | -0.1              | 0.1      | 0.9                | 0.4                          | 0.2       |
| <b>2008</b>   |                 |          |            |                 |                   |          |                    |                              |           |
| January   | 0.0             | 0.1      | 0.0        | 0.8             | 0.0               | 0.2      | 0.6                | 0.6                          | 0.1       |
| February  | -0.1            | -0.1     | -0.1       | 0.7             | 0.2               | 0.3      | 0.5                | 0.5                          | 0.0       |
| March   | -0.1            | -0.2     | 0.0        | 0.7             | 0.4               | 0.5      | 0.5                | 0.0                          | 0.0       |
| April   | -0.2            | -0.1     | 0.3        | 0.7             | 0.6               | 0.9      | 0.7                | -0.5                         | 0.1       |
| May   | -0.2            | 0.0      | 0.5        | 0.8             | 0.7               | 1.0      | 1.0                | -0.8                         | 0.2       |
| June  | -0.3            | 0.2      | 0.6        | 0.8             | 0.7               | 0.9      | 1.2                | -0.7                         | 0.3       |
| July  | -0.3            | 0.5      | 0.5        | 0.7             | 0.5               | 0.7      | 1.3                | -0.2                         | 0.3       |
| August  | -0.3            | 0.6      | 0.4        | 0.5             | 0.3               | 0.4      | 1.3                | 0.3                          | 0.2       |
| September   | -0.3            | 0.6      | 0.2        | 0.4             | 0.1               | 0.3      | 1.2                | 0.6                          | 0.2       |
| October   | -0.2            | 0.6      | 0.2        | 0.3             | 0.0               | 0.3      | 1.2                | 0.6                          | 0.2       |
| November  | -0.2            | 0.6      | 0.1        | 0.1             | -0.1              | 0.2      | 1.2                | 0.7                          | 0.1       |
| December  | np              | np       | np         | np              | np                | np       | np                 | np                           | np        |

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) Trend calculated on data up to November 2008. See Note on page 3.

## EXPLANATORY NOTES

### 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 monthly Retail Business Survey (RBS).

**2** About 500 'large' businesses are included in the survey every month, while a sample of about 2,700 'smaller' businesses is selected. 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)
- 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)

## EXPLANATORY NOTES *continued*

### SCOPE AND COVERAGE

*continued*

- 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

## EXPLANATORY NOTES *continued*

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 were allocated evenly across the three months of a quarter with approximately 900 sample sector businesses included each month. These businesses were required to provide a monthly estimate of turnover for the month of the quarter to which they had been allocated. They were then not required to report data for the next two months i.e. a business allocated to the first month of a quarter were required to report a monthly estimate for the July and October reference months. This strategy ceased in October 2008.

**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

## EXPLANATORY NOTES *continued*

### 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, detailed industry by state data for July to October 2008 are 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 enabled 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** From the November 2008 issue, forward factors are used to seasonally adjust the Retail series. For more information about forward factors methodology, 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 by industry) estimates to be equal to the Australian total.

## EXPLANATORY NOTES *continued*

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

## EXPLANATORY NOTES *continued*

### STANDARD ERRORS

**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.

**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<br>retailing | Department<br>Stores | Clothing<br>and soft<br>good<br>retailing | Household<br>good<br>retailing | Other<br>retailing | Cafes,<br>restaurants<br>and<br>takeaway<br>food services | 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    | B  | B   | A     |

**35** Standard errors for the Australian estimates (original data) for December 2008 contained in this publication are:

| Data Series                       | Estimate | Standard<br>error |
|-----------------------------------|----------|-------------------|
| Level of retail turnover (\$m)    | 24 717.2 | 167.2             |
| Change from preceding month (\$m) | 5 549.8  | 101.3             |
| % change from preceding month (%) | 29.0     | 0.6               |

### RELIABILITY OF TREND ESTIMATES

**36** The trending process dampens the volatility in the original and seasonally adjusted estimates. However, trend estimates are subject to revisions as future observations

## EXPLANATORY NOTES *continued*

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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

**37** 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.

RELATED PUBLICATIONS

**38** 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.









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