Australian Bureau of Statistics

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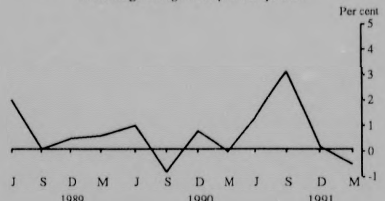
HOUSE PRICE INDEXES: EIGHT CAPITAL CITIES MARCH QUARTER 1992

NOTE: Beginning with this issue, indexes will be published on a new reference base - see Appendix A for an explanation of the changes and Appendix B for conversion factors.

MAIN FEATURES

ESTABLISHED HOUSE PRICES - AUSTRALIA
Percentage change from previous quarter



The Established House Prices - Australia index fell by 0.6 per cent between December quarter 1991 and March quarter 1992. This is the first quarterly decrease since March 1991. The Melbourne index fell by 4.5 per cent, while increases occurred in all other capitals, ranging from 0.1 per cent (Sydney) to 2.7 per cent (Brisbane and Adelaide).

In the year to March quarter 1992, the index rose by 3.6 per cent. Annual movements ranged from -1.8 per cent (Adelaide) to +15.4 per cent (Canberra).

EXPLANATORY NOTES

Introduction

This publication provides estimates of changes in housing prices for each of the eight capital cities of Australia. The information is presented in the form of price indexes constructed separately for *Established Houses* and for *Project Homes* (see below for definitions). The capital city indexes measure price movements over time in each city individually. They do not measure differences in price levels between cities.

2. The house price indexes are compiled by the ABS for use in calculating the Mortgage Interest Charges component of the Australian Consumer Price Index (CPI). These series are being published separately in recognition of the widespread interest in information specifically relating to housing. Users requiring more information about how these series are used in the CPI are referred to an information paper *The Australian Consumer Price Index: Treatment of Mortgage Interest Charges* . For detailed information about the CPI itself see *The Australian Consumer Price Index: Concepts Sources and Methods* .

3. To assist in the analysis of housing price movements at the national level, Australian series have also been compiled and are presented in tables 5 and 6 along with series for prices of building materials, wages in the construction industry and the housing investment deflator (from the Australian National Accounts). For information on the derivation of series in these tables see paragraph 14.

Definitions

4. *Established houses:* detached residential dwellings on their own block of land regardless of age (i.e. including new houses sold as a house/land package as well as secondhand houses). Price changes therefore relate to changes in the total price of dwelling and land.

INQUIRIES

- *for further information about statistics in this publication and the availability of related unpublished statistics*, contact Ian Buchanan on Canberra (06) 252 5754 or any ABS State office.
- *for information about other ABS statistics and services* please contact Information Services on Canberra (06) 252 5402, 252 6007, 252 6627 or any ABS State office.

5. *Project homes:* dwellings available for construction on a client's block of land. Price changes therefore relate only to the price of the dwelling (excluding land).

Price indexes

6. A price index is concerned with measuring pure price change. That is, it is concerned with isolating and measuring that element of price change which is not brought about by any change to either the quantity or the quality of the goods or services for which the index is required.

7. The techniques used to construct a price index for project homes are similar to those used for most other goods. A representative sample of project home models is selected in each city, prices obtained each quarter and the price movements for each model weighted together. Constant quality is preserved by calculating price movements on a matched sample basis (i.e. the price movements between adjacent quarters are based on the same models in each quarter). If the specification of an individual model changes substantially or a price is unable to be obtained then that model is excluded from the calculation of price movement. Adjustments are made to raw prices to compensate for any minor changes in specifications.

8. The construction of a price index for established houses, on the other hand, poses a number of problems. First, in addition to the physical characteristics of a dwelling (such as outer-wall construction, total overall size and number of rooms) its geographical location is a significant component of quality. Second, the only price data available relates to sales that have actually taken place during each quarter. Movements in the average price derived from total sales data in each period would not provide a measure of pure price change as the measure would be influenced by compositional changes (i.e. the prices from one period to the next would relate to houses of different quality).

9. In order to minimise the effects of compositional change on these indexes, the raw sales price data is stratified by geographic area and physical characteristics of dwelling. The overall movement in the index is calculated by weighting together the price movements in individual strata. To reduce costs, this procedure is carried out for a sample of Local Government Areas in each city.

10. Price information for project homes is obtained at the end of each quarter from a sample of project home builders in each city. Sale prices of established houses are obtained from real estate organisations and government agencies and relate to actual sales transacted during the quarter.

Limitations of house price indexes

11. As these indexes are designed specifically for use in the CPI (see paragraph 2), their scope is restricted to only those houses likely to be purchased by CPI population group households (i.e. metropolitan wage and salary earner households).

12. The reliability of each index is largely dependent upon the availability of sufficient pricing information each quarter. While not a problem for project homes, difficulties are sometimes encountered when compiling the indexes for established houses as the number of price observations available across the range of dwelling types depends on market activity in each quarter.

13. The series most affected by limited market scope is the Darwin established house price index. Rather than suppress publication, the series is included here because it is believed that the long term trend is reliable. However, because of limitations to the reliability of individual quarter to quarter movements users are advised to exercise due caution when analysing such movements.

National house price and other indexes

14. These series are presented to facilitate analysis of price movements at a national level. Although coverage is not, in all cases, strictly national, this is not believed to significantly impair their usefulness. The derivation or source of each series is as follows:

15. *Established houses:* derived by weighting together the indexes for each of the eight capital cities according to the value of secured finance commitments to individuals in each of the States and Territories for the purchase of newly erected and established houses in 1985-86. The source of weighting information is unpublished data from ABS survey of Housing Finance for Owner Occupation.

16. *Project homes:* derived by weighting together the indexes for each of the eight capital cities according to the value of secured finance commitments to individuals in each of the States and Territories for the construction of houses in 1985-86. The source of weighting information is the same as for established houses.

17. *Materials used in house building:* the series included here have been constructed from the monthly series for the weighted average of the six State capital cities (published in ABS catalogue No. 6408.0). Quarterly series were derived as the arithmetic average of the relevant monthly index numbers and then rebased to 1989-90 =100.0.

18. *Award rates of pay for the construction industry:* this series has been constructed from published monthly data for Australia in a similar way to that in which the materials used in house building series has been derived for this publication. The original monthly series (6312.0) used to derive the quarterly series are constructed by weighting weekly award rates of pay indexes (full-time adult employees: Australia) for selected classifications in the construction industry.

19. *Housing investment deflator:* this series is the fixed weighted deflator for private capital expenditure (houses), as used (but not separately published) in the Australian National Accounts (5206.0), rebased to 1989-90 = 100.0.

Analysis of changes in index numbers

20. The indexes presented in this publication are calculated on a quarterly basis with a reference base of 1989-90 =100.0. In compiling these indexes quarterly, the objective is to measure the change between average price levels during one quarter and average price levels during the next quarter. They do not measure price changes between any one date and any other date.

21. Index numbers are also presented for financial years where the index numbers for financial years are simple (arithmetic) averages of the quarterly index numbers. Index numbers for calendar years may be derived in the same way.

22. Movements in indexes from one period to another can be expressed either as changes in *index points* or as percentage changes. The following example illustrates the method of calculating index points changes and percentage changes between any two periods:

Established houses: Brisbane

Index numbers:	
March quarter 1992:	130.2 (see table 1)
less: December quarter 1991:	126.8 (see table 1)
Change in index points:	+3.4

$$\text{Percentage change} = \frac{+3.4}{126.8} \times 100 = +2.7\%$$

23. In this publication, percentage changes are calculated to illustrate 3 different kinds of movements in index numbers:

- movements between consecutive financial years (change between average price levels during one financial year and average price levels during the next financial year)
- movements between corresponding quarters of consecutive years
- movements between consecutive quarters

Related publications

24. Users may also wish to refer to the following publications which are available on request:

Consumer Price Index (6401.0) - issued quarterly

Information Paper: The Australian Consumer Price Index: Treatment of Mortgage Interest Charges (6442.0)

The Australian Consumer Price Index: Concepts Sources and Methods (6461.0)

Housing Finance for Owner Occupation, Australia (5609.0) - issued monthly

Price Index of Materials Used in House Building, Six State Capital Cities and Canberra (6408.0) - issued monthly

Award Rates of Pay Indexes, Australia (6312.0) - issued monthly

Australian National Accounts, National Income and Expenditure (5206.0) - issued quarterly

25. Current publications issued by the ABS are listed in the *Catalogue of Publications and Products, Australia* (1101.0). The ABS also issues, on Tuesdays and Fridays, a *Publications Advice* (1105.0) which lists publications to be released in the next few days. The Catalogue and Publications advice are available from any ABS office.

Symbols and other usages

r revised

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IAN CASTLES
Australian Statistician

TABLE 1: ESTABLISHED HOUSE PRICE INDEX NUMBERS
(Base of each index: 1989-90 = 100.0)

Period	*Sydney*	*Melbourne*	*Brisbane*	*Adelaide*	*Perth*	*Hobart*	*Darwin*	*Canberra*
1987-88	65.1	70.7	69.3	85.3	65.2	84.4	96.8	81.1
1988-89	95.2	91.4	86.2	91.3	89.0	93.1	98.8	93.9
1989-90	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1990-91	100.5	95.2	114.3	106.2	94.8	106.3	109.3	107.3
Quarter -								
1988-89-								
March	101.5	97.2	89.9	92.5	93.7	94.3	101.7	96.1
June	101.8	99.5	94.2	92.7	100.2	96.0	101.5	97.1
1989-90-								
September	101.3	99.2	95.4	97.1	97.9	97.8	99.6	97.5
December	98.8	100.5	98.1	101.1	101.3	100.5	97.3	100.5
March	99.8	99.8	101.3	99.7	100.8	100.6	99.9	100.9
June	100.1	100.4	105.1	101.9	99.9	101.0	103.3	101.0
1990-91-								
September	100.1	96.0	109.0	103.4	97.2	101.3	107.7	102.6
December	99.4	97.4	112.6	104.8	94.8	107.2	108.2	107.1
March	100.6	93.0	116.1	110.7	93.9	106.2	110.1	108.6
June	101.9	94.4	119.5	105.9	93.3	110.4	111.0	110.9
1991-92-								
September	104.5	98.7	124.0	104.5	94.0	110.9	111.8	120.4
December	104.7	96.9	126.8	105.8	93.3	112.5	113.9	123.7
March	104.8	92.5	130.2	108.7	93.8	112.9	116.3	125.3

TABLE 2: ESTABLISHED HOUSE PRICE INDEXES: PERCENTAGE CHANGES

Period	*Sydney*	*Melbourne*	*Brisbane*	*Adelaide*	*Perth*	*Hobart*	*Darwin*	*Canberra*
				Change from previous year				
1988-89	46.1	29.2	24.3	7.1	36.4	10.3	2.1	15.8
1989-90	5.1	9.4	16.0	9.5	12.4	7.3	1.2	6.5
1990-91	0.5	-4.8	14.3	6.2	-5.2	6.3	9.2	7.3
				Change from corresponding quarter of previous year				
1989-90-								
March	-1.6	2.7	12.6	7.7	7.6	6.7	-1.7	5.0
June	-1.6	0.9	11.6	9.9	-0.3	5.3	1.7	4.1
1990-91-								
September	-1.2	-3.2	14.2	6.5	-0.7	3.6	8.1	5.2
December	0.5	-3.0	14.8	3.6	-6.4	6.7	11.1	6.5
March	0.8	-6.8	14.7	11.0	-6.9	5.5	10.2	7.6
June	1.8	-6.0	13.6	3.9	-6.6	9.2	7.5	9.8
1991-92-								
September	4.4	2.8	13.7	1.0	-3.3	9.5	3.8	17.4
December	5.4	-0.5	12.6	1.0	-1.6	4.9	5.3	15.5
March	4.2	-0.5	12.1	-1.8	-0.1	6.3	5.6	15.4
				Change from previous quarter				
1988-89-								
March	8.6	9.1	7.3	0.4	11.6	1.7	4.0	3.6
June	0.3	2.4	4.8	0.2	6.9	1.8	-0.2	1.0
1989-90-								
September	-0.5	-0.3	1.3	4.8	-2.3	1.8	-1.8	0.5
December	-2.4	1.2	2.8	4.1	3.4	2.8	-2.3	3.1
March	1.0	-0.6	3.2	-1.5	-0.5	0.2	2.6	0.4
June	0.3	0.6	3.8	2.2	-0.9	0.4	3.3	0.1
1990-91-								
September	0.0	-4.4	3.7	1.5	-2.7	0.2	4.3	1.5
December	-0.8	1.5	3.3	1.3	-2.4	5.9	0.5	4.5
March	1.2	-4.6	3.1	5.6	-1.0	-1.0	1.8	1.4
June	1.3	1.5	2.9	-4.3	-0.6	3.9	0.8	2.1
1991-92-								
September	2.5	4.6	3.8	-1.3	0.7	0.5	0.7	8.5
December	0.3	-1.8	2.3	1.3	-0.7	1.4	1.8	2.8
March	0.1	-4.5	2.7	2.7	0.5	0.4	2.2	1.3

TABLE 3: PROJECT HOME PRICE INDEX NUMBERS
(Base of each index: 1989-90 = 100.0)

Period	*Sydney*	*Melbourne*	*Brisbane*	*Adelaide*	*Perth*	*Hobart*	*Darwin*	*Canberra*
1987-88	73.4	80.8	72.4	87.9	76.5	86.5	77.1	85.3
1988-89	91.4	91.0	89.1	96.1	93.8	93.5	84.3	91.6
1989-90	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1990-91	102.9	103.2	104.3	104.5	91.9	106.4	105.3	110.6
Quarter -								
1988-89-								
March	94.1	92.7	92.2	96.2	97.9	93.6	86.1	92.8
June	96.0	94.9	96.1	98.3	103.4	96.5	88.5	96.6
1989-90-								
September	98.6	97.5	97.8	98.3	103.2	98.0	89.8	97.7
December	99.0	99.8	99.2	99.7	102.1	99.4	99.8	98.9
March	100.5	100.4	100.5	100.3	99.8	100.3	105.2	100.7
June	101.8	102.0	102.5	101.6	94.8	102.4	105.3	102.8
1990-91-								
September	102.0	103.2	103.4	103.0	93.4	103.7	105.3	108.5
December	103.1	103.6	104.4	104.5	92.7	106.2	105.3	109.5
March	103.3	103.9	104.7	105.3	91.3	107.5	105.3	111.5
June	103.3	102.2	104.7	105.0	90.3	108.1	105.3	112.9
1991-92-								
September	103.7	102.1	104.8	105.6	90.6	108.8	107.4	118.1
December	103.0	102.3	105.0	105.9	89.9	109.3	107.4	123.4
March	103.1	101.8	105.2	105.6	90.6	110.5	107.4	125.2

TABLE 4: PROJECT HOME PRICE INDEXES: PERCENTAGE CHANGES

Period	*Sydney*	*Melbourne*	*Brisbane*	*Adelaide*	*Perth*	*Hobart*	*Darwin*	*Canberra*
				Change from previous year				
1988-89	24.5	12.6	23.1	9.3	22.6	8.1	9.3	7.4
1989-90	9.4	9.9	12.2	4.1	6.6	7.0	18.6	9.2
1990-91	2.9	3.2	4.3	4.5	-8.1	6.4	5.3	10.6
				Change from corresponding quarter of previous year				
1989-90-								
March	6.8	8.4	9.0	4.3	1.9	7.2	22.3	8.5
June	6.1	7.5	6.6	3.4	-8.4	6.1	18.9	6.4
1990-91-								
September	3.5	5.9	5.8	4.9	-9.6	5.9	17.3	11.1
December	4.1	3.8	5.2	4.8	-9.2	6.9	5.5	10.8
March	2.8	3.4	4.1	4.9	-8.5	7.1	0.1	10.7
June	1.5	0.1	2.1	3.3	-4.6	5.6	0.0	9.9
1991-92-								
September	1.6	-1.1	1.4	2.4	-3.0	4.9	2.0	8.8
December	-0.1	-1.2	0.6	1.3	-2.9	2.9	2.0	12.6
March	-0.1	-2.0	0.5	0.2	-0.8	2.8	2.0	12.3
				Change from previous quarter				
1988-89-								
March	4.9	2.5	6.6	1.8	7.9	0.2	2.7	3.5
June	2.1	2.4	4.3	2.3	5.6	3.1	2.9	4.1
1989-90-								
September	2.7	2.8	1.7	-0.1	-0.2	1.5	1.4	1.2
December	0.4	2.4	1.5	1.5	-1.1	1.4	11.2	1.2
March	1.5	0.6	1.3	0.6	-2.3	1.0	5.5	1.8
June	1.4	1.6	2.0	1.3	-5.0	2.0	0.1	2.1
1990-91-								
September	0.2	1.2	0.9	1.4	-1.5	1.4	0.0	5.6
December	1.0	0.4	1.0	1.4	-0.7	2.4	0.0	0.9
March	0.2	0.3	0.3	0.7	-1.4	1.2	0.0	1.8
June	0.1	-1.7	0.0	-0.2	-1.1	0.6	0.0	1.3
1991-92-								
September	0.3	-0.1	0.2	0.5	0.2	0.6	2.0	4.6
December	-0.7	0.2	0.2	0.3	-0.7	0.4	0.0	4.5
March	0.2	-0.5	0.1	-0.3	0.8	1.1	0.0	1.5

TABLE 5: SELECTED HOUSING PRICE INDEX NUMBER SERIES, AUSTRALIA (a)
(Base of each index: 1989-90 = 100.0)

Period	*Established houses*	*Project homes*	*Materials used in house building*	*Award rates of pay construction industry*	*National accounts housing investment deflator*
1987-88	69.5	77.0	83.8	88.9	78.6
1988-89	92.2	91.5	92.8	94.2	89.6
1989-90	100.0	100.0	100.0	100.0	100.0
1990-91	100.8	102.1	104.6	104.6	103.6
Quarter-					
1988-89-					
March	97.4	93.9	93.9	94.4	91.7
June	99.3	96.8	96.2	96.7	95.1
1989-90-					
September	99.3	98.7	97.8	97.1	97.7
December	99.6	99.8	99.3	99.2	99.6
March	100.1	100.4	100.5	100.8	100.8
June	101.0	101.1	102.4	102.8	101.8
1990-91-					
September	100.1	101.7	103.3	104.0	102.7
December	100.7	102.4	104.3	104.6	103.5
March	100.6	102.5	105.3	104.9	103.9
June	101.8	101.9	105.6	104.9	104.2
1991-92-					
September	104.9	102.2	105.2	106.5	103.9
December	104.9	102.1	104.7	107.3	103.5
March	104.2	102.1	104.6	107.6	103.8

(a) For the derivation of each of these series see Explanatory Notes paragraphs 14-19

TABLE 6: SELECTED HOUSING PRICE INDEX NUMBER SERIES, AUSTRALIA: PERCENTAGE CHANGES

Period	*Established houses*	*Project homes*	*Materials used in house building*	*Award rates of pay construction industry*	*National accounts housing investment deflator*
1988-89	32.7	18.8	10.7	6.0	14.0
1989-90	8.5	9.3	7.8	6.2	11.6
1990-91	0.8	2.1	4.6	4.6	3.6
			Change from corresponding quarter of previous year		
1989-90-					
March	2.8	6.9	7.1	6.7	9.9
June	1.7	4.5	6.5	6.3	7.0
1990-91-					
September	0.8	3.1	5.7	7.0	5.1
December	1.1	2.6	5.0	5.4	3.8
March	0.5	2.0	4.8	4.1	3.1
June	0.8	0.8	3.1	2.0	2.4
1991-92-					
September	4.8	0.5	1.8	2.4	1.1
December	4.2	-0.3	0.4	2.6	0.1
March	3.6	-0.3	-0.7	2.6	-0.1
			Change from previous quarter		
1988-89-					
March	8.1	4.7	2.3	0.5	4.5
June	1.9	3.1	2.4	2.4	3.7
1989-90-					
September	0.0	1.9	1.7	0.4	2.8
December	0.4	1.1	1.6	2.2	2.0
March	0.5	0.6	1.2	1.5	1.2
June	0.9	0.7	1.9	2.0	0.9
1990-91-					
September	-0.9	0.6	0.9	1.1	0.9
December	0.7	0.7	0.9	0.6	0.7
March	-0.1	0.1	1.0	0.2	0.4
June	1.2	-0.6	0.3	0.0	0.3
1991-92-					
September	3.0	0.3	-0.4	1.5	-0.3
December	0.1	-0.1	-0.4	r0.8	-0.4
March	-0.6	0.0	-0.1	0.2	0.2

APPENDIX A

RE-REFERENCING OF THE HOUSE PRICE INDEXES

The house price indexes are now published on a reference base of 1989-90 = 100.0. These indexes were formerly published on a base of September quarter 1986 = 100.0. The year 1989-90 has been chosen for the new base in line with other ABS price index and constant price series moves towards the same base.

The conversion of series on the new base to the old base involves a rescaling of the index numbers. The scaling factor that should be applied to the index numbers is calculated by obtaining the ratio of the index numbers on the old and new bases for the new reference year.

For example:

For the established houses index number for Sydney, an arithmetic conversion factor is obtained as follows:
Index number for year 1989-90 (on base September quarter 1986 = 100.0) is 185.9

Index number for year 1989-90 (on base 1989-90 = 100.0) is 100.0

$$\text{Conversion factor} \frac{185.9}{100.0} = 1.8590$$

The factor may be applied to any established houses index number for Sydney on the new (1989-90 = 100.0) reference base to give the corresponding number on the old (September quarter 1986 = 100.0) reference base.

Similarly the conversion of series on the old base to the new also involves rescaling. The rescaling factor is obtained by taking the inverse of the previously described factor. For example, using the same index series as in the previous example, the rescaling factor is obtained as follows:

$$\text{Conversion factor} \frac{100.0}{185.9} = 0.5379$$

The factor may be applied to any established houses index number for Sydney on the old (September quarter 1986 = 100.0) reference base to give the corresponding number on the new (1989-90 = 100.0) reference base.

Conversion factors for Established Houses, Project Homes, Materials Used in House Building, Award Rates of Pay in the Construction Industry and National Accounts Housing Investment Deflator for each capital city (where applicable) and the weighted average of eight capital cities are provided in Appendix B.

A consequence of re-referencing price indexes can be that period to period percentage changes calculated using the original series may differ slightly from those calculated using the original series. These differences do not constitute a revision of the series but simply reflect the effect of rounding.

APPENDIX B

FACTORS USED TO CONVERT INDEX NUMBERS FOR HOUSE PRICE INDEX SERIES FROM ONE REFERENCE BASE TO ANOTHER

TABLE 1. From OLD reference base September quarter 1986 = 100.0 to NEW reference base 1989-90 = 100.0

	Sydney	*Melbourne*	*Brisbane*	*Adelaide*	*Perth*	*Hobart*	*Darwin*	*Canberra*	*Weighted average of eight capital cities*
Established houses	0.5379	0.6435	0.6341	0.8210	0.5794	0.8026	0.9843	0.7740	0.6150
Project homes	0.6545	0.7524	0.6553	0.8688	0.6993	0.8137	0.7257	0.8375	0.7077
Materials used in house building									0.7610
Award rates of pay in the construction industry			The individual state series are not included in this publication. For more information regarding these series, please refer to paragraphs 17, 18 and 19 of the explanatory notes.						0.8425
National accounts housing investment deflator									0.7348

TABLE 2. From NEW reference base 1989-90 =100.0 to OLD reference base September quarter 1986 = 100.0

	Sydney	*Melbourne*	*Brisbane*	*Adelaide*	*Perth*	*Hobart*	*Darwin*	*Canberra*	*Weighted average of eight capital cities*
Established houses	1.8590	1.5540	1.5770	1.2180	1.7260	1.2460	1.0160	1.2920	1.6260
Project homes	1.5280	1.3290	1.5260	1.1510	1.4300	1.2290	1.3780	1.1940	1.4130
Materials used in house building									1.3140
Award rates of pay in the construction industry			Please refer to the note included in table 1 above.						1.1870
National accounts housing investment deflator									1.3610

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