

## **BTE Road Construction Price Indexes: 1976/77 to 1986/87**

### **Information Paper**

This Information Paper presents input-price indexes for national road construction activity for the period 1975-76 to 1986-87. This Paper contains a further update of the BTE Input-Price Indexes for the financial year 1986-87. Preliminary data which were used in compiling the indexes for 1986-87 have now been updated, and this has resulted in minor amendments to the previous 1986-87 figures. Earlier values of the indexes can be found in BTE Report 49, Road Construction Price Indexes 1969-70 to 1980-81.

Subject

Series

Date

A to Z

Search

Results

Print

Exit

federal bureau of  
**transport**  
**economics**

Information Paper 23

**BTE Road Construction**  
**Price Indexes**  
**1976-77 to 1986-87**

## BTE ROAD CONSTRUCTION PRICE INDEXES 1976-77 TO 1986-87

The Bureau of Transport Economics (BTE) Road Construction Price Indexes were first produced for the period 1969-70 to 1980-81 (BTE 1981). These indexes have been updated each financial year since 1980-81.

The BTE input price index (the overall activity index) is composed of three sub-indexes relating to maintenance, State Road Authority construction and Local Government Authority construction. Each sub-index is in turn made up of indexes of the following components: salaried and other labour, fuel, bitumen, other materials and stores items, and of plant acquisition and replacement.

The six input component indexes for 1976-77 to 1986-87 are set out in Table 1 and are presented in diagrammatic form in Figure 1. It can be observed from these data that, with the exception of salaried labour, the input components showed slower rates of growth in 1986-87 than in the previous year. The index for plant acquisition and replacement registered the largest rise (11.9 per cent) in 1986-87. The price of bitumen fell, mainly as a result of the reduction in crude oil prices during the period.

An update of the BTE overall activity index for the financial year 1986-87 is presented in Table 2. In addition, because of revisions in the data used in compiling the BTE index, minor changes have been made to previous 1985-86 figures. The table shows that the BTE index for overall road construction activity registered a 4.7 per cent rise in 1986-87. This is a smaller percentage increase than in 1985-86.

In Table 3, the BTE overall activity index is compared with seven other indexes:

- . the input-price indexes of the Main Roads Departments of Queensland and Western Australia;
- . the input-cost indexes of the New South Wales Department of Main Roads, the Road Construction Authority of Victoria, the South Australian Highways Department and the Main Roads Department of Tasmania; and

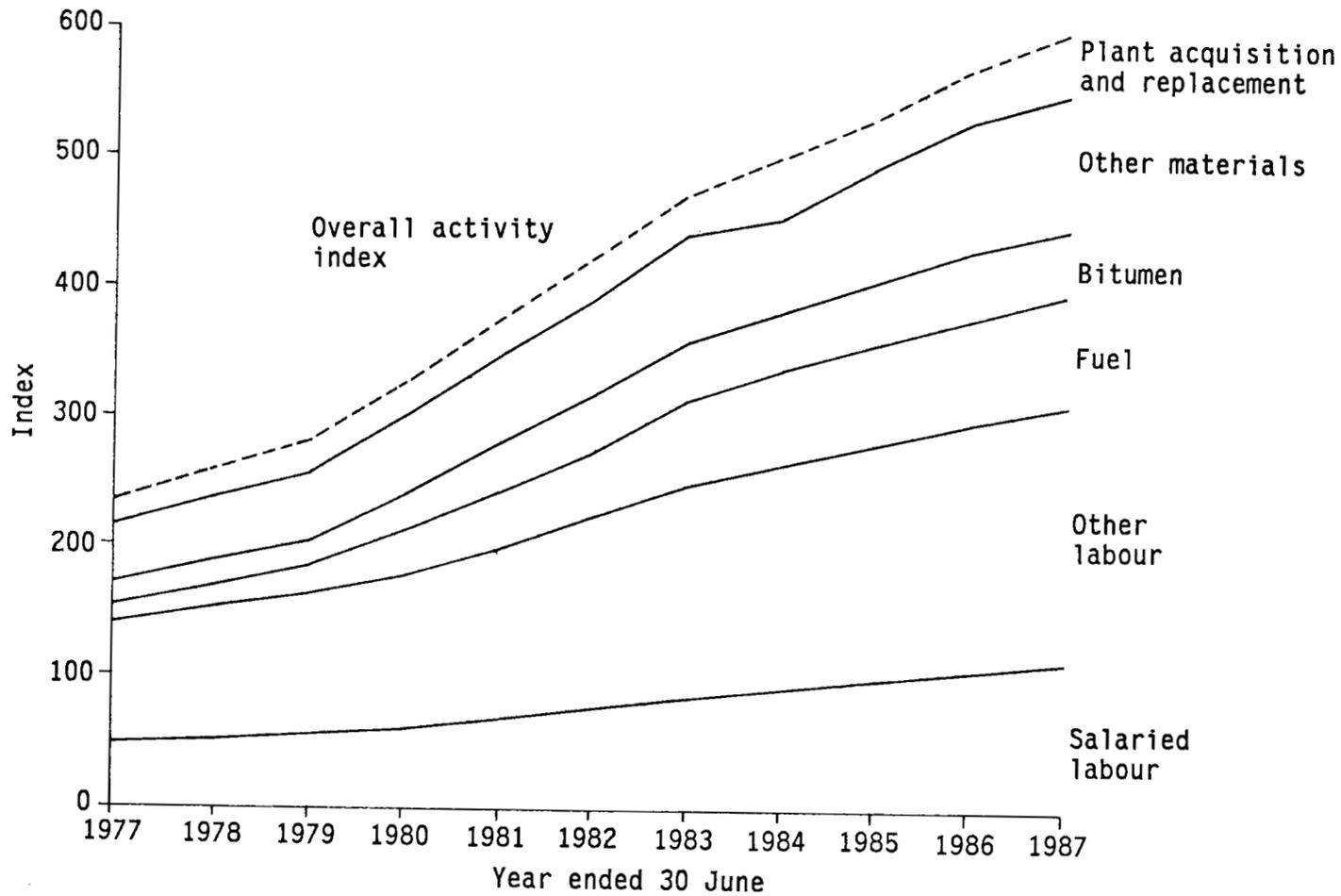
- . the ABS implicit price deflator for private sector gross fixed capital expenditure on non-dwelling construction (which has been used as a proxy for price changes in road construction).

These comparisons show that, of the road construction indexes produced by the various State authorities, the index produced by the New South Wales Department of Main Roads registered the smallest rise (4.6 per cent). The highest increase (8.0 per cent) was for the index prepared by the Main Roads Department of Western Australia. In addition, the ABS implicit price deflator for private sector fixed capital expenditure on non-dwelling construction increased at almost twice the rate of the BTE index.

Price movements in the road construction industry are also compared with the general price movements in the economy in Figure 2. One of the main reasons for the faster growth in road construction prices between 1979 to 1985 was the large increase in the prices of fuel and bitumen. Another was the relatively labour intensive nature of the road construction industry. The prices of fuel and bitumen have since eased. This is reflected in a slowing down of the rate of increase of the BTE overall activity index.

It should, however, be remembered that the BTE Road Construction Price Indexes are based on input, and not output, prices. As such they do not reflect productivity gains.

For further information contact Mr Bright Honu of the Economic Assessment Branch of the Bureau of Transport Economics, Phone: 062 - 67 9882.



*Note* The curve for each component index reflects its relative weight in the total activity index, as well as the growth in the price of that component.

**Figure 1 Component indexes of BTE Road Construction Price Indexes**

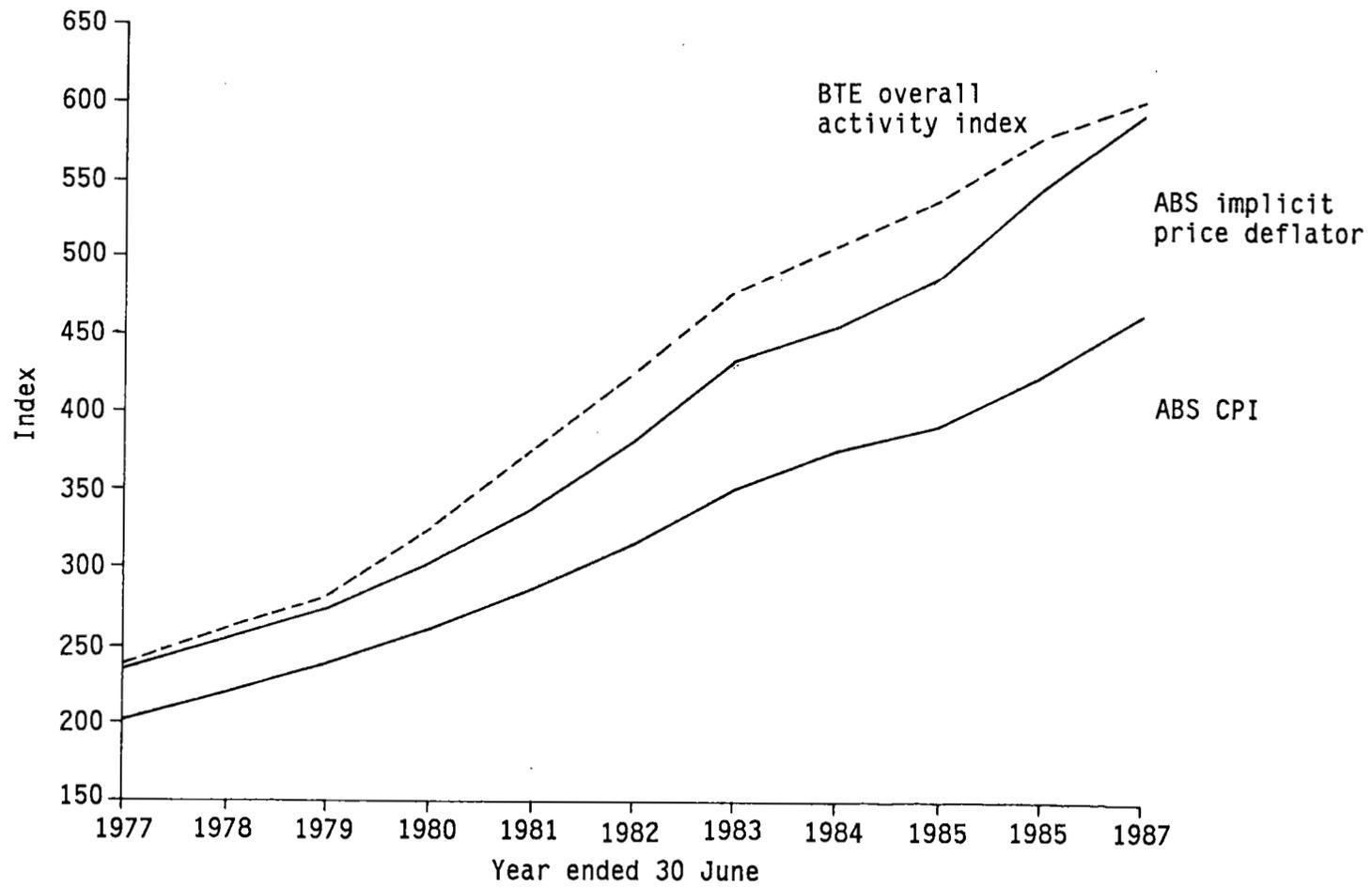


Figure 2 Comparison of BTE Input-Price Index (overall activity) with other general indexes

TABLE 1 COMPONENT INDEXES OF BTE ROAD CONSTRUCTION PRICE INDEXES, 1977 TO 1987  
 (Original base year 1979-80, adjusted so that 1969-70 = 100.0)

<i>Year ended 30 June</i>	<i>Salaried labour<sup>a</sup></i>	<i>Other labour<sup>b</sup></i>	<i>Fuel<sup>c</sup></i>	<i>Bitumen</i>	<i>Other materials</i>	<i>Plant acquisition and replacement</i>
1977	249.9 (12.4)	266.2 (12.8)	192.4 (13.6)	254.5 (19.7)	208.4 (11.7)	198.2 (17.0)
1978	274.6 (9.9)	290.6 (9.1)	232.9 (21.0)	272.8 (7.2)	226.0 (8.4)	215.8 (8.9)
1979	295.7 (7.7)	309.7 (6.6)	308.7 (32.5)	274.7 (0.7)	242.6 (7.3)	228.1 (5.7)
1980	324.9 (9.9)	336.9 (8.8)	497.4 (61.1)	380.8 (38.6)	274.2 (13.0)	252.1 (10.5)
1981	369.1 (13.6)	373.9 (11.0)	631.8 (27.0)	512.4 (34.6)	309.7 (12.9)	281.5 (11.7)
1982	422.7 (14.5)	420.3 (12.4)	697.8 (10.4)	606.9 (18.4)	344.0 (11.1)	311.1 (10.5)
1983	465.3 (10.1)	467.6 (11.3)	962.5 (37.9)	615.6 (1.4)	383.3 (11.4)	328.4 (5.6)
1984	508.0 (9.2)	492.7 (5.4)	1 067.4 (10.9)	630.0 (2.3)	403.6 (5.3)	333.0 (1.4)
1985	548.8 (8.0)	517.7 (5.1)	1 147.5 (7.5)	637.1 (1.1)	425.5 (5.4)	357.5 (7.4)
1986	581.4 (5.9)	541.8r (4.7)r	1 214.1 (5.8)	740.7r (16.2)	460.0 (8.1)	415.1 (16.1)

TABLE 1 (Cont.) COMPONENT INDEXES OF BTE ROAD CONSTRUCTION PRICE INDEXES, 1977 TO 1987  
(Original base year 1979-80, adjusted so that 1969-70 = 100.0)

Year ended 30 June	Salaried labour <sup>a</sup>	Other labour <sup>b</sup>	Fuel <sup>c</sup>	Bitumen	Other materials	Plant acquisition and replacement
1987	624.0p (7.3)p	566.9p (4.4)p	1 256.0p (3.5)p	674.5p (-8.9)p	495.6p (7.7)p	464.6p (11.9)p

a. The ABS Average Weekly Earnings series is used to measure 'salaried labour'. From the September quarter 1981, this series was based on a new survey of employers which replaced the previous series based principally on information from payroll tax returns. The new series was linked to the old in order to provide an index on a comparable basis over the whole period.

b. The new ABS Average Weekly Award Rates Index is used to measure 'other labour' from 1981-82 onwards. This series replaced the wage rates indexes which were used in the BTE indexes prior to 1981-82. The new index was linked to the older in order to provide an index on a comparable basis for the whole period.

c. An automotive distillate index (which is an unpublished component of ABS Price Indexes of Articles Produced by Manufacturing Industry) was used as the fuel component index until 1980-81. A series based on the Petroleum Products Pricing Authority's *Maximum Justified Prices* of automotive distillate was used from 1981-82 to 1983-84. A series based on ABS automotive fuel index has been used since 1984-85.

p Preliminary estimates.

r Revisions to index values presented in Information Paper 19 (BTE 1986) resulting from updated information.

Note Figures in parentheses represent percentage changes.

TABLE 2 BTE ROAD CONSTRUCTION INPUT-PRICE INDEXES, 1977 TO 1987  
(Base year 1979-80, adjusted so that 1969-70 = 100.0)

<i>Year ended 30 June</i>	<i>State Road Authority construction</i>	<i>Local Government Authority construction</i>	<i>Maintenance</i>	<i>Overall activity<sup>a</sup></i>
1977	237.4 (13.2)	235.9 (13.5)	240.2 (13.2)	237.9 (13.3)
1978	260.3 (9.6)	258.7 (9.7)	263.7 (9.8)	260.9 (9.7)
1979	280.7 (7.8)	279.2 (7.9)	285.5 (8.3)	281.8 (8.0)
1980	325.1 (15.8)	324.6 (16.3)	330.3 (15.7)	326.7 (15.9)
1981	376.1 (15.7)	375.9 (15.8)	380.1 (15.1)	377.4 (15.5)
1982	424.8 (12.9)	424.2 (12.8)	428.0 (12.6)	425.8 (12.8)
1983	476.8 (12.2)	476.7 (12.4)	484.9 (13.3)	479.6 (12.6)
1984	507.0 (6.3)	506.2 (6.2)	515.5 (6.3)	509.7 (6.3)
1985	536.6 (5.8)	536.0 (5.9)	545.9 (5.9)	539.8 (5.9)
1986	577.3r (7.6)r	578.1r (7.9)r	584.5r (7.1)r	580.2r (7.5)r
1987	603.7p (4.6)p	605.1p (4.7)p	612.5p (4.8)p	607.3p (4.7)p

a. These are input-price indexes and employ input components closely related to road authorities' actual expenditure items. The overall activity index and the sub-indexes were derived for the base year 1979-80 and then scale adjusted to give 1969-70 = 100.0, to facilitate comparison. Note that the adjusted scale (1969-70 = 100.0) version of the overall activity index cannot be derived simply from the three sub-indexes (State Road Authority construction, Local Government Authority construction and maintenance). Similarly, in the adjusted scale, the three sub-indexes cannot be derived simply from the component indexes in Table 1. Each of the required indexes must be constructed from the component indexes using the base year (1979-80 = 100.0).

p Preliminary estimates.

r Revisions to the index values presented in Information Paper 19 BTE (1986) resulting from updated information.

*Note* Figures in parentheses represent percentage changes.

∞ TABLE 3 COMPARISONS WITH BTE CONSTRUCTION PRICE INDEX, 1977 TO 1987  
(1969-70 = 100.0)

Year ended 30 June	BTE input- price index (overall activity)	State Road Authority input-price index		State Road Authority input-cost index				ABS implicit price deflator <sup>a</sup> private sector
		MRD (Qld)	MRD (WA)	DMR (NSW) <sup>b</sup>	RCA (Vic)	HD (SA) <sup>c</sup>	DMR (Tas)	
1977	237.9 (13.3)	248.5 (11.8)	229.0 (14.3)	244.4 (12.6)	241.4 (8.6)	260.0 (12.3)	263.5 (12.8)	234.5 (12.0)
1978	260.9 (9.7)	270.1 (8.7)	252.7 (10.3)	264.6 (8.3)	257.9 (6.8)	278.2 (7.0)	283.3 (7.5)	254.8 (8.6)
1979	281.8 (8.0)	287.0 (6.3)	275.7 (9.1)	281.4 (6.3)	273.5 (6.0)	302.9 (8.9)	300.6 (6.1)	274.2 (7.6)
1980	326.7 (15.9)	314.9 (9.7)	317.4 (15.1)	323.3 (14.9)	324.4 (18.7)	337.7 (11.5)	337.6 (12.3)	303.0 (10.5)
1981	377.4 (15.5)	353.9 (12.4)	363.1 (14.4)	373.2 (15.5)	367.5 (13.3)	377.6 (11.8)	374.1 (10.8)	340.0 (12.2)
1982	425.8 (12.8)	396.1 (11.9)	406.2 (11.8)	435.2 (16.6)	414.9 (12.9)	429.7 (13.8)	429.7 (13.8)	383.9 (12.9)
1983	479.6 (12.6)	441.2 (11.4)	453.7 (11.7)	512.7 (17.8)	450.7 (8.6)	479.5 (11.6)	451.0 (6.9)	435.8 (13.5)
1984	509.7 (6.3)	469.2 (6.3)	479.3 (5.6)	548.6 (7.0)	482.8 (7.1)	542.6 (13.1)	487.5 (8.1)	457.9 (5.1)
1985	539.8 (5.9)	494.3 <sup>r</sup> (5.3)	509.5 (6.3)	571.1 (4.1)	507.8 (5.2)	571.9 <sup>r</sup> (5.4) <sup>r</sup>	518.6 (6.4)	490.2 (7.1)

TABLE 3 (Cont.) COMPARISONS WITH BTE CONSTRUCTION PRICE INDEX, 1977 TO 1987  
(1969-70 = 100.0)

Year ended 30 June	BTE input- price index (overall activity)	State Road Authority input-price index		State Road Authority input-cost index				ABS implicit price deflator <sup>a</sup> private sector
		MRD (Qld)	MRD (WA)	DMR (NSW) <sup>b</sup>	RCA (Vic)	HD (SA) <sup>c</sup>	DMR (Tas)	
1986	580.2 (7.5)	522.0r (5.6)	552.1r (8.4)r	607.6 (6.4)	528.1r (4.0)r	603.4r (5.5)	546.1 (5.3)	547.4 (11.7)
1987	607.3 (4.7)	553.5p (6.0)p	596.3 (8.0)	635.5 (4.6)	565.1 (7.0)	649.9 (7.7)	583.2 (6.8)	594.4 (8.6)

a. Gross fixed capital expenditure, non-dwelling construction.

p Preliminary estimates.

r Revisions to the index values presented in Information Paper 19 BTE (1986) resulting from updated information.

Note Figures in parentheses represent percentage changes.

Source Personal communication with State Road Authorities.

## REFERENCES

### Abbreviations

ABS        Australian Bureau of Statistics  
AGPS      Australian Government Publishing Service  
BTE        Bureau of Transport Economics

ABS (1982), Price Indexes of Articles Produced by Manufacturing Industry, Australia, June Quarter 1982, cat. no. 6412.0, Canberra.

\_\_\_ (1987a), Average Weekly Earnings, Australia, June Quarter 1987, cat. no. 6302.0, and earlier issues, Canberra.

\_\_\_ (1987b), Award Rates of Pay Indexes, Australia, June Quarter 1987, cat. no. 6312.0, and earlier issues, Canberra.

\_\_\_ (1987c), Consumer Price Index, June Quarter 1987, cat. no. 6401.0, and earlier issues, Canberra.

\_\_\_ (1987d), Price Index of Materials used in Building Other Than House Building, Six State Capital Cities, June Quarter 1987, cat. no. 6407.0, and earlier issues, Canberra.

\_\_\_ (1987c), Quarterly Estimates of National Income and Expenditure, Australia, June Quarter 1987, cat. no. 5206.0, Canberra.

BTE (1981), Road Construction Price Indexes: 1969-70 to 1980-81, Report 49, AGPS, Canberra.

\_\_\_ (1983), BTE Road Construction Price Indexes: 1971-72 to 1981-82, Information Paper 7, AGPS, Canberra.

\_\_\_ (1984), BTE Road Construction Price Indexes: 1972-73 to 1983-84, Information Paper 9, AGPS, Canberra.

\_\_\_ (1985a), BTE Road Construction Price Indexes: 1973-74 to 1983-84, Information Paper 12, AGPS, Canberra.

\_\_\_ (1985b), BTE Road Construction Price Indexes: 1974-75 to 1984-85, Information Paper 15, AGPS, Canberra.

\_\_\_ (1986), BTE Road Construction Price Indexes: 1975-76 to 1985-86, Information Paper 19, AGPS, Canberra.

Petroleum Products Pricing Authority (1983), Maximum Justified Prices, 31 December, Melbourne.