# Report 2

## Changes in the prices paid for telecommunications services in Australia 1997–98 to 2001–02

# Contents

# Summary

Division 12 of Part XIB of the *Trade Practices Act 1974* requires that the Australian Competition and Consumer Commission (the ACCC) monitors and reports each financial year to the Minister for Communications, Information Technology and the Arts on prices paid by Australian consumers for telecommunications services. This report—commonly known as the Division 12 report—meets those obligations for the 2001–02 financial year.

The telecommunications services covered in this year's report include public switched telephone services (PSTN), which are fixed-line services, and mobile telephony services provided on the global system for mobile (GSM) networks. For PSTN services, the ACCC has analysed and reported on the prices paid by residential, small business and other business consumers for basic access, local calls, national long distance calls, international calls and fixed-to-mobile calls. For mobile telephony services, the ACCC analysed and reported on prices paid for prepaid and postpaid services by very low, low, average, high and very high users of these services.

Telstra, SingTel Optus (Optus), Primus, Vodafone and AAPT have provided the information used in this report to estimate prices for the services listed above, and to derive the price indexes used to determine price changes. For 2001-02 however, the ACCC found the data provided by Optus for residential and small business indexes was incompatible with data it has provided in previous years. The ACCC has therefore excluded this data so as not to compromise the index results. In constructing the Division 12 report every year, the ACCC relies on data provided by participating carriers. For this reason, the ACCC is particularly disappointed by Optus' inability to provide compatible and continuous data for residential and small business indexes for 2001–02.

Optus has reassured the ACCC that this is a one-off problem related to the introduction of a new reporting system for its Consumer and Multi-Media division, which is responsible for small business and residential consumers. Optus has also said it will use its new reporting system to provide the data for future Division 12 reports in a form consistent with this year's for easier comparison. Finally, Optus has also assured the ACCC that the difficulties it had in providing suitable data for small business and residential consumers did not affect the data for other business and mobile consumers as this is based on different systems. Therefore this data continues to be included in the indexes for these services.

While the exclusion of Optus' data from the small business and residential indexes is likely to affect the results at the margin, it is unlikely to change the direction of overall price movements, or affect their magnitude. This is because Optus' share in these markets is not enough to be the key driver of these indexes. Also, when these indexes are aggregated with other business and mobile indexes, the effects of excluding Optus would be watered down.

It should be noted that this report (and previous Division 12 reports) measures the real prices paid by consumers for telecommunications services. The ACCC believes that measuring real price

movements is more likely to reflect the underlying price movements for a particular service because it makes allowances for inflation. However, real price movements—which discount nominal (or actual) prices paid to take account of the effects of inflation—do tend to generate greater price decreases and smaller price increases as compared to movements in the actual 'dollar' amount consumers pay for these services.

Since 1999–2000 the ACCC has used a basket approach to measure the prices paid by consumers for telecommunications services. Indexes for the PSTN services or 'baskets' are derived using revenue and quantity or usage data to calculate yields which are used as a proxy for prices paid. Indexes for mobile telephony services are calculated by pricing bundles of mobile telephony services consumed by the five user groups.[1] These indexes, which are all constructed using real prices, are then aggregated together to form an overall index for telecommunications services. Chapter 1 provides further detail on the index model used in this report.

## Summary of main results in the report

### a) Prices paid for PSTN services

Based on the indexes in chapters 2, 3 and 4 of this report, the ACCC has estimated changes in the average price of a range of PSTN services for residential, small business and other business consumers. These price changes can then be aggregated, using a revenue-weighting process, to derive overall price changes for:

- each service across all groups of consumers
- all services across all groups of consumers.

The results of this analysis for 2001–02 are in table 1 on the next page. The aggregate change in price since 1997–98 appears in parentheses.

[1] That is, very low, low, average, high and very high users of mobile telephony services.

**Table 1** **Percentage changes in the PSTN indexes by service and consumer group**

| | Percentage price change, 1997–98 to 2001–02 | | | |
|---|---|---|---|---|
| | residential | small business | other business | **all groups** |
| basic access | +15.0 *(+47.4)* | +16.3 *(+33.2)* | +7.9 *(+32.8)* | **+13.2 *(+42.0)*** |
| local calls | -10.9 *(-34.0)* | -3.0 *(-26.8)* | -15.4 *(-37.7)* | **-11.7 *(-34.6)*** |
| national long distance calls | -8.5 *(-24.6)* | -6.6 *(-19.3)* | -9.5 *(-36.2)* | **-8.7 *(-27.5)*** |
| international calls | -15.6 *(-57.4)* | -13.2 *(-65.6)* | -13.8 *(-65.3)* | **-15.3 *(-59.3)*** |
| fixed-to-mobile calls | -4.8 *(-17.4)* | -0.8 *(-20.5)* | -2.0 *(-23.6)* | **-3.2 *(-20.8)*** |
| **overall** | **-2.2 (-16.7)** | **+2.4 (-15.1)** | **-4.7 (-24.2)** | **-2.6 (-19.0)** |

source: data supplied by Telstra, Optus, AAPT, Primus and (until 2000–01) One.Tel.

note: base year is 1997–98

When viewed by consumer group, table 1 indicates that:

- for **residential consumers**, the average price paid for PSTN services fell by 2.2 per cent in 2001–02. This is the smallest fall for PSTN residential services since 1998–99, and is less than the average price fall for PSTN services overall.
- for **small business consumers**, the average price paid for PSTN services rose by 2.4 per cent during 2001–02. Therefore, while the average price paid for all per-call services decreased in the last 12 months, these falls were not enough to offset the large increase in the price of basic access in the same period.
- the PSTN index for **other business consumers** fell by 4.7 per cent during 2001–02—more than twice the rate of fall for residential consumers. This is largely due to smaller increases in the average price of basic access and larger falls in per-call prices in 2001–02 compared to residential and small business consumers. While the PSTN index for the other business fell during 2001–02, chapter 3 of this report shows this fall was less than in all previous years.

When viewed by service type, table 1 shows that the price paid by all consumer groups for basic access increased during 2001–02. This is the third consecutive year that prices have, on average, increased for basic access. While small business consumers experienced the biggest rise (16.3 per cent) in the cost of basic access in the last 12 months, residential consumers have experienced the biggest overall price rise for basic access since 1997–98, with prices increasing by 47.4 per cent. Other business consumers experienced a smaller increase in the price of basic access compared with the other two groups—7.9 per cent in 2001–02 and 32.8 per cent since 1997–98. This has led to the average price for basic access rising by 13.2 per cent across all consumer groups in 2001–02 and by 42.0 per cent since 1997–98.

While the price of basic access to the PSTN network has increased, the prices paid by all consumer groups for all call types have fallen. Small business consumers experienced the smallest decreases in the average price paid per-call in 2001–02, with local calls falling by 3.0 per cent and national long distance, international and fixed-to-mobile calls falling by 6.6, 13.2 and 0.8 per cent respectively. For residential and other business consumers, prices fell by 10.9 and 15.4 per cent respectively for local calls, and 8.5 and 9.5 per cent for national long distance calls. International and fixed-to-mobile call prices fell by 15.6 and 4.8 per cent for residential consumers and 13.8 and 2.0 per cent for other business consumers.

Table 1 shows that the average price of PSTN services for all services and consumer types decreased by 2.6 per cent during 2001–02. While this result is still positive for consumers as a whole, it is the lowest decrease since 1997–98. This is reflected in the overall price decrease since 1997–98 being 19 per cent.

## b) Prices paid for mobile telephony services

Table 2 summarises the changes in the prices paid by consumers for mobile telephony services in 2001–02. The price of mobile telephony services fell, on average, by 2.5 per cent in 2001–02. Chapter 5 of this report shows that the price index for mobile telephony services has trended downward since 1997–98 indicating that, on average, prices paid by consumers for mobile telephony services have fallen by 23.3 per cent over this period. However, like the trend for PSTN services, the rate of fall has slowed since 1999–2000 with this year's decrease the smallest.

**Table 2 Percentage changes in the price of mobile telephony services by user group, 2001–02**

| | Percentage price change by user groups, 2001–02 | | | | | |
|---|---|---|---|---|---|---|
| | very low | low | average | high | very high | **aggregated** |
| postpaid | -7.8 | -6.8 | -9.3 | -4.1 | +2.1 | **-0.9** |
| prepaid | -34.3 | -0.8 | -3.9 | +0.4 | +3.2 | **-5.0** |
| ***overall*** | | | | | | ***-2.5*** |

source: data from Telstra, Optus, Vodafone, AAPT: published plans and service information

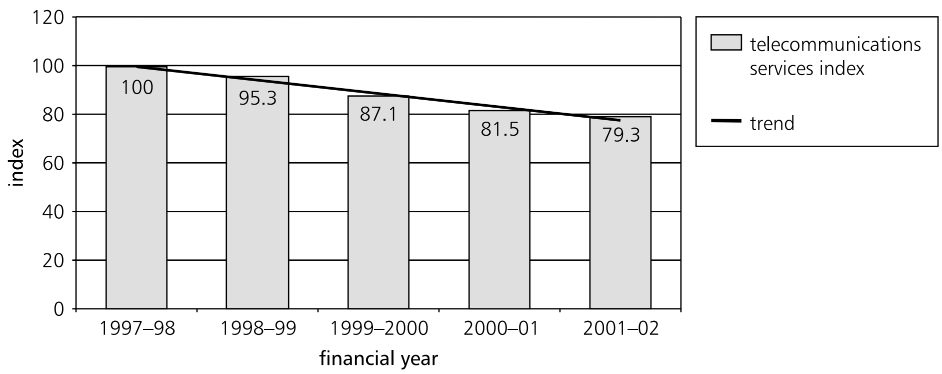
notes: base year is 1997–98

Table 2 shows that in 2001–02 the prices of prepaid mobile telephony services fell by 5.0 per cent while prices of postpaid services fell by just 0.9 per cent. The largest declines in the sub-indexes were experienced by the very low user groups. This generally occurred due to a decline in the fixed charges associated with accessing mobile telephony services which have been proportionally higher for the lower user groups.

## c) Changes in the overall prices paid for telecommunications services

The results from estimating price changes for PSTN and mobile services separately are then combined to estimate changes in the overall prices paid for telecommunications services (see chapter 6). The index that results from this analysis is illustrated in figure 1 below.

**Figure 1 Index for telecommunications services, 1997–98 to 2001–02**



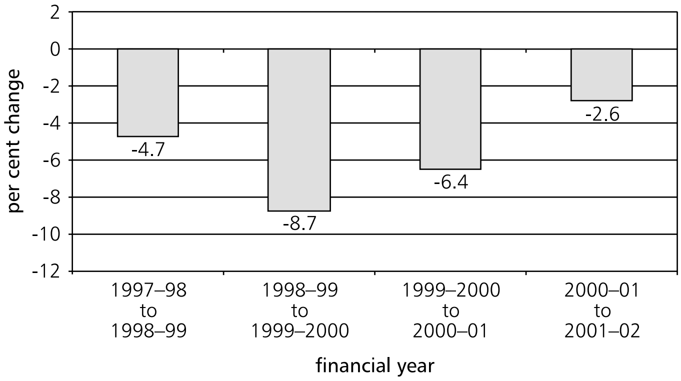

source: data supplied by Telstra, Optus, AAPT, Vodafone, Primus and (until 2000–01) One.Tel

note: base year is 1997–98

Figure 1 shows that, overall, the average price paid by consumers for telecommunications services has decreased by 20.7 per cent since 1997–98.[2] Figure 2 also shows that since 1998–99, the yearly rate of fall in the index has slowed from 8.7 per cent in 1999–2000, to just 2.6 per cent in 2001–02—the smallest fall to date. This trend picks up similar movements in the PSTN and mobile telephony services price indexes.

[2] calculated as the index in 2001–02 divided by the index at the end of 1997–98, minus one. i.e. (79.3/ 100)–1.

**Figure 2** **Year-on-year percentage changes in the index for telecommunications services, 1997–98 to 2001–02**




source: data supplied by Telstra, Optus, AAPT, Vodafone, Primus and (until 2000–01) One.Tel

note: base year is 1997–98

Close inspection in chapter 6 of the factors driving this overall trend shows that consumer expenditure on PSTN services has accounted for between 60 to 75 per cent of total expenditure on telecommunications services throughout the study. Accordingly, the index for PSTN services for all consumers has a bigger weight in the overall index for telecommunications services than the index for mobile telephony services. However, since 1997–98 the proportion of consumer telecommunications expenditure spent on PSTN services has been declining, although expenditure share is still larger than for mobile telephony services. So, while price changes in the PSTN index have generally been smaller than for mobile telephony services,[3] the contribution of these changes to movements in the overall index for telecommunications services has been larger than for mobiles.

## Key conclusions from this report

The key result from this report is that while the overall average price paid by consumers for telecommunications services decreased during 2001–02 , the rate of decrease is the lowest since 1998–99. This result is based on similar aggregate observations for both PSTN and mobile telephony consumers.

While the decrease in the average price paid for PSTN services during 2001–02 was smaller than in recent years, the distribution of the price decreases was not uniform across consumer groups.

The smaller decreases in the average price of PSTN services was largely due to the continued process of 'rebalancing' of the structure of prices for PSTN services in recent years. Rebalancing refers to carriers changing the structure of their charges for PSTN services by increasing the fixed price of basic access while decreasing the price of per-call services. This follows the government

[3] Chapters 4 and 5 of this report detail changes to the PSTN and mobile indexes respectively.

easing retail price controls on Telstra for the price of basic access in recent years while still applying pressure on Telstra to decrease the overall price of baskets of telephony services.[4]

A further implication of rebalancing is that as the price of basic access increases (and prices per-call decrease), it represents a larger proportion of overall expenditure on PSTN services. This is especially the case given the relatively inelastic nature of consumer demand for basic access services. Therefore, when determining revenue-weighted average price movements for overall PSTN indexes, any movement in the price of basic access now carries a greater weight because it represents a greater proportion of overall expenditure on PSTN services.

The exit of One.Tel from all telecommunications markets in May 2001 has also affected the prices paid for PSTN services. From 1997–98 to 2000–01 data from One.Tel was included in the study. As a new entrant in the market, One.Tel discounted aggressively to gain market share and this was reflected in the data for previous years' Division 12 reports. The removal of One.Tel from the survey may partly explain the slowing down in the rate of decrease in the prices paid for telecommunications services in 2001–02.

Other business consumers have clearly experienced the biggest decrease in the average price of PSTN services. Indeed, the fall in the average price of PSTN services for other business consumers is more than double that of residential consumers, while small business consumers experienced an increase. This relatively large decrease for other business consumers reflects their ability to better negotiate 'off-tariff' discounts with suppliers of PSTN services. This is reflected in the comments of carriers in chapter 3 of this report.

Finally, two key observations emerge from this report about changes in the price of mobile telephony services:

- while the rate of take-up of postpaid mobile telephony services seems to have stagnated during 2001–02, the rate of growth of prepaid services has been steadily growing since 1998–99
- the rate of decrease in the average price of mobile telephony services has, like PSTN services, been falling.

The Australian mobile market has been characterised by high penetration rates since about 1996. Since then, carriers have engaged in price and non-price competition to attract new subscribers and gain a share of the growing market.

In 2001–02, the market for postpaid mobile telephony services appears to be reaching saturation, although carriers still compete vigorously for new prepaid customers, which is a rapidly growing market segment. The pattern of mobile prices has followed this trend with the fall in postpaid prices slowing down, but large falls in prepaid prices are still occurring where carriers are competing for this type of customer.

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4 For more detail on the history of retail price control arrangements in telecommunications in Australia, refer to ACCC, *Review of price control arrangements—final report,* February 2001.

# 1 Introduction

Division 12 of Part XIB of the *Trade Practices Act 1974* (the Act) requires that the Australian Competition and Consumer Commission (the ACCC) must monitor and report each financial year to the minister on prices paid by consumers of telecommunications services (the Division 12 report).

The Division 12 report helps government and regulators make policy and regulatory decisions. It also encourages broader discussion about the progress of telecommunications reform in Australia. Although it is a report to the minister and his department, the ACCC, the Australian Communications Authority (ACA) and other government departments refer to the report for information. Industry participants and consumer groups have also taken an interest in previous report findings.

## 1.1 The index model

In previous years, to meet its monitoring and reporting obligations under Division 12 of Part XIB of the Act, the ACCC engaged the Communications Research Unit (CRU) of the Department of Communications Information Technology and the Arts to construct a model to derive estimates of the prices paid by consumers of telecommunications services, and to analyse how these have changed from one year to the next.

For 2001–02, the ACCC has undertaken this work itself. It has largely followed the same modelling approach devised by the CRU in previous Division 12 reports.

Since 1999–2000 the Division 12 report has used a basket approach to measure the prices paid by consumers of telecommunications services. Under this approach, index numbers are used to analyse movements in prices. An index number, in this context, measures the price of the services in one period relative to another. Index numbers therefore provide a measure of price changes over time, but not price levels. The advantages and disadvantages of the index approach and the method of constructing indexes are detailed in the Division 12 report for 1999–2000.[1]

To construct these indexes, the ACCC has collected revenue, quantity and pricing plan data from several telecommunications service providers. Based on this data, the ACCC can construct a number of indexes which measure how the average price paid by a range of consumer groups for various telecommunications services has changed over time. These indexes are then aggregated to derive a series of overall indexes.

1 A full description of the construction of the index and the underlying theory is contained in appendix 1 of ACCC, *Changes in the prices paid for telecommunications services, 1999–2000*.

The methodology used to derive individual indexes can vary. Specifically, the ACCC uses a different method to derive the indexes for PSTN services, than for the indexes for mobile telephony services. This is consistent with the methods used by the CRU in previous years' Division 12 reports. The alternative methods used to derive PSTN and mobile telephony price indexes are further outlined below.

### 1.1.1 The index for PSTN services

Division 12 of Part XIB of the Act requires that the ACCC report on prices paid for telecommunications services. This implies that retail prices, after deducting discounts and concessions to reflect prices actually paid by consumers, should ideally be used. The Australian Bureau of Statistics (ABS) follows this practice when constructing the consumer price index (CPI), which also aims to show changes in prices paid.

Historical and current data on actual prices paid are not readily available and would require regular and expensive sampling to obtain. Also, standard tariff documents may not include information on discounts and short-term specials, which have been offered increasingly by the carriers. In any case, such information only provides list prices and says nothing about how these pricing structures affect the prices paid by consumers. Additionally, many discount plans kick in only after a threshold value or number of calls has been made. It is extremely difficult to establish retrospectively the degree to which customers have not taken advantage of discounts by falling short of the thresholds.[2]

To try and capture the effects of discounts and specials on prices paid, carrier revenue and usage data have been used to derive a yield. The yield provides a proxy for price in the form of an estimate of the average price paid for a unit of a telecommunications service. In the market for national long distance calls, for example, it provides an estimate of the average price paid for a call minute during a year.[3]

Revenue and usage data have been collected from Telstra, SingTel Optus (Optus), AAPT and Primus to derive the indexes for PSTN services in this report. Until last year, the ACCC also included One.Tel data before its demise in 2001.[4] The carriers provided separate revenue and usage estimates for five basic PSTN services—basic access, local calls, national long distance, international long distance and fixed-to-mobile services. For each of these services, carriers were asked to further disaggregate the data by residential, small business and other business consumers.

2 The difficulty in obtaining data on prices paid meant that the standard or list prices were used to construct the weighted averages for each service reported in the first two Division 12 reports, but at a cost. Standard prices are the maximum consumers pay since these exclude all discounts and short term specials.

3 see ACCC, *Changes in the price paid for telecommunications services 1999–2000,* for a detailed discussion on the difficulty in using yield data.

4 actual data supplied previously by One.Tel was used for the years 1997–98 to 1999–2000. The data for 2000–01, however, was extrapolated from these previous data because One.Tel ceased trading before it could supply 2000–01 data. For ACCC, *Changes in the prices paid for telecommunications services, 2000–01*, One.Tel was assumed to grow at a similar rate to the rest of the market, excluding Telstra. This was a conservative assumption because One.Tel had grown more quickly during 1999–2000.

However, the data provided by some carriers cannot be used in all PSTN indexes. The ACCC is particularly disappointed by Optus' inability to provide data for 2001–02 that could be used as a basis of comparison with previous years' data. Optus' data for residential and small business services has been excluded from this year's analysis.

This is unfortunate as it reduces the sample of data upon which the PSTN indexes are based, but is necessary in order not to bias the Division 12 report's final results. It is also unfortunate given the ACCC places importance on the Division 12 report, as it provides valuable information and analysis on the price and competition dynamics over the years in Australia, and is required under Division 12, Part XIB of the *Trade Practices Act 1974*. The ACCC relies heavily on the input of participating carriers to complete the report.

Optus has indicated that this is a one-off problem related to the introduction of a new reporting system for its Consumer and Multi-media division—the division responsible for small business and residential consumers. Further, Optus indicates its new reporting system used to provide the required data for future Division 12 reports will be consistent with the system used for this year's data. This year's data for small business and residential consumers can therefore be directly compared with that of future years.

Finally, Optus has also assured the ACCC that the difficulties experienced in providing suitable data for small business and residential consumers does not in any way affect the data provided for business and mobile consumers, which is based on different systems. Accordingly, Optus' data continues to be included in estimating indexes for these services.

Excluding Optus' data is likely to marginally affect the small business and residential indexes but is unlikely to change the direction or magnitude of overall price movements. This is because, while significant, Optus' market share in these markets is not sufficient to be the key driver of these indexes. Further, the effect of excluding Optus from the small business and residential PSTN indexes would be watered down when these indexes are aggregated with other business and mobile indexes. Therefore, the exclusion of Optus' data from the small business and residential PSTN indexes probably has only a small impact on the overall indexes for telephony services.

Using data collected from each carrier, a yield for each carrier has been estimated for every PSTN service by consumer group for each year of the study. These yields were then converted into real terms[5] and, as indicated above, used to construct a series of price indexes—using a chained-Laspeyres index methodology[6]—that show how prices paid for individual PSTN services by different consumer groups changed over time.

Individual carrier indexes for each PSTN service and consumer group category were then combined to derive indexes for PSTN services by the three consumer groups for which data was

5 All the revenue and price data are expressed in 1999–2000 dollars in the index model. The nominal values were converted to 1999–2000 values using the consumer price index.

6 Full details of this methodology can be found in appendix 1 of ACCC, *Changes in the prices paid for telecommunications services, 1999–2000*.

collected—residential, small business and other business. These three indexes were then aggregated into an overall index for all PSTN services for all consumers. As with all aggregated indexes in this report, the expenditure share of a service determines its importance in the overall index. For a given change in price, the index is influenced most by those services on which consumers as a group spend the most money.

The different levels of aggregation of the PSTN indexes are particularly useful for the ACCC. It allows it to monitor both the changes in PSTN prices for all consumers via the 'overall' index as well as analyse how price changes for individual services across particular consumer groups. Chapters 2, 3 and 4 discuss the results of different levels of aggregation of the overall PSTN index.

### 1.1.2 The index for mobile services

As in previous years, the report monitors prices paid for mobile telephony services provided on the global system for mobile (GSM) networks. The prices of mobile telephony services provided on the code division multiple access (CDMA) network have been excluded. With growth in the use of CDMA, the ACCC has started collecting data on this service to include in future Division 12 reports.

In contrast to the PSTN index, yield data has not been used to construct indexes for mobile telephony services because of the marketing methods used to sell these services. To make a call on a mobile network, consumers require a mobile handset, connection and ongoing access to the network. Companies that supply mobile telephony services typically offer them as part of a bundled package or plan. These plans include ongoing access to a carrier's network, charges for calls and other services and if required, connection and a handset.

Many of the mobile plans contain a high degree of cross subsidy, particularly those where the cost to carriers of low upfront charges for handsets are recovered through higher charges for monthly access or calls. When choosing which plan to use, consumers can further trade-off higher access charges for lower call charges.

The CRU's approach to the problem of estimating prices for mobile services has been to treat mobile telephony as a bundle of services and then to measure the prices paid by consumers for these bundles. The bundles are based on the number and pattern of calls made by consumers and include calls to all mobile networks and the fixed network. The bundles are derived from sample bill data provided by carriers in the study and so reflect the actual consumption patterns of Australian consumers. The price of each bundle is determined by adding the cost of the handset, connection, monthly access and call charges, net of any discounts and free calls.

In previous years, there was not enough data to determine the use of text and voice messages so these were excluded from the bundles.[7] These services will be included in future reports when the prices of bundles are updated.

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[7] See ACCC, *Changes in the prices paid for telecommunications services, 1999–2000*, appendix 1 for a detailed discussion on estimating the price of mobile telephony.

Previous years' reports included only the prices of bundles constructed for postpaid mobile telephony services. Because of the rapid growth in the take-up of prepaid mobile telephony service plans in the last three years the ACCC has decided to construct and price a similar set of bundles for prepaid telecommunications services. The modelling therefore enables the ACCC to construct price indexes for both postpaid and prepaid mobile telephony services. These are aggregated using a revenue-weighting process to form an overall mobile telephony index. The results and analysis of this modelling can be found in chapter 5 of this report.

### 1.1.3 The overall index for all telecommunications services

Once overall indexes for PSTN and mobile telephony services have been derived, they are combined into a single overall index for all telecommunications services. This is done by revenue-weighting each index by the respective shares of PSTN and mobile telephony revenue in the total revenue for all services surveyed. The index gives a measure of how prices have changed, on average, for consumers of telephony services as a whole.

### 1.1.4 The analysis period

All indexes presented in this report monitor the changes in price of telecommunication services between 1997–98 and 2001–02. This year's Division 12 report has rebased its indexes to begin from 1997–98.

Regional indexes for consumers were not updated in last year's report as in previous reports because of difficulties in resolving quality issues.

For this report, the difficulties in acquiring suitable, quality data for updating the regional/rural indexes have remained, largely as a result of the incompatibility of data collected in previous years with that collected for 2000–01.

Price indexes for telecommunications services in regional/rural areas are excluded from the 2001–02 report. If data collected during 2001–02 can be used as a basis point for comparison, the regional/rural index can be re-introduced for future Division 12 reports.

### 1.1.5 The goods and services tax (GST)

On 1 July 2000, the government introduced a goods and services tax (GST) which affects the prices paid by consumers of telephony services. As noted in last year's Division 12 report, the GST affects the prices paid by business and residential consumers differently.

Most business consumers are able to claim a GST input credit on telecommunications services because these are business inputs. Residential consumers, on the other hand, cannot generally claim a GST input credit for the purchase of telecommunications services. Consequently, the estimated prices paid by business consumers for fixed line services are GST exclusive while those

paid by residential consumers are inclusive of GST.[8] The prices for mobile telephony services are GST inclusive as information was not available to estimate the proportion of mobile services used exclusively or partly for business.

### 1.1.6 Quality of service

Quality is interpreted to mean all the non-price attributes of a product or service. It would include, for example, performance, reliability, and features of the product or service. The Productivity Commission adopted the following definition. Quality is:

> …the totality of attributes embodied in (or associated with) a product or service that directly interact with the enjoyment (or utility) that consumers derive from that good or service…[9]

If changes in quality are ignored in the analysis of price change for telecommunications services, it is likely that changes will not reflect pure price changes. That is, price changes where quality remains unchanged. If quality does change and it can be measured, the base period price may be adjusted to reflect the quality change. The measured change in price after the adjustment is then a pure price change.

The adjustment is difficult to make for telecommunications services. The Australian Bureau of Statistics (ABS) has no satisfactory arrangement in place to adjust the prices of these services in the CPI to reflect changes in quality, however large they are.

Under these circumstances, it is not possible to do anything other than acknowledge that a bias may exist.

### 1.1.7 Alterations to the methodology for this year's report

It is noted that the results for previous periods in this report may differ in some instances from those reported in past years. This difference is mainly due to the methodology used by the ACCC this year in calculating price changes for PSTN services in the study period. Previously, the CRU has used an industry-wide aggregation method to calculate the annual price for individual services. This year, however, the ACCC has moved to adopt a two-step method to calculate annual average price movements. This involves firstly calculating an annual average price for each carrier for each service, and then calculating a revenue weighted price to estimate the price movement for the industry as a whole. Revenue weighted prices then form the basis for price comparisons between periods. While either approach can be used to calculate price movements over time, the ACCC considers that its two-step approach better reflects the relative importance of price changes by each individual carrier at the individual service level.

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8 As the GST was not in operation in Australia prior to 1 July 2000, no services included a GST component in their prices prior to 2000–01.

9 PC, *International Benchmarking of Australian Telecommunications Services— Research Report*, 1999, p.151.

In preparing this year's report, the ACCC has recalculated previous period's results for PSTN services using the two-step methodology noted above. This has generated some changes in price movements in previous periods which are not due to any changes in the data used in this report. The ACCC notes that while the change in methodology may affect the magnitude of some results, the broad trend of the results remains unchanged. That is, the overall trend of smaller price decreases across most aggregate PSTN indexes for the 2001–02 financial year holds, irrespective of the choice of methodology used in the Division 12 Report.

With regard to the mobile services index, the ACCC also notes that some differences exist between those results reported in previous year's reports, and those estimated for previous periods in this year's report. These are mainly due to the introduction of the prepaid index into the overall mobile services index, and some minor changes to correct for data errors made in previous year's reports.

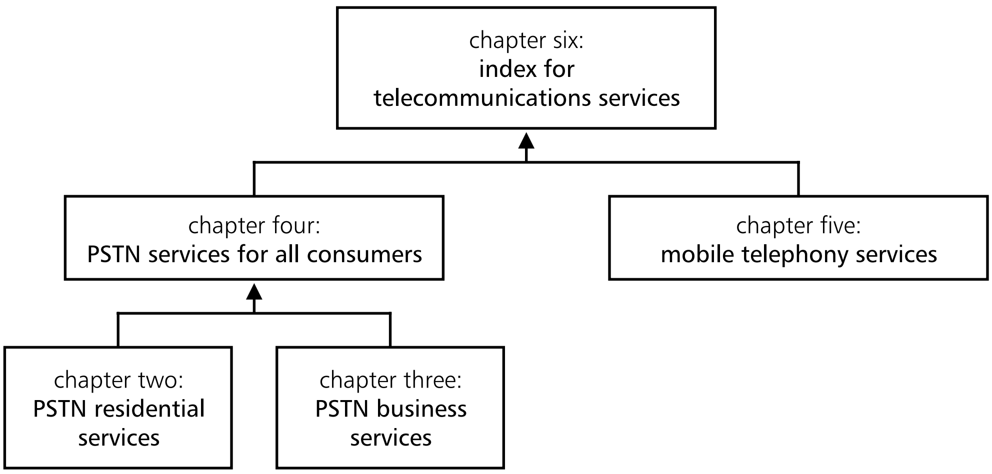
## 1.2 Structure of the report

Broadly speaking, the structure of this report reflects the way in which the base indexes for PSTN services and mobile services are aggregated to derive the final overall index for all consumers of telecommunications services.

Chapters 2 and 3 of this report begin by considering the indexes derived for residential and business PSTN consumers, respectively. The results from these indexes then form the basis of an aggregated index for all PSTN services in chapter four. Chapter 5 considers the changes in prices paid for GSM mobile telephony services, and these results are then combined with the all PSTN results from chapter 4 to derive the overall index given in chapter 6.

This structure of chapters and indexes is illustrated in figure 1.1 below.

**Figure 1.1 Structure of the report**



The index model used in chapters 2 to 6 produces several related indexes rather than one single index. The structure of the model allows additions up to several levels. Each level produces a sub-index that provides a range of information on price changes in particular parts of the market for telecommunications services.

For each index, or basket of services being analysed, the report discusses:

- changes in the index, and hence changes in prices paid, on average, for the relevant basket of services being analysed
- the year-on-year percentage changes in the index and contributions made by its major components
- the changes in price of individual services or baskets consumed by particular user groups that contribute most to each year-on-year change of the index.

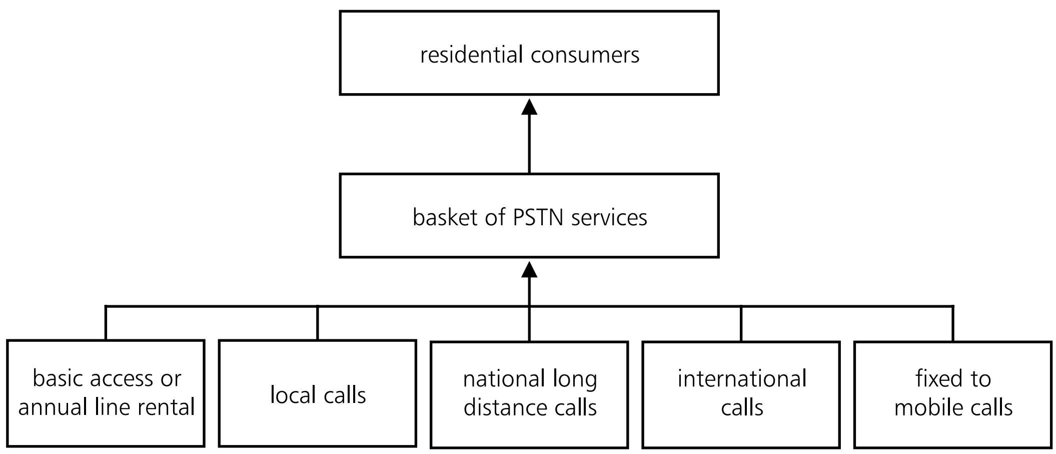
# 2 Price index for PSTN services consumed by residential consumers

The index for residential PSTN services is based on five individual sub-indexes for each PSTN service.[1] As discussed in chapter one, each individual sub-index is constructed on the basis of the revenue and quantity data provided by Telstra, AAPT, Primus, Optus and One.Tel (until its demise in 2000–01). As indicated in chapter one, Optus was unable to provide reliable data for residential PSTN services. Accordingly, this has been excluded from the analysis for 2001–02 financial year. This revenue and quantity data is used to calculate a weighted-average yield across carriers for each service for each financial year. The calculated yield for each service has been converted to 1999–2000 values using the CPI.

The individual indexes for each service are then combined by revenue-weighting the yearly price change for each individual PSTN service. Revenue weights are based on each individual service's share of the previous year's overall revenue for all residential PSTN services surveyed.

The broad structure of this index is illustrated in figure 2.1, which shows that the index for each individual PSTN service is combined to form an overall PSTN index for residential consumers.

**Figure 2.1 Construction of the index for PSTN services consumed by residential consumers**



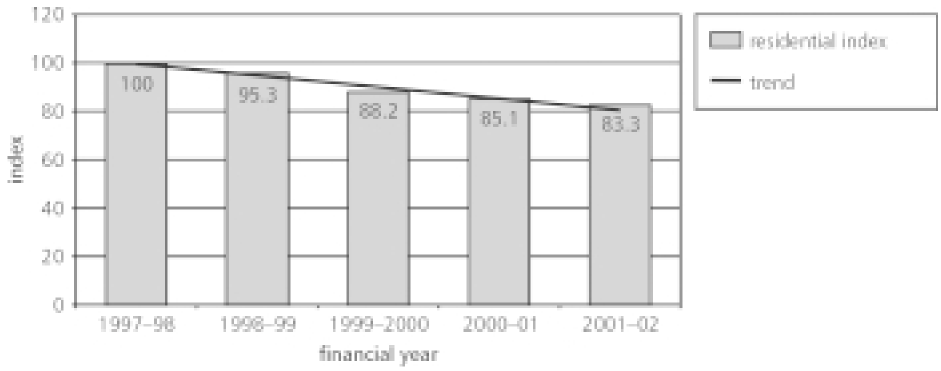

[1] The basket of PSTN services comprise the following individual services: basic access service, local calls, national long distance, international calls and fixed–to–mobile calls.

The initial focus in this chapter (section 2.1) is on the overall index of price changes for residential PSTN consumers. Section 2.2 considers how the average price movement for each individual PSTN service contributed to the overall price index. There is a tariff commentary in section 2.3 that sheds light on what changes individual carriers have made to their price offerings to explain what is driving the average price changes for each service.

## 2.1 Changes in the residential PSTN price index, 1997–98 to 2001–02

Over the period from 1997–98 to 2001–02, the average price for a basket of PSTN services paid by residential consumers decreased by approximately 16.7 per cent.[2] The overall downward trend in the prices paid by residential consumers between 1997–98 and 2001–02 is shown in figure 2.2, which illustrates the index for PSTN services for residential consumers.

**Figure 2.2 Index for PSTN services for residential consumers, 1997–98 to 2001–02**




source: data supplied by Telstra, AAPT, Primus and (until 2000–01) One.Tel and Optus.

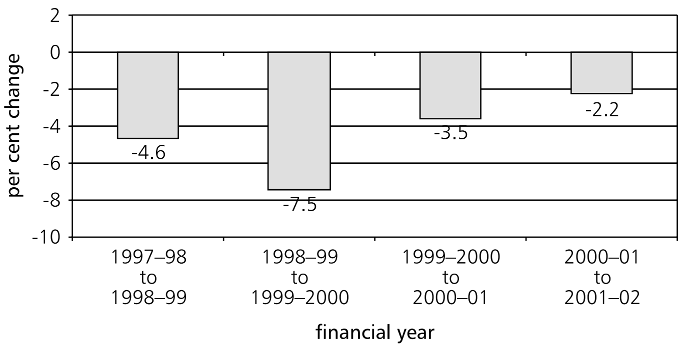
note: base year is 1997–98

As illustrated in figure 2.2, from a base of 100 in 1997–98, the index fell to 95.3 during 1998–99 and decreased overall to 83.3 in 2001–02. While the average price paid for residential PSTN services decreased each year from 1997–98 to 2001–02, the rate of decrease has slowed since 1999–2000. That is, residential consumers have, on average, paid less for PSTN services each year since 1997–98, but the rate that the prices have fallen has slowed.

[2] calculated as the index in 2001–02 divided by the index at the end of 1997–98, minus one. i.e. (83.3/ 100 )–1.

This trend is evident from figure 2.3 which shows the yearly percentage change in the price for PSTN services to residential consumers between 1997–98 and 2001–02.

**Figure 2.3 Year-on-year percentage changes in the index for residential consumers, 1997–98 to 2001–02**




source: data supplied by Telstra, AAPT, Primus and (until 2000–01) One.Tel and Optus

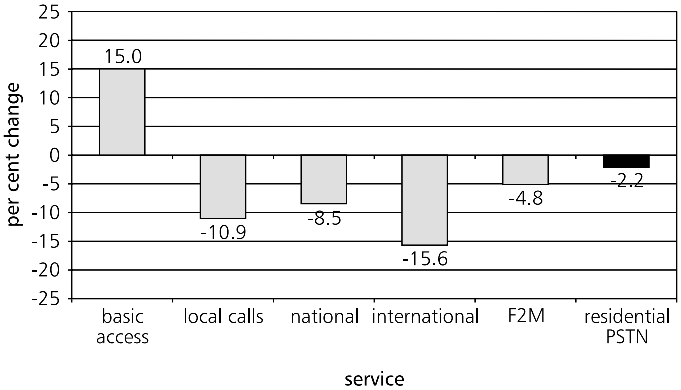
The rate of decrease in the PSTN residential index initially increased during the 1999–2000 period from 4.6 per cent to 7.5 per cent. Figure 2.3 shows that the rate of decrease in the average price paid by residential consumers for PSTN services decreased to approximately 3.5 per cent during 2000–01, and to approximately 2.2 per cent during 2001–02.

## 2.2 Price movements for each individual PSTN service for residential consumers

In order to determine the factors that may have driven the decline in the rate at which the weighted-average price of residential PSTN services has been decreasing, it is useful to consider how prices have moved, on average, for each individual PSTN service comprising the residential PSTN basket.

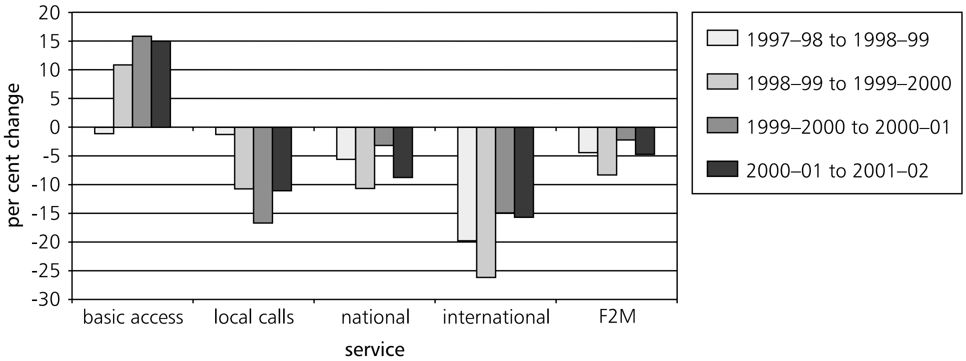
Figure 2.4 shows the price changes for the individual service components of the residential basket of PSTN services in 2001–02. This figure is complemented by figure 2.5 which shows how the price of each individual service has changed over four periods since 1997–98.

### Figure 2.4 Individual movements in the prices paid by residential consumers for PSTN services, 2001–02




source: data supplied by Telstra, AAPT, Primus and (until 2000–01) One.Tel and Optus.

### Figure 2.5 Year-on-year percentage price changes for individual PSTN services for residential consumers, 1997–98 to 2001–02




source: data supplied by Telstra, AAPT, Primus and (until 2000–01) One.Tel and Optus.

notes: see appendix for specific details with regard to the yearly price changes for each service for each financial year.

Figures 2.4 and 2.5 provide insights into the factors causing price changes for residential PSTN services. A brief commentary on the price movement for each individual service is provided below.

- *basic access service*: The average price paid for basic access services by residential consumers increased again during 2001–02 by approximately 15 per cent, slightly lower than the 16.1 per cent increase the previous year. Nonetheless, it reinforces the general trend towards higher average prices for residential basic access services observed since the 1998–99 financial year;

- *local calls*: The average price paid by residential consumers for local calls decreased in the two financial years before 2001–02: by 10.4 per cent during 1999–2000, and 16.4 per cent the following year. Price reductions continued during 2001–02, however as shown in figure 2.5, the rate of decrease in the average price of local calls by residential consumers slowed to approximately 10.9 per cent. Local calls have traditionally been a relatively large expenditure item for residential consumers of PSTN services. This helps explain the fall in the rate of decrease in the overall index for residential PSTN services during 2001–02.
- *national long distance calls*: During 2001–02 the average price of national long distance calls made by residential consumers reduced by approximately 8.5 per cent. As illustrated in figure 2.5, the reduction is greater than in 2000–01, but still smaller than in 1999–2000.
- *international calls*: During 2001–02 the average price of international calls made by residential consumers decreased by approximately 15.6 per cent, similar to the 14.6 per cent decrease in 2000–01. Both are less than the 26.3 per cent decrease experienced in 1999–2000.
- *fixed-to-mobile calls*: During 2001–02 the average price for fixed-to-mobile calls decreased by about 4.8 per cent for residential consumers. Figure 2.5 shows that while this decrease was larger than the 1.2 per cent decrease in 2000–01, it is smaller than the 8.2 per cent decrease during 1999–2000.

In summary, the rate of increase for the price of basic access was slightly lower during 2001–02 than 2000–01, while the rate of decrease for national long distance, international and fixed-to-mobile services was slightly higher. Nonetheless, there was a slowing rate of reduction in the price index for residential consumers of PSTN services during 2001–02, mainly due to the smaller decrease in the average price paid by residential consumers for local calls during that financial year.

This is because the average price paid by residential consumers for the other PSTN services tended to move in a direction that would suggest the rate of decrease for the residential PSTN price index would increase. That is, the rate of increase for the price of basic access was slightly lower during 2001–02 than during 2000–01, while the rate of decrease for national long distance, international and fixed-to-mobile services was slightly higher.

Viewed another way, figure 2.5 would also tend to indicate that in the absence of the significant decrease in the price of local calls during 2000–01, the decrease in the price index for residential PSTN services would have been much lower for last year's report. This is because the rate of decrease in the average price of national long distance, international and fixed-to-mobile services for residential consumers showed a marked fall during 2000–01, as compared to the decrease during the previous financial year. The decline in the rate of decrease for these other per call services would now appear to have been matched a year later by the decline in the average price decrease for local calls.

These observations are supported by consideration of the points contributions made by individual services to the overall price change for residential PSTN services.

Points contribution analysis outlines the number of points that a component (in this case a service) contributes to the overall index in a particular year. For example, it might say that of a 8 per cent increase in the price index for a certain basket of services, 2 points (or one quarter) is due to increases in the price of a given individual service. The points contribution for any component of a given index is calculated by multiplying the revenue share of a component in a basket by the movement or change of the index in that year.[3]

The points contribution of individual service components to the weighted average price changes for the PSTN residential services are shown in table 2.1.

The price decrease for residential PSTN services slowed from -3.5 per cent during 2000–01 to -2.2 per cent the following year. This was largely due to a fall in the point contributions made by local calls from -4.7 points to -2.4 points and an increase in the points contribution made by the increasing average price paid for basic access services.

The points contributions from international calls remained relatively constant at -1.5 points during 2001–02, while that of national long distance and fixed-to-mobile services increased from -0.7 points to -1.9 points, and -0.2 points to -0.8 points, respectively. This increase for national long distance and fixed-to-mobile calls was not sufficient to offset the reduced points contribution from local calls and the increased positive points contribution from basic access services.

Table 2.1 shows the sharp deceleration in the price fall for residential services during 2000–01 (from 7.5 per cent in 1999–2000 to 3.5 per cent in 2000–01) was mainly due to falls in the points contribution made by national long distance services (from -2.6 to -0.7 points); by international calls (from -2.9 to -1.6 points); and by fixed-to-mobile services (from -0.9 to -0.2 points) over this period.

This was reinforced by the positive points contribution made by basic access services which increased from 2.3 points to 3.7 points during 2001–02. These impacts were offset to some extent by the increase in the negative contribution made by local calls from -3.3 points in 1999–2000 to -4.7 points in 2000–01.

Thus, the sharp deceleration in the overall price fall for telecommunication services paid by residential customers in 2000–01 was largely due to the combined effect of accelerated increases in basic access and decelerated falls in the average price paid for national long distance, international and fixed-to-mobile services.

[3] Revenue shares are based on previous period revenue figures.

**Table 2.1 Points contributions by individual PSTN services to the residential index, 1997–98 to 2001–02**

| | points contribution in the financial year | | | |
|---|---|---|---|---|
| | 1998–99 | 1999–2000 | 2000–01 | 2001–02 |
| basic access | -0.1 | +2.3 | +3.7 | +4.4 |
| local | -0.3 | -3.3 | -4.7 | -2.4 |
| national long distance | -1.3 | -2.6 | -0.7 | -1.9 |
| international | -2.5 | -2.9 | -1.6 | -1.5 |
| fixed-to-mobile | -0.4 | -0.9 | -0.2 | -0.8 |
| residential | -4.6 | -7.5 | -3.5 | -2.2 |

notes: (a) where the base year is the previous year.

(b) revenue weights are based on previous year's revenue shares.

(c) the sum of the components' point change may not add up to the overall index change due to rounding.

(d) in order to obtain the relative contributions of the changes in the price of one component to the change in the overall index, divide the points change for a component by the points change for the overall index.

* also, see appendix for specific details with regard to the points contributions by individual PSTN services to the index for each financial year.

## 2.3 Analysis and tariff commentary on the reasons for changes in the price of individual PSTN services during 2001–02

The basic access service was the only service to experience an average price rise during 2001–02. The rise resulted from decisions by Telstra to continue rebalancing the prices for basic access and per-call services during the year.

Previous price control arrangements meant that the amount which Telstra could increase the price of basic access services was limited. As a result of this, the ACCC estimated that the price Telstra previously charged for basic access was below the average long-run cost of providing this service.[4] In turn, Telstra set the price for per-call PSTN services above the long-run incremental cost partly to recover the loss it made on basic access services.

[4] See, for example, ACCC, *Review of the price control arrangements*, February 2001.

However, in recent years the government has eased the restriction on the extent to which Telstra can increase the price of line rental.[5] Telstra has taken advantage of this opportunity to increase the price of basic access for residential and business consumers. Other price controls also encouraged Telstra to rebalance the structure of its prices for telephony services by decreasing the average price of per-call PSTN services, such as local, national long distance and international call services. Other carriers followed the trend of offsetting the increase in the price of line rental by decreasing the price of per-call PSTN services. This trend of rebalancing prices for residential PSTN consumers has been evident since 1999–2000.

With specific reference to 2001–02, in September 2001 Telstra increased the price of its basic access service to residential consumers for all HomeLine packages by about $2.40.[6] Other carriers followed suit with Primus and Optus increasing the price of their basic access service for residential consumers by about the same amount as Telstra.

The average prices for all per-call services paid by residential consumers decreased during 2001–02. The ACCC believes this was largely a result of promotions and discounts offered by the carriers to residential consumers.

Promotions on national long distance calls were offered by some carriers. Primus extended its $1.76 night capped rate for national long distance calls from 5 to 7 days a week. For a separate plan, Primus extended its $2 capped national rate plan from 7pm to midnight to 7pm to 7am. Telstra introduced a '1 cent Saturday calls' special promotion during August and September 2001 on each Saturday for all HomeLine customers who were charged at 1 cent per minute for all direct dialled STD calls.[7]

Promotions on international calls were offered to residential customers during 2001–02. In August 2001, Telstra introduced a capped rate for the first 10 minutes of an international call made by a HomeLine Plus customer. It also extended the first charging block for the Easy ½ Hour service from 30 minutes to 60 minutes for these customers.[8] AAPT offered a reduction of up to 5 per cent on international calls for residential consumers calling certain long distance destinations.

Results for 2001–02 indicate that rebalancing has continued to have a major influence on the price movements of PSTN services for residential consumers.

The price of basic access for residential consumers has continued to increase while the prices of per-call services have decreased. While, on average, residential consumers are paying less for PSTN services, the rate of decrease for the residential PSTN index has slowed in successive years.

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[5] see, for example, *Telstra carrier charges– price control arrangements, notification and disallowance determination no.1 of 2002*.

[6] for HomeLine Complete, HomeLine Part, and HomeLine Plus from $17.50 to $19.90, and HomeLine Net services from $14.50 to $16.90.

[7] a 25 cents call connection fee applied for this service.

[8] after the first 60 minutes, normal charges applied.

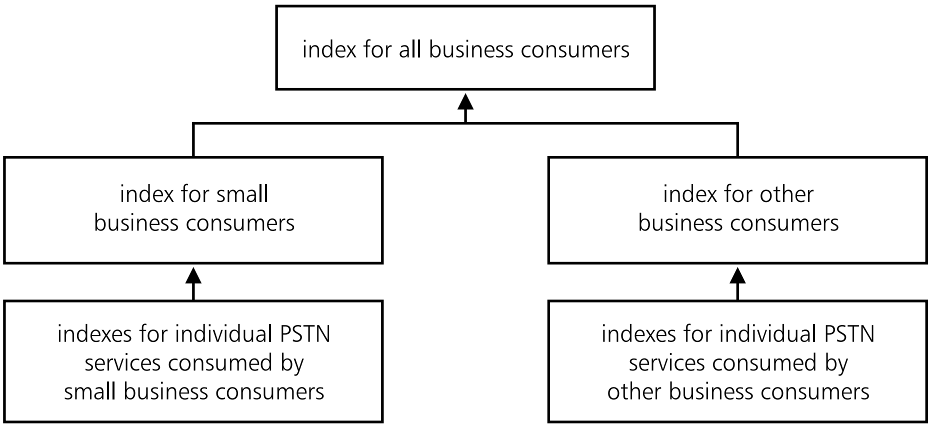
The points contribution analysis in table 2.1 shows that basic access is becoming an increasingly large component cost for residential consumers of PSTN services. Increases in the price of basic access therefore have a greater impact on the average price paid by residential consumers of PSTN services.

In 2001–02 residential consumers experienced a larger increase than business consumers in the price for basic access (reported in chapter 3). Conversely, residential consumers experienced larger decreases than business consumers in the price for some per-call services like international and fixed-to-mobile calls.

# 3 Price index for PSTN services for business consumers

The index for PSTN services for business consumers is made up of two sub-indexes: for small business and for other business.[1] These sub-indexes can be broken down to show how prices for each component service have changed during the year.[2] Figure 3.1 shows how all the sub-indexes are combined to form an overall index for all business consumers.

**Figure 3.1 Construction of the index for PSTN services consumed by business consumers**




To understand the factors that affect the index for PSTN services for all business consumers, the report will initially focus on the two sub-indexes for small business and other business consumers in section 3.1 and 3.2 respectively. How the average price movement for individual PSTN services contributes to the overall price index for each of the sub-indexes will be analysed. The two sub-indexes combined together produce the overall index for all business consumers, which is discussed in section 3.3.

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1 There is no single definition for small business consumers across the carriers. Telstra and Optus define them as business customer with less than three lines; however, it is noted that consumers can request a classification change based on bill spend. AAPT defines small business customers as those customers with five lines or less. In previous periods, One.Tel had also defined small business customers as those customers with less than five lines.

2 The basket of PSTN services consists of the following individual services: basic access service, local calls, national long distance, international calls and fixed–to–mobile calls.

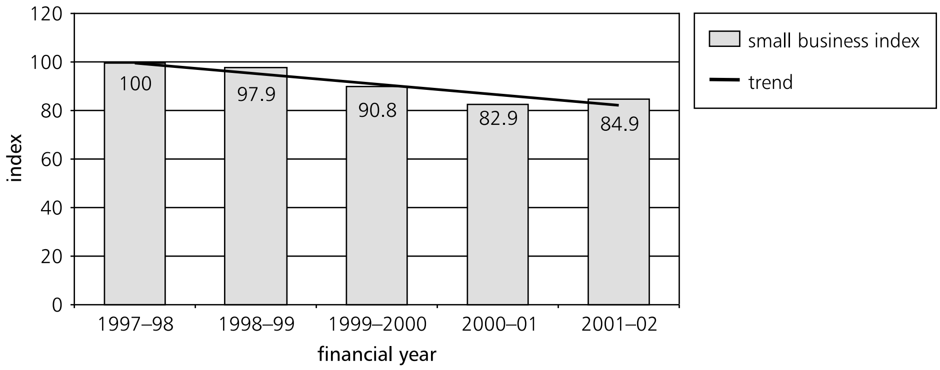
As with the index for residential PSTN services, the ACCC has been forced to remove Optus' data for the 2001–02 financial year for small business consumers. Optus' data was, however, sufficiently reliable that it could be used for other business consumers.

# 3.1 The small business index

## 3.1.1 Changes in the small business index for PSTN services between 1997–98 and 2001–02

From 1997–98 to 2001–02, the average price for PSTN services paid by small business consumers decreased by approximately 15.1 per cent.[3] The overall downward trend in the prices paid by small business consumers between 1997–98 and 2001–02 can be seen in figure 3.2, which illustrates the index for PSTN services for small business consumers.

**Figure 3.2 Index for PSTN services for small business consumers, 1997–98 to 2001–02**



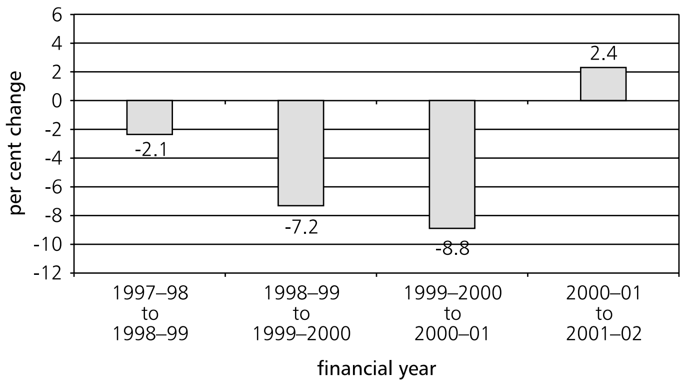

source: data supplied by Telstra, AAPT, Primus and (until 2000–01) One.Tel and Optus.

note: base year is 1997–98

As illustrated in figure 3.2, from a base of 100 in 1997–98, the index had already fallen to 97.9 by 1998–99. Figure 3.2 shows it decreased further to 84.9 by 2001–02. Of particular interest for small business consumers is the reversal of the downward trend during 2001–02. While the small business index fell from 1997–98 to 2000–01, it experienced a moderate increase in 2001–02. This trend is identified in figure 3.3 which shows the yearly change in the index for PSTN services for small business consumers.

[3] calculated as the index in 2001–02 divided by the index in 1997–98, minus one, i.e. (84.9/100)–1.

**Figure 3.3** **Year-on-year percentage changes in the index for small business consumers, 1997–98 to 2001–02**




source: data supplied by Telstra, AAPT, Primus and (until 2000–01) One.Tel and Optus.

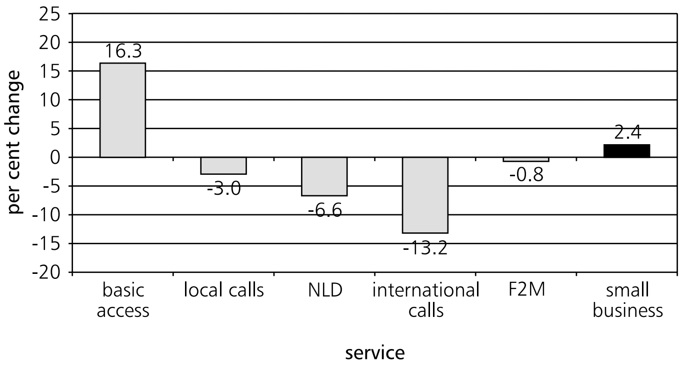
The average price paid by small business consumers for a basket of PSTN services decreased each year between 1997–98 and 2000–01. After the approximate 2.1 per cent fall in the average price paid by small business consumers during 1998–99, the decrease accelerated to approximately 7.2 per cent during the 1999–2000 period, and to approximately 8.8 per cent during 2000–01.

However, for the 2001–02 reporting period, the average price for a basket of PSTN services paid by small business consumers demonstrated a significant reversal with the price index increasing for the first time. The small business index increased by about 2.4 per cent during the period.

### 3.1.2 Price movements for individual PSTN services for small business consumers

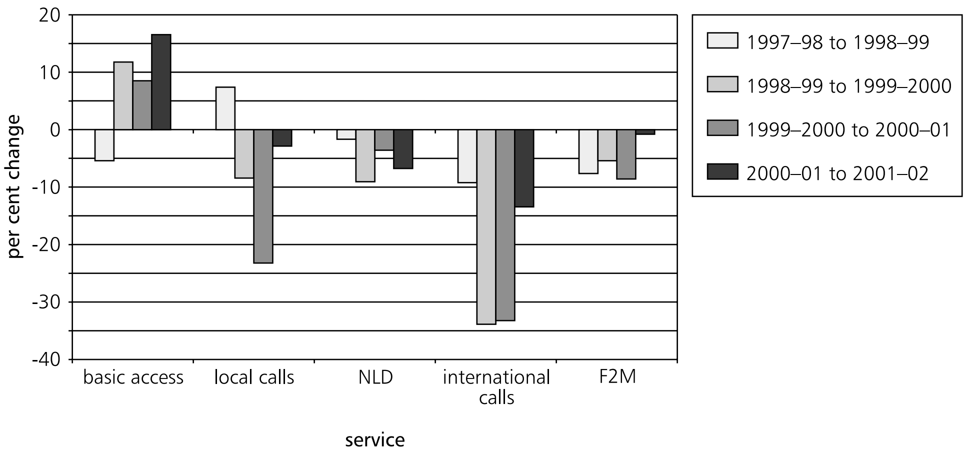
Figure 3.4 shows the price changes for the individual service components of the small business basket of PSTN services during 2001–02. Figure 3.5 shows how the price of each individual service changed from 1997–98 to 2001–02.

**Figure 3.4 Individual movements in the prices paid by small business consumers for PSTN services, 2001–02**




source: data supplied by Telstra, AAPT, Primus and (until 2000–01) One.Tel and Optus.

**Figure 3.5 Year-on-year percentage price changes for individual PSTN services for small business consumers, 1997–98 to 2001–02**




source: data supplied by Telstra, AAPT, Primus and (until 2000–01) One.Tel and Optus.

notes: see appendix for specific details with regard to the yearly price changes for each service for each financial year.

A commentary on the price movements for each individual service is given below:

- *basic access service*: There was a relatively large increase of approximately 16.3 per cent in the average price paid by small business consumers for basic access during 2001–02. The largest increase in the average price of the basic access service paid by small business consumers occurred in this period compared to all previous years.
- *local calls*: The average price for local calls paid by small business consumers decreased by about 3 per cent in 2001–02, compared to the previous year. This reduction was lower than that experienced in all the previous years.
- *national long distance calls*: The average price of national long distance calls made by small business consumers declined by approximately 6.6 per cent in 2001–02. This was a greater decrease than that in the previous period.
- *international calls*: The average price of international calls made by small business consumers decreased by approximately 13.2 per cent during 2001–02, a smaller decrease than in the two previous years.
- *fixed-to-mobile calls*: The average price paid for this service decreased by about 0.8 per cent during 2001–02, a much smaller decrease than in previous years.

While there were decreases in the average price paid for local, national long distance, international and fixed-to-mobile calls by small business consumers between 2000–01 and 2001–02, these decreases were not enough to outweigh the increases in the average price of basic access in the same period. This resulted in an overall increase in the price paid for a basket of PSTN services by small business consumers during 2001–02.

This is confirmed by results given in table 3.1 which shows the points contribution of each individual service to the 2.4 per cent increase in the average price of the small business index.[4] On a weighted-average, basic access contributed 5 points to the 2.4 per cent increase in the small business index—the largest contribution of any services. Local, national long distance, international and fixed-to-mobile calls contributed -0.6 points, -1.3 points, -0.4 points, and -0.2 points, respectively.

Table 3.1 also shows that the small business index fell more in 2000–01 than in any other year. The fall in local calls contributed about -5.9 points, the largest contribution to the fall in the small business index that year. International and fixed-to-mobile calls both contributed about -1.9 points to the fall in the small business index.

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4 Points contribution analysis outlines the number of points that a component (in this case a service) contributes to the overall index in a particular year. The points contribution for any component of a given index is calculated by multiplying the revenue share of a component in a basket by the movement or change of the index for that particular service in that year.

**Table 3.1 Points contributions by individual PSTN services to the small business index, 1997–98 and 2001–02**

| | points contribution in the financial year | | | |
|---|---|---|---|---|
| | 1998–99 | 1999–2000 | 2000–01 | 2001–02 |
| basic access | -1.0 | 2.2 | 1.9 | 5.0 |
| local calls | 1.9 | -2.3 | -5.9 | -0.6 |
| national long distance calls | -0.5 | -2.2 | -0.9 | -1.3 |
| international calls | -1.3 | -4.0 | -1.9 | -0.4 |
| fixed-to-mobile calls | -1.1 | -0.9 | -1.9 | -0.2 |
| small business | -2.1 | -7.2 | -8.7 | 2.4 |

notes: (a) where the base year is the previous year.

(b) revenue weights are based on previous year's revenue shares.

(c) the sum of the components' point change may not add up to the overall index change due to rounding.

(d) in order to obtain the relative contributions of the changes in the price of one component to the change in the overall index, divide the pchange for a component by the points change for the overall index.

* also, see appendix for specific details with regard to the points contributions by individual PSTN services to the index for each financial year.

Tariff changes made during 2001–02 affected the component prices of the individual components in the basket of PSTN service for small business consumers. These are discussed in section 3.3.2.

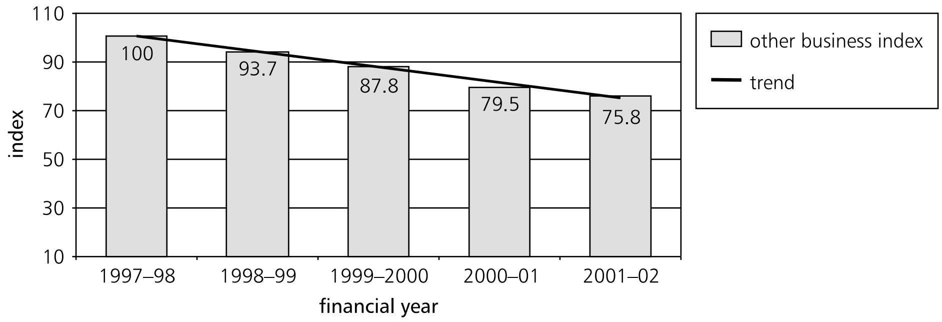
## 3.2 The other business index

### 3.2.1 Changes in the other business index for PSTN services between 1997–98 and 2001–02

From 1997–98 to 2001–02, the average price for a basket of PSTN services paid by other business consumers decreased by approximately 24.2 per cent.[5] The overall downward trend in the prices paid by other business consumers between 1997–98 and 2001–02 are given in figure 3.6.

[5] calculated as the index in 2001–02 divided by the index in 1997–98, minus one, i.e. (75.8/100)–1.

**Figure 3.6 Index for PSTN services for other business consumers, 1997–98 to 2001–02**

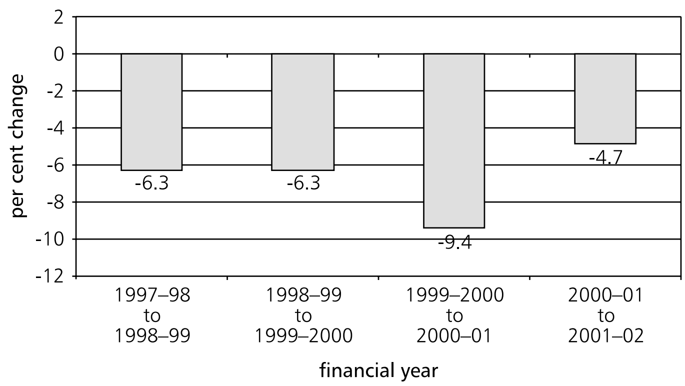



source: data supplied by Telstra, AAPT, Optus, Primus and (until 2000–01) One.Tel

note: base year is 1997–98

From a base of 100 in 1997–98, the index fell to 93.7 in 1998–99. It decreased further in subsequent years reaching 75.8 in 2001–02. Unlike the small business consumer index, the other business index has maintained a relatively steady yearly fall. The extent of the fall moderated in 2001–02, as can be seen in Figure 3.7.

**Figure 3.7 Year-on-year percentage changes in the index for other business consumers, 1997–98 to 2001–02**




source: data supplied by Telstra, AAPT, Optus, Primus and (until 2000–01) One.Tel

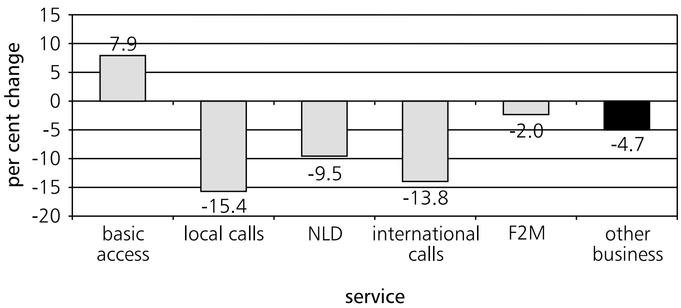
As shown in figure 3.7, the average price paid by other business consumers for a basket of PSTN services decreased between 1997–98 and 2001–02. During 1998–99 the average price paid for PSTN services by other business consumers fell approximately 6.3 per cent and then fell by the same rate the next year. In 2000–01 the decrease accelerated to approximately 9.4 per cent. For 2001–02, the average price for PSTN services paid by other business consumers moderated to a decrease of approximately 4.7 per cent, the smallest price decrease over the period.

## 3.2.2 Individual price movements for PSTN services to other business consumers

Price changes of individual PSTN services for other business consumers help explain the 2001–02 result.

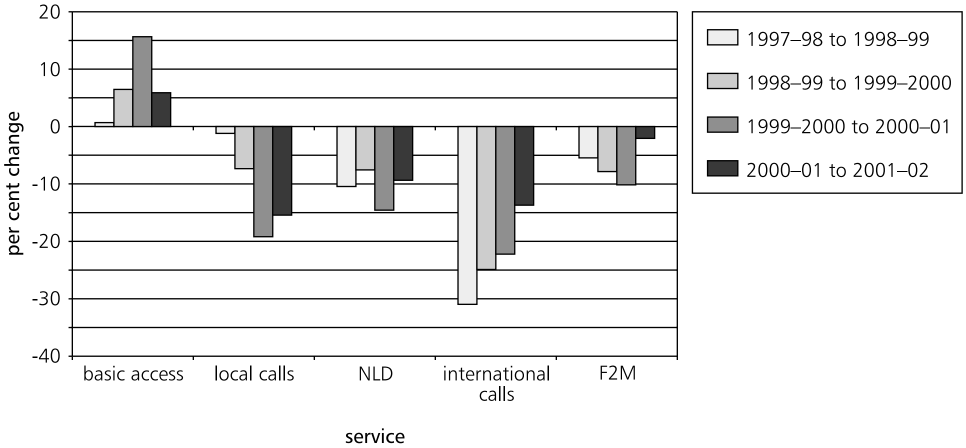
Figure 3.8 shows the price changes for the individual service components of the other business basket of PSTN services during 2001–02. Figure 3.9 shows how the price of each individual service changed from 1997–98 to 2001–02.

**Figure 3.8 Individual movements in the prices paid by other business consumers for PSTN services, 2001–02**




source: data supplied by Telstra, AAPT, Optus and Primus and (until 2000–01) One.Tel

**Figure 3.9 Year-on-year percentage price changes for individual PSTN services for other business consumers, 1997–98 to 2001–02**




source: data supplied by Telstra, AAPT, Optus, Primus and (until 2000–01) One.Tel.

notes: see appendix for specific details with regard to the yearly price changes for each service for each financial year.

A brief commentary on the price movements for each individual service is given below.

- *basic access service:* The average basic access price for other business consumers increased by approximately 7.9 per cent during 2001–02; a much smaller increase than in the previous financial year and considerably less than the price increase of this service for small business consumers in the same period.
- *local calls*: The average price for local calls paid by other business consumers decreased by about 15.4 per cent during 2001–02, the largest fall of any PSTN services in the period. This reduction was less than in the previous year, when the average price paid for local calls decreased by approximately 19.4 per cent.
- *national long distance calls*: In 2001–02 the average price of national long distance calls made by other business consumers reduced by approximately 9.5 per cent, less than the previous period.
- *international calls*: The rate of decrease in the average price paid for international calls has been falling steadily since the beginning of 1997–98. During 2001–02 the average price of international calls made by other business consumers decreased by approximately 13.8 per cent, smaller than that in previous years.
- *fixed-to-mobile calls*: the average price decreased by about 2 per cent during 2001–02, less than in all previous years.

In summary, the reduction in the average prices paid for local, national long distance, international, and fixed-to-mobile calls led to the decrease in the other business index for 2001–02. The average price for basic access increased in 2001–02, reducing the overall fall in the other business index. The other business index reduced during 2001–02 but the reduction was less than in all previous years.

The points contribution of each individual service to the 4.7 per cent decrease in the average price of the other business index is shown in table 3.2.[6] On a weighted-average basis, local calls contributed significantly to the 4.7 per cent decrease in the other business index. In particular, it contributed approximately -3.5 points to this index. National long distance, international and fixed-to-mobile calls each contributed -2.1, -0.4 and -0.6 points to the overall 4.7 per cent reduction in the other business index, while basic access contributed approximately +1.9 points to the other business index. International calls experienced the second largest actual fall in average PSTN services prices, however, its contribution of -0.4 points was the smallest of all services surveyed in the other business index due to its small revenue-weighting.

[6] Points contribution analysis outlines the number of points that a component (in this case a service) contributes to the overall index in a particular year. The points contribution for any component of a given index is calculated by multiplying the revenue share of a component in a basket by the movement or change of the index for that particular service in that year.

**Table 3.2 Points contributions by individual PSTN services to the other business index, 1997–98 and 2001–02**

| | points contribution in the financial year | | | |
|---|---|---|---|---|
| | 1998–99 | 1999–2000 | 2000–01 | 2001–02 |
| basic access | 0.1 | 1.1 | 3.0 | 1.9 |
| local calls | -0.4 | -2.1 | -5.4 | -3.5 |
| national long distance calls | -2.6 | -1.7 | -3.0 | -2.1 |
| international calls | -2.2 | -1.5 | -1.2 | -0.4 |
| fixed-to-mobile calls | -1.2 | -2.1 | -2.8 | -0.6 |
| **other business** | **-6.3** | **-6.3** | **-9.4** | **-4.7** |

notes: (a) where the base year is the previous year.

(b) revenue weights are based on previous year's revenue shares.

(c) the sum of the components' point change may not add up to the overall index change due to rounding.

(d) in order to obtain the relative contributions of the changes in the price of one component to the change in the overall index, divide the points change for a component by the points change for the overall index.

* also, see appendix for specific details with regard to the points contributions by individual PSTN services to the index for each financial year.

During 2001–02 there were tariff changes to individual components of PSTN services for all businesses which help in explaining the reasons behind the price changes during the year. These are discussed in section 3.3.2 below.

## 3.3 The all business index

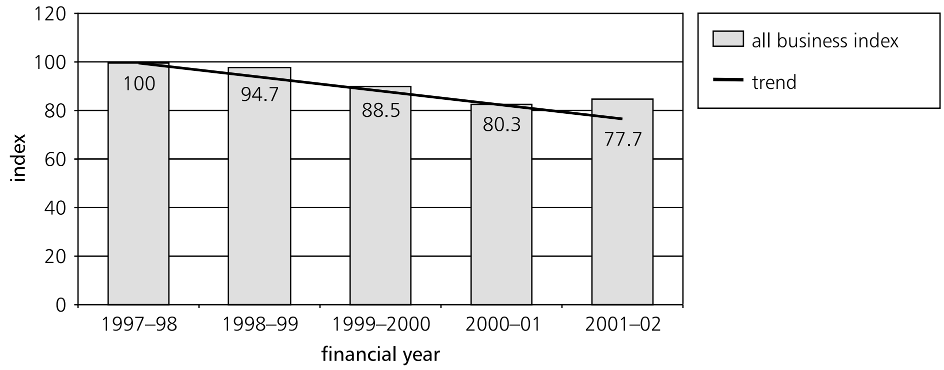
Results from the small and other business index can be aggregated to form a single all business index.

### 3.3.1 Changes in the all business index for PSTN services between 1997–98 and 2001–02

From 1997–98 to 2001–02, the average price for a basket of PSTN services paid by all business consumers decreased by approximately 22.3 per cent.[7] The overall downward trend in the prices paid by all business consumers between 1997–98 and 2001–02 is shown in figure 3.10.

[7] calculated as the index in 2001–02 divided by the index in 1997–98, minus one, i.e. (77.7/100)–1.

### Figure 3.10 Index for PSTN services for all business consumers, 1997–98 to 2001–02



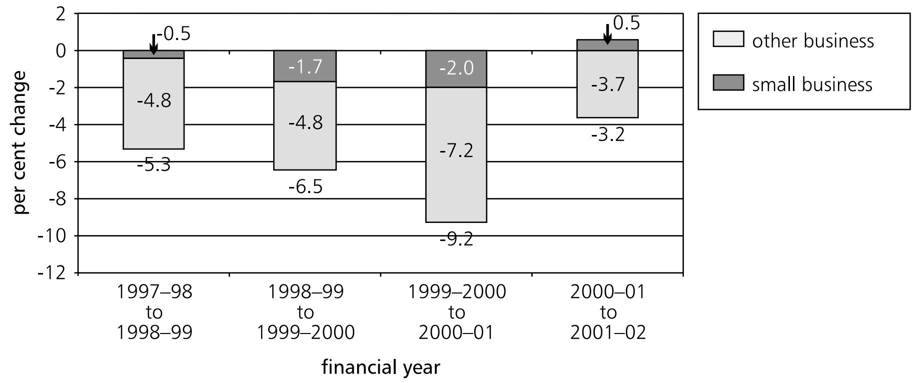

source: data supplied by Telstra, AAPT, Optus, Primus and (until 2000–01) One.Tel

note: base year is 1997–98

The index has fallen each year from a base of 100 in 1997–98. The size of the decrease in the all business index for 2001–02 was smaller than in previous years, partly reflecting the effect of the increase in the small business index in that year.

Figure 3.11 shows the change in the index for PSTN services for all business consumers.

### Figure 3.11 Year-on-year percentage price changes in the index for all business consumers, 1997–98 to 2001–02



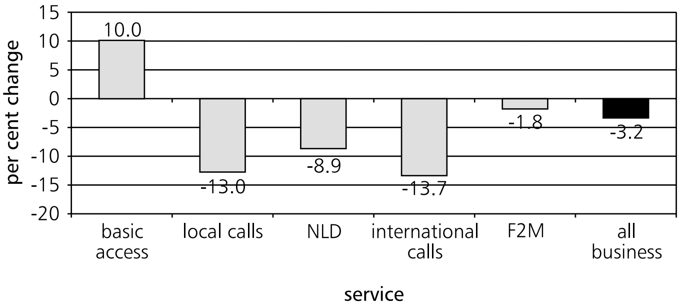

source: data supplied by Telstra, AAPT, Optus, Primus and (until 2000–01) One.Tel

The average price paid by all business consumers for a basket of PSTN services decreased between 1997–98 and 2001–02. The rate of fall in the all business PSTN index moderated in 2001–02. The 3.2 per cent reduction in the average price paid during 2001–02 was the lowest since 1998–99.

## 3.3.2 Individual price movements for each individual PSTN service consumed by all business consumers

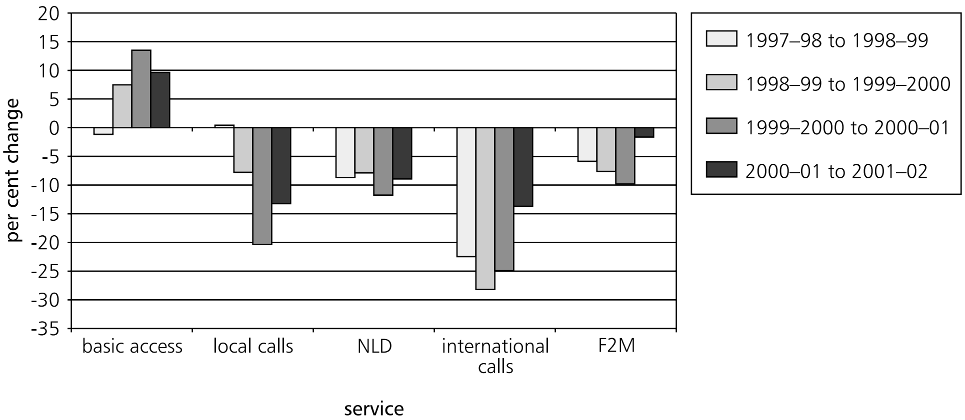
Figure 3.12 shows the price changes for the individual components of PSTN services for all business consumers over 2001–02. Figure 3.13 shows the change in the price of each individual service from 1997–98 to 2001–02.

**Figure 3.12 Individual movements in the prices paid by all business consumers for PSTN services, 2001–02**




source: data supplied by Telstra, AAPT, Optus, Primus and (until 2000–01) One.Tel

**Figure 3.13 Year-on-year percentage price changes for individual PSTN services for all business consumers, 1997–98 to 2001–02**




source: data supplied by Telstra, AAPT, Optus and Primus and (until 2000–01) One.Tel

notes: see appendix for details of the yearly price changes for each service for each financial year

There was a reduction of approximately 3.2 per cent in the all business index for PSTN services during 2001–02, caused by price movements for each PSTN service:

- *basic access:* During 2001–02 the average price for the basic access service paid by all business consumers increased by approximately 10 per cent. This increase is lower than in the previous year, and is similar to the trend in price changes for basic access for other business consumers;
- *local calls*: During 2001–02 the average price paid for local calls by all business consumers decreased by approximately 13 per cent, less than in the previous year;
- *national long distance calls*: During 2001–02 the average price paid by all business consumers for national long distance calls reduced by about 8.9 per cent, less than in the previous year;
- *international calls*: During 2001–02 the average price paid for international calls by all business consumers decreased by approximately 13.7 per cent, the smallest yearly reduction, a result that largely reflects the smaller price changes for other business consumers for this service; and
- *fixed-to-mobile calls*: During 2001–02 the average price paid for fixed-to-mobile calls by all business consumers decreased by approximately 1.8 per cent, the smallest yearly reduction for this service for both small and other business consumers.

In summary, during 2001–02 the reduction in the price of local, national long distance, international and fixed-to-mobile calls contributed to the overall decrease in the all business index. The reduction in the prices of international and fixed-to-mobile calls were the lowest, compared to all previous years. The increase in the price of basic access for all business consumers was less than in the previous year.

Table 3.3 provides more detail on the points contributions made by the other and small business indexes.[8] It breaks up the overall all business index yearly price change to show the points contribution of each individual service from 1997–98 to 2001–02.[9] For all years, most of the reduction in the all business index can be attributed to the reduction in the average price paid by other business consumers.

[8] Points contribution analysis outlines the number of points that a component (in this case a service) contributes to the overall index in a particular year. The points contribution for any component of a given index is calculated by multiplying the revenue share of a component in a basket by the movement or change of the index for that particular service in that year.

[9] the individual service points contribution reflect the average price change for both small and other business indexes for each service.

**Table 3.3 Points contributions by individual PSTN services and type of business to the all business index, 1997–98 to 2001–02**

| | points contribution in the financial year | | | |
|---|---|---|---|---|
| **index** | 1998–99 | 1999–2000 | 2000–01 | 2001–02 |
| basic access | -0.2 | 1.3 | 2.7 | 2.5 |
| local calls | 0.1 | -2.2 | -5.5 | -2.9 |
| national long distance calls | -2.1 | -1.8 | -2.5 | -2.0 |
| international calls | -2.0 | -2.1 | -1.3 | -0.4 |
| fixed-to-mobile calls | -1.2 | -1.8 | -2.6 | -0.5 |
| small business | -0.5 | -1.7 | -2.0 | 0.5 |
| other business | -4.8 | -4.8 | -7.2 | -3.7 |
| **all business** | **-5.3** | **-6.5** | **-9.2** | **-3.2** |

notes: (a) where the base year is the previous year.

(b) revenue weights are based on previous year's revenue shares.

(c) the sum of the components' point change may not add up to the overall index change due to rounding.

(d) in order to obtain the relative contributions of the changes in the price of one component to the change in the overall index, divide the points change for a component by the points change for the overall index.

* see appendix for specific details of the points contributions by individual PSTN services to the index for each financial year.

During 2001–02 the other business index contributed approximately -3.7 points to the reduction in the all business index. By contrast the small business index contributed +0.5 points to the all business index. The all business index therefore fell by 3.2 per cent.

During 2001–02 the other business index had a greater effect than the small business index on the all business index because of the greater revenue weight attached to the other business index. From 1998–99 to 2001–02 the other business index had a greater revenue-weight than the small business index. In addition, the revenue-weight for the other business index has increased more over time than for the small business index.

Apart from a slight fall in 2001–02, on a service-by-service basis the points contribution of basic access has increased due to a combination of price increases and, partly as a consequence, increased revenue (and hence revenue-weights). By contrast, price decreases and reduced revenue-weights for international calls are reflected in the reduction in their points contribution since 1998–99.

### 3.3.3 Analysis and tariff commentary on the reasons for changes in the price of individual PSTN services for 2001–02

The price of basic access for business and residential consumers increased in 2001–02 as it did has done since 1998–99. This can be put down to Telstra taking the opportunity to rebalance its tariffs for line rental and per-call services with other carriers following suit. In September 2001 Telstra increased the price of its basic access service for two of its business packages: the BusinessLine Plus package (from $34.95 to $36.95)[10] and Business Exchange Line package (from $27.50 to $31.95). Other carriers have also increased basic access prices during the survey period.

During 2001–02 the difference in the price paid by small and other business consumers for the basic access service was about 8.4 per cent: the price paid by small business consumers increasing by 16.3 per cent and for other business consumers by only 7.9 per cent.

Some carriers indicate that this price differential is because other business consumers who spend more on telecommunications services can negotiate different pricing arrangements from the standard list price. In this regard, other business consumers can obtain greater off-tariff discounts on telecommunication services than small business consumers.

During periods of rebalancing in 2001–02 the price of per-call services generally decreased. There were two factors that contributed to the reduction in price for business consumers. First, the pressure on Telstra to meet its price cap obligations for PSTN services, combined with increases in the price of basic access, created pressure on Telstra to decrease its per-call prices for other PSTN services. Second, this effect would be reinforced by other carriers' attempts to offer new innovative business services, and their response to Telstra's reduced prices for per-call PSTN services.

As with basic access, the per-call service varies for small and other business consumers. In 2001–02 there was a greater reduction for other business than small business consumers in the price of all per-call services and for basic access. The reduction in the price of most per-call services for all business consumers was less in 2001–02 than previous years.

In summary, during 2001–02 price movements for services paid by business and residential consumers reflected rebalancing. For all business consumers, most of the prices for per-call services decreased during 2001–02 to counter the increase in basic access. All business consumers had a smaller increase in the price of basic access and larger decrease in the price of local calls than residential consumers. This is likely to be a result of the greater ability of business, in particular corporate customers, to negotiate larger discounts with carriers.

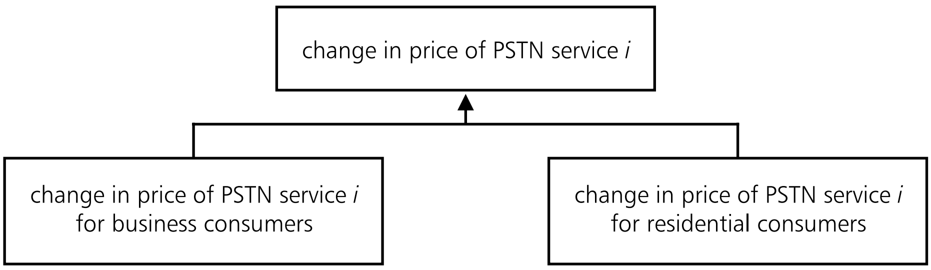
[10] It is noted that if these customers connected to this service on or before 31 August 2001, they receive a $2.00 (GST incl.) per month rebate on each of their BusinessLine Plus services until 28 February 2002. A BusinessLine Plus customer preselects Telstra for long distance calls and is directly billed by Telstra for access and local calls, and makes a large number of STD or fixed to Telstra mobile calls.

# 4 Price index for PSTN services for all consumers

The index for PSTN services for all consumers is derived from individual indexes for each service.[1] Each individual index is determined by calculating the weighted average price change of each service for business and residential customers.

The change in the average price paid for a given PSTN service for business and residential consumers (using a weighted average) combined into a single index for each individual PSTN service is shown in figure 4.1. The price change (using weighted averages) for each PSTN service aggregated into a single PSTN index for all consumers is shown in figure 4.2.

**Figure 4.1 Construction of the index for individual PSTN services consumed by all consumers**

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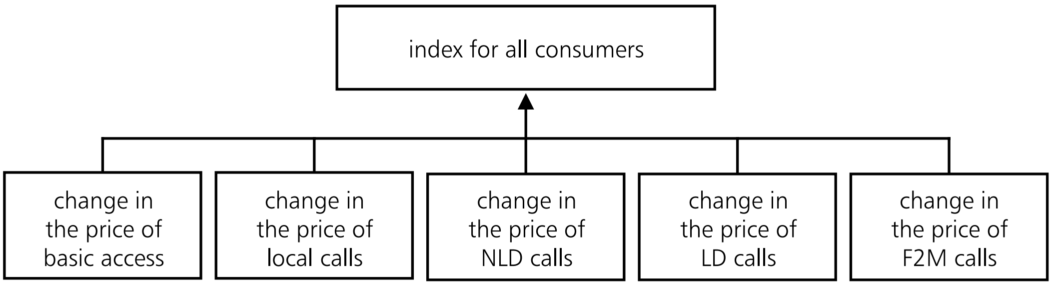
[1] As with the PSTN business and residential indexes, the services covered in the index for all PSTN services for all consumers are basic access, local, national long distance, international and fixed–to–mobile services.

**Figure 4.2 Construction of the index for PSTN services consumed by all consumers**




The structure of this chapter reflects the process by which the overall price index for PSTN services for all consumers is derived. In section 4.1 the results from the change in the average price of each individual PSTN service are discussed. The results from combining the price change for each individual service index into an overall PSTN index for all consumers are discussed in section 4.2.

## 4.1 Changes in the index for individual PSTN services for all consumers between 1997–98 and 2001–02

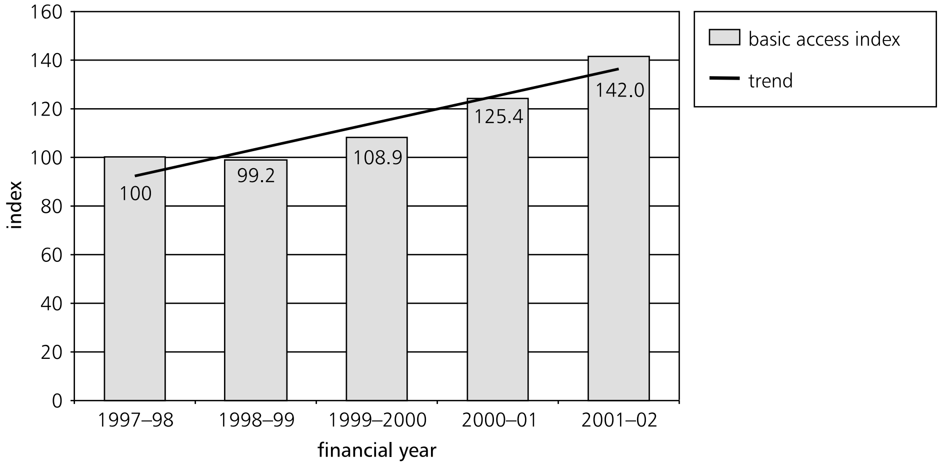
The following sub-sections examine the results of analysis of changes in the average price of each individual PSTN service between the periods 1997–98 and 2001–02.

### 4.1.1 Changes in the index for the basic access service for all consumers between 1997–98 and 2001–02

From 1997–98 to 2001–02 the average price of the basic access service for all consumers increased by an estimated 42 per cent.[2] The overall upward trend in the index for basic access between 1997–98 and 2001–02 is shown in figure 4.3, which gives the basic access index for all consumers during the period.

2 calculated as the index in 2001–02 divided by the index in 1997–98, minus one, i.e. (142.0/100)–1

**Figure 4.3 Index for the basic access service for all consumers, 1997–98 to 2001–02**



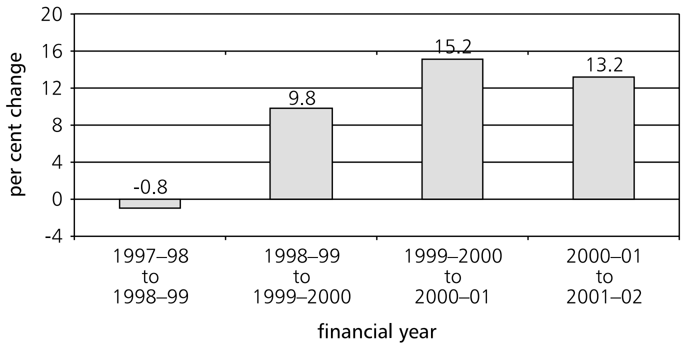

source: data supplied by Telstra, AAPT, Optus, Primus and (until 2000–01) One.Tel

note: base year is 1997–98

From a base of 100 in 1997–98 the index fell to 99.2 by the end of 1998–99. In subsequent years the index increased every year, reaching a level of 142.0 by 2001–02. While the index increased every year since 1997–98, the rate of increase slowed in the most recent period between 2000–01 and 2001–02.

This trend is evident in Figure 4.4 which shows the yearly change in the index for basic access for all consumers between1998–99 and 2001–02.

**Figure 4.4 Year-on-year percentage changes in the index for basic access service for all consumers, 1997–98 to 2001–02**



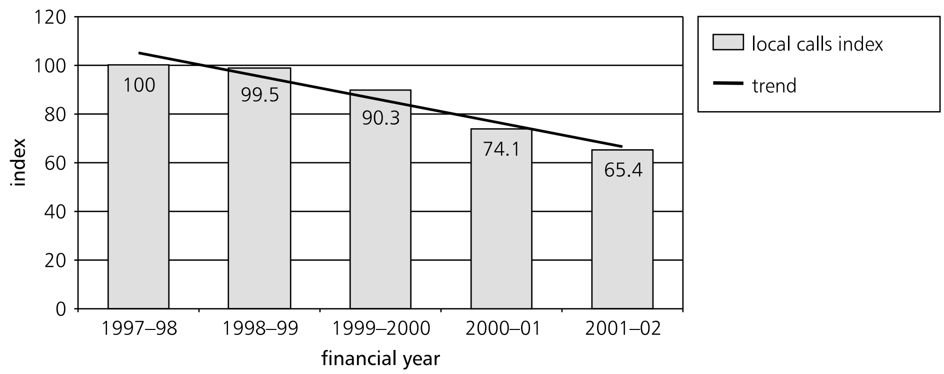

source: data supplied by Telstra, AAPT, Optus, Primus and (until 2000–01) One.Tel

After a small decrease during 1998–99, the index increased in each subsequent year, with the rate of increase rising from 9.8 per cent during 1999–2000 to 15.2 per cent during 2000–01. The rate of increase in the average price of basic access slowed to approximately 13.2 per cent between 2000–01 and 2001–02.

### 4.1.2 Changes in the index for local calls for all consumers between 1997–98 and 2001–02

From 1997–98 to 2001–02 the average price of local calls for all consumers decreased by 34.6 per cent.[3] The overall downward trend in the index for local calls for all consumers from 1997–98 to 2001–02 is shown in figure 4.5.

**Figure 4.5 Index for local calls for all consumers, 1997–98 to 2001–02**




source: data supplied by Telstra, AAPT, Optus, Primus and (until 2000–01) One.Tel

note: base year is 1997–98

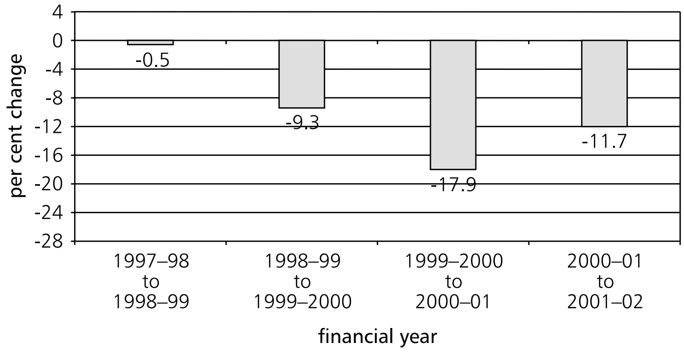
From a base of 100 in 1997–98, Figure 4.5 shows that the index fell to 99.5 by the end of 1998–99. Thereafter, the index continued to decrease every year until it reached a level of 65.4 by 2001–02. Figure 4.5 also indicates that, while the index for local calls decreased every year from 1997–98, the rate of decrease has slowed in the most recent period between 2001–01 and 2001–02.

This trend in the index for local calls consumed by all consumers is shown in Figure 4.6 which illustrates the change in the index for local calls consumed by all consumers from 1997–98 to 2001–02. In particular, the rate of decrease in the index for local calls accelerated from 0.5 per cent during 1998–99 period to 9.3 per cent during 1999–2000 and 17.9 per cent during 2000–01.

[3] calculated as the index in 2001–02 divided by the index in 1997–98, minus one, i.e. (65.4/100)–1

The average price for local calls continued to decrease yearly by 11.7 per cent in 2001–02 period. However, figure 4.6 shows that the rate of decrease during the most recent period is slower than that during 2000–01.

**Figure 4.6 Year-on-year percentage changes in the index for local calls for all consumers, 1997–98 to 2001–02**

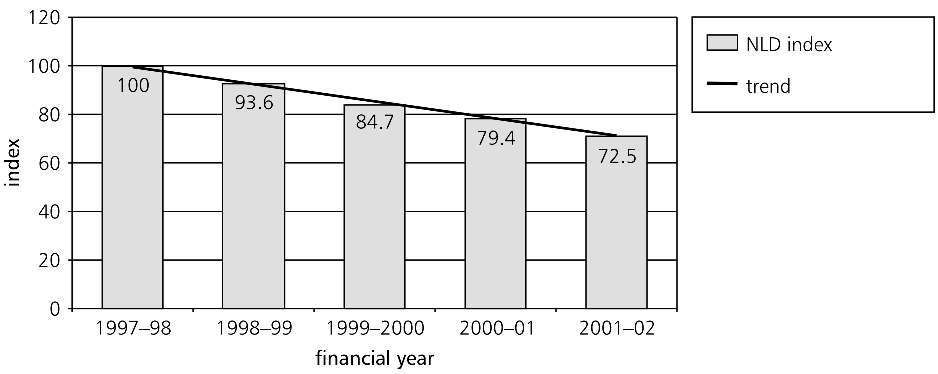



source: data supplied by Telstra, AAPT, Optus, Primus and (until 2000–01) One.Tel

## 4.1.3 Changes in the index for national long distance calls for all consumers between 1997–98 and 2001–02

From 1997–98 to 2001–02 the average price of national long distance calls for all consumers decreased by 27.5 per cent.[4] The overall downward trend in the index for national long distance calls between 1997–98 and 2001–02 is shown in figure 4.7.

**Figure 4.7 Index for national long distance calls for all consumers, 1997–98 to 2001–02**




source: data supplied by Telstra, AAPT, Optus, Primus and (until 2000–01) One.Tel

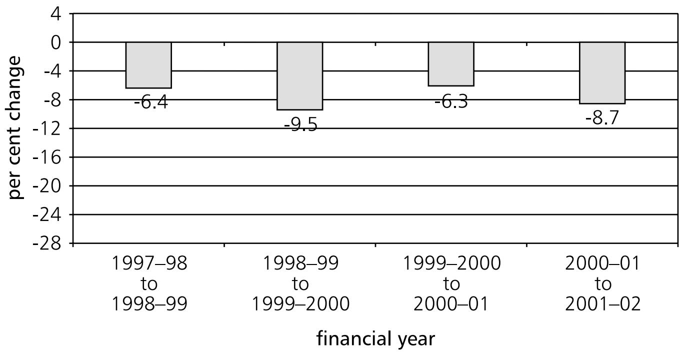
note: base year is 1997–98

[4] calculated as the index in 2001–02 divided by the index in 1997–98, minus one, i.e. (72.5/100)–1.

From a base of 100 in 1997–98 the index had already fallen to 93.6 by the end of 1998–99. In subsequent years the index decreased every year, reaching a level of 72.5 by the end of 2001–02. The rate of decrease slowed during 2000–01 before increasing again the following year.

This trend in the yearly change of the index for national long distance calls for all consumers is shown in figure 4.8. The index decreased every year. The 6.4 per cent rate of decrease during 1998–99 increased to 9.5 per cent during 1999–2000. The rate of decrease in the average price of national long distance calls slowed to approximately 6.3 per cent by 2000–01but then increased to 8.7 per cent during 2001–02.

**Figure 4.8 Year-on-year percentage changes in the index for national long distance calls for all consumers, 1997–98 to 2001–02**

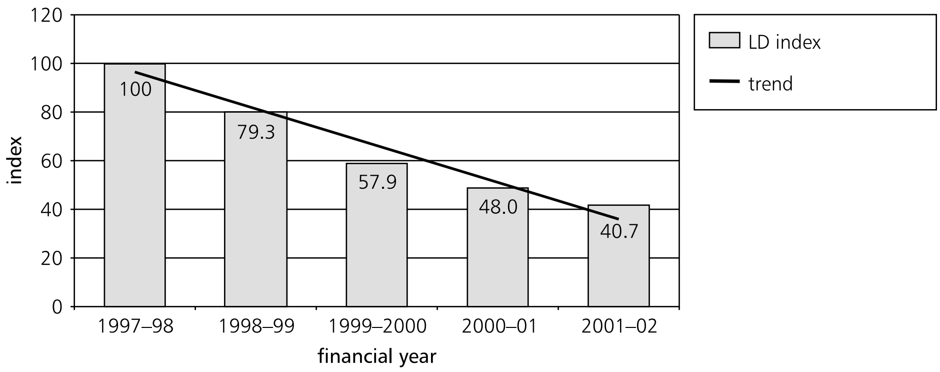



source: data supplied by Telstra, AAPT, Optus, Primus and (until 2000–01) One Tel

## 4.1.4 Changes in the index for international long distance calls for all consumers between 1997–98 and 2001–02

Between 1997–98 and 2001–02 the average price of international calls for all consumers decreased by 59.3 per cent.[5] The downward trend in the index for international calls for all consumers from 1997–98 to 2001–02 is shown in figure 4.9.

**Figure 4.9 Index for international long distance calls for all consumers, 1997–98 to 2001–02**




source: data supplied by Telstra, AAPT, Optus, Primus and (until 2000–01) One Tel

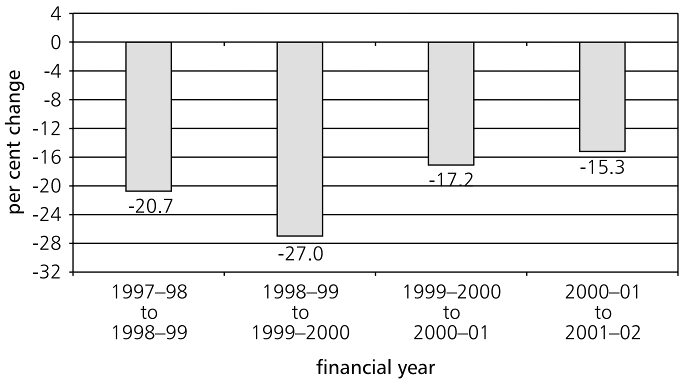
note: base year is 1997–98

From a base of 100 in 1997–98, the index fell to 79.3 during 1998–99. The index continued to decrease every year, reaching a level of 40.7 by 2001–02. While the index for international calls decreased every year from 1997–98, the rate of decrease moderated in the final two survey periods.

Figure 4.10 shows that the rate of decrease in the index for international calls accelerated from 20.7 per cent during 1998–99 to 27.0 per cent during 1999–2000. The rate of decrease has reduced in each year since 1999–2000, with average prices for international calls decreasing by 17.2 per cent during 2000–01 and by 15.3 per cent during 2001–02.

[5] calculated as the index in 2001–02 divided by the index in 1997–98, minus one, i.e. (40.7/100)–1

**Figure 4.10** **Year-on-year percentage changes in the index for international calls for all consumers, 1997–98 to 2001–02**

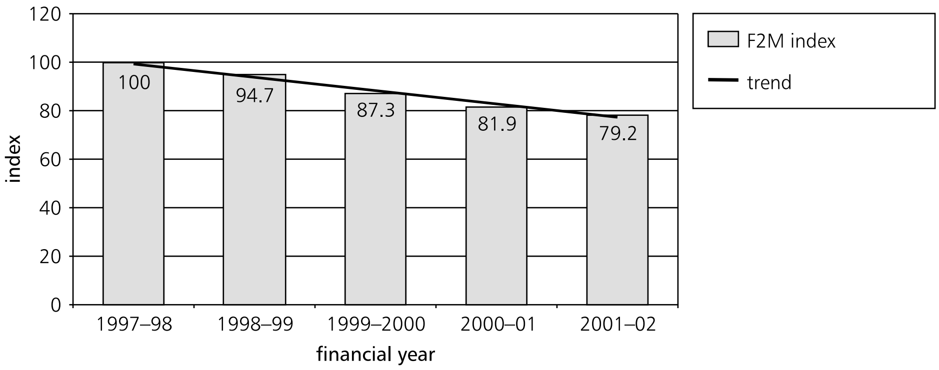



source: data supplied by Telstra, AAPT, Optus, Primus and (until 2000–01) One.Tel

## 4.1.5 Changes in the index for fixed-to-mobile calls for all consumers between 1997–98 and 2001–02

From 1997–98 to 2001–02 the average price of fixed-to-mobile calls for all consumers decreased by 20.8 per cent.[6] The overall downward trend in the index for fixed-to-mobile calls between 1997–98 and 2001–02 is shown in figure 4.11.

**Figure 4.11** **Index for fixed to mobile calls for all consumers, 1997–98 to 2001–02**




source: data supplied by Telstra, AAPT, Optus, Primus and (until 2000–01) One.Tel

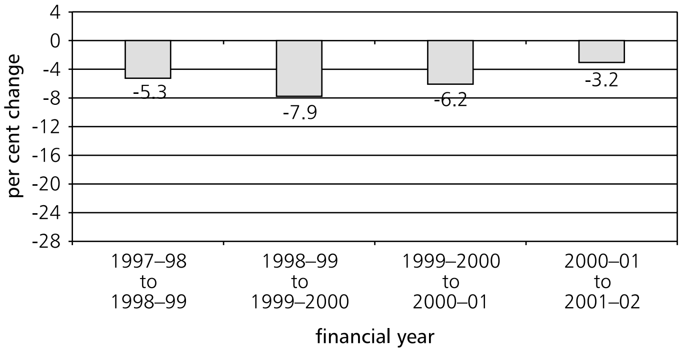
note: base year is 1997–98

6 calculated as the index in 2001–02 divided by the index in 1997–98, minus one, i.e. (79.2/100)–1.

The index has decreased every year since 1997–98, reaching a low of 79.2 by the end of 2001–02. The index decreased every year from the end of 1998–99, but the rate of decrease has slowed in the last two years.

Figure 4.12 shows the change in the index for fixed-to-mobile calls for all consumers between 1998–99 and 2001–02.

**Figure 4.12 Year-on-year percentage changes in the index for fixed-to-mobile calls for all consumers, 1997–98 to 2001–02**



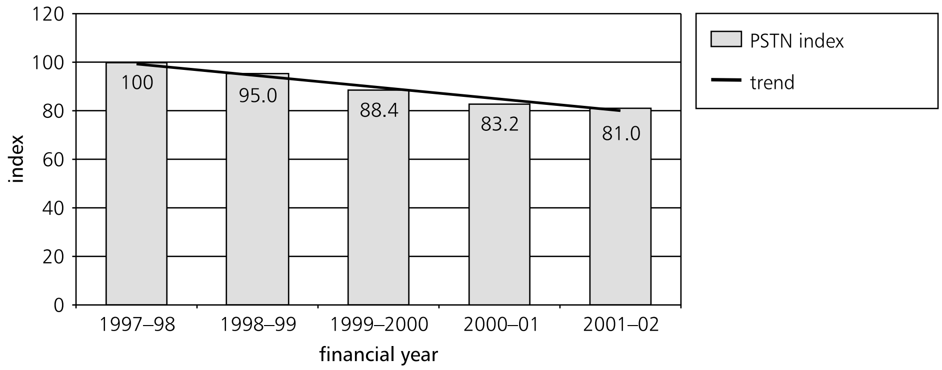

source: data supplied by Telstra, AAPT, Optus, Primus and (until 2000–01) One.Tel

The index decreased in each period, with the rate of decrease of 5.3 per cent during 1998–99 increasing to 7.9 per cent in 1999–2000. The rate of decrease in the average price of fixed-to-mobile calls slowed after the 1999–2000 period to around 6.2 per cent during 2000–01 and 3.2 per cent during 2001–02.

## 4.2 Price index for PSTN services for all consumers

From 1997–98 to 2001–02 the average price of PSTN services for all consumers decreased by 19 per cent.[7] The downward trend in the PSTN price index for all consumers between 1997–98 and 2001–02 is shown in figure 4.13.

**Figure 4.13 Index for PSTN services for all consumers, 1997–98 to 2001–02**




source: data supplied by Telstra, AAPT, Optus, Primus and (until 2000–01) One.Tel

note: base year is 1997–98

As shown in figure 4.13, from a base of 100 in 1997–98 the index fell to 95.0 by 1998–99 and has continued to fall every year thereafter. The index had fallen to 81.0 by the end of 2001–02. The average price paid for PSTN services decreased annually from 1997–98 to 2001–02. The rate of decrease has fallen each year since the end of 1999–2000.

That is, while all consumers have, on average, paid less for PSTN services since 1997–98, the rate at which prices have fallen has slowed in recent years.

The annual change in the index for PSTN services for all consumers from 1998–99 to 2001–02 is shown in figure 4.14.

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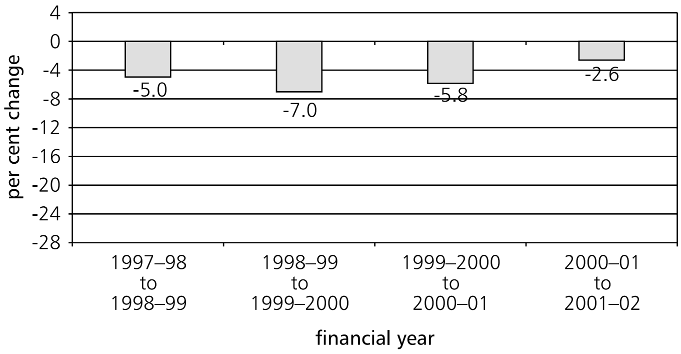
7 calculated as the index in 2001–02 divided by the index in 1997–98, minus one, i.e. (81.0/100)–1

**Figure 4.14 Year-on-year percentage changes in the index for PSTN services for all consumers, 1997–98 to 2001–02**

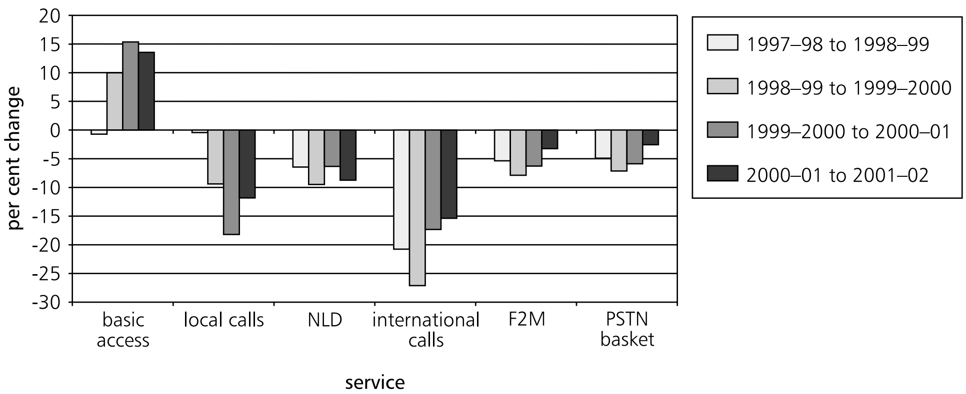



source: data supplied by Telstra, AAPT, Optus, Primus and (until 2000–01) One.Tel

The rate of decrease in the PSTN index for all consumers initially increased during the 1999–2000 period from 5.0 to 7.0 per cent but then decreased to 5.8 per cent in 2000–01 and 2.6 per cent during 2001–02.

In order to analyse the factors behind the slowdown in the rate at which the average price of the basket of PSTN services for all consumers has been decreasing, it is useful to recall the discussion in section 4.1 of this chapter on movements in average prices for each individual PSTN service constituting the PSTN basket. Figure 4.15 shows an integrated picture of how the average price of each PSTN service has changed over the four periods since 1998–99.

**Figure 4.15 Year-on-year percentage price changes for individual PSTN services for all consumers, 1997–98 to 2001–02**




source: data supplied by Telstra, AAPT, Optus, Primus and (until 2000–01) One.Tel

notes: see appendix for specific details with regard to the yearly price changes for each service for each financial year.

The slowdown in the rate of decrease in the price index for PSTN services for all consumers during 2001–02 (a continuation of the observed trend in last year's report) appears to be largely due to the smaller annual decreases in local, international and fixed-to-mobile calls reinforced by large increases in the price of basic access services. The raw increase in the average price of basic access was less in 2001–02 than the previous financial year, but the growing weight of the cost of basic access ensures that any increase in the average price has an effect on the overall PSTN index.

From Figure 4.15, it can be seen that the annual decreases in the average prices of most PSTN services have reduced in the last two reporting periods. The average consumer price of local calls fell in 2000–01 as the impact of offers such as neighbourhood calls took full effect. The rate of decrease of the average price of national long distance calls rose in 2001–02. Other than for these two services, the rate of decrease in the average price paid for the majority of per-call PSTN services has moderated during the last two years. With the exception of local calls, the rate of decrease for all per-call services was less in 2001–02 than in 1999–2000.

Points contribution analysis outlines the number of percentage points that a service contributes to the overall percentage change in an index each year. The points contributions of component services to the weighted average change in the overall index for PSTN services are given in table 4.1.

**Table 4.1 Points contributions by individual PSTN services to the PSTN services index for all consumers, 1997–98 and 2001–02**

| | points contribution in the financial year | | | |
|---|---|---|---|---|
| | 1998–99 | 1999–2000 | 2000–01 | 2001–02 |
| basic access | -0.2 | +2.0 | +3.3 | +3.7 |
| local | -0.2 | -2.8 | -5.0 | -2.6 |
| national long distance | -1.6 | -2.3 | -1.4 | -1.9 |
| international | -2.3 | -2.7 | -1.5 | -1.1 |
| fixed-to-mobile | -0.7 | -1.3 | -1.1 | -0.7 |
| overall | -5.0 | -7.0 | -5.8 | -2.6 |

notes: (a) where the base year is the previous year.

(b) revenue weights are based on previous year's revenue shares.

(c) the sum of the components' point change may not add up to the overall index change due to rounding.

(d) in order to obtain the relative contributions of the changes in the price of one component to the change in the overall index, divide the points change for a component by the points change for the overall index.

* also, see appendix for specific details with regard to the points contributions by individual PSTN services to the index for each financial year.

The deceleration in the price decreases in overall PSTN services from 5.8 per cent in 2000–01 to 2.6 per cent in 2001–02 was mainly due to a fall in local calls points from -5.0 per cent to -2.6 per cent.

Other factors included the reduced contributions made by fixed-to-mobile calls from -1.1 points to -0.7 points and by international calls from -1.5 to -1.1 points. The contribution from basic access increased from +3.3 points to + 3.7 points between 2000–01 and 2001–02 and for national long distance services from -1.4 points to -1.9 points during the same period.

The increase in the index for the basic access service is smaller in 2001–02 than before. But the consistent increase in the price of access in recent years has become more significant in consumers' overall expenditure on PSTN services. As a result the points allocated to the cost of basic access has had an increased revenue weighting.

The deceleration in the price decreases for the basket of PSTN services from 7.0 per cent in 1999–2000 to 5.8 per cent in 2000–01 was primarily due to the increase in the points contribution from basic access from +2.0 points to +3.3 points. This was reinforced by the fall in points contribution made by national long distance calls from -2.3 points to -1.4 points and by international calls from -2.7 points to -1.5 points.

The effect of contributions by these three PSTN services was offset only by the increase in points contribution made by local calls, which increased from -2.8 points during 1999–2000 to -5.0 points during 2000–01. However, the greater decrease in the average price of local calls was not enough to counter the effects of the fall in points contributions of the other three PSTN services. The points contribution from fixed-to-mobile services remained largely unchanged.

During 2001–02 the change in the price index for PSTN services was affected by changes to the retail price structure of all carriers as they sought to rebalance the prices of basic access and per-call PSTN services.

As the price of line rental increases, carrier revenue from providing the service is likely to increase, especially as the consumer demand for this service is largely inelastic. The reverse is likely to be true for price falls, subject to the elasticity of demand for individual per-call services.

An increase in the price of basic access on the overall price of PSTN services has greater impact than that of a decrease in the price of other PSTN services such as per-call services. The weighted average decrease in the price of PSTN services was much bigger when basic access prices were not increasing. even initially when line rental prices initially started to rise. This has not been the case in recent years.

Another factor explaining the reduced size of decreases in PSTN indexes is the exit of One.Tel from all telecommunications markets during 2000–01. One.Tel had a smaller market share and revenue weight than other carriers surveyed, but its aggressive price cutting reduced the average price paid for PSTN services.

The global downturn in telecommunications markets, combined with the demise of carriers like One.Tel, partly explains the reduced rate of decrease in the average price paid for PSTN services.

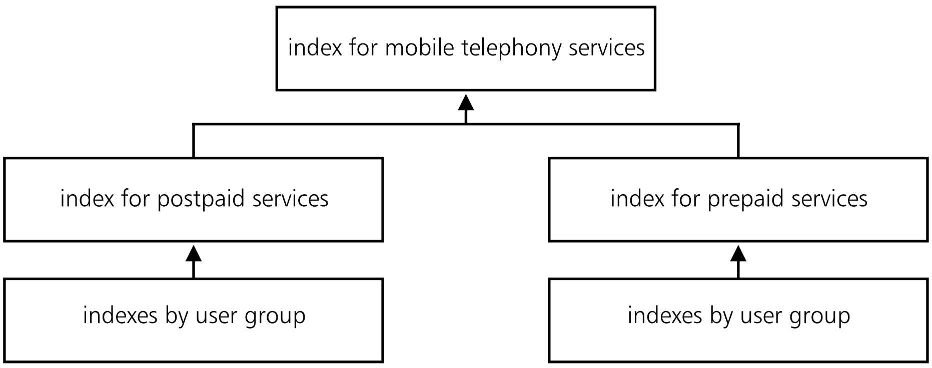
# 5 Price index for mobile telephony services

The index for mobile telephony services shows how prices have changed, on average, for users of GSM mobile telephony services.[1] Figure 5.1 illustrates the structure of the index for mobile telephony services which, for the first time, includes mobile prepaid services.

The movement of the index for mobile telephony services is based on changes in the sub-indexes for postpaid and prepaid mobile telephony services. These sub-indexes are weighted in the mobile index according to the proportion of mobile telephony services in operation for each service type. In turn, each sub-index is constructed by deriving sample prices for bundles of mobile telephony services that represent the consumption patterns of very low, low, average, high and very high user groups of postpaid and prepaid services. The prices for these representative bundles are then used to form an index by comparing the price of the bundles over time.[2]

The bundles used for these indexes include all components necessary for the consumer to use a mobile telephone service including connection and access fees, handset costs, flagfall and call charges. They also take into account any discounts or free calls offered by carriers.

**Figure 5.1 Construction of the price index for mobile telephony services**




1 The ACCC plans to introduce code division multiple access (CDMA) services into the index for mobile telephony services in 2002–03. GSM is defined as global system for mobile communications and is a digital cellular network.

2 This approach was developed by the CRU, Department of Communications Information Technology and the Arts. Refer to ACCC, *Changes in the prices paid for telecommunications services in Australia 1999–2000* for a detailed discussion on estimating the price of mobile telephony services.

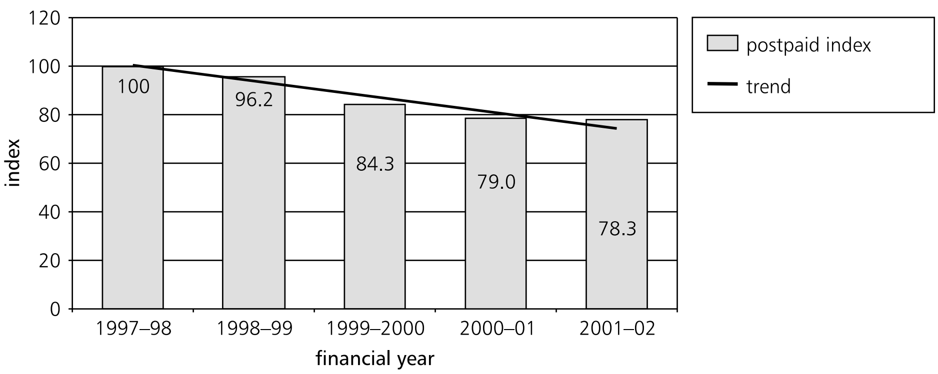
Sections 5.1 and 5.2 of this chapter describe the changes in the postpaid and prepaid sub-indexes respectively, and include a discussion of price changes for various user groups for those services. Section 5.3 reports on the overall change in the index and summarises what this means for consumers of mobile telephony services.

## 5.1 Index for postpaid mobile telephony services

### 5.1.1 Changes in the postpaid mobile telephony services index between 1997–98 and 2001–02

Since 1997–98 the average price of postpaid mobile telephony services (represented by the bundles put together for the five user groups) has fallen by 21.7 per cent.[3] This can be inferred from Figure 5.2, which shows the postpaid mobile index has decreased from 100 in 1997–98 to 78.3 in 2001–02.[4]

**Figure 5.2 Index for postpaid mobile telephony services, 1997–98 to 2001–02**




source: CRU price estimates to 2000–01; data from Telstra, Optus, Vodafone, AAPT; published plans and service information.

notes: base year is 1997–98

The index for postpaid mobile telephony services has trended downward. As illustrated in figure 5.3, the percentage rate of fall in the price change index has been uneven. The biggest single fall in the index for postpaid mobile telephony services prices occurred between 1998–99 and 1999–2000 when the index fell by 13.4 per cent.

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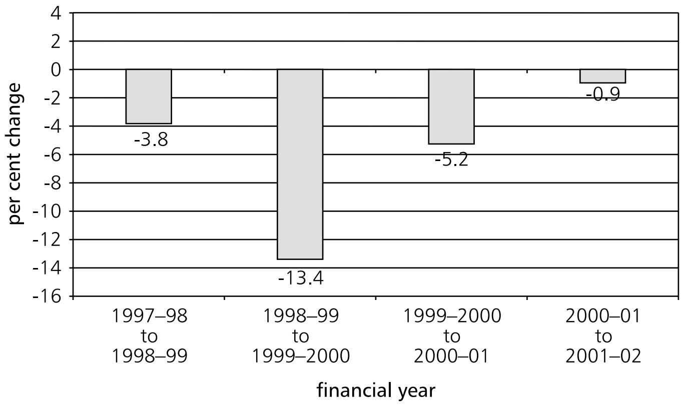
[3] calculated as the index in 2001–02 divided by the index in 1997–98, minus one, i.e. (78.3/100)–1.

[4] index numbers between 1998–99 and 2000–01 vary slightly from previous CRU estimates due to revised weights.

The smallest percentage change in the postpaid index occurred in the last twelve months to 30 June 2002, with the index declining by 0.9 per cent. Figure 5.3 shows that while there was a fall in the average price paid for postpaid mobile telephony services during the 1999–2000, the rate of change in the average price of these services has been in steady fall ever since.

**Figure 5.3 Year-on-year percentage changes in the index for postpaid mobile telephony services, 1997–98 to 2001–02**



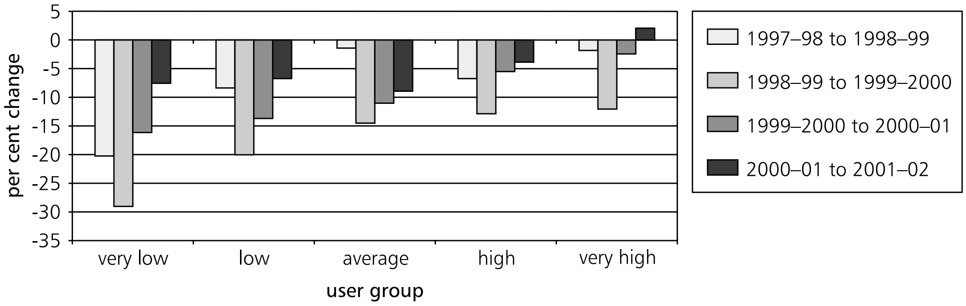

source: CRU price estimates to 2000–01, data from Telstra, Optus, Vodafone, AAPT; published plans and service information.

Factors contributing to the change in prices for postpaid mobile telephony services and the effects on prices paid by the five user groups are discussed in more detail below.

## 5.1.2 Changes in the postpaid mobile telephony services index by user group

The index for postpaid mobile telephony services is based on a number of sub-indexes constructed for five user groups. Figure 5.4 illustrates how the postpaid index for mobile telephony services has changed for the defined user groups in the study.

**Figure 5.4 Year-on-year percentage price changes for postpaid mobile telephony services by user group, 1997–98 to 2001–02**




source: CRU price estimates to 2000–01; data from Telstra, Optus, Vodafone, AAPT; published plans and service information

The following changes occurred in the sub-indexes for the respective user groups:

- *very low user group*: consumers use a mobile service infrequently; no more than once a week.[5] The sub-index for this group has shown the largest decreases of any group sampled. The index peaked in 1999–2000 when the average price paid by this group fell 28.9 per cent from the previous year. Since then, the rate of fall in the index each year has slowed. In 2001–02 prices fell by 7.8 per cent. Prices for the very low user group have fallen by 56.3 per cent since the base year in 1997–98. It should be noted that this group only accounts for a relatively small proportion of total revenue share for most carriers.[6]

- *low user group*: consumers make an average of five calls a week. The sub-index for this group has fallen a total of 41.1 per cent from the base year in 1997–98. Yearly price decreases show a similar trend to that of the very low user group with the largest fall of 20.2 per cent in prices occurring in 1999–2000. The following year prices fell by a further 6.8 per cent after a fall of 13.4 per cent in 2000–01.

- *average user group*: consumers make an average of 10 to 15 calls a week. The sub-index for this group has fallen 32 per cent from the base year in 1997–98. Yearly price decreases show a similar, but smaller, trend to that of the user groups above with the biggest fall of 14.5 per

5 The assumed calling patterns of respective user groups were derived by the CRU and are detailed in ACCC, *Changes in the prices paid for telecommunications services in Australia 1999–00*, p. 69.

6 based on sample bill data provided by mobile carriers to the CRU in 2000

cent occurring in 1999–2000. In 2001–02, prices fell a further 9.3 per cent after a fall of 10.9 per cent the previous year.

- *high user group*: consumers making an average of more than 30 calls a week. The sub-index for this group in 2001–02 fell a total of 26.3 per cent from the base year in 1997–98; about half the rate of fall for very low users. Prices fell 12.7 per cent in 1999–2000, 5.6 per cent in 2000–01 and a further 4.1 per cent in 2001–02.

- *very high user group*: consumers make in excess of 70 mobile calls a week. Along with the high user group, very high user group consumers account for the largest proportion of total mobile revenue share. The sub-index for this group fell by 14.3 per cent over the study period with the yearly price fall peaking at 12 per cent in 1999–2000. While the prices for other user groups continued to fall in 2001–02, the price index for the very high user group increased by 2.1 per cent—the first such increase in an index for any user group since the base year in 1997–98.

The falls in the indexes for very low to average user groups were larger than for the high to very high user groups because of the changes in the tariff structure and plans available to consumers, and the movement in prices of the various components within those plans. These factors are discussed in more detail below.

### 5.1.3 Pricing plans for postpaid mobile telephony services

To make a mobile call, consumers require a handset, connection and ongoing access to a mobile network. These are usually sold jointly as bundles through a wide range of pricing plans.[7] The nature of this bundling means there can be a high degree of cross subsidisation between the individual components of the bundle. It is incorrect to analyse changes in the overall price of mobile telephony by only looking at per minute charges.[8] That said, once overall price change trends have been established, it is possible to analyse the pricing plans used to derive the sample bundle prices for the index to identify factors that may have contributed to this price change.

- *handsets:* Handset prices offered as part of pricing plans generally fell between 1997–98 and 1999–2000 when handsets were being offered at zero or marginal up-front cost to consumers. This trend has been somewhat arrested in subsequent years with the reduction of handset subsidies by carriers. While some carriers still offer a handset at zero cost up-front, it is part of a contract and plan where consumers pay the full cost of the handset if they break the contract. Other carriers, like Telstra, allow consumers to pay back the cost of the handset over an agreed time. Because handset costs make up a higher proportion of fixed costs for lower user groups, falls in the price of handsets have had a bigger effect on the downward index movement of the lower user groups.

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7 While consumers are able to sign up to plans without handsets, the CRU approach prices plans with a handset as it is a basic component for using a mobile service.

8 Collins P and Osiowy E in *Changes in the prices paid for telecommunication services in Australia 1999–2000*, ACCC, p.67.

- *connection charges:* The movement of connection charges in the bundles is dependent on the number of consumers who actually pay the connection charge rather than just the standard list price. Up until 1999–2000, connection charges in the bundles were decreasing as carriers waived fees for large numbers of new connections. In 2001–02, this trend appears to have been reversed with more consumers paying for connection to a network.
- *access:* Until 1998–99, carriers rarely included any free calls and minutes as part of their access charges and free calls were usually restricted to consumers on more expensive access plans. Since 1999–2000 carriers have gradually increased free calls to the point where consumers on an access plan of, say, $55 a month will receive the first $55 of calls 'free'. These types of plans have been extended to very low to average users and have contributed to the falls in the indexes for these groups.
- *flagfalls*: In 2001–02, most carriers charged a flagfall for each mobile call made. Telstra's flagfall increased from 15 cents per-call across all plans in 1999–2000 to 25 cents in 2001–02. Optus did not have a flagfall charge in 1999–2000 but in 2001–02 charged a flagfall for each call of between 18.7 and 24.2 cents depending on the access plan. In 2001–02 Vodafone's flagfall varied between zero and 28.6 cents depending on both the time of day and access plan.
- *call charges:* These charges can vary depending on the length of the call, the network to which the call is made and the time of day the call is made. Generally, call charges are set in increments of one or 30 seconds. Incremental call charges are usually more expensive when customers choose a lower monthly access charge. While it is correct to say call charges have trended downward for all groups since 1997–98, the main change seems to be a restructuring of call charges within plans.
- *discounts:* Carriers provide discounts to their customers in many different ways and these have contributed to falling prices for all user groups. Discounts have been extended to the very low to low user groups and have contributed to falling prices for these groups' bundles. While 'free' minutes have become almost standard as part of most postpaid access plans, carriers may also offer other discounts to consumers. Examples include 'loyalty bonuses', further percentage discounts at set expenditure thresholds and discounts if consumers also buy other products from the carrier such as internet or fixed line services.

## 5.2 Index for prepaid mobile telephony services

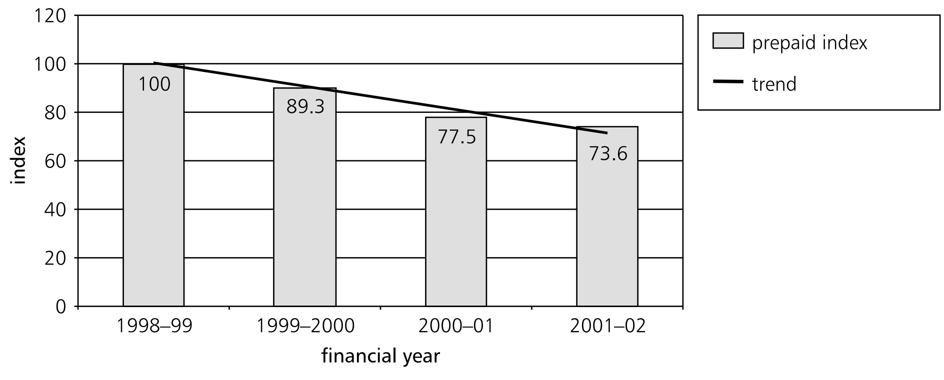
### 5.2.1 Changes in the prepaid mobile telephony services index between 1998–99 and 2001–02

A sub-index for prepaid mobile telephony services has been introduced into the mobile telephony services index for the first time this year.[9] Prepaid mobile service plans differ from postpaid plans in that consumers are not billed each month for mobile services. Rather, as the name suggests, consumers pay up-front for access, call charges and handsets in advance of their use. Prepaid mobile telephony services are often initially bought as start-up packages that include a subscriber identity module (SIM) card, a small amount of free calls, access and a handset. The consumer can then top up or recharge their account as required.

Sample prices are derived for the prepaid services sub-index using the same bundles and user groups as for postpaid services. Prices were calculated back to 1998–99 using historical plan information.

Since 1998–99, the average price of prepaid mobile telephony services, as represented by the bundles consumed by the five user groups, has fallen by about 26.4 per cent.[10] Compared to the 21.7 per cent price fall reported for postpaid mobile telephony services in section 5.1 over the same period, the rate of fall in prices for prepaid services has outstripped that for postpaid services. This may reflect the higher initial price levels for the prepaid services.

**Figure 5.5 Index for prepaid mobile telephony services, 1998–99 to 2001–02**




source: data from Telstra, Optus, Vodafone, AAPT; published plans and service information

notes: base year is 1998–99.

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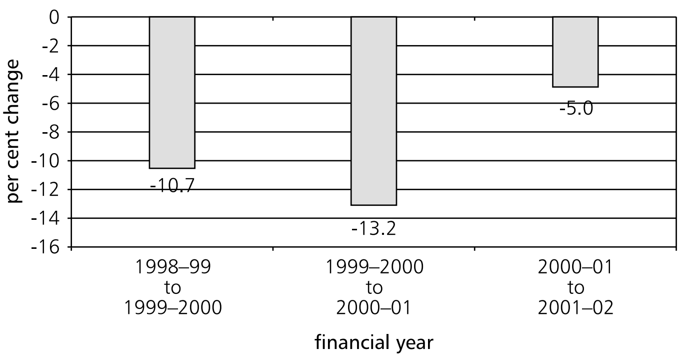
9 based on data provided by Telstra, Optus, Vodafone and AAPT, prepaid services in operation have increased from approximately 350,000 in 1998–99 to nearly four million in June 2002. While growth in postpaid services stagnated in 2001–02, approximately 1.2 million new prepaid services were added to carrier networks in the same year.

10 calculated as the index in 2001–02 divided by the index in 1998–99 minus one, i.e. (73.6/100)–1

## 5.2.2 Changes in the prepaid mobile telephony services index by user group

Figure 5.5 shows that prices for prepaid mobile telephony services have been trending downward since 1998–99. Figure 5.6 illustrates how the rate of fall has varied. The index for prepaid services fell by 5.0 per cent in 2001–02, the smallest fall to date in the index for prepaid services, but larger than the change in price for postpaid mobile telephony services. The largest fall in the index occurred in the 12 months to 30 June 2001 when the prepaid index indicated a price fall of 13.2 per cent, while between the years 1998–99 and 1999–2000 the index fell by 10.7 per cent.

**Figure 5.6 Year-on-year percentage changes in the index for prepaid mobile telephony services, 1998–99 to 2001–02**

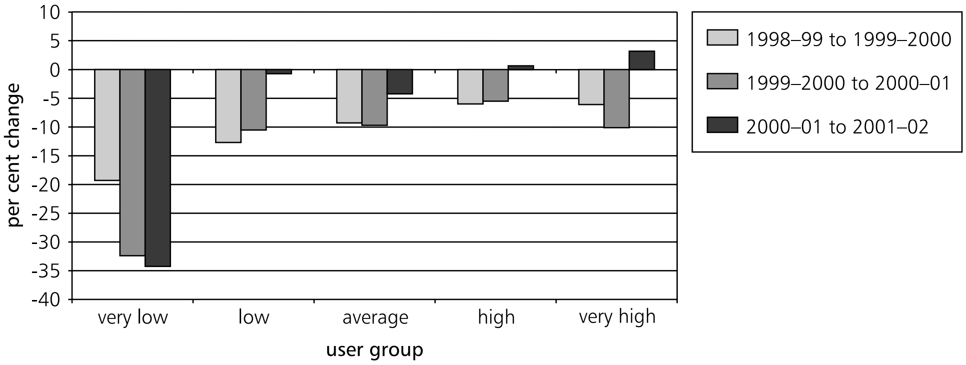



source: data from Telstra, Optus, Vodafone, AAPT; published plans and service informationnote: base year is 1998–99.

Figure 5.7 illustrates how the prepaid index for mobile telephony services has changed for the user groups in the study.[11]

[11] User groups were constructed using sample bill records from mobile consumers using postpaid services and were also used for prepaid services in the absence of comparable usage data for prepaid consumers. Unlike the postpaid index, where bundles representing user groups are weighted according to revenue share, for the prepaid index these are equally weighted because corresponding information was unavailable.

**Figure 5.7** **Year-on-year percentage price changes for prepaid mobile telephony services by user group, 1998–99 to 2001–02**




source: data from Telstra, Optus, Vodafone, AAPT; published plans and service information

The following changes occurred for the respective user groups:

- *very low user group:* experienced the largest fall in the prepaid index. The rate of decline in this sub-index has increased each year with average prices falling by 19.5 and 32.4 per cent in 1999–2000 and 2000–01 respectively, and by 34.3 per cent in 2001–02, the largest fall to date.
- *low user group:* falls were less marked, with the largest yearly fall in 1999–2000 when the index fell by 12.7 per cent. This was followed by a fall of 10.7 per cent in 2000–01 and a marginal fall of 0.8 per cent in the 12 months to June 2002.
- *average user group:* index fell by 9.3 and 9.7 per cent in 1999–2000 and 2000–01 respectively. As with the index for the low user group, the rate of fall slowed in 2001–02 when prices fell by only 3.9 per cent.
- *high user group:* overall price falls were the smallest of the user groups for the first two years of the survey, with the index declining by 6.0 and 5.4 per cent in 1999–2000 and 2000–01 respectively. In 2001–02, there was a marginal increase in this group's index of 0.4 per cent.
- *very high user group:* sub-index increased by 3.2 per cent in 2001–02 after falls of 6.0 and 10.1 per cent in the previous two years.

The large falls in the index for the very low user group compared to the other user groups reflect both the initial high prices paid by the very low user group for prepaid services and also that carriers have been targeting this group with newer plans.

### 5.2.3 Pricing plans for prepaid mobile telephony services

Carriers offer many plans for postpaid consumers to choose from depending on expected usage, but offer only a limited range of options to consumers who wish to use a prepaid plan. Unlike consumers opting to use postpaid plans, prepaid consumers currently cannot trade off higher fixed access charges for lower variable call charges—so consumers who make frequent mobile calls cannot access cheaper-call charges.

Variable call charges are generally higher for prepaid plans, so the price of prepaid mobile telephony services used by user groups in the study is higher for all groups (except very low users) than for consumers on postpaid plans.

- *handsets*: The price of handsets in prepaid bundles has fallen since 1998–99. Handsets and SIM cards sold as part of prepaid packs are usually locked on a particular carrier network and consumers are subject to a fee if they want to use the handset on another carrier network within a certain time period. While not a contract, this arrangement encourages consumers who buy a handset this way to remain with a particular carrier.

- *connection and access charges:* Connection charges are often built into start-up kits, but where listed have been lower than for postpaid plans. While plans do not charge a specific amount for access, ongoing network access is 'purchased' in combination with call credits when consumers buy recharge cards. Access is assumed to be the length of time between a consumer recharging call credits and the expiry date of those credits. The length of access usually depends on the dollar amount recharged and increases as the dollar amount increases. Over time, carriers have appeared to increase the length of access for each value of recharge cards and have also made recharge cards available in smaller dollar amounts. This has contributed to the fall in prices paid for prepaid services, especially for the very low user group, as it has reduced the fixed minimum cost that must be incurred.

- *call charges:* As with postpaid services, these charges vary with the length of the call, the network to which the call is made and the time of day the call is made. Call charges are set in increments of one or 30 seconds. Since 1998–99, call charges for prepaid plans have tended to be higher than those for postpaid plans. This continued to be the case in 2001–02 despite the fact that charges have, on average, fallen since the beginning of the survey period. Since 1998–99, some carriers have restructured call charges. Examples include providing limited choice between flat per second call charges and peak or off-peak charges, and the elimination of some flagfall charges. Assuming consumers know when they will make calls and the duration of those calls (as is the case in the pricing model used in this study), the restructuring of call charges has contributed to the fall in the index of prepaid mobile telephony services.

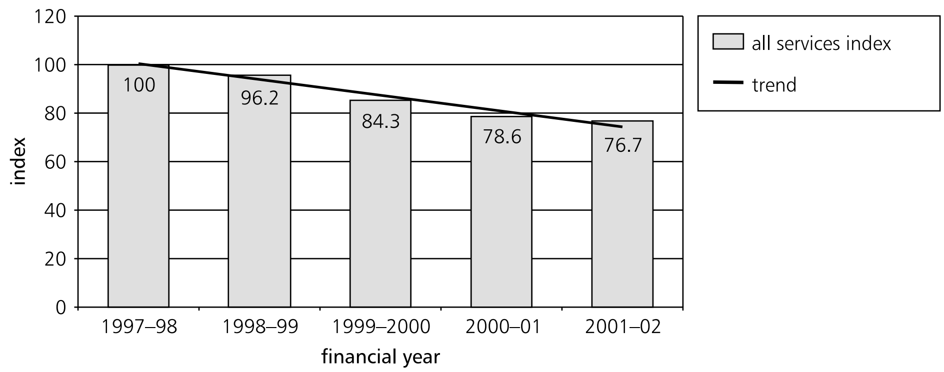
- *discounts*: In 1998–99, there were few, if any, discounts available to consumers using prepaid plans, beyond a small number of free call minutes when a prepaid start-up pack was initially purchased. While still not as common as for postpaid plans, discounts and specials had started to increasingly appear in prepaid pricing plans in 2001–02. This has contributed to some fall in prices.

## 5.3 Overall mobile telephony services

### 5.3.1 Changes in the mobile telephony services index between 1997–98 and 2001–02

Figure 5.8 shows the movement of the overall index for mobile telephony services—derived from the postpaid and prepaid mobile telephony services sub-indexes—for each financial year from 1997–98 to 2001–02. Figure 5.8 shows the mobile index has fallen from 100 in 1997–98 to 76.7 in 2001–02; a reduction of 23.3 per cent.[12] In the 12 months to 30 June 2002, mobile prices fell by 2.5 per cent, the smallest decrease to date.

**Figure 5.8 Index for mobile telephony services, 1997–98 to 2001–02**



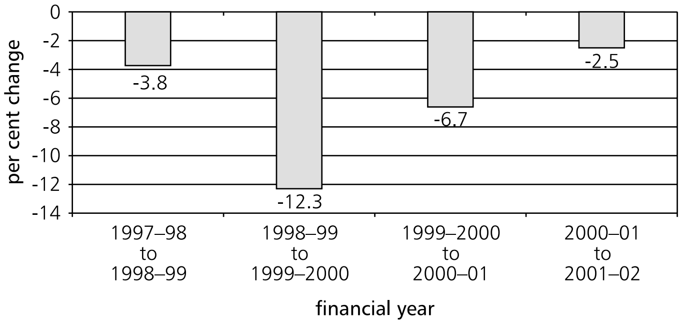

source: CRU price estimates to 2000–01 (except for prepaid prices); data from Telstra, Optus, Vodafone, AAPT; published plans and service information

notes: base year is 1997–98

The rate of fall in the price index for mobile telephony services has been decreasing since 1999–2000. This can be inferred from Figure 5.9 which illustrates that in 1999–2000, the index fell by 12.3 per cent compared to the previous year. In the following year, 2000–01, the index fell by 6.7 per cent and in the last 12 months to June 2002, the index fell by just 2.5 per cent, the smallest fall since 1997–98.

[12] calculated as the index in 2001–02 divided by the index in 1997–98, minus one, i.e. (76.7/100)–1

**Figure 5.9 Year-on-year percentage changes in the index for mobile telephony services, 1997–98 to 2001–02**




source: CRU price estimates to 2000–01 (except for prepaid prices); data from Telstra, Optus, Vodafone, AAPT; published plans and service information

## 5.3.2 Contribution of postpaid and prepaid services to changes in the index for mobile telephony services between 1998–99 and 2001–02

Table 5.1 below details the respective contribution of postpaid and prepaid services to the overall changes in the index for mobile telephony services. The prices of both postpaid and prepaid mobile telephony services fell during every time period.

**Table 5.1 Points contributions by postpaid and prepaid services to the mobile telephony services index, 1998–99 to 2001–02**

| | 1999–2000 | 2000–01 | 2001–02 |
|---|---|---|---|
| postpaid | -10.3 | -4.9 | -1.6 |
| prepaid | -2.0 | -1.8 | -0.9 |
| **overall** | **-12.3** | **-6.7** | **-2.5** |

source: CRU price estimates to 2000–01 (except for prepaid prices); data from Telstra, Optus, Vodafone, AAPT; published plans and service information

* also, see appendix for specific details of the points contributions by individual PSTN services to the index for each financial year.

Because the index for postpaid mobile telephony services has a bigger weight in the overall index for mobile telephony services compared to the index for prepaid services, postpaid services make a greater points contribution to the index.

That said, the proportional contribution of postpaid services to this fall decreased between 1999–2000 and 2001–02, reflecting both the increasing market share of prepaid services in the mobile telephony services market and the larger decreases in the prices of prepaid services compared to postpaid services.

This trend is evident from table 5.1 above. It can be seen that while in 1999–2000, the fall in the postpaid index contributed -10.3 points, over 80 per cent of the total fall of 12.3 points in the overall index, by 2001–02 this contribution had fallen in both absolute (due to the slow down in the rate of fall in prices) and proportional terms (due to declining market share) to -1.6 points, or just over 60 per cent of a total fall of 2.5 points.

The points contribution of prepaid services to the overall index decreased between 1999–2000 and 2001–02 because of the reducing rate of price falls in the prepaid index, but its proportional contribution to the overall index increased because of increasing expenditure of consumers on prepaid services.

Table 5.1 shows that in 1999–2000, the fall in the prepaid index contributed -2.0, less than 20 per cent of the total fall in the overall index. By 2001–02, this contribution had fallen in absolute terms to -0.9 points of a total fall of 2.5 points, but had increased in proportional terms to just less than 40 per cent of the total points contribution.

### 5.3.3 Summary

This chapter described movements in the sub-indexes measuring prices paid by consumers for postpaid and prepaid mobile telephony services and the effect of these on the overall price index for mobile telephony services.

The overall index for mobile telephony services has trended downward since 1997–98 indicating that, on average, prices paid by consumers for mobile telephony services have fallen 23.3 per cent over this time. The rate of fall slowed from 12.3 per cent in 1999–2000 to 2.5 per cent in the last financial year.

The movement of the sub-indexes for postpaid and prepaid mobile services is similar to the movement in the overall mobile index. Both indexes trended downwards over the study period but the rate of fall slowed in recent years.

The largest price falls in the sub-indexes for postpaid and prepaid services were experienced by the very low user groups. This generally occurred due to a fall in the fixed charges associated with accessing mobile telephony services which historically have been proportionately higher for the lower user groups.

In 2001–02, the sub-indexes for postpaid and prepaid mobile services showed an increase in the prices paid for mobile telephony services by the very high user group, the first such increase over the study period.

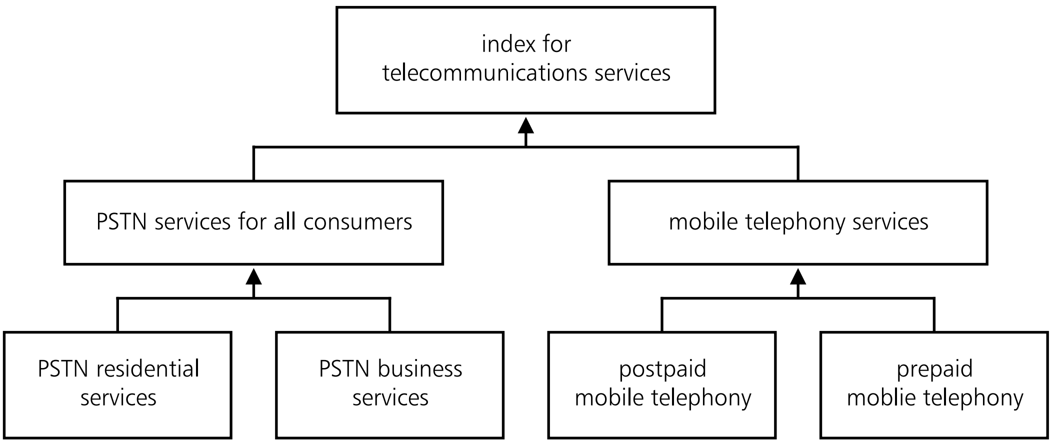
# 6 Overall price index for telecommunications services

The index for all telecommunications services shows how prices have changed, on average, for consumers of PSTN fixed and GSM mobile services.[1] Figure 6.1 shows the structure of the overall index for telecommunications services and represents the full basket of telecommunications services covered in this report.

The index is derived using the price index for PSTN services for all consumers and the price index for mobile telephony. These sub-indexes are weighted in the overall index using expenditure aggregates derived from carrier revenue data.

The sub-index for PSTN services for all consumers is constructed with reference to baskets of services for both residential and business consumers. The sub-index for GSM mobile services is calculated by deriving sample prices for bundles of postpaid and prepaid mobile telephony services that represent the consumption patterns of five defined user groups.

**Figure 6.1 Construction of the index for all telecommunications services**




The index for all telecommunications services provides an indication of how price changes for PSTN and mobile services have affected the overall prices paid, on average, by consumers of telecommunications services.

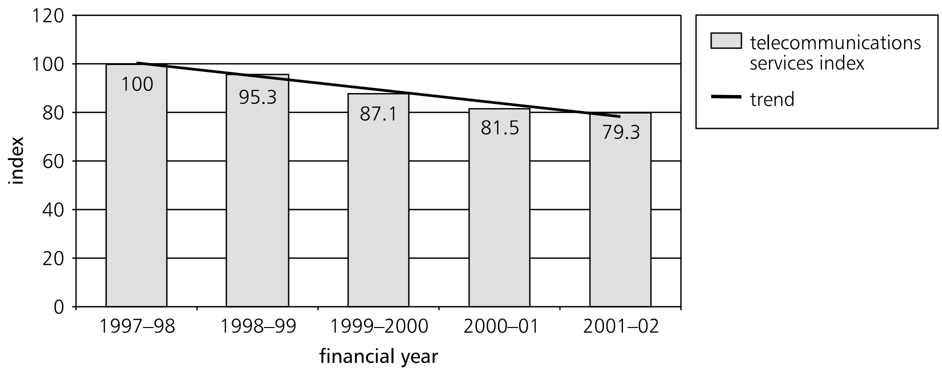
1 Chapters 2 to 5 of this report describe in detail the changes in price for PSTN and GSM mobile services separately.

Section 6.1 of this chapter describes the movement of the overall index between 1997–98 and 2001–02, while section 6.2 describes the yearly price changes in this index and the contribution of PSTN and mobile services to these movements. Section 6.3 summarises the overall index changes and what these changes mean for consumers of telecommunications services.

## 6.1 Changes in the overall index for telecommunications services between 1997–98 and 2001–02

Figure 6.2 shows the movement of the telecommunications index for the financial years 1997–98 to 2001–02. Since 1997–98 the average price of telecommunications services, represented by the weighted average of the PSTN basket and the mobile telephony bundles, has fallen by 20.7 per cent[2] with the index reducing from 81.5 in 2000–01 to 79.3 in 2001–02.[3]

**Figure 6.2 Index for telecommunications services, 1997–98 to 2001–02**




source: data supplied by Telstra, AAPT, Optus Primus and (until 2000–01) One.Tel

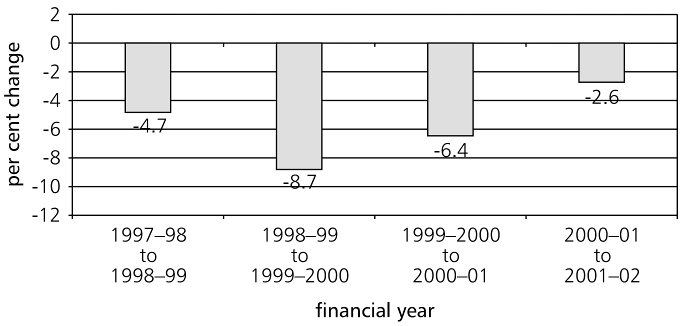
notes: base year is 1997–98

The yearly percentage changes in the index are illustrated in figure 6.3. The total percentage fall in the prices of telecommunications services has been trending downward in each year since 1999–2000. Between 1998–99 and 1999–2000 the index fell by 8.7 per cent. In the following 12 month period ending in June 2001, the index dropped by 6.4 per cent. In the last 12 months, the fall was only 2.6 per cent.

2 calculated as the index in 2001–02 divided by the index in 1997–98, minus one, i.e. (79.3/100 –1)

3 index numbers between 1998–99 and 2000–01 vary from previous CRU estimates due to revised weights.

**Figure 6.3** **Year-on-year percentage changes in the index for telecommunications services, 1997–98 to 2001–02**




source: data supplied by Telstra, AAPT, Optus Primus and (until 2000–01) One.Tel

Table 6.1 details the respective contribution of PSTN services and mobile telephony services to the overall changes in the index for telecommunications services between 1997–98 and 2001–02.[4] In particular, table 6.1 shows that in all years, the average prices paid by consumers for both PSTN services and mobile telephony services fell.

**Table 6.1** **Points contributions by PSTN and mobile telephony services to the telecommunications services index, 1997–98 to 2001–02**

| | 1998–99 | 1999–2000 | 2000–01 | 2001–02 |
|---|---|---|---|---|
| PSTN services for all consumers | -3.7 | -4.8 | -3.7 | -1.6 |
| mobile telephony services | -1.0 | -3.9 | -2.5 | -1.0 |
| all telecommunications services | -4.7 | -8.7 | -6.4 | -2.6 |

* also, see appendix for specific details with regard to the points contributions by individual PSTN services to the index for each financial year

Consumer expenditure on PSTN services accounted for 60 to 75 per cent of total expenditure on telecommunications services. Hence the PSTN services index for all consumers has a bigger weight in the overall telecommunications services index than the index for mobile telephony.

Since 1997–98 the proportion of consumer telecommunications expenditure spent on PSTN services has been declining, although expenditure share is still larger than for mobile telephony services. Price changes in the PSTN index have been smaller than those for mobile telephony services[5], but their contribution to movement in the overall telecommunications services index has been larger.

[4] readers should refer to chapters 2 to 5 of this report for detailed discussion on individual services

[5] Chapters 4 and 5 of this report detail changes to the PSTN and mobile indexes respectively.

As inferred from table 6.1, since 1999–2000, the points contribution of PSTN and mobile telephony services has been declining, implying a slowing in the rate of fall in the average prices of these services and hence of the overall index. During the same period the PSTN services index for all consumers remained the main component of the telecommunications index, despite the greater proportional contribution of mobile telephony services resulting from increasing consumer spending on mobile telephones. This is reflected by the points contribution of PSTN services to the overall index of -3.7 (about 75 per cent of the total change in the index in 1998–99) and -1.6 points (about 60 per cent of the fall in the telecommunications index in 2001–02).

## 6.2 Summary

Since 1997–98 the average prices paid by consumers for telecommunications services have trended downward by 20.7 per cent. The yearly rate of fall in the index has slowed from 8.7 per cent in 1998–99 to 2.6 per cent in 2001–02.

This pattern of fall has been mirrored in several of the sub-indexes from which the overall index for telecommunications services is derived. The sub-indexes for the PSTN services indicate that the prices paid by consumers for local, national long distance, international and fixed-to-mobile calls have all been falling since 1998–99.

With the exception of local calls, the decrease in the average price paid for all per-call services was lower in 2001–02 than two years earlier. The exception to the downward trend of costs for PSTN services is the price paid by consumers for basic access, which has increased every year since 1999–2000. This indicates that carriers have been increasing the fixed price components of their PSTN services while decreasing the variable charge components.

Prices paid by consumers for mobile telephony services followed a similar trend to the index for PSTN services. Overall prices trended downward but the rate of fall slowed. Since 1998–99 the prices consumers pay for fixed charges for PSTN services increased, but decreased for mobile telephony services (excluding flagfall charges). In 2001–02 this downward trend slowed.

Finally, while the largest proportion of the fall in the index for telecommunications services came from the net falls in the price of PSTN services, the contribution of mobile telephony services to overall price reductions increased in each year of the study, reflecting the strong growth and take-up of mobile telephony services in recent years by Australian consumers.

# Appendix—Points contributions

The appendix contains the points contribution of an index component for all indexes discussed in this report. The points contribution of an index is the number of points that a component contributes to the overall index in a particular year. It provides important information on the contribution of the price change of a particular index on the overall index.

Further details on the construction of points contribution to an index component is discussed in appendix 1 of *ACCC telecommunications reports—report 3: Changes in the prices paid for telecommunications services in Australia for 2000–01*.

# Appendix for chapter 2

**Table A2.1 Yearly point contributions by individual PSTN services for the residential index between 1997–98 and 2001–02**

| index | 1998–99 per cent change | 1998–99 weight | 1998–99 point cont. | 1999–2000 per cent change | 1999–2000 weight | 1999–2000 point cont. | 2000–01 per cent change | 2000–01 weight | 2000–01 point cont. | 2001–02 per cent change | 2001–02 weight | 2001–02 point cont. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| basic access | -0.6 | 20.8 | -0.1 | 11.1 | 21.2 | 2.3 | 16.1 | 22.9 | 3.7 | 15.0 | 29.5 | 4.4 |
| local calls | -1.0 | 31.6 | -0.3 | -10.4 | 31.7 | -3.3 | -16.4 | 28.6 | -4.7 | -10.9 | 22.5 | -2.4 |
| NLD calls | -5.2 | 25.7 | -1.3 | -10.3 | 25.2 | -2.6 | -3.0 | 24.3 | -0.7 | -8.5 | 22.2 | -1.9 |
| international calls | -19.8 | 12.8 | -2.5 | -26.3 | 11.2 | -2.9 | -14.6 | 11.1 | -1.6 | -15.6 | 9.7 | -1.5 |
| fixed-to-mobile calls | -4.4 | 9.1 | -0.4 | -8.2 | 10.7 | -0.9 | -1.2 | 13.1 | -0.2 | -4.8 | 16.2 | -0.8 |
| **residential** | **-4.7** | **100** | **-4.7** | **-7.4** | **100** | **-7.4** | **-3.5** | **100** | **-3.5** | **-2.2** | **100** | **-2.2** |

(points contribution for each financial year)

source: data supplied by Telstra, AAPT, Primus and (until 2000–01) One.Tel and Optus

notes: per cent change relates to the change in the average price compared to the previous year's average price; weights are previous year's revenue weights

the sum of the components' points contribution may not add up to the overall index change due to rounding

# Appendix for chapter 3

## Table A3.1 Yearly point contributions by type of business and individual PSTN services between 1997–98 and 2001–02

| | points contribution for each financial year | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1998–99 | | | 1999–2000 | | | 2000–01 | | | 2001–02 | | |
| **index component** | per cent change | weight | point cont. | per cent change | weight | point cont. | per cent change | weight | point cont. | per cent change | weight | point cont. |
| **business** | **-5.3** | **100** | **-5.3** | **-6.5** | **100** | **-6.5** | **-9.2** | **100** | **-9.2** | **-3.2** | **100** | **-3.2** |
| **small business** | **-2.1** | **24.0** | **-0.5** | **-7.2** | **23.8** | **-1.7** | **-8.7** | **23.3** | **-2.0** | **2.4** | **20.9** | **0.5** |
| basic access | -5.3 | 4.7 | -0.3 | 11.5 | 4.5 | 0.5 | 8.5 | 5.0 | 0.4 | 16.3 | 6.4 | 1.0 |
| local calls | 7.2 | 6.1 | 0.4 | -8.3 | 6.7 | -0.6 | -23.2 | 5.9 | -1.4 | -3.0 | 4.3 | -0.1 |
| NLD calls | -1.8 | 6.2 | -0.1 | -8.9 | 5.8 | -0.5 | -3.4 | 5.8 | -0.2 | -6.6 | 4.2 | -0.3 |
| international calls | -9.3 | 3.4 | -0.3 | -34.2 | 2.8 | -1.0 | -33.5 | 1.4 | -0.5 | -13.2 | 0.6 | -0.1 |
| fixed-to-mobile calls | -7.6 | 3.5 | -0.3 | -5.4 | 4.0 | -0.2 | -8.3 | 5.2 | -0.4 | -0.8 | 5.4 | 0.0 |
| **other business** | **-6.3** | **76.0** | **-4.8** | **-6.3** | **76.2** | **-4.8** | **-9.4** | **76.7** | **-7.2** | **-4.7** | **79.1** | **-3.7** |
| basic access | 0.5 | 12.8 | 0.1 | 6.2 | 13.2 | 0.8 | 15.4 | 14.8 | 2.3 | 7.9 | 19.0 | 1.5 |
| local calls | -1.4 | 22.4 | -0.3 | -7.3 | 22.0 | -1.6 | -19.4 | 21.3 | -4.1 | -15.4 | 17.9 | -2.8 |
| NLD calls | -10.6 | 18.4 | -2.0 | -7.7 | 16.9 | -1.3 | -14.6 | 15.9 | -2.3 | -9.5 | 17.8 | -1.7 |
| international calls | -31.0 | 5.4 | -1.7 | -24.9 | 4.5 | -1.1 | -22.3 | 4.0 | -0.9 | -13.8 | 2.4 | -0.3 |
| fixed-to-mobile calls | -5.5 | 17.0 | -0.9 | -8.1 | 19.6 | -1.6 | -10.2 | 20.9 | -2.1 | -2.0 | 22.0 | -0.4 |

source: data supplied by Telstra, AAPT, Optus, Primus and (until 2000–01) One.Tel

notes: per cent change relates to the change in the average price compared to the previous year's average price; weights are previous year's revenue weights

the sum of the components' points contribution may not add up to the overall index change due to rounding

**Table A3.2 Yearly contributions by individual PSTN services for the all business index between 1997–98 and 2001–02**

| | points contribution for each financial year | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **1998–99** | | | **1999–2000** | | | **2000–01** | | | **2001–02** | | |
| **index component** | per cent change | weight | point cont. | per cent change | weight | point cont. | per cent change | weight | point cont. | per cent change | weight | point cont. |
| basic access | -1.1 | 17.5 | -0.2 | 7.6 | 17.8 | 1.3 | 13.7 | 19.8 | 2.7 | 10.0 | 25.4 | 2.5 |
| local calls | 0.5 | 28.6 | 0.1 | -7.6 | 28.7 | -2.2 | -20.2 | 27.2 | -5.5 | -13.0 | 22.1 | -2.9 |
| NLD calls | -8.3 | 24.6 | -2.1 | -8.0 | 22.7 | -1.8 | -11.7 | 21.6 | -2.5 | -8.9 | 22.0 | -2.0 |
| international calls | -22.6 | 8.9 | -2.0 | -28.5 | 7.3 | -2.1 | -25.2 | 5.3 | -1.3 | -13.7 | 3.0 | -0.4 |
| fixed-to-mobile calls | -5.9 | 20.5 | -1.2 | -7.6 | 23.6 | -1.8 | -9.9 | 26.1 | -2.6 | -1.8 | 27.4 | -0.5 |
| **business** | **-5.3** | **100.0** | **-5.3** | **-6.5** | **100.0** | **-6.5** | **-9.2** | **100.0** | **-9.2** | **-3.2** | **100.0** | **-3.2** |

source: data supplied by Telstra, Optus, AAPT, Primus and (until 2000–01) One.Tel

notes: per cent change relates to the change in the average price for that service compared to the previous year's average price; weights'are previous period revenue weights

the sum of the components' points contribution may not add up to the overall index change due to rounding

# Appendix for chapter 4

## Table A4.1 Yearly point contributions by individual PSTN services to the PSTN between 1997–98 and 2001–02

| | points contribution for each financial year | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **1998–99** | | | **1999–2000** | | | **2000–01** | | | **2001–02** | | |
| **index component** | per cent change | weight | points cont. | per cent change | weight | points cont. | per cent change | weight | points cont. | per cent change | weight | points cont. |
| basic access | -0.8 | 19.0 | -0.2 | 9.8 | 20.0 | 2.0 | 15.2 | 22.0 | 3.3 | 13.2 | 28.0 | 3.7 |
| local calls | -0.5 | 30.0 | -0.2 | -9.3 | 30.0 | -2.8 | -17.9 | 28.0 | -5.0 | -11.7 | 22.0 | -2.6 |
| NLD calls | -6.4 | 25.0 | -1.6 | -9.5 | 24.0 | -2.3 | -6.3 | 23.0 | -1.4 | -8.7 | 22.0 | -1.9 |
| international calls | -20.7 | 11.0 | -2.3 | -27.0 | 10.0 | -2.7 | -17.2 | 9.0 | -1.5 | -15.3 | 7.0 | -1.1 |
| fixed-to-mobile calls | -5.3 | 14.0 | -0.7 | -7.9 | 16.0 | -1.3 | -6.2 | 18.0 | -1.1 | -3.2 | 21.0 | -0.7 |
| **PSTN** | **-5.0** | **100.0** | **-5.0** | **-7.0** | **100.0** | **-7.0** | **-5.8** | **100.0** | **-5.8** | **-2.6** | **100** | **-2.6** |

source: data supplied by Telstra, Optus, AAPT, Primus and (until 2000–01) One.Tel

notes: per cent change relates to the change in the average price for that service compared to the previous year's average price; weights are previous period revenue weights

the sum of the components' points contribution may not add up to the overall index change due to rounding

**Table A4.2 Yearly point contributions by consumer type to the PSTN between 1997–98 and 2001–02**

| | points contribution for each financial year | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1998–99 | | | 1999–2000 | | | 2000–01 | | | 2001–02 | | |
| **index** | per cent change | weight | point cont. | per cent change | weight | point cont. | per cent change | weight | point cont. | per cent change | weight | point cont. |
| residential | -4.7 | 60.0 | -2.8 | -7.4 | 59.0 | -4.4 | -3.5 | 60.0 | -2.1 | -2.2 | 61.0 | -1.3 |
| small business | -2.1 | 10.0 | -0.2 | -7.2 | 10.0 | -0.7 | -8.8 | 9.0 | -0.8 | 2.4 | 8.0 | 0.2 |
| other business | -6.3 | 30.0 | -2.0 | -6.3 | 31.0 | -1.9 | -9.4 | 31.0 | -2.9 | -4.7 | 31.0 | -1.5 |

source: data supplied by Telstra, Optus, AAPT, Primus and (until 2000–01) One.Tel

notes: per cent change relates to the change in the average price for that service compared to the previous year's average price; weights are previous period revenue weights.

the sum of the components' points contribution may not add up to the overall index change due to rounding

# Appendix for chapter 5

## Table A5.1 Points contribution for postpaid and prepaid services to the index for mobile telephony services

| | points contribution for each financial year | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **1998–99** | | **1999–2000** | | **2000–01** | | **2001–02** | |
| **type of mobile service** | per cent change | points cont. | per cent change | points cont. | per cent change | points cont. | per cent change | points cont. |
| postpaid | -3.8 | -3.8 | -13.4 | -10.3 | -5.2 | -4.9 | -0.9 | -1.6 |
| prepaid | np | 0 | -10.7 | -2.0 | -13.2 | -1.8 | -5.0 | -0.9 |
| **overall** | **-3.8** | **-3.8** | **-12.3** | **-12.3** | **-6.7** | **-6.7** | **-2.5** | **-2.5** |

source: CRU price estimates to 2001–02 (except for prepaid services); data from Telstra, Optus, Vodafone, AAPT; published plans and service information

notes: per cent change relates to the change in the average price for that service compared to the previous year's average price

# Appendix for chapter 6

Table A6.1 Points contribution by the PSTN and mobile telephony services index to the overall telecommunication services index

| | points contribution for each financial year | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1998–99 | | | 1999–2000 | | | 2000–01 | | | 2001–02 | | |
| **indexes** | per cent change | weight | point cont. | per cent change | weight | point cont. | per cent change | weight | point cont. | per cent change | weight | point cont. |
| index for PSTN services | -5.0 | 75 | -3.7 | -7.0 | 68 | -4.8 | -5.9 | 62 | -3.7 | -2.6 | 60 | -1.6 |
| index for mobile telephony services | -3.8 | 25 | -1.0 | -12.3 | 32 | -3.9 | -6.7 | 38 | -2.5 | -2.5 | 40 | -1.0 |
| **index for telecommunications services** | **-4.7** | **100** | **-4.7** | **-8.7** | **100** | **-8.7** | **-6.4** | **100** | **-6.4** | **-2.6** | **100** | **-2.6** |

source: data supplied by Telstra, Optus, AAPT, Primus and (until 2000–01) One.Tel

notes: per cent change relates to the change the average price for that service compared to the previous year's average price; weights are previous period revenue weights

the sum of the components' points contribution may not add up to the overall index change due to rounding