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**DENTAL SERVICE MIX AND DENTAL FEES
IN AUSTRALIA 1975-1993**

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SUMMARY

In Australia, there are no established methods of determining private dental fees. The Australian Dental Association (ADA) and some of its state branches, however, play active parts in giving fee guidance and monitoring the movement of fees. The Federal ADA conducts regular fee surveys and negotiates with the Government on the Treasury Scale. Some state branches conduct their own surveys and issue fee recommendations to their members. Fee monitoring also exist in most of the states involving the ADA or Dental Boards.

Although fee monitoring does exist no attempt has been made to establish an overall index for dental fees. The Australian Bureau of Statistics (ABS) does not release information on weightings and calculations for the expenditure class "dental services" in the Consumer Price Index (CPI). There is no "CPI for Dental Services" or any other similar published index for dental fees.

In this thesis, a Dental Fee Index (DFI) was constructed for the period 1975-1993. The Index was compiled based on average fees for a basket of dental services. Utilization data of dental services from major health funds with a total coverage of 4 million people were analyzed to determine the composition and weighting of the basket. Results from past ADA Dental Fee surveys were used for fee levels for the items. In order to reflect the changes in utilization pattern during the period a reweighting of the basket was done for data from 1985. The results show that dental fees had been rising in line

with inflation from 1975-1989. From 1989-1993 dental fees increased at a faster rate.

This Index should be of value to compare dental fees changes with inflation.

It could also be used in:

- government fee scale formulation and adjustment;
- calculation of economic growth of the Australian dental industry and
- monitoring appropriateness of the present method used in compiling the dental service component of the CPI.

The DFI Baskets and the weights of their components also provide us with information on the ways in which dental service mix changed during the period. The most significant changes were the sharp drop in amalgam fillings and the significant increase in periodic examination. Looking at the overall picture, in the last two decades dental service mix had shifted from mainly amalgam filling, extraction and full denture to more periodic examination, topical fluoride and crown and bridge.

This thesis also gives an account of the different fee guidance and fee monitoring mechanisms operating in Australia, both at state and national level. Background information are provided on some established methods of dental fees determination and how the CPI is compiled by the Australian Bureau of Statistics.

Suggestions are made to the Australian Dental Association, the Commonwealth Government and the Australian Bureau of Statistics on the possible application of the Index. It is hoped that this thesis will provide a basis for further research into the areas of dental fees and dental service mix.

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Finally, I would like to express my appreciation to the various health funds who have provided me with data on dental service mix. Their contributions are gratefully acknowledged.

DEDICATION

This thesis is dedicated to three ladies:

-My wife Monica; for her love, support and encouragement.

-My daughter Michelle; for the experience of going to school together.

-My baby Manda; for the joy her arrival brings us.

TABLE OF CONTENTS

	<u>Page</u>
Summary	i
Acknowledgements	iv
Dedication	v
Table of Contents	vi
List of Tables	xiii
List of Figures	xvi
1 INTRODUCTION	1
2 DIFFERENT METHODS OF FEES DETERMINATION	4
2.1 Relative Value System (Canadian Model)	6
2.1.1 The Relative Value Unit	6
2.1.2 The Dollar Conversion Factor	6
2.1.3 The Final Formula	7
2.1.4 Adoption of the Relative Value System	7
2.1.5 Review of the System	9
2.2 Relative Value System (American Model)	10
2.2.1 Characteristics of the System	10
2.2.2 Factors for Evaluating the Intrinsic Values	11
2.2.3 Development of the Relative Value Scale	12
2.3 Resource Related Method	14
2.3.1 Background	14
2.3.2 The Method	14
2.3.3 Use of the Resource Related Method in the National Health Service	16
2.4 Fees Survey	18
2.5 Usual, Customary and Reasonable Fees	20
2.5.1 Definition	20
2.5.2 Determination of the Fees	21

2.6	Capitation	23
2.6.1	Definition	23
2.6.2	Development of Capitation in Dentistry	24
3.	AUSTRALIAN GOVERNMENT DENTAL FEES	26
3.1	The Treasury Scale	28
3.1.1	Setting of the Scale	28
3.1.2	The New Formula	29
3.1.3	Variables and Parameters for the Formula	30
3.1.4	Application of the Treasury Scale	34
3.1.5	The Australian Dental Association's Position	35
3.1.6	Average Weekly Earning	36
3.1.7	The Accord	37
3.2	Visiting Dental Officers Sessional Fees	40
3.2.1	Methods of Determining Sessional Fees	40
3.2.2	Sessional Classification	41
3.3	Schedule Fees for Medicare Benefits Purposes	42
3.3.1	Treatment of Cleft Lip and Cleft Palate	42
3.3.2	Approved Dentists Scheme	43
3.3.3	Medicare Benefits Schedule Fee Increases	43
4	AUSTRALIAN PRIVATE DENTAL FEES	44
4.1	The Australian Dental Association	45
4.1.1	Profile of the Association	45
4.1.2	The Association's Role in Fee Determination	47
4.1.3	The Australian Dental Association Fees Surveys	49
4.2	New South Wales	52
4.2.1	Suggested Minimum Fee Schedule	52
4.2.2	Application of the Schedule	53
4.3	Victoria	54
4.4	Queensland	55
4.5	Western Australia	56

4.6	South Australia	57
4.7	Tasmania	59
4.8	Northern Territory	60
4.9	Australian Capital Territory	60
4.10	Specialist Fees	61
4.10.1	Australian Society of Endodontology	61
4.10.2	Australian Society of Orthodontists	61
4.10.3	Australian and New Zealand Society of Paediatric Dentistry	62
4.10.4	Australian Prosthodontic Society	62
5.	DENTAL FEES CONTROL IN AUSTRALIA	63
5.1	New South Wales	64
5.1.1	Australian Dental Association	64
5.1.2	The Dentists Charge Committee	64
5.1.3	The Dental Care Assessment Committee	65
5.1.4	Consumer Affairs Department	66
5.2	Victoria	67
5.2.1	Australian Dental Association	67
5.2.2	The Dentists Act	67
5.2.3	Office of Fair Trading and Business Affairs	67
5.3	Queensland	68
5.3.1	Australian Dental Association	68
5.3.2	Dental Board of Queensland	68
5.3.3	Health Rights Commission	68
5.4	Western Australia	70
5.4.1	Australian Dental Association	70
5.4.2	Dental Charges Committee	70
5.4.3	Ministry of Fair Trading	70
5.5	South Australia	71
5.5.1	Australian Dental Association	71
5.5.2	Dental Board	72

5.5.3	Department of Consumer Affairs	72
5.6	Tasmania	73
5.6.1	Australian Dental Association	73
5.6.2	Office of Consumer Affairs	73
5.7	Northern Territory	74
5.8	Australian Capital Territory	75
5.8.1	Dental Board	75
5.8.2	Consumer Affairs Bureau	75
5.9	The Advisory Committee on Prices and Incomes	77
5.9.1	The 1983 Prices and Incomes Policy	77
5.9.2	The Committee	77
5.9.3	The Australian Dental Association's Submission	78
5.9.4	The Government's view	80
5.9.5	Outcome of the Inquiry	81
5.10	Prices Surveillance Authority	84
5.11	Trade Practices Commission	86
6.	THE CONSUMER PRICE INDEX	89
6.1	Definition	90
6.2	The Consumer Price Index Population	91
6.3	Composition of the CPI Basket	93
6.4	Weighting of the CPI Basket	95
6.5	Treatment of weight changes	96
6.6	Capital City Weights	98
6.7	Collection of Data for Dental Services Expenditure Class	99
6.8	CPI for Dental Services	100
7	DENTAL FEE INDEX	101
7.1	Introduction	101
7.2	Requirements of the Index	104
7.3	Utilization Pattern of Dental Services	106
7.4	Health Funds in Australia	110

7.5	Construction of the DFI Basket	112
7.6	Response from the Health Funds	113
7.7	The 1975-1985 Basket	115
7.8	The 1985-1993 Basket	120
7.9	Fees Estimation	125
7.9.1	Periodic Examination (item 012)- 1975, 1977, 1980, 1981, 1983	126
7.9.2	Scaling (item 112)- 1975	127
7.9.3	Treatment of Acute Periodontal Infection (item 213)- 1985	128
7.9.4	Porcelain Jacket (item 613)- 1985	129
7.9.5	Three-quarter Cast Old crown (item 620)- 1985	130
7.9.6	Removable Appliance (item 821)- 1975	131
7.9.7	Root Planing and Subgingival Curettage (item 222)- 1985, 1987, 1989	132
7.9.8	Root Canal Therapy- 2 Canals (item 424)- 1985	133
7.9.9	Root Canal Therapy (1 canal)- 1991, 1993	134
7.9.10	Root Canal Therapy (3 canals)- 1991, 1993	135
7.10	Definition Changes	136
7.11	The Aggregate Values	137
7.11.1	Calculation of the Aggregate values	137
7.11.2	Contribution of Individual Items and Groups to the 1975-1985 Basket	149
7.11.3	Contribution of Individual Items and Groups to the 1985-1993 Basket	154
7.12	Conversion of Aggregate Value into Dental Fee Index Value	159
7.13	Comparison of Dental Fee Index with Consumer Price Index 1975-1993	161
8	FEES CHANGES IN INDIVIDUAL ITEMS	163
8.1	Initial Examination	164
8.2	Single X-ray	166

8.3	Two X-rays	168
8.4	Plaque Removal	170
8.5	Topical Fluoride	172
8.6	Extraction	174
8.7	Amalgam (1 surface)	176
8.8	Amalgam (2 surfaces)	178
8.9	Amalgam (3 or more surfaces)	180
8.10	Porcelain Fused to Gold Jacket Crown	182
8.11	Full Denture	184
8.12	Partial Denture- Cobalt Chromium	186
9	DISCUSSION	188
9.1	The Dental Fee Index	188
9.1.1	The Dental Fee Index Population	188
9.1.2	Significance of the Weighted Fee	191
9.1.3	Comparison of Compositions of the DFI Baskets	192
9.1.4	Comparison of Weighted Fees of Items in the Two DFI Baskets	193
9.1.5	Changes in the Dental Fee Index	194
9.1.6	Changes in Fees of Individual Items	195
9.2	Other uses of the Dental Fee Index	197
9.2.1	Analysis of Utilization Pattern Changes	198
9.2.2	Determining Items for CPI Calculation	199
9.2.3	Measuring Economic Growth of the Dental Industry	204
9.2.4	Government Fee Scale Adjustment	205
9.3	Factors Affecting Dental Fees Changes	206
9.3.1	Cost of Infection Control	207
9.3.2	Cost of Dental Material and Equipment	210
9.3.3	Professional Insurance	212
9.3.2	Asset Prices	214
9.4	Restraint in Dental Fees	215
9.5	The Treasury Scale	217

9.5.1	Improvement for the Formula	218
9.5.2	Possible Methods of Adjustment	220
9.6	Recommendations to the Australian Dental Association	222
9.6.1	Dental Fees Survey	222
9.6.2	The Dental Fee Index	224
9.7	Conclusion	225
10	REFERENCES	226
11	APPENDICES	
	Appendix 1: 1993 Australian Dental Fees Survey Form	252
	Appendix 2: Example from computer report of the 1993 Australian Dental Fees Survey	257
	Appendix 3: Publication of the 1993 Dental Fees Survey results in the Australian Dental Association July 1994 News Bulletin	260

LIST OF TABLES

No.	Title	Page
1	<i>Formula for adjustment of the Treasury Scale</i> <i>Source: Stoya (1994)</i>	30
2	<i>Staff to dentist ratio used in the formula for the Treasury Scale</i> <i>Source: Butler (1994)</i>	31
3	<i>1987 Treasury Scale adjustment</i> <i>Source: Australian Dental Association (1988a)</i>	33
4	<i>The Accord 1983-1990</i> <i>Source: Treyvaud & Dundas (1990)</i>	39
5	<i>ADA membership figures at 27 January 1994</i> <i>Source: Barnard & Ho (1994)</i>	46
6	<i>Response to the Dental Fees Survey 1985-1993</i> <i>Source: Barnard (1988, 1993b), Barnard & Ho (1994)</i>	50
7	<i>Contribution of the Dental Services Expenditure Class</i> <i>to the Consumer Price Index (12th Series, June 1992)</i> <i>Source: Castle (1992b)</i>	94
8	<i>Example of treatment of weight changes in the CPI</i> <i>Source: Castle (1992b)</i>	96
9	<i>Percentage of population with private health fund cover</i> <i>Source: Toohey (1994)</i>	108
10	<i>Composition of the 1975-1985 DFI Basket</i>	116
11	<i>Group composition of the 1975-1985 DFI Basket</i>	118
12	<i>Composition of the 1985-1993 DFI Basket</i>	121
13	<i>Group composition of the 1985-1993 DFI Basket</i>	123
14	<i>Aggregate value for DFI 1975</i>	138
15	<i>Aggregate value for DFI 1977</i>	139
16	<i>Aggregate value for DFI 1980</i>	140
17	<i>Aggregate value for DFI 1981</i>	141
18	<i>Aggregate value for DFI 1983</i>	142
19	<i>Aggregate value for DFI 1985a</i>	143

20	<i>Aggregate value for DFI 1985b</i>	144
21	<i>Aggregate value for DFI 1987</i>	145
22	<i>Aggregate value for DFI 1989</i>	146
23	<i>Aggregate value for DFI 1991</i>	147
24	<i>Aggregate value for DFI 1993</i>	148
25	<i>Individual item contribution to the aggregate value in the 1975-1985 DFI Basket</i>	150
26	<i>Group contribution to the aggregate value in the 1975-1985 DFI Basket</i>	152
27	<i>Individual item contribution to the aggregate value in the 1985-1993 DFI Basket</i>	155
28	<i>Group contribution to the aggregate value in the 1985-1993 Basket</i>	157
29	<i>Dental Fee Index 1975-1993</i>	160
30	<i>Dental Fee Index and Consumer Price Index 1975-1993</i>	161
31	<i>Fees for initial examination 1975-1993</i>	164
32	<i>Fees for single x-ray 1975-1993</i>	166
33	<i>Fees for two x-rays 1975-1993</i>	168
34	<i>Fees for plaque removal 1975-1993</i>	170
35	<i>Fees for topical fluoride 1975-1993</i>	172
36	<i>Fees for extraction 1975-1993</i>	174
37	<i>Fees for one surface amalgam 1975-1993</i>	176
38	<i>Fees for two-surface amalgam 1975-1993</i>	178
39	<i>Fees for three-surface amalgam 1975-1993</i>	180
40	<i>Fees for porcelain fused to gold jacket crown 1975-1993</i>	182
41	<i>Fees for full denture 1975-1993</i>	184
42	<i>Fees for partial denture (cobalt chromium) 1975-1993</i>	186
43	<i>Fees change for individual items in the DFI Basket 1975-1993</i>	196
44	<i>Share of items included in the CPI calculation of dental services in the 1975-1985 DFI Basket</i>	200

45	<i>Share of items included in the CPI calculation of dental services in the 1985-1993 DFI Basket</i>	200
46	<i>Share of items in the 5 suggested items of dental services in the 1985-1993 DFI Basket</i>	203
47	<i>Insurance fees of the Medical Defence Union 1975-1994</i> <i>Source: McIntosh (1994)</i>	212

LIST OF FIGURES

No.	Title	Page
1	<i>Composition of the 1975-1985 DFI Basket</i>	117
2	<i>Group composition of the 1975-1985 DFI Basket</i>	119
3	<i>Composition of the 1985-1993 DFI Basket</i>	122
4	<i>Group composition of the 1985-1993 DFI Basket</i>	124
5	<i>Individual item contribution to the aggregate value in the 1975-1985 DFI Basket</i>	151
6	<i>Group contribution to the aggregate value in the 1975-1985 DFI Basket</i>	153
7	<i>Individual item contribution to the aggregate value in the 1985-1993 DFI Basket</i>	156
8	<i>Group contribution to the aggregate value in the 1985-1993 DFI Basket</i>	158
9	<i>Dental Fee Index and Consumer Price Index 1975-1993</i>	162
10	<i>Fees for initial examination 1975-1993</i>	165
11	<i>Fees for single x-ray 1975-1993</i>	167
12	<i>Fees for two x-rays 1975-1993</i>	169
13	<i>Fees for plaque removal 1975-1993</i>	171
14	<i>Fees for topical fluoride 1975-1993</i>	173
15	<i>Fee for extraction 1975-1993</i>	175
16	<i>Fees for one surface amalgam 1975-1993</i>	177
17	<i>Fees for two surface amalgam 1975-1993</i>	179
18	<i>Fees for amalgam (three or more surfaces) 1975-1993</i>	181
19	<i>Fees for porcelain fused to gold crown 1975-1993</i>	183
20	<i>Fees for full denture 1975-1993</i>	185
21	<i>Fees for cobalt chromium partial denture 1975-1993</i>	187
22	<i>Percentage of dentists in the United States using gloves, mask, gown and protective eyewear in 1986, 1988 and 1991</i> <i>Source: Nash (1992)</i>	207

23	<i>Australian Dollar exchange rates 1970-1990</i> <i>Source: Clark (1992)</i>	211
24	<i>Insurance fee of the Medical Defence Union and the</i> <i>Consumer Price Index 1975-1993</i>	213
25	<i>Asset Prices and the CPI</i> <i>Source: Allen & Unwin (1992)</i>	214
26	<i>Banks interest rates in Australia 1950-1990</i> <i>Source: Allen & Unwin (1992)</i>	218

1. INTRODUCTION

In Australia, dental care for most people is provided by private dentists. There is no large scale subsidised dental insurance scheme similar to the medical cover under Medicare. The absence of any Government contributions towards the cost of dental care for the majority of the population has left private dental practitioners free to fix their own fees. There is no national scale of fees or any universally adopted methods of determining dental fees.

Although generally there are also no recommended fees for other Australian professional services, there exist certain venues by which it can be established as to whether or not fees are reasonable. With the legal profession, the Solicitors' Remuneration Order provides a scale of charges in addition to the services of the Taxing Master. The medical profession has no compulsory scale of fees; however, medical services are covered by Medicare which sets out recommended fees for any type of medical service. There is no equivalent scale of standard charges in the dental profession, which leaves the public open to the suspicion that unscrupulous dentists will charge whatever the market will bear (Australian Dental Association, Victorian Branch 1979b).

Although there is no standard national scale, dental fee guidance and monitoring do exist in most of the States. There are a number of fee scales issued by the Australian Dental Association (ADA). The Federal ADA

negotiates a fixed fee scale with the Treasury for services provided by private dentists on behalf of the Government. Some ADA State Branches provide guideline fee scales for their members. Most of these scales are compiled from data collected from the Association's fees surveys. Such surveys have been conducted for more than 30 years but no attempts have been made so far to analyse the results and correlate the pattern of fees changes with the economic changes in Australia over the same period.

The aims of this thesis are:

1. to give an account of the different fee guidance and fee monitoring mechanisms operating in Australia;
2. to construct a valid "Dental Fee Index" (DFI) for the period 1975-1993 based on average fees for a basket of dental services after they have been weighted to reflect their importance in the market;
3. to compare dental fees changes with economic changes in Australia during the period.

To achieve the above aims, it is important that we have some basic knowledge of the different methods of setting dental fees in Australia and in other parts of the world. Chapter 2 gives an account of the different established methods of fee determination. Chapter 3 describes how the

Australian Government fee scales are set while Chapters 4 and 5 outline how private dental fees advice are made and how their appropriateness is monitored in the different States of the Country.

The second half of the thesis looks at the pattern of changes in dental fees in Australia for the period 1975-1993. A "Dental Fee Index" (DFI) is constructed using service rebate information from Health Funds and Dental Fees Surveys data from ADA. The DFI is to be compared with the Consumer Price Index (CPI), which is covered in Chapter 6. Chapter 7 describes how the DFI is constructed and their values compiled using data from the last 2 decades, the changes in DFI are compared with changes in the CPI. Not all the items in the DFI Baskets have their fees changing in the same pattern; in Chapter 8 we look at fees changes in some individual items and how they compare with the changes in the CPI. In the final chapter various aspects affecting dental fees for the period under study are discussed before conclusions and suggestions are made.

2. DIFFERENT METHODS OF FEES DETERMINATION

Although the determination of equitable fees for dental services is an important part of dental practice administration, the dental profession in the past has not devoted much attention to methods of fees determination (Jorgensen 1959, Howe 1979, Marchack 1992). It was not until the 1960's, with the advent of third-party payment programs and the growth in consumerism, that attempts were made by some dental organisations to systematically determine dental fees which were fair and acceptable (American Dental Association 1959, Dodd 1956, Hollinshead 1961, Wilkinson 1989).

In the United Kingdom, the Dental Rate Study Group was set up in 1962 by the British Dental Association and the Health Department to determine dental fee levels in the National Health Service (Scarrott 1979). The **Resource Related Method** was developed and used extensively. In Canada and the United States a totally different approach was used. The Canadian Dental Association (1964) and the American Dental Association (1968) developed their different versions of the **Relative Value System** in giving fee advice to their members. In some countries **fees surveys** conducted periodically have allowed dentists to determine how their fees compare with those of other practitioners in the country (Barnard 1984, Marchack 1992, Croxson 1993). In many third-party programs the "**Usual, Customary and Reasonable Fees**" are commonly used (American Dental Association 1983) while **Capitation** is increasingly being adopted as an alternative to the

traditional fee structure (American Dental Association 1983, Coventry Holloway, Lennon, Mellor 1986, Soh 1989).

In this chapter the different established methods of setting dental fees will be discussed. The specific ways in which dental fees are determined in Australia, both in private practice and in government sponsored services, will be covered in the next two chapters.

2.1 RELATIVE VALUE SYSTEM (CANADIAN MODEL)

The Relative Value System was developed by the Canadian Dental Association in 1964 (Canadian Dental Association 1964, Ontario Dental Association 1970, Ontario Dental Association 1993). With this approach, dental services are assigned a relative scale of values. The scale is based on a specifically selected unit of services called "Relative Value Unit" (RVU).

2.1.1 The Relative Value Unit

A simple formula was developed to permit the calculation of the relative values for most dental services. This formula gives prime consideration to the two basic components of any dental services - time and responsibility. Time (T) is measured in 15-minute units while the responsibility component (R) takes into consideration 4 main factors - scientific knowledge, professional judgement, technical skill and risk.

The formula for the Relative Value Unit is:

$$RVU = T \times R$$

2.1.2 The Dollar Conversion Factor

To convert RVUs into suggested fees it is necessary to use a dollar conversion factor "f". The "f" factor is periodically adjusted taking into

account the following factors:

- the present specific methods of practice;
- the present socio-economic conditions;
- the fees of other related professions.

The formula for establishing a fee then becomes:

$$\text{Fee} = \text{RVU} \times f$$

2.1.3 The Final Formula

In the provision of dental services laboratory costs and other expenses are sometimes involved. These are added to the fee (denoted as L and E respectively) and the final formula becomes:

$$\text{RVU} \times f = \text{Fee} + L + E$$

2.1.4 Adoption of the Relative Value System

The Ontario Dental Association (ODA) formally adopted the Relative Value System in formulating its suggested fees guide in 1967 (Howes 1993). It is used until now with annual adjustment on the f factor. The Economics of Practice Committee of the ODA uses an accounting firm to conduct an annual study of the economics of operating a dental practice in Ontario and determine the yearly value for the f factor. In the last 25 years the conversion

factor adjustment has mostly been close to or below the Consumer Price Index , with the exception of 1991. In that year the Goods and Services Tax (GST) was introduced and the dentists were required to pay GST on services and supplies but the services they perform for their patients were exempted from the GST. Therefore a one time adjustment of 1.10% was added to the conversion factor to offset the anticipated 1.80% increase in their expenses.

The Bureau of Economic Research and Statistics of the American Dental Association used the Canadian model as the basis for their own relative value study in 1966 (Ogawa 1966). The American Relative Value System was developed as a result of that study.

The Dental Association of South Africa also adopted the RVS in 1969 with modifications made on the T factor (Dental Association of South Africa 1974). Instead of using 15 minutes, as in the Canadian model, a time unit of 1 minute was used. This avoided fractions in the T factor, thus leading to simpler calculation and greater accuracy in determining time differences for different procedures.

In New Zealand, the Canadian System was extensively used by the New Zealand Dental Association until recent years (Croxon 1993). The arrival of the Commerce Act in 1986 made it illegal for the Association to work towards group fee determination in any way.

2.1.5 Review of the System

In 1993 the ODA undertook a review of the RVU (Howes 1993). A 2-week long exercise was conducted to determine the actual time required to perform individual services. In addition, a number of panels comprising of various specialty sections and general practitioners were tasked with developing responsibility values for the individual dental services. The result will be available in January 1995.

2.2 RELATIVE VALUE SYSTEM (AMERICAN MODEL)

After the development of the Relative Value System by the Canadian Dental Association the American Dental Association began its own study. A detailed outline of the study's objective and framework was presented to the Association by Ogawa, Assistant Director of the Bureau of Economic Research, at a 1966 conference. The study was completed and results reported in the Journal of American Dental Association in 1968 (American Dental Association 1968, Dunning 1979).

2.2.1 Characteristics of the System

The American system is different from the Canadian system in two main ways:

- It relied totally on dentists' rating of "intrinsic values" of dental services to determine their fees. The cost and time required to complete the procedures were not taken into account.
- For the purpose of devising a simple conversion process, the point assignment was designed to yield a linear relationship between relative values and fees. The various services were positioned along a continua in the order of their respective intrinsic value points.

Ogawa (1966) believed that there was only a limited role for cost in the determination of prices. He pointed out that while cost set a minimum price,

the price that could be charged beyond that minimum was influenced more significantly by demand, competition and other related non-cost factors. Moreover, no two cost-finding procedures were identical and the "cost" of a product was a composite of numerous elements which were hard to calculate.

As to the role of time, Ogawa viewed dental service as problem solution where time would be implicit in the application of the factors involved in the process of solving the problem. The greater the complexity of the problem, the greater the amount of factors used and the greater the amount of time needed for the performance of the service. If this were true, we would be overweighting time by considering it as an independent dimension since, in essence, we would then be counting time twice.

2.2.2 Factors for Evaluating the Intrinsic Values

In developing the Relative Value Scale the following general and specific factors were selected:

1. Knowledge- content of knowledge, understanding and judgement.
2. Skill- digital dexterity, experience and perceptual skill.
3. Effort- physical, mental and visual skill effort.
4. Responsibility- effect of error and correction of error.

For the purpose of administration, "content of knowledge and understanding"

were evaluated with reference to "basic science", "dental materials" and "instrumentation". The factor "judgement" was assessed with respect to "type of decision and risk of failure".

2.2.3 Development of the Relative Value Scale

Data on factor ratings were obtained from dentist raters from two sites, one in a "high" fee state (Oregon) and the other in a "low" fee state (Kentucky). Statistical tests showed that the relative values of dental services remained invariant in spite of the differences in the general fee levels of the two states. Accordingly, the ratings of the two states were pooled and used as data for computation of the relative value scale.

The total points, or relative value, for each service used in this study were obtained by simply adding the degree weights of the factors. The 133 dental services with the corresponding relative values were arranged in the order of the magnitude of the points. They form a hierarchical structure of dental services and, hence, a Relative Value Scale.

The Relative Value Scale was published in 1968 (American Dental Association 1968) with the recommendation that it "be made available to dentists and administrators of dental prepayment and insurance programs to test its usefulness". However, no further research has been done by the American Dental Association in this area since the publication of the article.

According to Bently (1993), Research Analyst of the Bureau of Economic and Behavioural Research and Statistics, the Association later became very careful about the dental fee area to avoid possible misinterpretation of its activities as contributing to price fixing.

In the United States, research in the area had been taken up by private companies. In 1986, a report named "Relative Values for Dentists" was published by the Relative Value Studies Incorporation . It was available for purchase by dentists in private practice to assist them in fee determination.

Considering that major changes to the United States health system will soon be proposed by the Clinton Administration, the American Dental Association may be revisiting the topic of relative values within the next few years (Bently 1993).

2.3 Resource Related Method

With this method, level of fees depends on the measurements of the cost of physical and manpower resources required to complete each item of treatment (Mackie, Lennon 1984, Scarrott 1979). Unlike the Relative Value System, the Resource Related Method is free of professional or market valuations.

2.3.1 Background

In 1948 the National Health Service (NHS) was established in the United Kingdom which included dental service. The Dental Rates Study Group (DRSG) was set up in 1962 to devise a pay system for general dental practitioners under the scheme (Scarrott 1979). The Resource Related Method was developed and adopted by the DRSG. A fee scale covering some 400 treatment items was set up and reviewed periodically (Wilkinson 1989, Bloomfield 1992, British Dental Association 1993).

2.3.2 The Method

There were 4 processes involved (Scarrott 1979, Nettley, Scarrott 1988, Ernst & Young 1991, Scarrott 1993a):

1. The dentist around whom the system was to be built must be defined.

This was taken to be a General Dental Scheme principal who had been in the Service for at least a full year.

2. The dentist's practice expenses must be estimated for the period for which a fee scale was to be set. Practice expenses data were obtained from a confidential analysis of practice accounts carried out each year by the Inland Revenue.

3. Target average turnover, known as Target Average Gross Income (TAGI) could then be set for the set period. This was done by combining estimated expenses and Target Average Net Income (TANI) decided by the Government's Review Body on Doctor's and Dentist's Remuneration ($\text{TAGI} = \text{Expenses} + \text{TANI}$).

4. The TAGI could then be 'spent' and spread over the projected volume of services. With this global sum treatments were remunerated according to the time taken to complete them and whether laboratory costs were involved.

Periodic inquiries were held to establish time relativities for the different items. Inquiries were originally made by postal survey of dentists. This was found to be time consuming for dentists and also presented considerable problems in interpretation and analysis, particularly where treatment were carried out in combination or not completed at one visit (Nettley et al 1988).

Starting from 1980, discussion panel inquiries were used instead, using a panel of practitioners drawn from the British Dental Association's General Dental Service Committee. The method proved successful and preferable as an acceptable basis for determining fee relativities. Three timing inquiries were held in Sunningdale in 1980, Keele in 1985 and Widermere in 1988 (Nettley et al 1988). According to Scarrott (1993b) another inquiry was done recently but the findings have not yet been published.

2.3.3 Use of the Resource Related Method in the National Health Service

When the National Health Service was initiated in 1948 the first scale of fees was a negotiated one, not based on objective criteria (Nettley et al 1988). The Resource Related Method was used since 1962 until now. Over the years, the process has become more complex and time consuming (Ernst & Young 1991). In 1990, major changes were made to the NHS dental contract where 20% of the funds available to pay dentists were used to create capitation fees. Instead of being a 100% fee-for service pay system using the Resource Related Method, dentists were given a 80/20 fee for service/capitation combination (Scarrott 1993c).

Recently, a basic review of the whole dental fees system was undertaken by Ernst & Young (1991) and Bloomfield (1992). According to Scarrott (1993b), everybody is now looking at the NHS dental pay system afresh and

expecting imminent changes.

2.4 FEES SURVEY

Some Dental Associations periodically conduct fees surveys of their members. Most of these surveys are carried out primarily to obtain data for negotiating dental fee schedules with Governments and third party carriers (American Dental Association 1957a, American Dental Association 1975, Barnard 1990, Croxson 1993).

Since 1950, the Bureau of Economic Research and Statistics of the American Dental Association has been assisting more than 40 state Dental Societies in the United States in conducting fees surveys (American Dental Association 1957). The assistance provided are of 3 types:

1. Provision of questionnaires.
2. Provision of technical advice regarding sampling and procedures.
3. Preparation of summary reports of survey results.

The Bureau has also conducted its own national survey every three to five years since 1956 (Hollinshead 1961, American Dental Association 1992). In the 1956 survey only 5 items were included (American Dental Association 1957b), the number increased to 136 in 1990 (American Dental Association 1992).

In Australia, dental fees surveys of active members of the Australian Dental Association were carried out by the Association and some of its State

Branches since 1961. This will be covered in more details in Chapter 4.

In New Zealand, the Dental Association collects information on fees of a basket of services to provide information for negotiation with the Government on its fees scale. The data are also made available to private practitioners to do comparisons on incomes and fees (Coxson 1993).

The Singapore Dental Association formulated a Minimum Fees Schedule in 1990 (Lim 1993). The minimum fees were derived by using the median fees of two previous fees surveys , and adjusting after comparing with fees charged by the semi-private and public hospitals.

2.5 USUAL, CUSTOMARY AND REASONABLE FEES

2.5.1 Definition

In many third-party dental plans reimbursements are based on the "usual, customary and reasonable fees" (UCR). The American Dental Association (1983) defines UCR in the following way:

Usual fee - the usual fee is the fee that an individual dentist most frequently charges and accepts as payment in full for a given dental service.

Customary fee - a fee is customary when it is in the range of the usual fees of dentists of similar training and experience, for the same service within the specific and limited geographic area. Third-party customary fees calculation should be based on current, accurate usual fees data, and updated at least semiannually for the specific geographic area under consideration.

Reasonable fee - a fee is reasonable when it meets the foregoing two criteria or, in the opinion of the responsible Dental Association's review committee, is justifiable considering the special circumstances of the particular care in question.

Dunning (1979) simplified the definition by referring to UCR as "the fees in which the insurance underwriter agrees to pay the dentist whatever he would usually charge his regular patients for a given operation, provided that

charge is customary in his locale and reasonable in relation to other costs of living and in the view of the local dental society".

2.5.2 Determination of the Fees

To protect the underwriter, the "usual fees" for a range of services must be specified by the dentist in advance of the contract, and then must be adhered to. The fees filed by the dentist will not be permanently binding, he may refile within an agreed period of time if at any time he raises his charge to most of his patients.

The range of charges filed by the vast majority of dentists is the basis for determining the "customary fees". In 1981, the American Dental Association conducted a survey of insurance firms and service plans on the various methods used in calculating UCR benefits (American Dental Association 1983). The result of the survey indicated that out of 15 insurance companies and service plans who responded to the survey 14 of them used the 90 percentile of all fees filed by dentists as their basis for "customary fees". By this arrangement, some 90% of the charges of the dentists within a plan were paid without question. The dentists whose fees were higher would be reimbursed only to the agreed fees limits.

The responses of the survey demonstrated a great deal of similarities but also substantial differences in the methods used by major insurance firms

and services plans. The basic principle behind the methods of calculation were very similar, using dentists' filed fees as their "usual fees" and overall fee profile of the participating dentists as basis for "customary fees".

But the UCR programs might in fact provide significantly different benefits when even a single element of the data used in the calculation formula differs. These elements include:

- the locality from which the fee information is derived;
- the recency of the fee information;
- the frequency with which maximum allowable benefits are recomputed; and
- the percentile used as the upper limit on the range of fees.

2.6 CAPITATION

2.6.1 Definition

This is an alternative approach to the fee-for-service method in reimbursing the dentist for his service. It is a system by which the contracting dentist is compensated a fixed per capita rate in advance to provide dental services to an identified population for a specific period (Beachan, Francis 1981). Payment is based upon the number of persons eligible for dental treatment during a period, whether or not the enrollees use the service. Patients are eligible for treatment under the plan only if they utilise contracting providers. The theory behind capitation is that, for the enrolled population, dentists provide treatment based on appropriateness and necessity, not financial consideration of individual patients. Participating dentists are motivated to incur short-term losses in bringing patients to maintenance levels, thereafter realising financial gain. In capitation, the financial risk was transferred from the purchaser to the provider of care (Davis, Schechter 1987, Beazoglou, Guay, Heffley 1988).

The concept of insurance risk as it applies to capitation in dentistry is complex and requires extensive actuarial knowledge and assistance. Many variables must be considered in the calculation, such as the subscriber's age, sex, race, income, family size, occupation; stability of enrolled population; fluoridation of water supply; the backlog of unmet dental needs;

length of contract; plan design and marketing expenses (Beacham et al 1981). Individual dentists are unlikely to carry enough patients to make this system equitable. Group practice, however, can afford to accept capitation contracts from consumer groups such as labour unions and are finding it advantageous to do so (Strevel 1982, Dunning 1979)

2.6.2 Development of Capitation in Dentistry

The capitation concept was first applied to medicine in 1929 with the Ross-Loos Health Plan in Los Angeles. The benchmark for dentistry involvement is in 1954 with the establishment of the International Longshoremen's and Warehousemen's Union Pacific Maritime Association's children's program in the United States (Soh 1989).

A 1977 survey conducted by the American Dental Association indicated that 5% of actively practising dentists in the United States have patients paying some form of capitation (Beacham et al 1981). Data on the full extent of dental capitation are hard to come by, probably because they are proliferating independently without any central organising body. Lack of good basic data makes the study of capitation difficult, but it is generally agreed that capitation plans are likely to continue growing (Burt 1985). Davis et al (1987) predicted that by 1995 capitation would become a major payment mechanism to health providers in the United States.

In the United Kingdom, capitation fee for routine maintenance treatment in the National Health Service was suggested by the British Dental Association from as early as 1964 (Tattersall 1964). It was not until 1983 that a trial on capitation system for treatment of children in the NHS was done by the Department of Health and the British Dental Association (Coventry et al 1986). In 1990, a new contract for the NHS was finally adopted allocating 20% of the budget to capitation (Scarrott 1993c). The whole NHS fees system is currently under review and it is expected that capitation will play an increasingly important role in its future (Bloomfield 1992).

In Australia, capitation has been used by the South Australian School Dental Service for over 10 years (Macklin 1992). The Australian Dental Association does not have a policy on capitation, other than in a negative sense. Its policies depend primarily on fee-for-service (Australian Dental Association 1986).

3. AUSTRALIAN GOVERNMENT DENTAL FEES

In Australia, government involvement in the financing of dental service is limited to certain groups in the community. They are namely school children, pensioners, veterans, aborigines, members of armed services, indigent persons, patients under the "Approved Dentists Scheme" for specific oral surgical services and the scheme for cleft lip and palate patients. Services are provided either directly by the Government or by payment to dentists in private practices on a fixed fee-for-service basis or on a sessional fee.

The Treasury Scale used by the Department of Veteran's Affairs (DVA) is the most widely known and used Government scale. While the Treasury Scale is a fee-for-service scale, the DVA also has a sessional fee, based on an hourly rate, applying to Visiting Dental Officers attending DVA hospitals. There are also separate fee scales for dental services provided in relation to Medicare benefits.

In this chapter we shall look into the ways in which the various Government scales are derived. The use of a "wage indicator" is essential in determining fees and there is disagreement between DVA and the ADA on the appropriate index (Australian Dental Association 1984b). Traditionally, the Average Weekly Earnings (AWE) compiled by the Australian Bureau of Statistics was used but in 1984 the Government changed its reference and followed the National Wage Case ("The Accord"). A brief explanation of both the AWE and the Accord are made in the section covering the Treasury

Scale.

3.1 THE TREASURY SCALE

With the exception of a few programs, most of the payment to private dentists in Government programs follows the Treasury Scale (Barnard 1989). The scale was first developed by the Commonwealth Department of Repatriation and Compensation (now Department of Veterans' Affairs) in 1953 to be used in the Repatriation Local Dental Officers Scheme. Although its application is now more extensive, the scale is still often referred to as the Veterans' Affairs Fees Scale.

3.1.1 Setting of the Scale

The Treasury Scale is set by the Interdepartmental Committee on Fees and Allowances (IDCFA) of the Commonwealth Government after taking submissions from the Australian Dental Association. The secretariat for the IDCFA is located in the Department of Human Services and Health. The fee scale is usually negotiated every 2 years (Australian Dental Association 1986b).

In all negotiations since the inception of the scheme up to 1974 the Government had maintained that it would not accept a formula to allow automatic adjustment of fees. The ADA, meanwhile, made their submissions using the following formula:

% increase in dental fees =

$$\frac{\% \text{ increase in overhead} + \% \text{ increase in Average Weekly Earnings}}{2}$$

The overhead component took into consideration variations in surgery rentals, laboratory charges and related other miscellaneous components of the overhead (stationery, postage, cleaning etc.) to the Consumer Price Index published by the Australian Bureau of Statistics (ABS).

3.1.2 The New Formula

Meetings were held in 1975 between ADA and the Government and a working party set up to develop a new formula for review of the fees schedule (Australian Dental Association 1994, Butler 1994, Stoya 1994). It was agreed that a market place scale of fees would be accepted (derived from the then current ADA Fees Survey) and periodically adjusted by reference to a formula that took into account changes in overheads, and referenced the dentist's earning component to wages and salary awards (Australian Dental Association 1991, Stoya 1994). Table 1 shows the different components of costs of dental practice and their respective weights used in the formula.

Table 1: Formula for adjustment of the Treasury Scale
Source: Stoya (1994)

component costs	component percentage	increase
salaries	24.70%	specified designations in state awards
dental materials	7.40%	cost of a range of dental materials
laboratory charges	11.20%	fees schedules of selected laboratories
rental and miscellaneous	24.00%	Consumer Price Index
net income	32.70%	Award Rate of Pay Indexes

The weighted increase is calculated for each of the components at the end of September of each year and included in the total percentage increase. The fees for the current year are then uniformly increased by the resulting percentage to obtain the following year's fees, and rounded to the nearest cents (Stoya 1994).

3.1.3 Variables and Parameters for the Formula

Data from the Australian Dental Practice Surveys, conducted regularly by the ADA, are used to determine the relative weights of the 5 component costs of dental practices.

1. Salary (24.70%)

The state awards for chairside assistants, technicians and receptionists are used to calculate a composite weighted increase, using the staff to dentist ratio in **Table 2**.

Table 2: Staff to dentist ratio used in the formula for the Treasury Scale
Source: Butler (1994)

Staff Category	Ratio of staff (per private practising dentist)
Chairside Assistant	1.59
Technician	0.17
Receptionist	0.60

2. Dental material (7.40%)

A list of dental materials are recommended as appropriate indicators by the ADA Dental Fee Relativity Working Party. Details of price variations of the selected materials are provided to the ADA by the Australian Dental Trade Association.

3. Laboratory charges (11.20%)

Fees schedules of selected laboratories in different states are used to work

out an average increase after taking state weighting into consideration.

4. Rental and miscellaneous (25.00%)

The Consumer Price Index (Special Grouping) is used to calculate the cost change in this category. The following subgroups of the Index are used:

- rent of private owned dwellings;
- local Government rates and charges;
- fuel and light;
- stationery;
- private transport;
- postal and telephone services.

The data are provided by the ABS, movement of the Index is measured from 30th September of one year to 30th September of the next year.

5. Net income of dentists (32.70%)

The 1975 formula used the ABS Average Weekly Earnings (Ordinary Time) as the basis for adjustment of the income component. In 1984, the Government unilaterally changed the reference to National Wage Case percentage increase (Australian Dental Association 1984).

Table 3 gives an example of how the formula was applied to work out the fee increase of 5.99% in 1987.

Table 3: 1987 Treasury Scale adjustment

Source: Australian Dental Association (1988a)

Variable	% of Gross Income	% Increase in Parameter	Weighted % Increase
Salaries	24.70%	4.16%	1.03%
Dental Materials	7.40%	13.34%	0.99%
Laboratory Charges	11.20%	10.57%	1.18%
Rental and Miscellaneous	24.00%	10.02%	2.41%
Net Income	32.70%	1.2%	0.39%
Gross Income	100.00%		5.99%

3.1.4 Application of the Treasury Scale

The Scale was originally designed to provide treatment for Repatriation personnel, and to a lesser degree for the treatment of members of armed services by civilian dentists. Over the years it has gradually become a Treasury Schedule and is now used by the Commonwealth Government whenever dental treatment is sought or provided. The scale is also widely used in State Government dental programs.

Some of the examples where the Treasury Scales has been used are:

- Country Dental Patients' Subsidy Scheme in Western Australia (McAuliffe 1993);
- Dental Care Scheme for Aborigines in New South Wales, 1973-1977 (Australian Dental Association, New South Wales Branch 1975);
- Dental services rendered on behalf of the Australian Army (Australian Dental Association, Queensland Branch 1975);
- Community Welfare Services patients in Victoria (Australian Dental Association, Victoria Branch 1979a);
- The South Gippsland Public Dental Scheme established by the Health Department of Victoria (Rogers 1994);
- Tasmanian Government Dental Scheme from November 1993 (Anderton 1994);
- Remote Areas Dental Scheme in South Australia (Peninska 1993);
- Commonwealth Dental Health Program (Australian Dental Association

1994).

The Treasury scale has also been used by the Victorian Government to calculate the value of services provided by staff in the Royal Dental Hospital and the School Dental Service (Minister for Health, Victoria 1986). It was even found to be used by some private dental schemes to formulate their own fees scale (Australian Dental Association, Western Australia Branch 1984).

3.1.5 The Australian Dental Association's Position

The ADA's general view is that each dentist should charge his own fair and reasonable fees, leaving it up to the third party or the subsidising organisation to determine what rebate or benefit their clients will receive (Australian Dental Association 1988c). The concept of a fixed fee scale does not sit well with its philosophies.

For many years the ADA has cooperated with the Repatriation Department, and later the Department of Veterans' Affairs, in providing a dental service with a national schedule of fees. This was done mostly because of a perception that an obligation existed to look after veteran clients. A schedule of fees was accepted by the ADA for the sake of simplification and because work for Repatriation beneficiaries comprised only a small part of the dentists' practices (Australian Dental Association 1973). ADA considered this

to be an inequitable and concessional fee (Australian Dental Association, New South Wales Branch 1963, Australian Dental Association 1973).

The 1976 formula, while generally fair, is now considered defective in a few aspects:

- The formula has not succeeded in keeping the fees reasonably aligned with the market level. The successive application of percentage adjustment has caused items to drift out of proper relativity (Australian Dental Association 1991).

- The formula should have an additional component representing the cost of capitalisation in a dental practice (Australian Dental Association 1986c).

- The income component of the formula should follow the Average Weekly Earnings and not the National Wage Case, which erodes the value of the income component of fees (Australian Dental Association 1984b).

3.1.6 Average Weekly Earning

This is an indicator used to show trends in payments made to labour. The figures are derived by the ABS from a survey of a sample of approximately

4,000 employees. "Average Weekly Earnings" refers to one week's earning of employees before taxation and any other deductions are made. The earnings include ordinary time earnings, over award payments, overtime payments, penalty payments, shift allowances, bonuses and similar payments made under incentive or profit-sharing schemes.

AWE may be affected, not only by changes in the level of earnings of employees, but also by changes in the overall composition of the labour force, such as variations in employment levels, and the proportion of part-time, casual, and junior employees in the work force (Castle 1992a).

3.1.7 The Accord

Commencing in 1983, the Accord is the common name given to a series of formal arrangements between the Labor Government and the trade union movement concerning wages growth and other social goals for Australia.

The concept of a "social wage" was encompassed in the Accord documents. This social wage provided for expenditure by the Government by direct income transfers or the provision of service in such areas as health insurance, education, housing and social welfare. The Accord, was thus an instrument for the achievement of a range of economic and social goals, and not merely a wage policy. The Accord, for example, gave the

Government the means by which it could restructure taxation, alter the health system, allow for changing economic conditions, and not cause industrial strife, because such measures were an integral part of the Accord. Thus "trade-offs" became the hallmark of successive stages of the Accord. Reduced wage rises were traded off against selected improvements in the social wage (Treyvaud & Dundas 1990).

The Accord has undergone significant revisions during its lifetime. In February 1990 the sixth variation of the Accord was announced. The modifications introduced at each stage reflect changing economic conditions and the associated policy objectives. The Accord Mark VI of 1990 reflects a completely different approach to wage setting than did the Accord Mark I of 1983. A summary of the main feature of each Accord is presented in **Table 4.**

Table 4 The Accord 1983-1990

Source: Treyvaud & Dundas (1990)

Year	Accord	Feature
1983	Mark I	Wage indexation
1986	Mark II	Discounting for depreciation
1987	Mark III	Two-tier system
1988	Mark IV	Structural efficiency principle
1989	Mark V	Wage/tax package
1990	Mark VI	Wage/tax trade-off, plus enterprise bargaining.

3.2 VISITING DENTAL OFFICERS SESSIONAL FEES

Visiting Dental Officers are private dentists who spend part of their time looking after the dental needs of Veterans in DVA hospitals and nursing homes around the country. For their services they are paid an hourly rate (Australian Dental Association 1990).

3.2.1 Methods of Determining Sessional Fees

In 1976 a formula for setting hourly rate was worked out between ADA and DVA. This formula took into account the visiting dentists' ongoing expenses with compensation for components such as holiday pay and superannuation.

During the negotiation consideration was given to the rates payable to Visiting Medical Officers which consisted of a base salary component plus a 10% loading to compensate for superannuation, a 14% to compensate for on going practice costs, and a 33.3% loading to compensate for leave. This amount was then converted from a per annum figure to an hourly rate based on a 39-week year at 35-hours per week. In order to establish a sessional rate for VDOs, a similar calculation was made (Butler 1994).

For quite a number of years, dentists' hourly rates of pay were better than that for visiting medical officers, reflecting the larger component for on going practice expenses (Australian Dental Association 1990). According to ADA

(1988b) , the formula was simple to administer from everybody's point of view (DVA and ADA) and produced for many years very fair results. However, in the last few years it has not been satisfactory because of some slippage of the relevance and weightings of some of the elements of the formula. The income component of the formula is now being adjusted by referring to the "Accord", causing an erosion of comparability between what the dentist can earn in his practice, and what the formula calculation produces (Australian Dental Association 1988b, 1990).

3.2.2 Sessional Classification

There are 4 sessional classification for VDOs:

1. Visiting general dental practitioner - aligned with the maximum of the salary range of a dentist, Class 2.
2. Visiting dental specialist- fees are 25% greater than those for visiting general dental practitioners.
3. Visiting senior dental officer- fees are 10% greater than those for visiting dental specialists.
4. Visiting principal dental officer- fees are 10% greater than those for visiting senior dental officer.

3.3 SCHEDULE FEES FOR MEDICARE BENEFITS PURPOSES

3.3.1 Treatment of Cleft Lip and Cleft Palate

Part 12 of the Medical Benefits Schedule covers benefits for certain dental services provided to patients who are certified as requiring the treatment in connection with a palate and/or lip defect.

This scheme was introduced on 1st January 1981, with the full cooperation of the ADA. Rebates are available for a range of orthodontic services, together with some general dentistry, including oral surgery; some prosthetic items; and items providing for preventive dentistry. Unlike the arrangements for the "Approved Dentists Scheme" for oral surgical services, there is no requirement that the treatment be provided in an operating theatre; it can be carried out in the ordinary general practice or specialist practice environment (Australian Dental Association 1984a).

Schedule fees were determined in 1981 by the Commonwealth Department of Health in consultation with the relevant professional groups. These fees have increased since then in line with general Medicare Benefits Schedule fee increases (Dunnett 1994).

3.3.2 Approved Dentists Scheme

Medical benefits for services provided by approved dental practitioners in the operating theatres of hospitals were introduced from 1st November 1971. All services had a corresponding service in the Medical Benefits Schedule and the fees were set at the equivalent level. Following reviews of these services, benefits are no longer restricted to services rendered in the operating theatre of a hospital (from 1st November 1990), and some non-surgical services have been introduced (consultations and assistance at operation- from 1st December 1991). The fees for services by approved dental practitioners have also been adjusted over the years in line with general Medicare Benefits Schedule fee increases (Dunnett 1994).

3.3.3 Medicare Benefits Schedule Fee Increases

For general fee increase in Medicare, Schedule fees are indexed in accordance with the application of appropriate economic indicator series to a Medical Fees Index. The Medical Fees Index contains weights for wages and salaries, motor vehicle running costs, other practice costs and net incomes. Since wages and salaries move at a different rate to motor vehicle running costs, the Award Rates of Pay Index is used to adjust the wages and salaries and net incomes components of the index while the Consumer Price Index is used to adjust the motor vehicles and other practice costs components (Dunnett 1994).

4. AUSTRALIAN PRIVATE DENTAL FEES

Dental fees charged by private dentists are determined entirely by the dentists themselves. However, individual State Branches of the Australian Dental Association play some advisory role in providing information to members concerning fee determination. In this chapter we shall look into the ways in which the different State Branches of the Association provide fee advice to their members. The roles of some Specialist Societies are also covered.

4.1 THE AUSTRALIAN DENTAL ASSOCIATION

4.1.1 Profile of the Association

The national dental organisation in the country is the Australian Dental Association (ADA) which was found in 1928. Each State has a semi-autonomous branch. Membership of State Branch entails membership of the ADA. As at 27 January 1994, the ADA had a membership of 7003 of which around 6424 were in active practice (Barnard & Ho 1994). Detail breakdown of the ADA membership is listed out in **Table 5**.

Table 5 ADA membership figures at 27 January 1994

Source: Barnard & Ho (1994)

Active:

Private Practice	5057
Specialists	630
Locums/Part-time	75
Government Service	480
University	48
Government Specialists	33
Armed Services	66
Industrial Clinics etc.	35
Total Active	6424

Non Active:

Retired from Practice	225
Overseas	58
Leave of Absence	7
Post Graduate Studies	71
Not Practising/to be advised	189
Not Given	29
Total Non-active	579

Total (active & non-active) :**7003**

Important areas of concern for the ADA includes all aspects affecting the dental manpower situation and the impact of the decline in dental diseases on the dental profession, dental care for priority groups, dental research, professional education and the role of the Dental Council of Australia. Other areas of interest include Aboriginal health, fluoridation, preventive dentistry, information services and determination of recommended item scales (Australian Government Department of Employment & Industrial Relation 1984).

4.1.2 The Association's Role In Fee Determination

The State Branches of the ADA have only an advisory role with regard to fee determination, they do not issue mandatory scales. The Federal Association has no direct control over the State Branches in fee determination. The Branches use their preferred methodologies to establish their own scales, or adjustment percentages, which are then forwarded to members. The various State or Territory arrangements are outlined below.

Each member of the ADA uses the fee information from the State Branches according to his or her circumstances. Dentists who are not members of the ADA do not have access to this information. There is considerable variation not only in the type of fee guides recommended by State Branches of the ADA but also in the extent to which these are used by members.

The ADA is generally opposed to any system of fee determination which would result in a single fixed fee for any particular item of service, applicable to all practitioners under all circumstances. It gives the following reasons:

- the cost of overheads varies considerably between practices;
- the dentist has an ethical responsibility to choose the technique which produces the best result achievable;
- the content of any item of service may be highly variable; and
- there are varying standards of skill and experience amongst dentists which should be remunerated appropriately.

The ADA has commented that dental fees are not determined by arbitrary methods but in accordance with sound accounting procedures (Australian Government Department of Employment & Industrial Relations 1984).

4.1.3 The Australian Dental Association Fees Surveys

Dental Fees Surveys of all active members of the ADA were carried out by PD Barnard, Research Consultant of the Association. They were done at irregular intervals for the year 1961, 1966, 1971, 1975 and 1977. A more regular survey format was used to determine average fees at 31 December for 1980, 1981, 1983, 1985, 1987, 1989, 1991 and 1993 (Barnard & Ho 1994). The results from these surveys were used by the Association when negotiating fee-for-service levels with the Australian Treasury (Australian Dental Association 1985b). The present policy of the ADA is to have a Fees Survey every two years.

The surveys were conducted by means of questionnaires sent to all active members of the ADA in the private practice sector. Information sought related to usual fees charged for a selected list of items of service as at 31 December of the survey year. A copy of the 1993 Survey form is in **Appendix 1**. The questionnaires were sent out in December. Respondents in January and February had their names "pipped" on the ADA membership file and mail follow up were made to non-respondents in March. The response from ADA members to the surveys had been generally good (**Table 6**) without the need for any follow up non-responsive surveys.

Table 6 Response to the Dental Fees Survey 1985-1993

Source: Barnard (1988, 1993b), Barnard & Ho (1994)

Year	Number of respondents	% of ADA members in active private practice
1985	3847	81%
1987	4067	81%
1989	3709	69%
1991	3693	66%
1993	4669	81%

The selected items of services were first approved by the Dental Health Services Committee and Federal Executive of the ADA. The range of ADA Schedule items were selected to represent those most frequently performed in practice and a few more specialised items. In the last few surveys the selections were based on claims for rebate through Voluntary Health Insurance Association of Australia (VHIAA) Health Funds and Medibank private in 1984 and 1985. The selected items were thought to cover approximately 80% of services rebated by Health Funds.

The survey responses were checked prior to data entry on the ADA computer and a computer validation program used to detect keyboard entry errors and to highlight high or low values for re-checking against survey forms for any previously undetected respondent error. Reports were generated for State, Metropolitan and Country, and Specialist groups. They contained the numbers in sample with range, mean (with standard deviations and errors) and median (Australian Dental Association 1993). Results of the central 80%, excluding zeros, of the national analysis of general practitioners were published in the ADA News Bulletin. The central 80% was taken so as to exclude extreme fees, or responses involving a mistaken interpretation. National and State reports were made available to ADA State Branches as well as Federal Executive and appropriate committees. Individual members of the Association might request survey details at a nominal cost (Australian Dental Association 1988b).

4.2 NEW SOUTH WALES

4.2.1 Suggested Minimum Fee Schedule

Since 1961 the New South Wales Branch of the Australian Dental Association (ADA-NSW) has been issuing Suggested Minimum Fee Schedules to its members (Australian Dental Association, New South Wales Branch 1961). The schedules are intended purely for the guidance of members, to enable them to charge fees which will allow them to render continuous service of a standard advocated by the Association. It is not meant to be a fee scale (Australian Dental Association, New South Wales Branch 1967, Thompson 1993).

The factors involved in calculating the fees are:

- average surveyed clinical time taken for particular services;
- average number of working weeks per year for a dentist in private practice (taking into account recreation, sick and study leave); and
- target net income relative to other professional incomes.

The schedule is revised from time to time according to a formula based on:

- variations in the CPI;
- variations in AWE; and
- variations in a basket of private dental practice costs such as dental materials, energy and surgery rental.

The complete range of dental items is not covered as this is not technically practical.

4.2.2 Application of the Schedule

Besides acting as a guide to ADA members, the schedule has also been used by a number of dental programmes. Some of the examples are:

- Dental Rural Scheme in the Orana district of Western New South Wales, with Government funding equivalent to 85% of the State ADA Schedule (Australian Dental Association 1989a). However, the New South Wales Department of Health now wishes to align it to fees paid under the National Dental Health Scheme (Thompson 1994).

- Western Shires Dental Services (Australian Dental Association, New South Wales Branch 1963), fees being standardised at the level of the Schedule.

- Emergency Dental Services organised by the ADA New South Wales State Branch (1963a), fees being the Schedule fees plus 50%.

4.3 VICTORIA

The Victorian Branch of the ADA does not provide a recommended scale of fees to its members. The Branch does, however, give fee advice in a few ways:

- Fees surveys are conducted regularly to provide fee information to its members. The first survey was done in December 1960 (Pearson 1994).
- Since 1969 the Practice Administration Committee of the Branch has been publishing a Guide to Practice Administration to its members, giving advice on various aspects of practice. Section D6 deals with possible methods of fee determination and adjustment.
- In 1980 the Victorian ADA, together with the Swinburne College of Technology, arranged a computer service for its members who want to determine fee schedules appropriate to their own particular practices (Australian Dental Association, Victorian Branch 1980a).

4.4 QUEENSLAND

The Members' Service Committee of the Queensland Branch of ADA conducts a biannual fee appraisal in which the percentage increases in cost of running a practice are calculated (as the arithmetic mean of the percentage increase in the CPI and the AWE) and the increment applied to the fee for each service (Australian Government Department of Employment and Industrial Relations 1984).

The guidelines for fee assessment are published at November and May of each year as supplement to the Branch's newsletter. Members are reminded that:

- The list is not a schedule of recommended or minimum fees, rather it is a guide to members for the relativity between services.
- For all services fee flexibility is recommended according to the time factor and complexity.
- In determining fees for items which contain a laboratory component, recognition should be made of the wide variation in laboratory fee.

(Australian Dental Association, Queensland Branch 1992a)

4.5 WESTERN AUSTRALIA

It is not the policy of the ADA Western Australian Branch to produce a fee schedule. The Branch believes that all practitioners and their practices vary and thus a range of fees can be expected (Australian Dental Association, Western Australian Branch 1991). However, the Branch does recommend an hourly rate calculated by a firm of chartered accountants, which takes into account:

- net remuneration of other professionals of similar training and skill;
- practice overhead; and
- provision for superannuation and 4 weeks annual leave.

The Western Australian Branch publishes annual adjustments based on CPI and AWE movements (Australian Government Department of Employment and Industrial Relations 1984).

In 1985, the Branch issued a Guide to Fee Determination to its members based on the result of a workshop. The fees were based on average time units, at a given rate, assuming each item as a separate service (Australian Dental Association, Western Australian Branch 1985). The guide is reviewed biannually since then. A very large and expensive survey was also undertaken in 1981 with results published in 1985 (Owen 1994).

4.6 SOUTH AUSTRALIA

Prior to 1989 there were recommended fees. The first recommendation was devised by the Branch's Economic Advisory Committee in 1965. It was based on the salary of a third year Dental House Surgeon at the Royal Adelaide Hospital. To this officer's salary were added the value of his fringe benefits and the estimated costs of running a solo practice. This gave the appropriate gross income necessary for a private practitioner to obtain an equivalent income to his colleagues in the public service. The number of chargeable hours of work was calculated and a hourly rate devised. Average times taken to perform the more common procedures were then estimated and a set of fee-for-service scale obtained (Australian Dental Association, South Australian Branch 1977). These calculations were checked by an accounting firm, Price Waterhouse & Co..

In 1976, it was decided that both the basis for fees and the updating formula should be revised by persons competent to carry out such an exercise. Touche Ross & Associate of Adelaide was appointed (Australian Dental Association, South Australian Branch 1977, 1986). A formula was developed and updated twice yearly, in May and November. The Recommended Fee Basis essentially involved a target net income. This was geared to the salary and conditions (e.g. superannuation) of a Senior Dental Officer in the South Australian Dental Service. Additional considerations included:

- 10% loading as reward for business risk;

- 13.5% loading as a target return on investment capital;
- a Schedule of Practice Expenses, i.e. the normal expenses of running a solo practice;
- a fee for common services, determined on a time basis from a study of average times for services covered by a sample of practitioners; and
- laboratory and metal costs.

A number of members of the Association agreed to submit their accounts periodically to Touche Ross to substantiate the changes to the model which occurred every year (Australian Dental Association, South Australian Branch 1979). The method was presented , for opinion, to the Dunston Government at that time and accepted as the basis for fee setting mechanism for the Branch. Dental fees were not subjected to statutory control in South Australia, as they were not a declared item under the Price Act (1948-1975). As a matter of courtesy, the Branch wrote to the Consumer Services Branch of the Department of Public and Consumer Affairs, advising them of any proposed changes to its Recommended Basis For Fee Assessment (Australian Government Publishing Service 1984).

Since 1984, to avoid possible contravention of the Trade Practices Act, the issuing of recommended fee was stopped. Instead, members are surveyed every 6 months, covering the fees charged for about 40 commonly used items. The results are given as information to members (Australian Dental Association, South Australian Branch 1992).

4.7 TASMANIA

The Tasmanian Branch of the ADA does not provide a scale of recommended fees for its members. For many years the Economics Committee of the Branch provided a CPI adjusted basket of fees from a base rate established in 1962. This base rate required adjustments to take into account changes in award entitlements since 1962 (Grenness 1994). The last report of this kind was published in 1989 (Australian Dental Association, Tasmanian Branch 1989). During this period the relevance of the 1962 based scale was questioned, particularly in light of the fall of the Australian Dollar and the consequent increase in the cost of imported consumable materials and equipment (Australian Dental Association, Tasmanian Branch 1990).

A fees survey was conducted in 1991. This was poorly responded to and there has been no further reports issued by the Committee since then. There had also not been any requests for fee information from members until a question from the floor at a General Meeting of the Branch held in February 1994 (Grenness 1994).

4.8 NORTHERN TERRITORY

ADA members follow the advice of their States of origin with a loading to cover higher labour and materials cost (Australian Government Department of Employment and Public Relations 1984).

4.9 AUSTRALIAN CAPITAL TERRITORY

Fees are based on New South Wales advice (Australian Government Department of Employment and Public Relations 1984).

4.10 SPECIALIST FEES

In all of the states where the ADA State Branches give fee advice none of them differentiate between general practitioners and specialists (Thompson 1993, Dutson 1994, Grenness 1994, Owen 1994, Pearson 1994). The different specialist societies have different policies concerning fee guidance.

4.10.1 Australian Society of Endodontology

The Society does not issue any guideline regarding fees for endodontic services (Abbott 1994).

4.10.2 Australian Society of Orthodontists

A yearly recommended fee is published by the Association's New South Wales Branch (Baisi 1994). The fees were first structured in the 1960's by the Branch following an informal survey of how much orthodontists were charging at the time. There were fewer orthodontists at the time and this survey resulted in a calculated average, which was then presented to the Branch members. Ever since that time the recommended fee schedule has been linked with the ADA New South Wales Branch formula for calculating the percentage changes as they applied to general dentistry.

4.10.3 Australian and New Zealand Society of Paediatric Dentistry

The Society has never published any list of recommended fees for members (Devlin 1994).

4.10.4 Australian Prosthodontic Society

The Society does not publish any fee guides. According to Clausen (1994), the practical difficulty of a fee scale for a Society such as the Prosthodontic Society is that members of the Society consist of both general practitioners with an interest in prosthodontics and prosthodontists. Therefore, a fee scale would be difficult as it would have to account for both specialists and general practitioners alike.

5. DENTAL FEES CONTROL IN AUSTRALIA

While dentists are free to charge whatever fees they feel fit for the service they provide there are also certain channels by which patients can complain if they feel they are overcharged. The system varies from state to state.

On a national level, in 1983, at the National Economic Summit Conference an Advisory Committee on Prices and Incomes (ACPI) was set up by the Federal Government to overview prices and incomes policies, including fees-setting. Dental fee was one of the professional fees being investigated.

In this chapter we look at the different dental fee complaint mechanisms operating in each state. The roles of the ACPI, the Trade Practices Commission and the Prices Surveillance Authority in monitoring national fees are also covered.

5.1 NEW SOUTH WALES

5.1.1 Australian Dental Association

New South Wales Branch of the ADA does not handle complaints from patients concerning overcharging. The Patient Liaison Officers are in attendance to answer patient queries but no determinations are made by them as to whether or not a dentist is overcharging. Furthermore, the ADA is of the view that a dentist's fees are an individual matter for him to decide and should not be regulated by an outside body (Thompson 1994).

5.1.2 The Dentists Charges Committee

A Dentists Charges Committee was set up under section 12A of the Dentists Act 1934. The Committee consisted of 5 members with representatives from the State Government and the ADA State Branch. An accountant was also appointed to the Committee. When an application was made to review a bill, the Committee would proceed to review it and certify what was found to be a reasonable charge. In the review of any bill, the Committee took into consideration the following factors:

- the time occupied in performing and the nature of the dental treatment rendered;
- the distance between the consulting room or residence of the dentist and the place at which he rendered the treatment;

- the hours of the day or night at which such treatment was rendered;
- the degree of skill, knowledge or experience required; and
- whether the dentist rendered such treatment in the capacity of specialist, consultant or dentist in ordinary practice.

5.1.3 The Dental Care Assessment Committee

Following recommendation from the New South Wales ADA, the Dentists Charges Committee was abolished in the 1989 Amendment of the Dentists Act. Instead a Dental Care Assessment Committee was established to deal with complaints regarding fees and the nature and standard of treatment. (Australian Dental Association, New South Wales Branch 1988, 1989).

The factors to be taken into account by the Committee in investigating charges for dental treatment are essentially the same as those used by the Dentists Charges Committee outlined in the 1934 Act with the addition of one extra factor. Section 41(f) of the 1989 Act stated that the Committee should also take into account "what amount, if any, was paid by the dentist to any other person in respect of any dental prosthesis used in the dental treatment".

Section 42(2) of the Dentists Act 1989 also lists out the possible recommendations that may be made by the Committee after investigation.

The Committee may:

- (a) recommend a refund of money paid for the dental treatment in question;
- (b) recommend that the patient withhold payment of fees;
- (c) recommend the payment of dental fees, consequential to any remedial treatment;
- (d) recommend that the dental treatment is acceptable or that the fees are reasonable;
- (e) recommend that the patient pay the fee considered reasonable by the Committee;
- (f) recommend the practitioner be cautioned or reprimanded;
- (g) make such other recommendations as may be considered necessary.

5.1.4 Consumer Affairs Department

The Consumer Affairs Department of New South Wales does not handle complaints on dental fees (Goldingay 1994).

5.2 VICTORIA

5.2.1 Australian Dental Association

Although the Victorian Branch of the ADA has no statutory role in handling complaints, the Branch's Community Relations Officer operates as a conciliator in cases when patients believe they have been overcharged by dentists (Pearson 1994).

5.2.2 The Dentists Act

There are no provisions in the Victorian Dentists Act 1972 that deal with overcharging of patients by private dentists (Amerena 1994). Complaints made to the Dental Board are referred to the ADA (Pearson 1994).

5.2.3 Office of Fair Trading and Business Affairs

This Office also refers its complaints to the ADA (Harper 1994).

5.3 Queensland

5.3.1 Australian Dental Association

The Queensland Branch of the ADA has a complaint resolution system and gives advice to the Health Rights Commission and the Department of Consumer Affairs (Morrison 1994, Rodd 1994, Shambrook 1994). Throughout the year the State Branch has a Fee Enquiry Roster manned by a group of volunteers to answer telephone enquiries (Australian Dental Association, Queensland Branch 1976).

5.3.2 Dental Board of Queensland

The Board does not deal with matters concerning dental fees and there is no Dental Charges Committee in Queensland (Collie 1994).

5.3.3 Health Rights Commission

The Health Rights Commission was set up under the Health Rights Commission Act 1991, the aim of which is to "establish an accessible independent way to oversee, review and improve health services in Queensland" (Siggins 1993).

Since the Commission was established on 1 July 1992 there have been only

15 complaints on dental fees. If a fee is considered unreasonable after taking advice from the ADA, the complaint is assessed and possibly conciliated (Morrison 1994).

5.4 WESTERN AUSTRALIA

5.4.1 Australian Dental Association

Complaints made to the State Branch are not peer-reviewed but referred to the Dental Charges Committee of the State Government (Owen 1994).

5.4.2 Dental Charges Committee

The Committee was set up under Section 51 of the Western Australian Dental Act 1939-1972 .

The Committee, upon application, reviews a dental account and certifies the amount it considers reasonable. In reviewing an account the Committee takes into consideration 6 factors similar to that used by the New South Wales Dental Care Assessment Committee (Neesham 1994).

5.4.3 Ministry of Fair Trading

The Ministry usually refers complaints from the public to the Dental Charges Committee (Milford 1994).

5.5 SOUTH AUSTRALIA

5.5.1 Australian Dental Association

A large number of inquiries are made regularly to the Branch office regarding dental fees. The office has a very important public relations role in this area and a measure of the success with which the staff deals with this is the relatively few complaints that are followed up in writing by the public (Australian Dental Association, South Australia Branch 1992a). According to the Branch (1992b), in 1992 the enquiries /complaints regarding fees averaged 200 per month, with only 3 following up in writing.

Information gathered from the Branch's regular fees surveys are used to deal with these enquires. If a query is made with regard to the cost of treatment, patients are advised to discuss their concerns with their dentists. If for some reason this has proved unsatisfactory and the enquirer wants to know the "standard or recommended fee", the staff advise that there is no such fee, but an average fee, calculated from a survey of fees charged in dental practices for some treatments in general dentistry only, is available.

A fee range based on the survey is given, with the proviso that there may well be special reasons why the fee could lie outside this range, either higher or lower, and the enquirer should discuss this with their dentist. If the dentist is a specialist the enquirer is advised that the Association has no guidelines

on specialist fees.

5.5.2 Dental Board

There are no provisions in the South Australian Dentists Act 1984 regarding fees charged by dentists. Complaints received by the Dental Board are usually referred to the ADA (Cropley 1994).

5.5.3 Department of Consumer Affairs

The Department also refers dental fees complaints to the ADA (Cooper 1994).

5.6 TASMANIA

5.6.1 Australian Dental Association

The Branch has a system of peer review, that all members agree to cooperate with, as a part of its constitution. All complaints received by the Branch are passed on to the Executive Officer of the Peer Review Committee. The Officer usually has a telephone conversation with the complainant at which point the complainant may be satisfied with the explanation given or the process goes further.

According to Grenness (1994) the system seems to work well in Tasmania where all dentists are known to each other and Peer Review has personal, social as well as professional impact.

5.6.2 Office of Consumer Affairs

Most complaints are referred to the ADA which then refers them to the Peer Review Committee. For the period 1 January 1992 to 28 February 1994, a total of 23 complaints on dentists were received by the Office. Out of them 12 were concerned with fees (Ormerod 1994).

5.7 NORTHERN TERRITORY

In the Northern Territory, both the Dental Board and the Office of Consumer Affairs and Fair Trading do not handle dental fees complaints but refer them to the ADA (Lanyon 1994, Mckirdy 1994).

5.8 AUSTRALIAN CAPITAL TERRITORY

5.8.1 Dental Board

Under Section 38A of the Dentists Registration Act 1993 the Board can review an account for fee for a dental service (Patterson 1994). The factors to be considered in the review are similar to those in the New South Wales Dentists Act 1989.

5.8.2 Consumer Affairs Bureau

It is usual for the Bureau Officer to refer cases of dental fees complaints to the Dental Health Authority in the ACT. The Bureau does have the power to examine cases where the dental charge may seem to be unconscionable. Unconscionable conduct is conduct which has the effect of placing one party to a transaction at a serious disadvantage. It only relates to the supply of goods and services normally purchased for personal and domestic use. Unconscionable conduct is an offence under Section 13 of the ACT Fair Trading Act 1993.

To determine whether an action is unconscionable Bureau Officers look to the industry standard. Information regarding dental fees is usually gained from the Health Authority and a number of independent dentists offering similar services.

Whilst details of complaints cannot be released under the Privacy Act, the number of complaints to the Bureau concerning dental fees is known to be very low (Eccles 1994).

5.9 THE ADVISORY COMMITTEE ON PRICES AND INCOMES

5.9.1 The 1983 Prices and Incomes Policy

The Prices and Incomes Policy had its origin in the Statement of Accord by the Australian Labor Party and the Australian Council of Trade Unions Regarding Economic Policy made in February 1983 while the Australian Labor Party (ALP) was in Federal Opposition. It was further developed on the basis of the principles in the Communique of the National Economic Summit which was held in April 1983 soon after the ALP took office in Government (The Advisory Committee on Prices and Incomes 1986).

The Policy was the Government's response to the economic problems facing Australia at 1983 - the simultaneous emergency of inflation and unemployment combined with a slackening of economic growth. The policy was directed at resolving conflicting income claims and permitting policies that could promote economic and employment growth at lower levels of inflation. It comprised direct policy action in prices. Professional fees, including dental fees, was one of the subjects being investigated for possible control.

5.9.2 The Committee

Under the Prices and Incomes Policy, the Advisory Committee on Prices and

Incomes (ACPI) was established to play an advisory role in the determination of professional fees. The ACPI was a tripartite commission with representation from the Government, the professions and the trade union movement (Australian Dental Association 1983b, 1983c).

ADA and other professional bodies were asked to submit details of their mechanisms for fees determination and advice to the Committee so that a series of inquiries could be held to determine their fairness (Australian Dental Association 1986). These inquiries were intended to be an implementation of Clause 28 of the National Economic Conference Communique' :

"If restraint is to be exercised then such restraint should be exercised universally. As such, it is important that non-wage incomes are not increased faster than movement in wages."

The Australian Council of Professionals did not agree to any review of fees - that is to say, into the dollar values of particular fees. There was, however, little objection to a review of the principles observed in adjusting these fees from time to time.

5.9.3 The Australian Dental Association's Submission

The ADA Federal Secretariat lodged its submission to the ACPI in October

1984, together with supporting papers from a number of State Branches, providing details of dental fees adjustment mechanisms (Australian Dental Association 1985).

There followed, during November and December, a series of hearings at which Deputy-President Mackenzie of the Committee received verbal statements and arguments from all parties. Hearings were held in Sydney (4 November), Adelaide (19 November), Melbourne (6 December) and Brisbane (12 December). Western Australia and Tasmania were represented by the Federal ADA (The Advisory Committee on Prices and Incomes 1986, Australian Dental Association 1985).

The ADA case embodied the following main points (Australian Dental Association 1985):

- The Commonwealth has no legal or constitutional rights to involve itself in professional fee matters. There was, nevertheless, some public duty for ADA to justify its philosophies and methods.

- ADA stated that fee advice was entirely a matter for the State Branches, and in any case such evidence was wholly advisory, with each dentist at liberty to set his own fees as he saw fit.

- ADA rejected the concept of "averaging" fees and reserved the rights

of dentists to vary fees according to circumstances.

-ADA stressed that the main regulating force for dental fees was the competition in the market place.

-Movements in dental fees, as recorded by ADA's regular Fees Surveys, had been fair and reasonable.

-In those fee formulae which used an income index there was no reasonable alternative to the Average Weekly Earning Series.

-The rights of ADA State Branches to choose their methods of fee advice to suit the circumstances of their own States, and the preferences of their members, was defended.

-ADA data showed that the return to dentist had slipped badly due to increasing overheads and declining business.

5.9.4 The Government's view

The Commonwealth submission had as their main thrust the need for public accountability (Australian Dental Association 1985a):

-The review process should be an on-going mechanism, so that if a

Branch wanted to change its system it would be obliged to go to the Arbitration Court to get the change approved.

-In setting income adjustments, the National Wage Case should be used (ADA contended this to be unfair, because of the extent of other benefits received by wage earners which did not show up in National Wage Case reviews).

-There should be a single national method on the grounds that the differences between states were not great enough to justify each Branch doing its own thing.

5.9.5 Outcome of the inquiry

The outcome of the inquiry is best expressed by quoting part of Deputy President Mckenzie's conclusion of the inquiry (Australian Dental Association 1986):

Section 12.3

"...it could not be said on the weight of the material before me that the methodology of the fee adjustment recommendations, including the weightings of components and the indicators use, is conceptually fair and reasonable in every State."

Section 12.4

"It is, however, clear that Australia-wide and in individual states the actual movement in dental fees over recent years has been fair and reasonable judged as against a range of community indicators. The levels of competitiveness in dental practice, ethical considerations, the admonitions of some State Branches of the ADA and availability of complaints procedures for those who believe there has been overcharging for dental care have all contributed to a general restraint in dental fee adjustments."

Section 12.5

"I am not persuaded that a national adjustment recommendation regarding dental fees is impracticable, having regard to the apparently limited degree of regional variability in respect of key items of the fee structure and the approach adopted in other health professional areas. On the other hand, the existing State mechanisms are well known, understood and accepted, in some instances they assist dentists to set their own fee scales in a way which a national adjustment recommendation may not, and the actual movement of fees in most, if not all, States has been fair and reasonable. Specific information was not provided in respect of New South Wales and South Australia but other material does not suggest any

contrary inference. Accordingly I consider that the present system of regional variability should be retained."

Section 12.6

"If it could have been said that the methodologies adopted by all Branches were conceptually fair and reasonable, I would have not seen a need for further reviews while those methodologies remained fundamentally unchanged. However, in the light of my conclusions on the methodologies, further review could be warranted while there is an ongoing prices and incomes policy involving restraint. As to the timing of such a review, I have had particular regard to the view of the ADA on the continued oversupply of dental capacity in the period ahead, a view which was not challenged by the Commonwealth. Assuming no major changes in the present fee adjustment mechanisms of the State Branches of the ADA I would not envisage a review for another five years."

5.10 PRICES SURVEILLANCE AUTHORITY

The Prices Surveillance Authority (PSA) is a Federal Government agency established under the Prices Surveillance Act 1983. The Authority was established as part of the Government's Prices and Income Policy, with a mandate to promote responsible price setting behaviour by firms in the private and public sectors (Prices Surveillance Authority 1991).

During 1992, the Authority undertook some research into the matter of pricing within the dental industry (French 1994). The result was an in-house paper, the aim of which was to provide Authority members with a background to the operation of the industry. The Authority, however, did not feel that resources should be put to take the matter further. Moreover, the profession, not being incorporated or engaged in interstate trade, would not be inside the statutory terms of reference of the PSA (Australian Dental Association 1987).

The 1992 research found that in general there appeared to be a certain amount of price variation within the industry. On the face of it, price levels in some cases did appear to be quite high. On the other hand, estimated rates of return to investment for an "average" dentist, including expenditure on education and equipment, appeared to be quite low (French 1994).

Overall, the Authority was unable to offer an opinion as to the validity of

price levels and price increases observed within the industry.

5.11 Trade Practices Commission

The Trade Practices Commission was established under Section 28 of the Trade Practices Act 1974. Its main functions are:

- (a) to examine the laws in force in Australia relating to the protection of consumers;
- (b) to conduct research in relation to matters affecting the interest of consumers;
- (c) to make available to the public general information in relation to matters affecting the interest of consumers;
- (d) to make known for the guidance of consumers the rights and obligations of persons under provision of laws in force in Australia that are designed to protect the interest of the consumers.

One of the functions of the Commission is to receive complaints and to take action where appropriate, the action can include investigation and prosecution (Layton & Steinwall 1994).

Under Section 45A(1) of the Trade Practices Act, a corporation must not make any arrangement which would substantially lessen competition by fixing or controlling the prices of goods or services. However, section 45A(3) states that it does not apply when there are more than 50 persons supplying a service.

In 1977, the Legislation Committee of ADA New South Wales Branch did a review of the Act in respect of the publication of fee schedules. The Committee concluded that the powers of State Branches to publish fee schedules would not be adequately defined until there was a test case (Australian Dental Association 1977). The matter was then referred to the Association's solicitors for opinion. Their comments on this matter were as follow:

- The Act attempted to control the activities of individuals and corporate persons in Australia, this included members of the ADA and the ADA itself.

- The test under Section 45 must be satisfied; that was, it must be shown that the ADA fee recommendation did not have the effect of substantially lessening competition among its members.

- Exemption clause on Section 45A(3) applied to situations where more than 50 persons supply a service, which was true of all Branches of the ADA.

- The position of a professional person was a slightly unusual one with the business community, as his relationship with his client or patient depended upon his personal interactions with them. His "competition" with his colleagues would depend largely upon such factors as his

reputation, personality, promptitude, geographical proximity and the quality of his treatment and facilities. It seemed doubtful that a mere tendency towards uniformity of fees charged would in itself result in a substantial lessening of competition within a profession in which the number of possible entrants or competitors was heavily restricted in any event.

-On balance, the solicitors concluded that the publication by the ADA of recommended fees unaccompanied by any encouragement towards uniformity was unlikely to result in a substantial lessening of competition within the profession and therefore would not be in breach of Section 45 of the Act. However, the Trade Practices Commission might not accept the propositions which could only be established by a test case.

6. THE CONSUMER PRICE INDEX

The Consumer Price Index has always been an important economic indicator and in recent years actions related to movements in the CPI have had direct or indirect effects on all Australians.

It has been used as a starting point by parties to the national wage hearings and by the Arbitration Commission in determining the size and nature of wage adjustments. The CPI has also been used in the indexation of pension and superannuation payment. Many business contracts are regularly adjusted to take account of changes in the CPI or in some components of it. Rental agreements, insurance covers, alimony and child support payments are frequently tied in some manner to changes in the CPI (Castle 1987a).

6.1 Definition

The Consumer Price Index is a general indicator of the rate of change in prices paid by household consumers for the goods and services they buy (Castle 1987a, Brown 1989).

The easiest way to think about the CPI is to image a basket of goods and services of the kind bought by Australian households. As prices vary, the total price of the basket will also vary. Thus the CPI measure the change in the cost of purchasing a constant basket of goods and services.

The CPI is compiled quarterly each year and the results published by the Australian Bureau of Statistics.

6.2 The Consumer Price Index Population

The basket of goods and services used in the CPI is chosen to represent the spending pattern of a particular group of the population- a large group with fairly homogeneous spending habits- known as the CPI population group. The CPI population group for the Australian CPI is employee households in metropolitan areas.

"Employee household" have been defined, for CPI purposes, as those households which obtain at least three-quarters of their total income from wages and salaries- but excluding the top 10 percent (in terms of income) of such households.

"Metropolitan" consists of the Statistical Divisions (currently as defined for the Census of Population and Housing) for the 8 capital cities of the States and Territories- Sydney, Melbourne, Brisbane, Adelaide, Perth, Hobart, Canberra and Darwin. From its inception since 1964 the CPI covered only the 6 State capital cities. Canberra was added in September quarter 1964 and Darwin was added in June quarter 1982.

Some significant subgroups of the Australian population are not included in the CPI population group (eg, the unemployed, pensioners and other retired people, full-time students living independently, the self-employed and people of independent means, and high income earners). On the basis of 1984

population estimates and Household Expenditure Survey results the CPI population group accounted for 57 percent of the population of the 8 capital cities, or 36 percent of the Australian population. The ABS has no measure of whether price movements relating to expenditure by the groups not included have been different from the CPI movements. But on average, over any substantial period, any divergence could be expected to be small (Castle 1987b).

6.3 Composition of the CPI Basket

The composition of the CPI basket is based on the spending pattern information of Australian households obtained in the Household Expenditure Surveys conducted by the ABS (Castle 1987a). The total basket is divided into the following 8 groups:

- food;
- clothing;
- housing;
- household equipment and operation;
- transportation;
- tobacco and alcohol;
- health and personal care; and
- recreation and education.

These groups are in turn divided into 35 subgroups and the subgroups into 107 expenditure classes. "Dental Services" is one of the expenditure class under the subgroup "Health Services" of the "Health and Personal Care" group. Its percentage contribution in the current (12th Series) of the CPI is shown in **Table 7**.

**Table 7 Contribution of the Dental Services Expenditure Class to
the Consumer Price Index (12th Series, June 1992)**

Source: Castle (1992b)

Group; Subgroup; Expenditure class	Contribution
Group- Health and Personal Care	6.850%
Subgroup- Health Services	3.961%
Expenditure Class- Dental Services	0.634%

6.4 Weighting of the CPI Basket

In compiling the CPI, price movements for the different component items are combined using "weights" which represent the relative importance of each of the components in the total expenditure of the CPI population.

The CPI is a chain of linked indexes with changes in composition and weighting made at regular intervals. To ensure that the CPI continues to meet community needs, it is the Australian practice to review the index at approximately 5 yearly intervals with timing linked to the availability of output from the Household Expenditure Survey (HES). Within this cycle, every second review is a major review with a minor review in between. Major reviews are used to reassess all aspects of the CPI while minor reviews are generally restricted to update weights and referencing (Castle 1993).

At times of linking the weighting pattern is brought up to date, the composition of the index revised and the new CPI linked to its predecessors to form one continuous series. The linkage ensures that the resulting continuous series reflects only price variations and not differences in cost of the old and new combinations and lists of items. The introduction of the new items and weights by linkings does not, of itself, raise or lower the level of the index.

6.5 Treatment of Weight Changes

The general procedure in obtaining linkage in the CPI in weight change is to calculate price movement on the basis of "matched observations". Whenever a particular price observation is missing from either the previous or current period the corresponding price observation is also eliminated from the other period so that the sets of observations are matched. The way in which the linkage is obtained is illustrated in the following example in **Table 8**:

Table 8 Example of treatment of weight changes in the CPI

Source: Castle (1992b)

Item	Weight		Average Price (\$ per unit)	
	Period 1	Period 2	Period 1	Period 2
A	.55	.48	65.89	67.10
B	.38	.42	49.56	52.90
C	.07	.10	141.29	145.00

Weighted Average Price:

old weight	64.96	/
new weight	66.57	68.93

In order to calculate the price movement in period 2, the weighted average price for period 1 would be recalculated using the new weights, and the movement would be calculated as $68.93 / 66.57$.

6.6 Capital City Weights

Weights for all Expenditure Classes are calculated for each of the 8 cities separately and these weights are used to compile the CPI separately for each city. The composite index numbers for the weighted index average of 8 capital cities are calculated from the individual city indexes using combining weights reflecting the relative importance of CPI population group households in each city.

6.7 Collection of Data for Dental Services Expenditure Class

In each State, a number of dentists are selected, with the cooperation of the State Branches of the Australian Dental Association. The numbers of dentists in the sample, and their locations, are carefully chosen so as to make the sample representative. Each dentist agrees to co-operate with the ABS in providing information for the CPI calculation. Each remains anonymous, and the numbers and distribution of the sample are also secret (Australian Dental Association 1985c).

At quarterly intervals each of these dentists is asked to provide his current fees for 5 items of treatment, and it is from the changes in these fees that the dental costs element of the CPI is calculated. For years, the agreed items were:

- Examination
- Two bite-wings
- Single extraction
- Single surface amalgam
- Full upper and lower dentures.

6.8 CPI for Dental Services

The Australian Bureau of Statistics is unable to give information on data under the expenditure class "Dental Services". This is different in the United States (Knudsen 1994) where monthly "CPI for Dental Services" are compiled and released by the U.S. Bureau of Labor Statistics.

In the United States, for the December 1993 CPI dental services had 1.018% of the weight for the CPI for all urban consumers. The sample for the dental services component contains 900 individual price quotes from approximately 300 different establishments. There are no set weights for different types of services within the dental services component of the index. At each establishment, services are selected for inclusion in the index, using probability proportional to revenue. In 1994, the breakdown of the sample by general category of service is:

<u>Type of Service</u>	<u>Number of quotes</u>
Prosthodontics and implants	115
Extraction and oral surgery	128
Restorations	251
Diagnostic and preventive dental service	215
Orthodontics	85
Other dental services	106

7. DENTAL FEE INDEX

7.1 INTRODUCTION

In the United States, when determining whether dental fees have become too costly, it is standard procedure to compare changes in dental fees with changes in the Consumer Price Index (Nash 1991). The "CPI for Dental Services", a monthly figure issued by the US Bureau of Labor Statistics covering dental services component of the CPI, is available and frequently used as an index for dental fees (Knudsen 1994). The American Dental Association (1993) uses such data to publish a quarterly report "The Consumer Price Index and Dental Services". The report includes:

- monthly and annual tables of the CPI for Dental Services, along with the overall CPI and CPIs for other categories;
- charts and tables showing the cumulative effect of inflation since 1972, along with the year-to-year change;
- a narrative section explaining what the CPI is and how data for the CPI for Dental Services are collected by the US Bureau of Labor and Statistics; and
- formulae with examples for doing basic calculations using data from the table.

The American Dental Association (1956, 1976, 1985) had also done a number of reports comparing dentists' fees and inflation for the periods 1945-1955, 1967-1975 and 1982-1985 using the CPI for Dental Services. The same index

was used by Doherty (1981) to compare dental fees change and the CPI for 1950-1977.

Other methods had also been used by the American Dental Association, some of them were:

- by compiling a "composite fee" using a basket of dental services with weights estimated to represent the relative frequencies at which the services were performed (Hollinshead 1961);
- by comparing movement of fees of selected individual dental procedures after the fees were adjusted for inflation using the CPI (Nash 1991); and
- by comparing fees change of selective individual dental procedures with changes in the CPI (Bently, Tucker & Schneider 1992).

In Australia, the Australian Bureau of Statistics is unable to give information on weightings and calculations for the expenditure class "Dental Services" (McCrea 1993). There is no "CPI for Dental Services" or any other similar published index for dental fees.

In 1982, Barnard did a comparison of fees of 3 items (one-surface amalgam, full-on-full denture and porcelain jacket crown) with the CPI for the 3-year period 1977/78 to 1980/81 (Australian Dental Association 1982) and concluded that dental fees movement had approximately paralleled CPI movement. In 1983, the Victorian Branch of the ADA (1983) stated that "past

surveys have shown that dental fees in this State have risen less than CPI" while in 1991 the South Australia Minister of Health maintained that dental fees there had been rising at a faster rate than the CPI. There was no established index to substantiate such claims.

There is clearly a need to have an Australian dental fee index by which we can compare fees changes with the CPI and other economic indicators. In this chapter, we shall attempt to construct such an index, the Dental Fee Index (DFI), and use the results to look at the pattern of changes of Australian dental fees.

7.2 REQUIREMENTS OF THE INDEX

In constructing the index, it is desirable that it should be:

- representing the real dental market situation;
- suitable for comparison with the CPI;
- easily understood by the dental profession as well as the public;
- utilising data already available; and
- easy to be continuously applied in the future.

The composition of the CPI by the Australian Bureau of Statistics provides us some insight into how such an index could be constructed. A basket of representative dental services could be selected and a "composite fee" calculated by applying in the basket the fees for the individual items, taking into consideration the relative weights of the items. This was done by the American Dental Association (1975b, 1963, 1969) in the 1950's and 1960's, using a composite fee which was the total fee for 10 prophylaxis, 30 one-surface amalgam fillings, 20 simple extractions, one acrylic jacket crown and one complete upper acrylic-base denture. These weights represented the approximate relative frequency of the 5 services for the average dentist in the United States at that time (Hollinshead 1961).

In constructing such a composite fee index, 3 basic decisions have to be made, they are:

1. items to be included in the basket;

2. relative weights of the selected items; and
3. way of determining fee level for each of the item.

In Australia, the ADA Dental Fees Surveys done since 1960 provide the most readily available and authoritative information on fee levels. Since we are looking at historical data, our choice of items in the basket are limited to those in which past fees data are either available or can be estimated. In our study, we try to include as many items included in past surveys as possible. Whilst the selection of items and the methods of determining fee levels are relatively straight forward the remaining problem, assignment of weights to the items in the basket, is more complicated and requires further research.

7.3 UTILIZATION PATTERN OF DENTAL SERVICES

A number of studies had been done on the service mix of dental treatment provided in Australia. In 1989 Spencer and Lewis did a survey of service mix in general dental practice in Australia (Spencer & Lewis 1989). The Dental Statistics and Research Unit of the Australian Institute of Health (AIHW DSRU) at the University of Adelaide had also compiled similar data (Australian Dental Association, Victorian Branch 1992). A Children's Dental Survey was done by the ABS as part of the regular population survey in November 1983 (Australian Dental Association, Western Australian Branch 1985a). The Victorian Government Ministerial Review of Dental Services (1986) looked at attendance percentage at various Departments at the Royal Dental Hospital while also recognising that attendance figures were not necessarily a measure of output. In the 1987-1988 National Oral Health Survey of Australia (NOHSA) the percentage distribution of "estimated treatment needs", "treatment thought by person to be required" and "treatment received at last dental visits" of different age groups were obtained (Barnard 1993a).

While such surveys provide a wealth of information on the utilization pattern the best source of information for our DFI basket remains the Australian health funds. The reasons for our choice are:

1. Similarity in characteristics of the "CPI population" and the population with

health fund cover.

The CPI population group is "employee households in metropolitan areas", some significant sub-groups of the Australian population are not included, e.g. the unemployed, pensioners and other retired people. On the basis of 1984 population estimates and household Expenditure Survey results the CPI population group accounted for 36% of the Australian population (Castle 1987a).

As to the group with private health fund cover, there was lower insurance coverage among persons aged 65-year and above, health card holder and lower socio-economic groups (Slade 1993). Number of people with insurance has been declining in recent years. In 1982, 67.9% of population in Australia had private health cover, the figure dropped to 37.6% in 1994 (Toohey 1994). **Table 9** shows how the insurance population changed from 1982 to 1994.

Table 9 Percentage of population with private health fund cover
1982-1994

Source: Toohey (1994)

Year	Percentage
1982	67.9
1983	63.7
1984	50.0
1985	47.6
1986	48.8
1987	48.3
1988	47.0
1989	45.4
1990	44.5
1991	43.7
1992	41.0
1993	39.4
1994	37.6

2. Existence of accurate data on utilization.

Health funds have exact rebate data on nearly all dental procedures.

3. Specificity of items

Unlike many of the studies where items were put into broad groupings (e.g. filling, scaling, x-ray), health funds have data on specific items (e.g. amalgam restoration on one surface of permanent tooth, root planing and subgingival curettage per segment of eight teeth or less, intraoral periapical or bite-wing radiograph - single film). Both the ADA Fees Survey and health fund records use the ADA Schedule numbers. This allows accurate matching of the two in calculating the value of the DFI.

4. Continuity of the data

Since rebate data should be continuously compiled by health funds, future values of the DFI can be easily calculated. Should the need arise to change the basket weighting this could be done by using the already available data.

7.4 HEALTH FUNDS IN AUSTRALIA

Health funds in Australia are registered non-profit health benefits organizations providing coverage to individuals and families who join and pay premiums which are either paid by members directly or through agencies (sometimes at place of employment). Premiums may be for single or family membership.

Some funds offer dental benefits separately but most plans are combined with other combinations of health benefits such as optical, optometry, pharmaceutical, physiotherapy, psychology, dietetics and chiropody.

Rebates are payable directly to fund members against receipts for dental services rendered to them (or their family members). Benefits are paid for items of service. Some funds have a limited range of services but most funds include all or most items of service listed on the ADA Schedule of Service.

Rebates from most funds are fixed for items of service. Some funds offer a percentage of the fee paid up to a fixed rebate for each service or often a maximum payment for a membership year. Waiting period to be eligible for rebates for dental services (unless covered by accidental injury) is usually 2 months.

The number of funds known to offer dental benefits in Australia in October 1988 was 59 (Barnard 1989).

7.5 CONSTRUCTION OF THE DFI BASKET

Only items which were included in past ADA Fees Surveys are considered. The surveys were done in 1961, 1966, 1971, 1975, 1977, 1980, 1981, 1983, 1985, 1987, 1989, 1991 and 1993. Data from the first 3 surveys (1961, 1966, 1971) were not used because they had too few items.

In order to make the basket more representative, as many items as possible are included. 34 items were initially selected base on the availability of fee data for the period 1975-1993 (or the possibility of estimating the fees).

In collecting utilization data, individual letters were sent to all health funds in Australia which have coverage above 30,000 people based on data from ADA publication "Facts & Figures" (Barnard 1989). This covered over 90% of the population with insurance. The funds were asked to provide:

- the percentage weight in claims (out of the total claims in dental services) of each of the 34 items for the year 1976, 1981, 1986 and 1991; and
- the total number of people enrolled and covered (member and dependants) for dental services for each of those 4 years.

In the letter it was stressed that data from individual funds would be combined together to form one basket and information from each fund would be kept confidential.

7.6 RESPONSE FROM THE HEALTH FUNDS

Most of the health funds that replied could only supply data from mid-1980. Records back to 1975 were difficult to obtain. The data from the funds came in different forms. Some gave detail numbers of services for different States while others supplied overall national figures only. Some of them provided complete continuous data up to 1993 while others gave only selective years.

Before analysing the information obtained we first eliminated those funds which did not provide coverage for all ADA Schedule items. The final useable data included funds with a total coverage of slightly more than 4 million people, which was equivalent to around 60% of the health fund market. As information from individual funds are to be kept confidential we cannot give details of further breakdown of the distribution.

Claim data from the majority of the funds were from 1986 to 1993 only. However, in 1983, 1984 and 1985 the Voluntary Health Insurance Association of Australia (VHIAA) had conducted surveys on utilization of dental services of its member funds. Such surveys included all ADA Schedule items. The results, combined with those from Medibank Private, were available from the ADA (Barnard 1989).

In compiling the CPI, the Australian Bureau of Statistics does a reweighting of the basket every 10 years in order to accurately reflect the change in

spending pattern of the population. The same was done for the DFI. As our study began with the year 1975, 1985 was chosen as the year to reweight the DFI Basket.

7.7 The 1975-1985 BASKET

Ideally, utilization data for 1975-1985 should be used to determine the weighting of the basket. However, the only data available for this period were the combined VHIAA/Medibank Private data. In our basket, 23 final items were selected based on availability of fees information from the 1975, 1977, 1980, 1981, 1983 and 1985 ADA Fees Surveys. The relative weight of each of the 23 items in the basket were obtained by taking the arithmetic mean of the results of the 1983, 1984 and 1985 VHIAA/Medibank Private surveys. The composition of the basket is listed in **Table 10** and **Figure 1**.

In **Table 11** and **Figure 2**, the 23 items are grouped into 10 groups according to their natures of service.

Table 10 Composition of the 1975-1985 DFI Basket

ADA Schedule	Type of Service	Weight(%)
011	Initial oral examination	7.94
012	Periodic oral examination	9.29
022	Single intraoral x-ray	4.73
023	Two intraoral x-rays	6.99
111	Removal of plaque	2.26
112	Scaling	17.13
121	Topical fluoride	6.49
213	Treatment of acute periodontal infection	0.16
311	Extraction	5.09
323	Surgical removal of tooth	0.44
421	Anterior root canal therapy (1 root)	0.91
424	Posterior root canal therapy (2 roots)	0.34
511	Amalgam filling of permanent tooth (1 surface)	11.34
512	Amalgam filling of permanent tooth (2 surfaces)	13.28
513	Amalgam filling of permanent tooth (3+ surfaces)	8.50
532	Composite filling (1 surface)	2.57
613	Porcelain jacket crown	0.05
615	Porcelain fused to gold jacket crown	0.96
620	Three quarter cast gold crown	0.05
719	Complete maxillary and mandibular denture	0.39
721	Partial acrylic denture	0.44
727	Partial cobalt chromium denture	0.50
821	Simple removable appliances (one arch)	0.15

Figure 1 Composition of the 1975-1985 DFI Basket

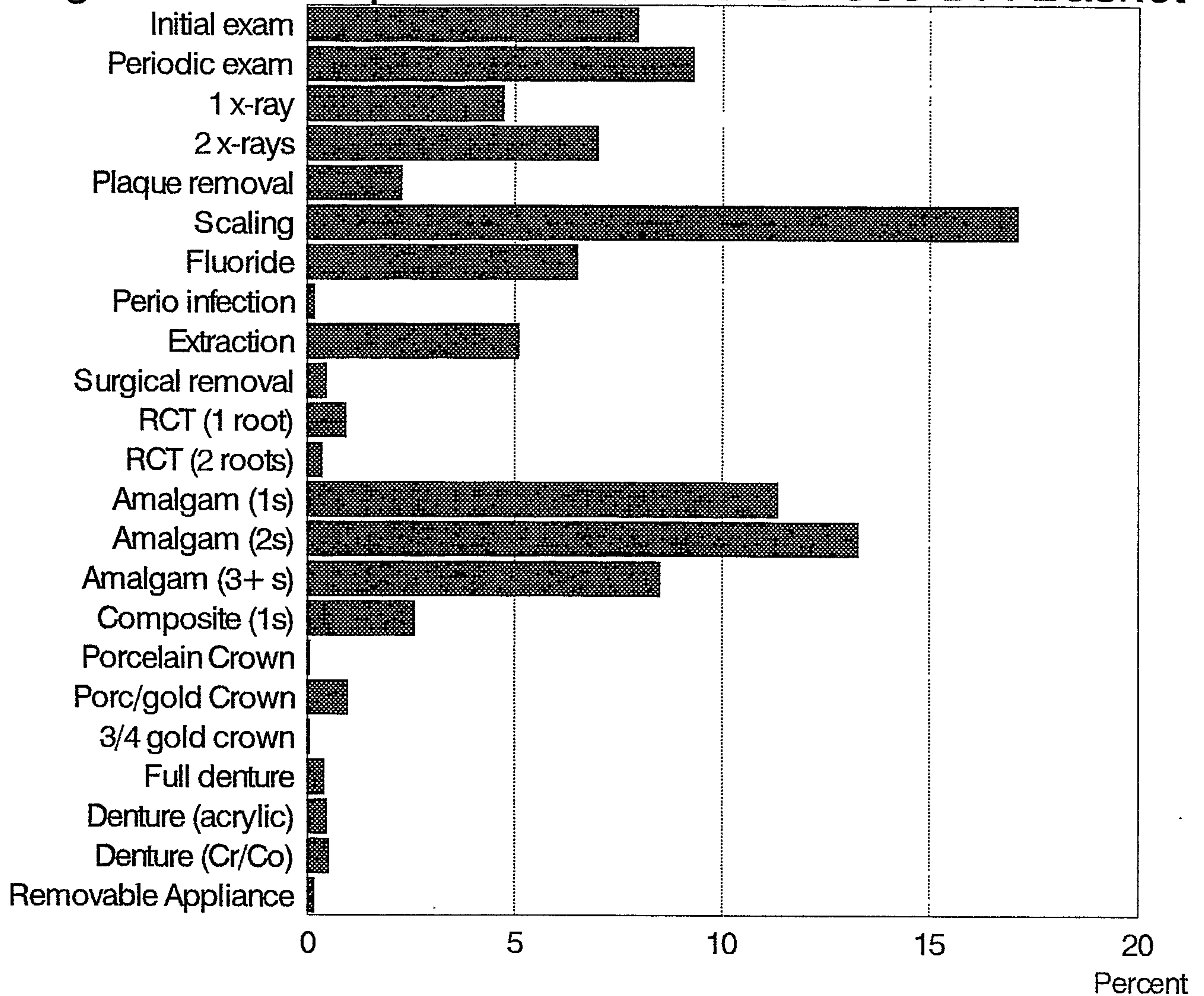
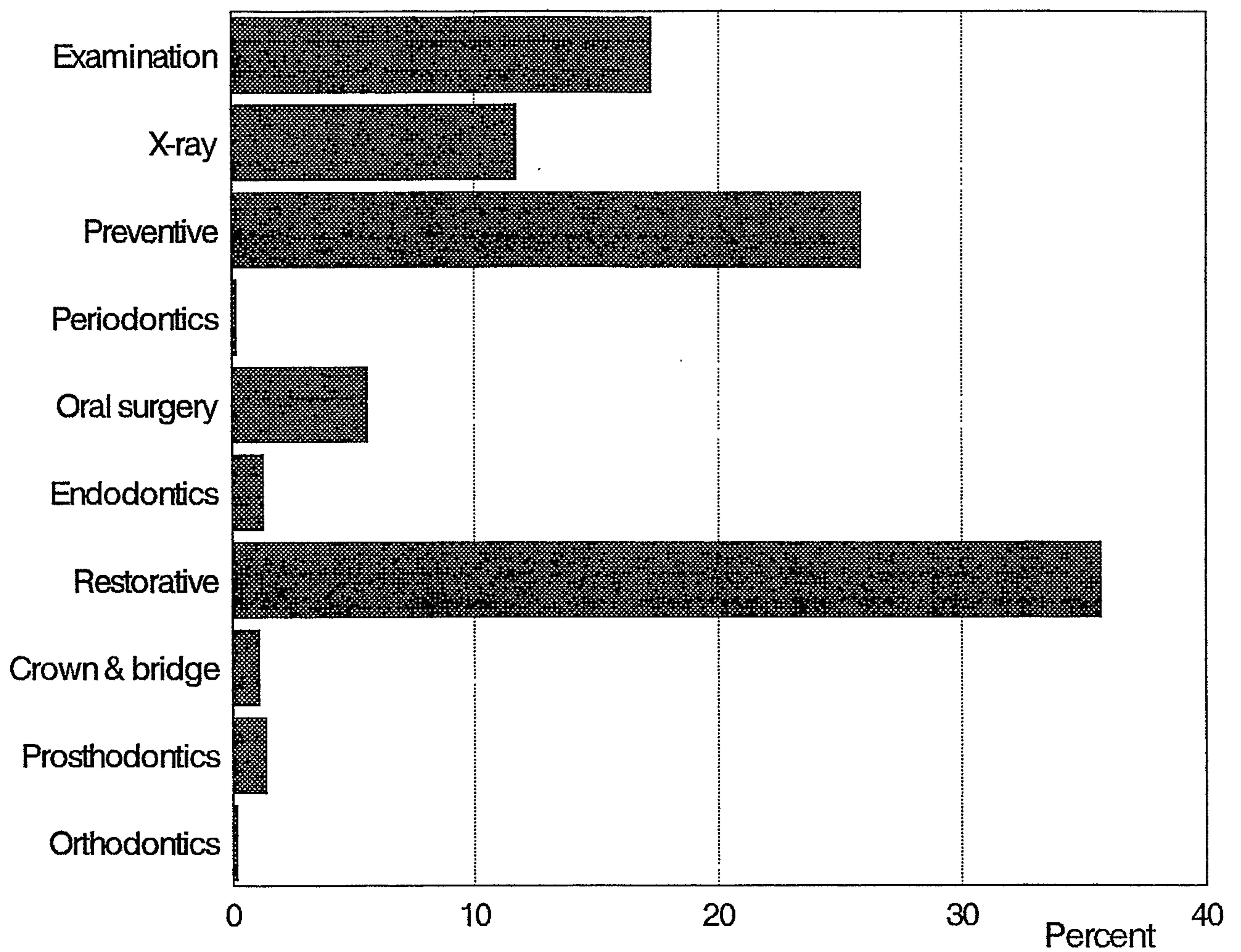


Table 11 Group composition of the 1975-1985 DFI Basket

Group	Service	Service weight(%)	Group weight(%)
Examination	Initial exam	7.94	17.23
	Periodic exam	9.29	
X-ray	Single x-ray	4.73	11.72
	Two x-rays	6.99	
Preventive	Plaque removal	2.26	25.88
	Scaling	17.13	
	Topical fluoride	6.49	
Periodontics	Perio infection	0.16	0.16
Oral surgery	Extraction	5.09	5.53
	Surgical removal	0.44	
Endodontics	RCT (1 root)	0.91	1.25
	RCT (2 roots)	0.34	
Restorative	Amalgam (1s)	11.34	35.69
	Amalgam (2s)	13.28	
	Amalgam (3+s)	8.50	
	Composite (1s)	2.57	
Crown & bridge	Porcelain crown	0.05	1.06
	Porcelain/gold Cr	0.96	
	3/4 gold crown	0.05	
Prosthodontics	Full denture	0.39	1.33
	Denture (acrylic)	0.44	
	Denture (Co/Cr)	0.50	
Orthodontics	Removable appliance	0.15	0.15

Figure 2 Group composition of the 1975-1985 DFI Basket



7.8 The 1985-1993 Basket

Items in the basket were selected based on availability of fees information from the 1985, 1987, 1989, 1991, 1993 ADA Dental Fees Surveys. 23 final items were selected with 4 item changes from the previous basket. New weightings for all items were obtained by combining claims data from the different health funds in the following way:

- For each fund, if more than one year data were given, the arithmetic mean of the utilization data from different years were used as the overall figures for that particular fund.
- The membership number of each fund was also calculated by taking the arithmetic mean of the membership numbers for the different years.
- Having calculated an overall utilization pattern and membership number for each fund, the figures were then combined together to form one single basket. Data from each fund was assigned a specific weight depending on its membership size.

The composition of the basket is listed in **Table 12** and **Figure 3**. In **Table 13** and **Figure 4** we group the 23 items into 10 groups according to their natures of service.

Table 12 Composition of the 1985-1993 DFI Basket

ADA Schedule	Type of Service	Weight(%)
011	Initial oral examination	7.72
012	Periodic oral examination	14.59
022	Single intraoral x-ray	6.16
023	Two intraoral x-rays	7.03
111	Removal of plaque	1.99
112	Scaling	13.45
121	Topical fluoride	7.95
222	Root planing & subgingival curettage/quadrant	4.05
311	Extraction	3.04
323	Surgical removal of tooth	0.46
421	Root canal therapy (1 root)	0.70
425	Root canal therapy (3 roots)	0.57
511	Amalgam filling of permanent tooth (1 surface)	5.19
512	Amalgam filling of permanent tooth (2 surfaces)	8.23
513	Amalgam filling of permanent tooth (3+ surfaces)	6.54
537	Composite filling (1 surface)	4.90
538	Composite filling (2 surfaces)	4.25
615	Porcelain fused to gold jacket crown	1.76
643	Bridge	0.46
719	Complete maxillary and mandibular denture	0.18
721	Partial acrylic denture	0.37
727	Partial cobalt chromium denture	0.43
821	Simple removable appliance	0.07

Figure 3 Composition of the 1985-1993 DFI Basket

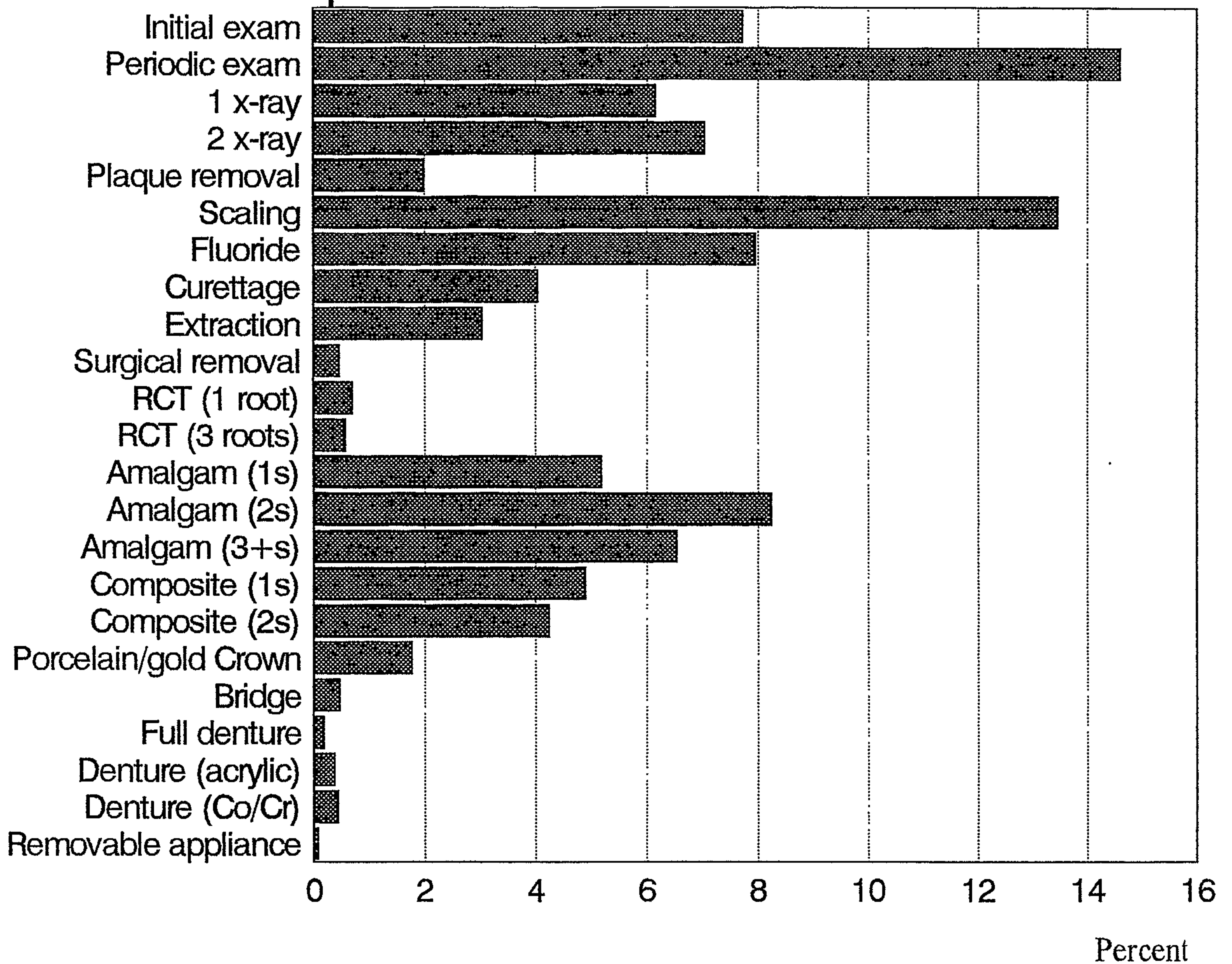
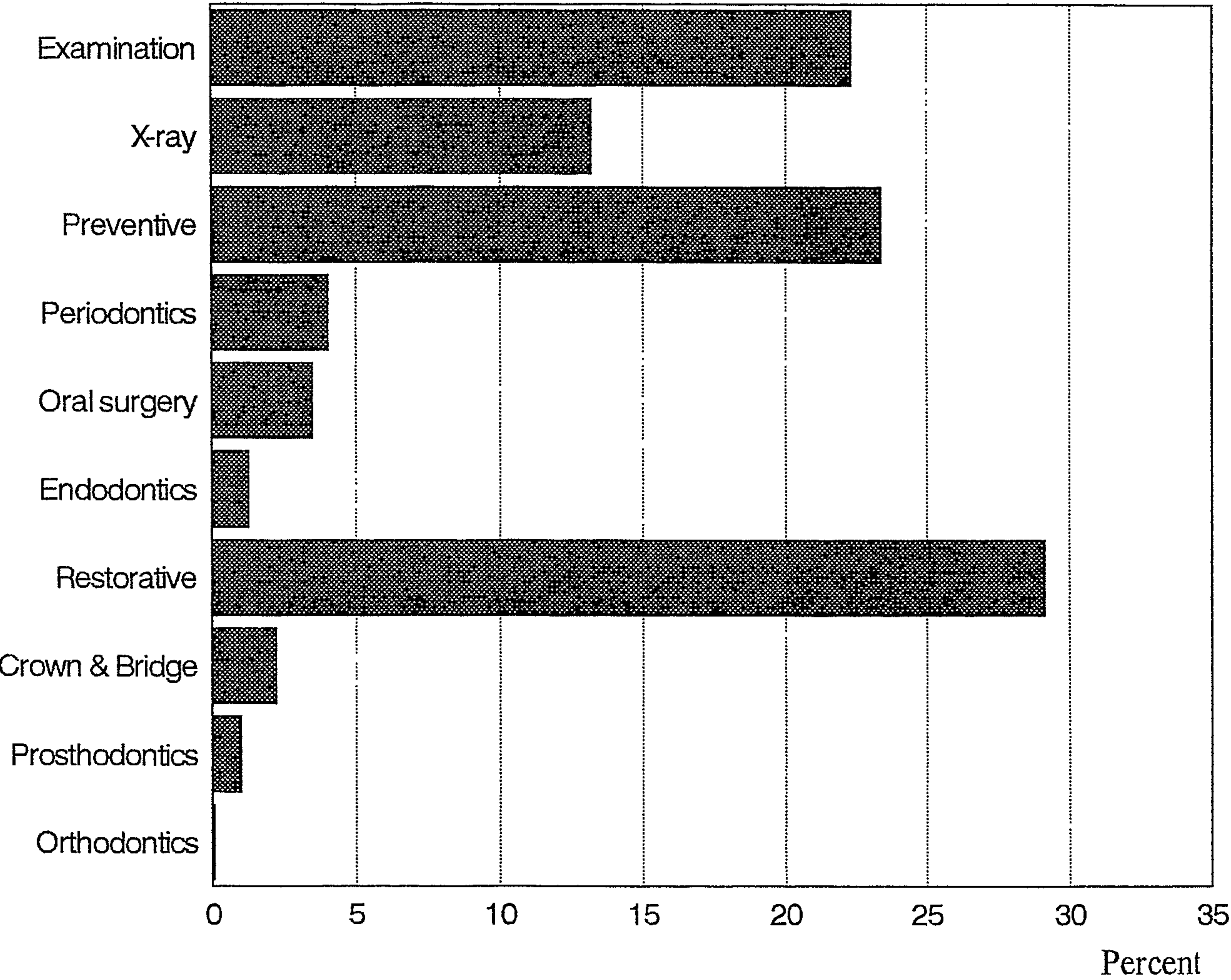


Table 13 Group composition of the 1985-1993 DFI Basket

Group	Service	Service weight(%)	Group Weight(%)
Examination	Initial exam	7.72	22.31
	Periodic exam	14.59	
X-ray	Single x-ray	6.16	13.19
	Two x-rays	7.03	
Preventive	Plaque removal	1.99	23.39
	Scaling	13.45	
	Topical fluoride	7.95	
Periodontics	Subgingival curettage & root planing	4.05	4.05
Oral surgery	Extraction	3.04	3.50
	Surgical removal	0.46	
Endodontics	RCT (1 root)	0.70	1.27
	RCT (3 roots)	0.57	
Restorative	Amalgam (1s)	5.19	29.11
	Amalgam (2s)	8.23	
	Amalgam (3+s)	6.54	
	Composite (1s)	4.90	
	Composite (2s)	4.25	
Crown & bridge	Porcelain/gold Cr	1.76	2.22
	Bridge	0.46	
Prosthodontics	Full denture	0.18	0.98
	Denture (acrylic)	0.37	
	Denture (Co/Cr)	0.43	
Orthodontics	Removable appliance	0.07	0.07

Figure 4 Group composition of the 1985-1993 DFI Basket



7.9 FEES ESTIMATION

Not all items in the DFI Baskets were included in past ADA Fees Surveys. It was necessary in some cases to estimate the fees for some items in specific years. In this section we shall explain how the fees were estimated for those items.

7.9.1 Periodic examination (item 012) - 1975, 1977, 1980, 1981, 1983

Fees data were available for 1987, 1989, 1991, 1993 but not for the earlier years. To estimate the fees for 1975, 1977, 1980, 1981, 1983 and 1985, the average ratio between Initial examination (item 011) and Periodic examination (item 012) for 1987 to 1993 were used.

	1987	1989	1991	1993
Item 011 Item 012	<u>18.79</u> 16.69	<u>22.59</u> 19.89	<u>25.70</u> 22.40	<u>27.50</u> 24.20
Ratio	1.126	1.136	1.147	1.136

Average ratio = 1.136

Using this ratio (1.136), fees estimations for item 012 from 1975 to 1985 could then be done by dividing the values for item 011 for that particular year by 1.136.

Year	Fee for <u>011</u> (\$)	Calculation	Fee for <u>012</u> (\$)
1975	5.67	<u>5.67</u> 1.136	4.99
1977	6.93	<u>6.93</u> 1.136	6.10
1980	9.16	<u>9.16</u> 1.136	8.06
1981	10.07	<u>10.07</u> 1.136	8.86
1983	12.75	<u>12.75</u> 1.136	11.22
1985	15.20	<u>15.20</u> 1.136	13.38

7.9.2 Scaling (item 112) - 1975

Fee for 1975 was not available, it was estimated by using the average ratio between Plaque removal (item 111) and Scaling (item 112) for the years 1977, 1980, 1981, 1983 and 1985.

	1977	1980	1981	1983	1985
<u>Item 111</u> Item 112	<u>9.88</u> 14.72	<u>12.64</u> 17.58	<u>13.07</u> 19.21	<u>15.01</u> 22.84	<u>17.55</u> 27.10
Ratio	0.67	0.72	0.68	0.66	0.65

Average ratio = 0.68

Estimated fee for item 112 for 1975 became:

$\$ 9.19 \text{ (fee for item 111 in 1975)} / 0.68 = \$13.51$

7.9.3 Treatment of acute periodontal infection (item 213) - 1985

Fee for 1985 was not available, it was estimated by using the ratio between Treatment of acute periodontal infection (item 213) and Scaling (item 112) for the years 1977, 1980, 1981 and 1983.

	1977	1980	1981	1983
<u>item 213</u> item 112	<u>13.57</u> 14.72	<u>16.36</u> 17.58	<u>17.85</u> 19.21	<u>21.62</u> 22.84
Ratio	0.92	0.93	0.93	0.95

Average ratio = 0.93

Estimated fee for item 213 for 1985 became:

$\$ 27.10 \text{ (fee for item 112 in 1985)} \times 0.93 = \$ 25.20$

7.9.4 Porcelain jacket crown (item 613) - 1985

Fee for 1985 was not available, it was estimated by using the average ratio between Porcelain fused to gold jacket crown (item 615) and Porcelain Jacket Crown (item 613) for the years 1975, 1977, 1980, 1981 and 1983.

	1975	1977	1980	1981	1983
<u>Item 615</u>	<u>182.71</u>	<u>224.51</u>	<u>312.30</u>	<u>342.38</u>	<u>406.41</u>
Item 613	156.73	187.90	273.32	290.15	352.66
Ratio	1.17	1.19	1.14	1.18	1.15

Average ratio = 1.17

Estimated fee for item 613 for 1985 became:

$$\text{\$ } 486.06 \text{ (fee for item 615 in 1985) } / 1.17 = \text{\$ } 415.44$$

7.9.5 Three-quarter cast gold crown (item 620) - 1985

Fee for 1985 was not available, it was estimated by using the average ratio between Three-quarter cast gold crown (item 620) and Porcelain fused to gold jacket crown (item 615) for the years 1975, 1977, 1980, 1981 and 1983.

	1975	1977	1980	1981	1983
<u>Item 620</u>	<u>99.81</u>	<u>134.45</u>	<u>177.31</u>	<u>201.97</u>	<u>269.96</u>
Item 615	182.71	224.51	312.30	342.38	406.41
Ratio	0.55	0.60	0.57	0.59	0.66

Average ratio = 0.59

Estimated fee for item 620 for 1985 became:

$$\$486.06 \text{ (fee for item 615 in 1985)} \times 0.59 = \$286.78$$

7.9.6 Removable appliance (item 821) - 1975

Fee for 1975 was not available, it was estimated by using the average ratio between Removable appliance (item 821) and Acrylic denture (item 721) for the years 1977, 1980, 1981, 1983 and 1985.

	1977	1980	1981	1983	1985
<u>item 821</u> item 721	<u>88.48</u> 92.09	<u>68.48</u> 127.94	<u>130.78</u> 126.53	<u>172.48</u> 151.98	<u>202.81</u> 251.22
Ratio	0.96	0.53	1.03	1.13	0.81

Average ratio = 0.89

Estimated fee for item 821 for 1975 became:

$$\$72.40 \text{ (fee for item 721 in 1975)} \times 0.89 = \$64.44$$

7.9.7 Root planing and subgingival curettage (item 222) - 1985, 1987, 1989

In the 1985-1993 Basket, due to definition changes, root planing and subgingival curettage were put under different schedule numbers in 1985, 1987 and 1989 and their fees surveyed separately. In 1991 and 1993, they were combined together into one item (222) with one single fee.

In 1985, the item was divided into 2 separate items, 211 (subgingival curettage) and 212 (root planing), with fees of \$31.76 and \$33.26 respectively. The overall fee for subgingival curettage and root planing was taken to be the average fee of the 2 items which became \$32.51.

In 1987 and 1989, the item was divided into another 2 separate items 222, (Root planing and subgingival curettage where the deepest periodontal pocket is 4mm or less) and 223 (Root planing and subgingival curettage where the deepest pocket is greater than 4mm), with fees of \$42.65 and \$48.78 for 1987 and \$50.41 and \$57.35 for 1989. The overall fee for "Root planing and subgingival curettage" for 1987 and 1989 were taken to be average of the two items each year, which became \$45.72 and \$53.88.

7.9.8 Root canal therapy-2 canals (item 424) - 1985

Fee for 1985 was not available, it was estimated by using the average ratio between Root canal therapy-2 roots (item 424) and Root canal therapy- 1 root (item 421) for the years 1977, 1980, 1981 and 1983.

	1977	1980	1981	1983
<u>item 424</u> item 421	<u>87.63</u> 66.29	<u>115.47</u> 88.69	<u>123.82</u> 94.58	<u>151.14</u> 117.25
Ratio	1.32	1.30	1.30	1.29

Average ratio = 1.30

Estimated fee for item 424 for 1985 became:

$$\$145.38 \text{ (fee for item 421 in 1985)} \times 1.30 = \$189.00$$

7.9.9 Root canal therapy (1 canal) -1991, 1993

Since 1991, the ADA Schedule number for root canal therapy of single root was cancelled. In our estimation of the 1991 and 1993 fees for this procedure we took it to be the sum of item 415 (Extirpation of pulp- one canal) and 417 (Root canal obturation- one canal) which were \$103.00 and \$119.70 for 1991 and \$115.30 and \$114.30 for 1993. This lead to our estimation of the fees for Root canal therapy (1 canal) for 1991 and 1993 to be \$222.70 and \$229.60 respectively.

7.9.10 Root canal therapy (3 canals) - 1991, 1993

Since 1991, the ADA Schedule number for root canal therapy of 3 roots was cancelled. In our estimation of the 1991 and 1993 fees for this procedure we used the following formula:

$$(\text{item 415} + \text{item 417}) + (\text{item 416} + \text{item 418}) \times 2$$

item 415 being extirpation of root canal (one canal);

item 416 being extirpation of root canal (each additional canal);

item 417 being root canal obturation (one canal);

item 418 being root canal obturation (each additional canal).

For 1991, fees surveys results for items 415, 416, 417 and 418 were \$103.00, \$47.00, \$119.70 and \$53.70 respectively. The formula gave an overall fee of \$424.10.

For 1993, fees surveys results for items 415, 416, 417 and 418 were \$115.30, \$48.20, \$114.30 and \$48.30 respectively. The formula gave an overall fee of \$422.60.

7.10 Definition changes

There had been a few definition changes in the ADA Schedule for some basket items. They were of minor nature and should not greatly affect the accuracy of the index.

The definition changes were:

- Item 112 in 1975-1985 Basket:

1983 definition: Scaling and cleaning.

1985 definition: Removal of calculus and plaque.

- Item 323 in 1985-1993 Basket:

1989 definition: Surgical removal of tooth with partial bone impaction.

1991 definition: Surgical removal of unerupted or partly erupted tooth,
requiring removal of bone or tooth division.

- Item 643 in 1985-1993 Basket:

1989 definition: Bridge-porcelain fused to gold- per unit.

1991 definition: Bridge-porcelain fused to gold- per pontic.

7.11 THE AGGREGATE VALUES

7.11.1 Calculation of the aggregate values

Once the fees and the relative weights in the baskets were obtained the aggregate values for conversion into DFI values could then be calculated. **Table 14 to Table 24** shows how the aggregate values of the 10 years (1975, 1977, 1980, 1981, 1983, 1985, 1987, 1989, 1991, 1993) in which ADA Dental Fees Surveys were conducted were calculated. The 1985 change in basket weight was treated exactly the same way as in the calculation of the CPI. This required calculation of the 1985 value twice, using weightings in both baskets; they were called 1985a and 1985b values, denoting the 1975-1985 and 1985-1993 Basket respectively (**Table 19** and **Table 20**).

Table 14 Aggregate value for DFI 1975

ADA Schedule	Type of Service	Weight(%)	Fee(\$)	Weighted Fee
011	Initial examination	7.94	5.67	45.02
012	Periodic examination	9.29	(4.99)	46.36
022	1 x-ray	4.73	5.70	26.96
023	2 x-rays	6.99	9.06	63.33
111	Plaque removal	2.26	9.19	20.77
112	Scaling	17.13	(13.51)	231.43
121	Topical fluoride	6.49	11.33	73.53
213	Periodontal infection	0.16	9.84	1.57
311	Extraction	5.09	9.68	49.27
323	Surgical removal	0.44	24.44	10.75
421	Root canal therapy (1 canal)	0.91	49.49	45.04
424	Root canal therapy (2 canals)	0.34	69.14	23.51
511	Amalgam (1 surface)	11.34	9.98	113.17
512	Amalgam (2 surfaces)	13.28	12.70	168.66
513	Amalgam (3+ surfaces)	8.50	16.10	136.85
532	Composite (1 surface)	2.57	11.70	30.07
613	Porcelain crown	0.05	156.73	7.84
615	Porcelain/ gold crown	0.96	182.71	175.40
620	3/4 gold crown	0.05	99.81	5.00
719	Full denture	0.39	227.84	88.86
721	Denture (acrylic)	0.44	72.40	31.86
727	Denture (Co\Cr)	0.50	163.16	81.58
821	Removable appliance	0.15	(64.44)	9.67

() : Estimated fee

Aggregate value: 1486.50

Table 15 Aggregate value for DFI 1977

ADA Schedule	Type of Service	Weight(%)	Fee(\$)	Weighted Fee
011	Initial examination	7.94	6.93	55.02
012	Periodic examination	9.29	(6.10)	56.70
022	1 x-ray	4.73	7.61	36.00
023	2 x-rays	6.99	11.74	82.06
111	Plaque removal	2.26	9.88	22.33
112	Scaling	17.13	14.72	252.15
121	Topical fluoride	6.49	13.83	89.76
213	Periodontal infection	0.16	13.57	21.17
311	Extraction	5.09	13.07	66.53
323	Surgical removal	0.44	30.88	13.59
421	Root canal therapy (1 canal)	0.91	66.29	60.32
424	Root canal therapy (2 canals)	0.34	87.63	29.79
511	Amalgam (1 surface)	11.34	13.27	150.48
512	Amalgam (2 surfaces)	13.28	16.32	216.73
513	Amalgam (3+ surfaces)	8.50	20.93	177.90
532	Composite (1 surface)	2.57	15.57	40.01
613	Porcelain crown	0.05	187.90	9.40
615	Porcelain/ gold crown	0.96	224.51	215.53
620	3/4 gold crown	0.05	134.45	6.72
719	Full denture	0.39	291.66	113.75
721	Denture (acrylic)	0.44	88.48	38.93
727	Denture (Co\Cr)	0.50	199.31	99.66
821	Removable appliance	0.15	92.09	13.81

() : Estimated fee

Aggregate value: 1849.34

Table 16 Aggregate value for DFI 1980

ADA Schedule	Type of Service	Weight(%)	Fee(\$)	Weighted Fee
011	Initial examination	7.94	9.16	72.73
012	Periodic examination	9.29	(8.06)	74.88
022	1 x-ray	4.73	9.20	43.52
023	2 x-rays	6.99	15.14	105.83
111	Plaque removal	2.26	12.64	28.57
112	Scaling	17.13	17.58	301.15
121	Topical fluoride	6.49	17.56	113.96
213	Periodontal infection	0.16	16.36	2.62
311	Extraction	5.09	17.11	87.09
323	Surgical removal	0.44	39.69	17.46
421	Root canal therapy (1 canal)	0.91	88.69	80.71
424	Root canal therapy (2 canals)	0.34	115.47	39.26
511	Amalgam (1 surface)	11.34	17.90	203.00
512	Amalgam (2 surfaces)	13.28	22.01	292.29
513	Amalgam (3+ surfaces)	8.50	26.82	227.97
532	Composite (1 surface)	2.57	20.67	53.12
613	Porcelain crown	0.05	273.32	13.67
615	Porcelain/ gold crown	0.96	312.30	299.81
620	3/4 gold crown	0.05	177.31	8.87
719	Full denture	0.39	338.46	132.00
721	Denture (acrylic)	0.44	127.94	56.29
727	Denture (Co\Cr)	0.50	236.22	118.11
821	Removable appliance	0.15	68.48	10.27

() : Estimated fee

Aggregate value: 2383.15

Table 17 Aggregate value for DFI 1981

ADA Schedule	Type of Service	Weight(%)	Fee(\$)	Weighted Fee
011	Initial examination	7.94	10.07	79.96
012	Periodic examination	9.29	(8.86)	82.30
022	1 x-ray	4.73	9.83	46.50
023	2 x-rays	6.99	16.28	113.80
111	Plaque removal	2.26	13.07	29.54
112	Scaling	17.13	19.21	329.07
121	Topical fluoride	6.49	18.72	121.50
213	Periodontal infection	0.16	17.85	2.86
311	Extraction	5.09	18.86	96.00
323	Surgical removal	0.44	42.30	18.61
421	Root canal therapy (1 canal)	0.91	94.58	86.07
424	Root canal therapy (2 canals)	0.34	123.82	42.10
511	Amalgam (1 surface)	11.34	18.72	212.28
512	Amalgam (2 surfaces)	13.28	23.07	306.37
513	Amalgam (3+ surfaces)	8.50	29.52	250.92
532	Composite (1 surface)	2.57	21.78	56.00
613	Porcelain crown	0.05	290.15	14.51
615	Porcelain/ gold crown	0.96	342.38	328.68
620	3/4 gold crown	0.05	201.97	10.10
719	Full denture	0.39	402.44	156.95
721	Denture (acrylic)	0.44	126.53	55.67
727	Denture (Co\Cr)	0.50	295.08	147.54
821	Removable appliance	0.15	130.78	19.62

() : Estimated fee

Aggregate value: 2606.95

Table 18 Aggregate value for DFI 1983

ADA Schedule	Type of Service	Weight(%)	Fee(\$)	Weighted Fee
011	Initial examination	7.94	12.75	101.24
012	Periodic examination	9.29	(11.22)	104.23
022	1 x-ray	4.73	11.85	56.05
023	2 x-rays	6.99	19.34	135.19
111	Plaque removal	2.26	15.01	33.92
112	Scaling	17.13	22.84	391.25
121	Topical fluoride	6.49	22.54	146.28
213	Periodontal infection	0.16	21.62	3.46
311	Extraction	5.09	24.01	122.21
323	Surgical removal	0.44	52.88	23.27
421	Root canal therapy (1 canal)	0.91	117.25	106.70
424	Root canal therapy (2 canal)	0.34	151.14	51.39
511	Amalgam (1 surface)	11.34	23.08	261.73
512	Amalgam (2 surfaces)	13.28	28.54	379.01
513	Amalgam (3+ surfaces)	8.50	36.32	308.72
532	Composite (1 surface)	2.57	26.79	68.85
613	Porcelain crown	0.05	352.66	17.63
615	Porcelain/ gold crown	0.96	406.41	390.15
620	3/4 gold crown	0.05	269.96	13.50
719	Full denture	0.39	472.84	184.41
721	Denture (acrylic)	0.44	151.98	66.87
727	Denture (Co\Cr)	0.50	364.89	182.44
821	Removable appliance	0.15	172.48	25.87

() : Estimated fee

Aggregate value: 3174.37

Table 19 Aggregate value for DFI 1985a

ADA Schedule	Type of Service	Weight(%)	Fee(\$)	Weighted Fee
011	Initial examination	7.94	15.20	120.69
012	Periodic examination	9.29	(13.38)	124.30
022	1 x-ray	4.73	13.84	65.46
023	2 x-rays	6.99	22.72	158.81
111	Plaque removal	2.26	17.55	39.66
112	Scaling	17.13	27.10	464.22
121	Topical fluoride	6.49	25.16	163.29
213	Periodontal infection	0.16	(25.20)	4.03
311	Extraction	5.09	29.01	147.66
323	Surgical removal	0.44	80.71	35.51
421	Root canal therapy (1 canal)	0.91	145.38	132.30
424	Root canal therapy (2 canals)	0.34	(189.00)	64.26
511	Amalgam (1 surface)	11.34	27.89	316.27
512	Amalgam (2 surfaces)	13.28	34.31	455.64
513	Amalgam (3+ surfaces)	8.50	43.71	371.54
532	Composite (1 surface)	2.57	31.61	81.24
613	Porcelain crown	0.05	(415.44)	20.77
615	Porcelain/ gold crown	0.96	486.06	466.62
620	3/4 gold crown	0.05	(286.78)	14.34
719	Full denture	0.39	565.09	220.39
721	Denture (acrylic)	0.44	251.22	110.54
727	Denture (Co\Cr)	0.50	431.11	215.56
821	Removable appliance	0.15	202.81	30.42

() : Estimated fee

Aggregate value: 3823.52

Table 20 Aggregate value for DFI 1985b

ADA Schedule	Type of Service	Weight(%)	Fee(\$)	Weighted Fee
011	Initial examination	7.72	15.20	117.34
012	Periodic examination	14.59	(13.38)	195.21
022	1 x-ray	6.16	13.84	85.25
023	2 x-rays	7.03	22.72	159.72
111	Plaque removal	1.99	17.55	34.92
112	Scaling	13.45	27.10	364.50
121	Topical fluoride	7.95	25.16	200.02
222	Subgingival curettage & root planing	4.05	(32.51)	131.67
311	Extraction	3.04	29.01	88.19
323	Surgical removal	0.46	80.71	37.13
421	Root canal therapy (1 canal)	0.70	145.38	101.77
425	Root canal therapy (3 canals)	0.57	243.80	138.97
511	Amalgam (1 surface)	5.19	27.89	144.74
512	Amalgam (2 surfaces)	8.23	34.31	282.37
513	Amalgam (3+ surfaces)	6.54	43.71	285.86
537	Composite (1 surface)	4.90	31.61	154.89
538	Composite (2 surfaces)	4.25	40.57	172.42
615	Porcelain/ gold crown	1.76	486.06	855.47
643	Bridge (per unit)	0.46	444.26	204.36
719	Full denture	0.18	565.09	101.72
721	Partial denture (acrylic)	0.37	251.22	92.95
727	Partial denture (Co\Cr)	0.43	431.11	185.38
821	Removable appliance	0.07	202.81	14.20

() : Estimated fee

Aggregate value: 4149.05

Table 21 Aggregate value for DFI 1987

ADA Schedule	Type of Service	Weight(%)	Fee(\$)	Weighted Fee
011	Initial examination	7.72	18.79	145.06
012	Periodic examination	14.59	16.69	243.51
022	1 x-ray	6.16	16.40	101.02
023	2 x-rays	7.03	26.29	184.82
111	Plaque removal	1.99	20.84	41.47
112	Scaling	13.45	31.78	427.44
121	Topical fluoride	7.95	28.32	225.14
222	Subgingival curettage & root planing	4.05	(45.72)	185.17
311	Extraction	3.04	37.08	112.72
323	Surgical removal	0.46	102.54	47.17
421	Root canal therapy (1 canal)	0.70	175.32	122.72
425	Root canal therapy (3 canals)	0.57	295.24	168.29
511	Amalgam (1 surface)	5.19	33.26	172.62
512	Amalgam (2 surfaces)	8.23	40.90	336.61
513	Amalgam (3+ surfaces)	6.54	52.26	341.78
537	Composite (1 surface)	4.90	37.38	183.16
538	Composite (2 surfaces)	4.25	48.41	205.74
615	Porcelain/ gold crown	1.76	563.94	992.53
643	Bridge (per unit)	0.46	520.53	239.44
719	Full denture	0.18	653.36	117.60
721	Partial denture (acrylic)	0.37	299.29	110.74
727	Partial denture (Co\Cr)	0.43	500.96	215.41
821	Removable appliance	0.07	243.00	17.71

() : Estimated fee

Aggregate value: 4937.87

Table 22 Aggregate value for DFI 1989

ADA Schedule	Type of Service	Weight(%)	Fee(\$)	Weighted Fee
011	Initial examination	7.72	22.59	174.39
012	Periodic examination	14.59	19.89	290.20
022	1 x-ray	6.16	19.09	117.59
023	2 x-rays	7.03	31.08	218.49
111	Plaque removal	1.99	24.14	48.04
112	Scaling	13.45	37.29	501.55
121	Topical fluoride	7.95	32.58	259.01
222	Subgingival curettage & root planing	4.05	(53.88)	218.21
311	Extraction	3.04	45.34	137.83
323	Surgical removal	0.46	122.11	56.17
421	Root canal therapy (1 canal)	0.70	207.52	145.26
425	Root canal therapy (3 canals)	0.57	350.49	199.78
511	Amalgam (1 surface)	5.19	39.68	205.94
512	Amalgam (2 surfaces)	8.23	48.88	402.28
513	Amalgam (3+ surfaces)	6.54	62.09	406.07
537	Composite (1 surface)	4.90	47.92	234.81
538	Composite (2 surfaces)	4.25	56.93	241.95
615	Porcelain/ gold crown	1.76	645.49	1136.06
643	Bridge (per unit)	0.46	597.02	274.63
719	Full denture	0.18	756.39	136.15
721	Partial denture (acrylic)	0.37	352.49	130.42
727	Partial denture (Co\Cr)	0.43	583.09	250.73
821	Removable appliance	0.07	308.11	21.57

() : Estimated fee

Aggregate value: 5807.13

Table 23 Aggregate value for DFI 1991

ADA Schedule	Type of Service	Weight(%)	Fee(\$)	Weighted Fee
011	Initial examination	7.72	25.70	198.40
012	Periodic examination	14.59	22.40	326.82
022	1 x-ray	6.16	21.20	130.59
023	2 x-rays	7.03	34.60	243.24
111	Plaque removal	1.99	27.10	53.93
112	Scaling	13.45	42.00	564.90
121	Topical fluoride	7.95	35.70	283.82
222	Subgingival curettage & root planing	4.05	59.30	240.16
311	Extraction	3.04	52.60	159.90
323	Surgical removal	0.46	115.80	53.27
421	Root canal therapy (1 canal)	0.70	(222.70)	155.89
425	Root canal therapy (3 canals)	0.57	(424.10)	241.74
511	Amalgam (1 surface)	5.19	45.60	236.66
512	Amalgam (2 surfaces)	8.23	56.20	462.53
513	Amalgam (3+ surfaces)	6.54	70.90	463.69
537	Composite (1 surface)	4.90	55.00	269.50
538	Composite (2 surfaces)	4.25	65.30	277.52
615	Porcelain/ gold crown	1.76	716.00	1260.16
643	Bridge (per unit)	0.46	640.00	294.40
719	Full denture	0.18	847.00	152.46
721	Partial denture (acrylic)	0.37	398.00	147.26
727	Partial denture (Co\Cr)	0.43	656.00	282.08
821	Removable appliance	0.07	345.00	24.15

() : Estimated fee

Aggregate value: 6523.07

Table 24 Aggregate value for DFI 1993

ADA Schedule	Type of Service	Weight(%)	Fee(\$)	Weighted Fee
011	Initial examination	7.72	27.50	212.30
012	Periodic examination	14.59	24.20	353.08
022	1 x-ray	6.16	22.40	137.98
023	2 x-rays	7.03	36.40	255.89
111	Plaque removal	1.99	29.00	57.71
112	Scaling	13.45	45.30	609.28
121	Topical fluoride	7.95	35.80	284.61
222	Subgingival curettage & root planing	4.05	64.00	259.20
311	Extraction	3.04	57.60	175.10
323	Surgical removal	0.46	125.30	57.64
421	Root canal therapy (1 canal)	0.70	(229.60)	160.72
425	Root canal therapy (3 canals)	0.57	(422.60)	240.88
511	Amalgam (1 surface)	5.19	49.70	257.94
512	Amalgam (2 surfaces)	8.23	61.20	503.68
513	Amalgam (3+ surfaces)	6.54	76.30	499.00
537	Composite (1 surface)	4.90	59.00	289.10
538	Composite (2 surfaces)	4.25	70.30	298.78
615	Porcelain/ gold crown	1.76	747.00	1314.72
643	Bridge (per unit)	0.46	652.00	299.92
719	Full denture	0.18	898.00	161.64
721	Partial denture (acrylic)	0.37	418.00	154.66
727	Partial denture (Co\Cr)	0.43	692.00	297.56
821	Removable appliance	0.07	366.00	25.62

() : Estimated fee

Aggregate value: 6907.01

7.11.2 Contribution of individual items and groups to the 1975-1985 Basket

Table 25 shows how the weighted fee of each item in all the years in the 1975-1985 Basket were combined together and their individual contributions to the total aggregate value calculated. The result is presented graphically in **Figure 5**.

The contributions by each of the 10 groups of services are shown in **Table 26** and **Figure 6**.

Table 25 Individual item contribution to the aggregate value in the 1975-1985 DFI Basket

Item	1975	1977	1980	1981	1983	1985a	Total	%
011	45.02	55.02	72.73	79.96	101.24	120.69	474.66	3.10
012	46.36	56.70	74.88	82.30	104.23	124.30	488.77	3.19
022	26.96	36.00	43.52	46.50	56.05	65.46	274.49	1.79
023	63.33	82.06	105.83	113.80	135.19	158.81	659.02	4.30
111	20.77	22.33	28.57	29.54	33.92	39.66	174.79	1.14
112	231.43	252.15	301.15	329.07	391.25	464.22	1969.3	12.85
121	73.53	89.76	113.96	121.50	146.28	163.29	708.32	4.62
213	1.57	2.17	2.62	2.86	3.46	4.03	16.71	0.11
311	49.27	66.53	87.09	96.00	122.21	147.66	568.76	3.71
323	10.75	13.59	17.46	18.61	23.27	35.51	119.19	0.78
421	45.04	60.32	80.71	86.07	106.70	132.30	511.14	3.33
424	23.51	29.79	39.26	42.10	51.39	65.25	251.30	1.64
511	113.17	150.48	203.00	212.28	261.73	316.27	1256.9	8.20
512	168.66	216.73	292.29	306.37	379.01	455.64	1818.7	11.87
513	136.85	177.90	227.97	250.92	308.72	371.54	1473.9	9.62
532	30.07	40.01	53.12	56.00	68.58	81.24	329.29	2.15
613	7.84	9.40	13.67	14.51	17.63	20.77	83.82	0.55
615	175.40	215.53	299.81	328.68	390.15	466.62	1876.2	12.24
620	5.00	6.72	8.87	10.10	13.50	14.34	58.53	0.38
719	88.86	113.75	132.00	156.95	184.41	220.39	896.36	5.85
721	31.86	38.93	56.29	55.67	66.87	110.54	360.16	2.35
727	81.58	99.66	118.11	147.54	182.44	215.56	844.89	5.51
821	9.67	13.81	10.27	19.62	25.87	30.42	109.66	0.72
Agg. Value	1486.5	1849.3	2383.2	2607.0	3174.4	3824.5	15324	100.0

Figure 5
Individual item contribution to the aggregate value in the
1975-1985 DFI Basket

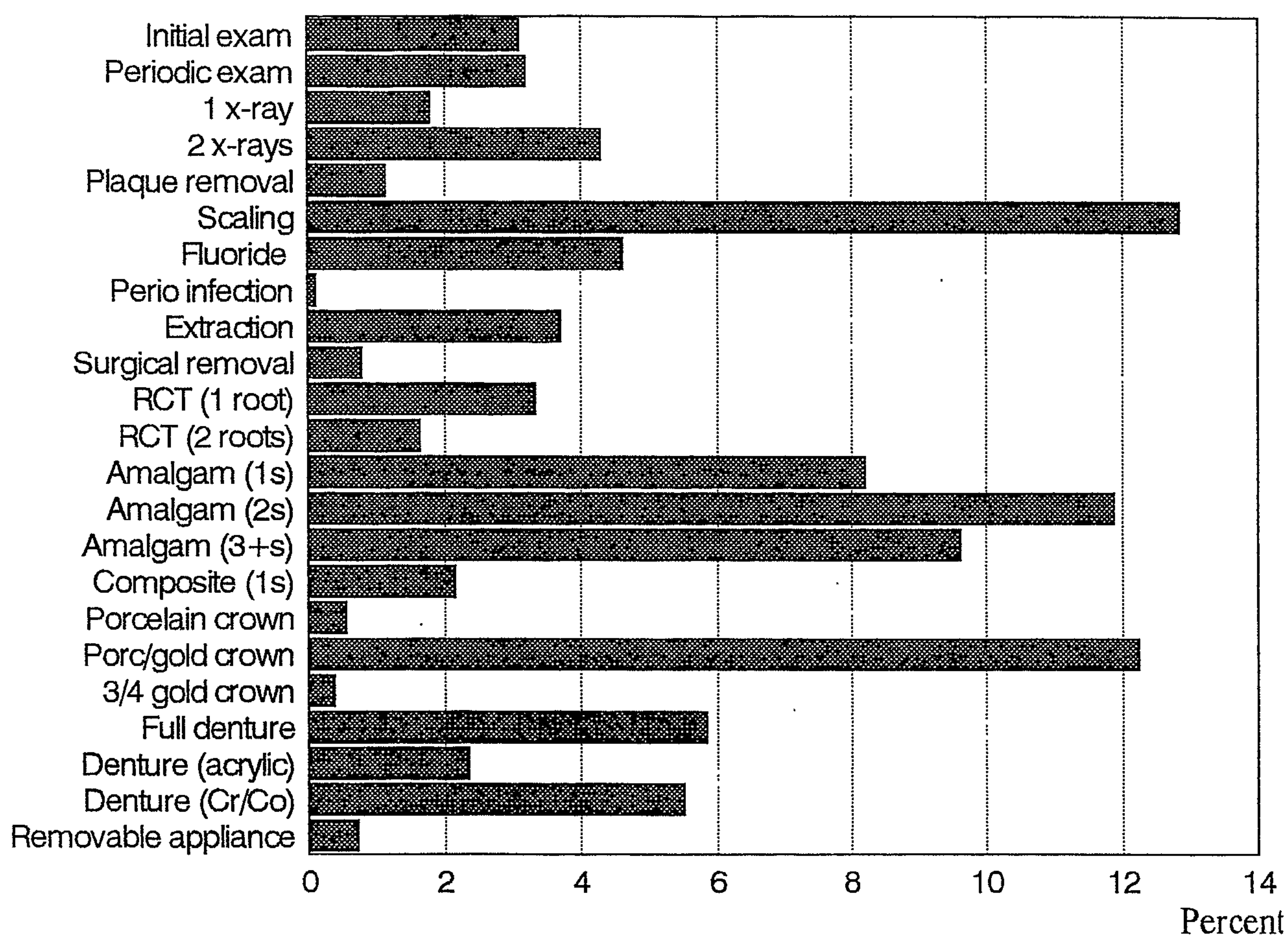
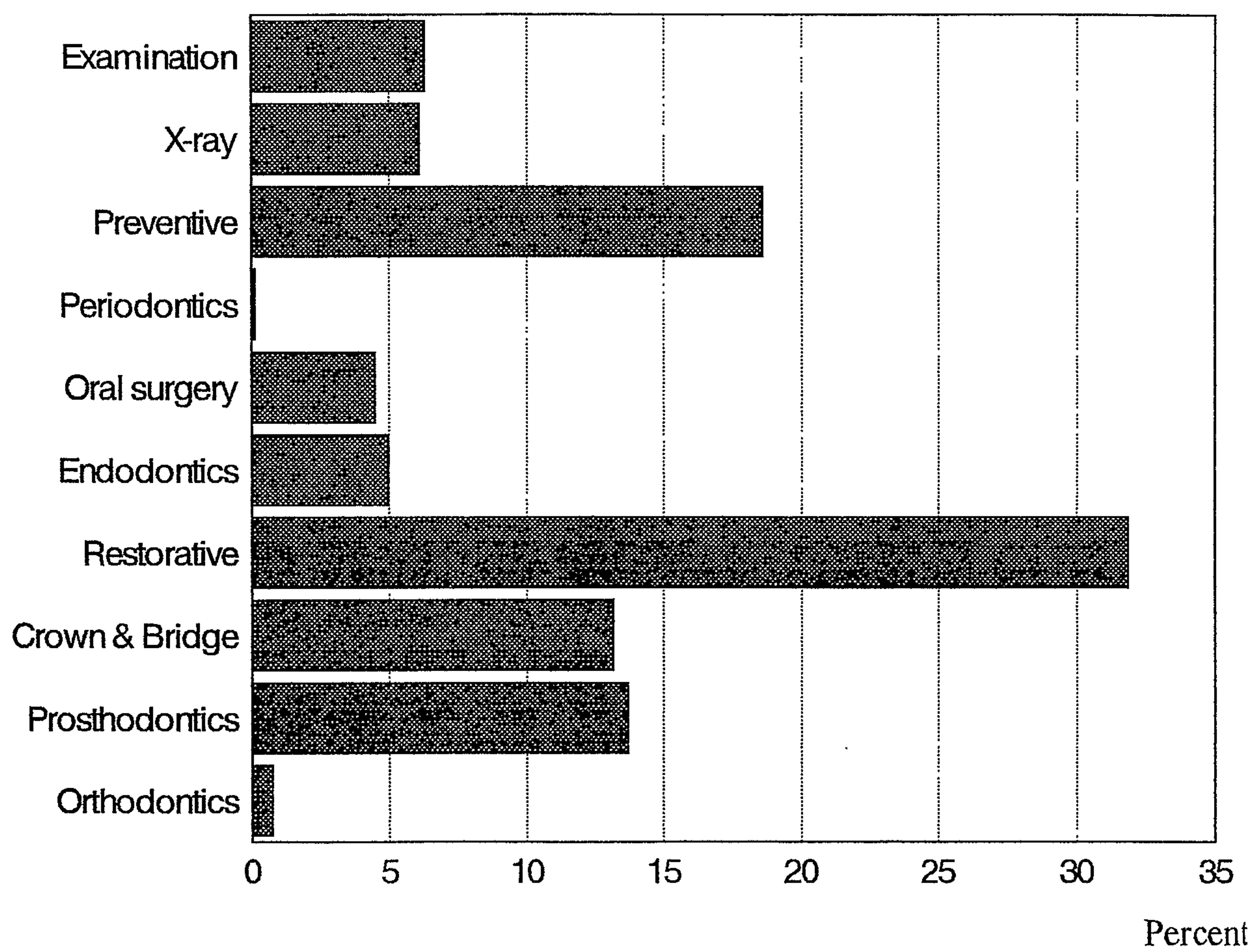


Table 26 Group contribution to the aggregate value in the 1975-1985 Basket

Group	Service	Service aggregate value (%)	Group aggregate value (%)
Examination	Initial exam	3.10	6.29
	Periodic exam	3.19	
X-ray	Single x-ray	1.79	6.09
	Two x-rays	4.30	
Preventive	Plaque removal	1.14	18.61
	Scaling	12.85	
	Topical fluoride	4.62	
Periodontics	Perio infection	0.11	0.11
Oral surgery	Extraction	3.71	4.49
	Surgical removal	0.78	
Endodontics	RCT (1 root)	3.33	4.97
	RCT (2 roots)	1.64	
Restorative	Amalgam (1s)	8.20	31.84
	Amalgam (2s)	11.87	
	Amalgam (3+s)	9.62	
	Composite (1s)	2.15	
Crown & bridge	Porcelain crown	0.55	13.17
	Porcelain/gold Cr	12.24	
	3/4 gold crown	0.38	
Prosthodontics	Full denture	5.85	13.71
	Denture (acrylic)	2.35	
	Denture (Co/Cr)	5.51	
Orthodontics	Removable appliance	0.72	0.72

Figure 6
Group contribution to the aggregated value in the 1975-1985 DFI Basket



7.11.3 Contribution of individual items and groups to the 1985-1993 Basket

Table 27 shows how the weighted fee of each item in all the years in the 1985-1993 Basket were combined together and their individual contributions to the total aggregate value calculated. The result is presented graphically in **Figure 7**.

The contributions by each of the 10 groups of services are shown in **Table 28** and **Figure 8**.

**Table 27 Individual item contribution to the aggregate value in the
1985-1993 DFI Basket.**

Item	1985a	1987	1989	1991	1993	Total	%
011	117.34	145.06	174.39	198.40	212.30	847.49	2.99
012	195.21	243.51	290.20	326.82	353.08	1408.8	4.97
022	85.25	101.02	117.59	130.59	137.98	572.43	2.02
023	159.72	184.82	218.49	243.24	255.89	1062.2	3.75
111	34.92	41.47	48.04	53.93	57.71	236.07	0.83
112	364.50	427.44	501.55	564.90	609.28	2467.6	8.71
121	200.02	225.14	259.01	283.82	284.61	1252.6	4.42
222	131.67	185.17	218.21	240.16	259.20	1034.4	3.65
311	88.19	112.72	137.83	159.90	175.10	673.74	2.38
323	37.13	47.17	56.17	53.27	57.64	251.38	0.89
421	101.77	122.72	145.26	155.89	160.72	686.36	2.42
425	138.97	168.29	199.78	241.74	240.88	989.66	3.49
511	144.74	172.62	205.94	236.66	257.94	1017.9	3.59
512	282.37	336.61	402.28	462.53	503.68	1987.5	7.02
513	285.86	341.78	406.07	463.69	499.00	1996.4	7.05
537	154.89	183.16	234.81	269.50	289.10	1131.5	4.00
538	172.42	205.74	241.95	277.52	298.78	1196.4	4.22
615	855.47	992.53	1136.06	1260.16	1314.72	5558.9	19.63
643	204.36	239.44	274.63	294.40	299.92	1312.7	4.64
719	101.72	117.60	136.15	152.46	161.64	669.57	2.36
721	92.95	110.74	130.42	147.26	154.66	636.03	2.25
727	185.38	215.41	250.73	282.08	297.56	1231.2	4.35
821	14.20	17.71	21.57	24.15	25.62	103.25	0.37
Agg. Value	4149.0	4937.9	5807.1	6523.1	6907.0	28324	100.00

Figure 7
Individual item contribution to the aggregated value in the
1985-1993 DFI Basket

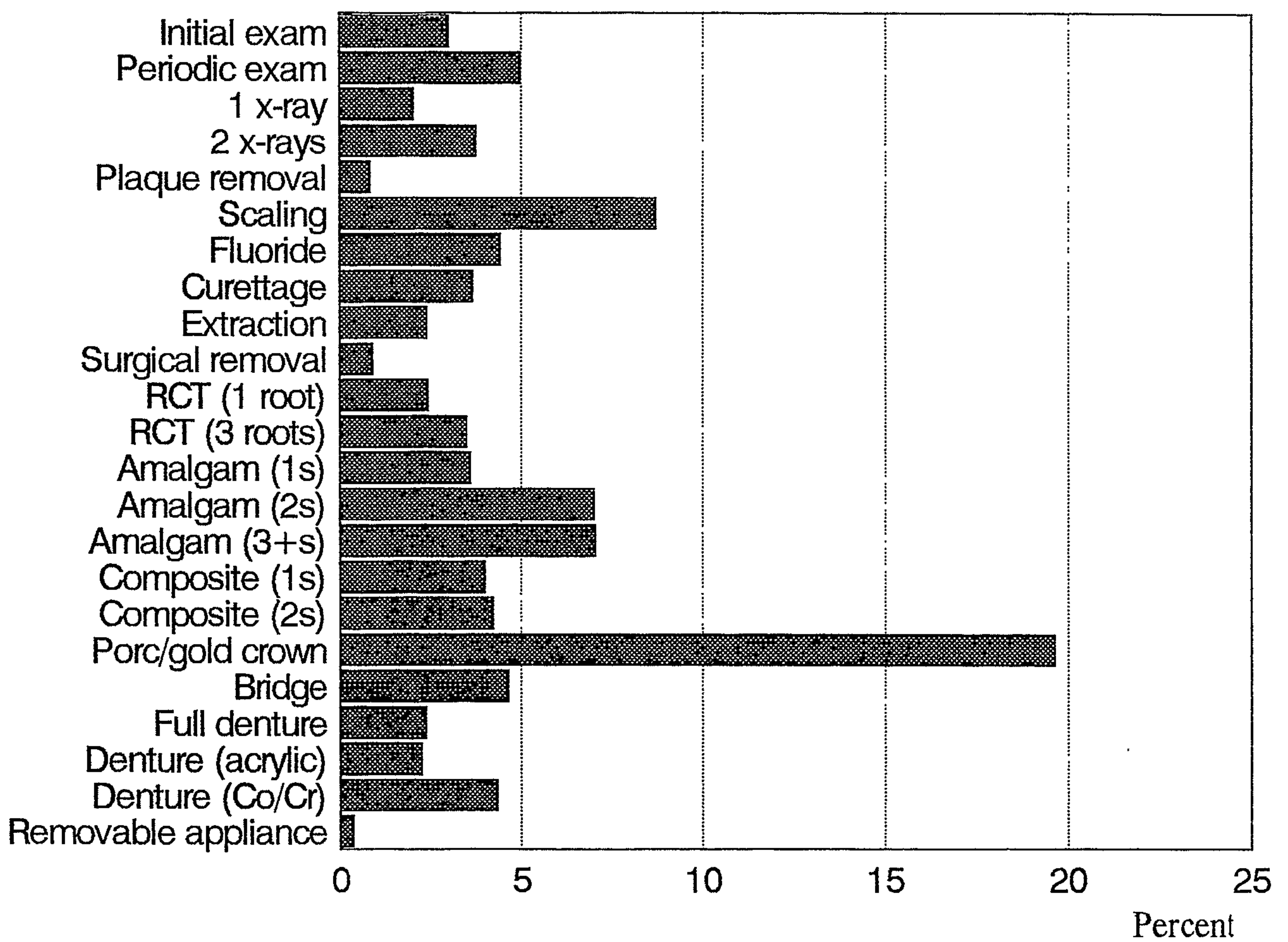
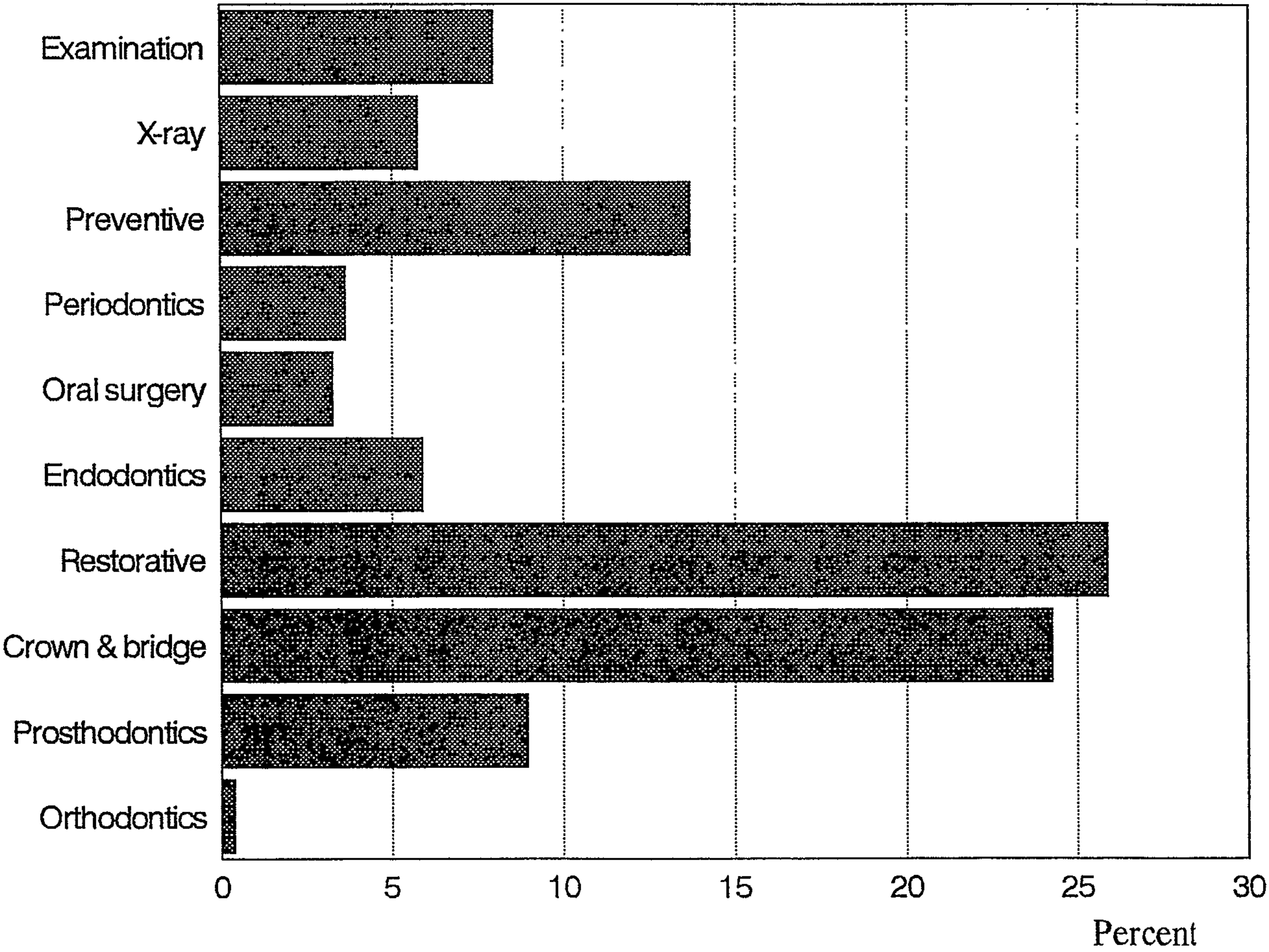


Table 28 Group contribution to the aggregate value in the 1985-1993 Basket

Group	Service	Service aggregate value (%)	Group aggregate value (%)
Examination	Initial exam	2.99	7.96
	Periodic exam	4.97	
X-ray	Single x-ray	2.02	5.77
	Two x-ray	3.75	
Preventive	Plaque removal	0.83	13.96
	Scaling	8.71	
	Topical fluoride	4.42	
Periodontics	Root planing & subgingival curettage	3.65	3.65
Oral surgery	Extraction	2.38	3.27
	Surgical removal	0.89	
Endodontics	RCT (1 root)	2.42	5.91
	RCT (3 roots)	3.49	
Restorative	Amalgam (1s)	3.59	25.88
	Amalgam (2s)	7.02	
	Amalgam (3+s)	7.05	
	Composite (1s)	4.00	
	Composite (2s)	4.22	
Crown & bridge	Porcelain/gold Cr	19.63	24.27
	Bridge	4.64	
Prosthodontics	Full denture	2.36	8.96
	Denture (acrylic)	2.25	
	Denture (Co/Cr)	4.35	
Orthodontics	Removable appliance	0.37	0.37

Figure 8

Group contribution to the aggregate value in the 1985-1993 DFI Basket



7.12 CONVERSION OF AGGREGATE VALUE INTO DENTAL FEE INDEX VALUE

Table 29 shows how the "aggregate value" for each year in the two Baskets were converted into DFI with 1985 having a base value of 100.0.

Table 29 Dental Fee Index 1975-1993

Year	Total Aggregated Value	Dental Fee Index
1975	1486.50	38.9
1977	1849.34	48.4
1980	2383.15	62.0
1981	2606.95	68.2
1983	3174.37	83.0
1985	3823.52*	100.0

* 1985a value

Year	Total Aggregated Value	Dental Fee Index
1985	4149.05*	100.0
1987	4937.87	119.0
1989	5807.13	140.0
1991	6523.07	157.2
1993	6907.01	166.5

* 1985b value

7.13 COMPARISON OF DENTAL FEE INDEX WITH CONSUMER PRICE INDEX 1975-1993

Table 30 and Figure 9 shows how the DFI and CPI, both having a value of 100 at 1985, changed from 1975 to 1993.

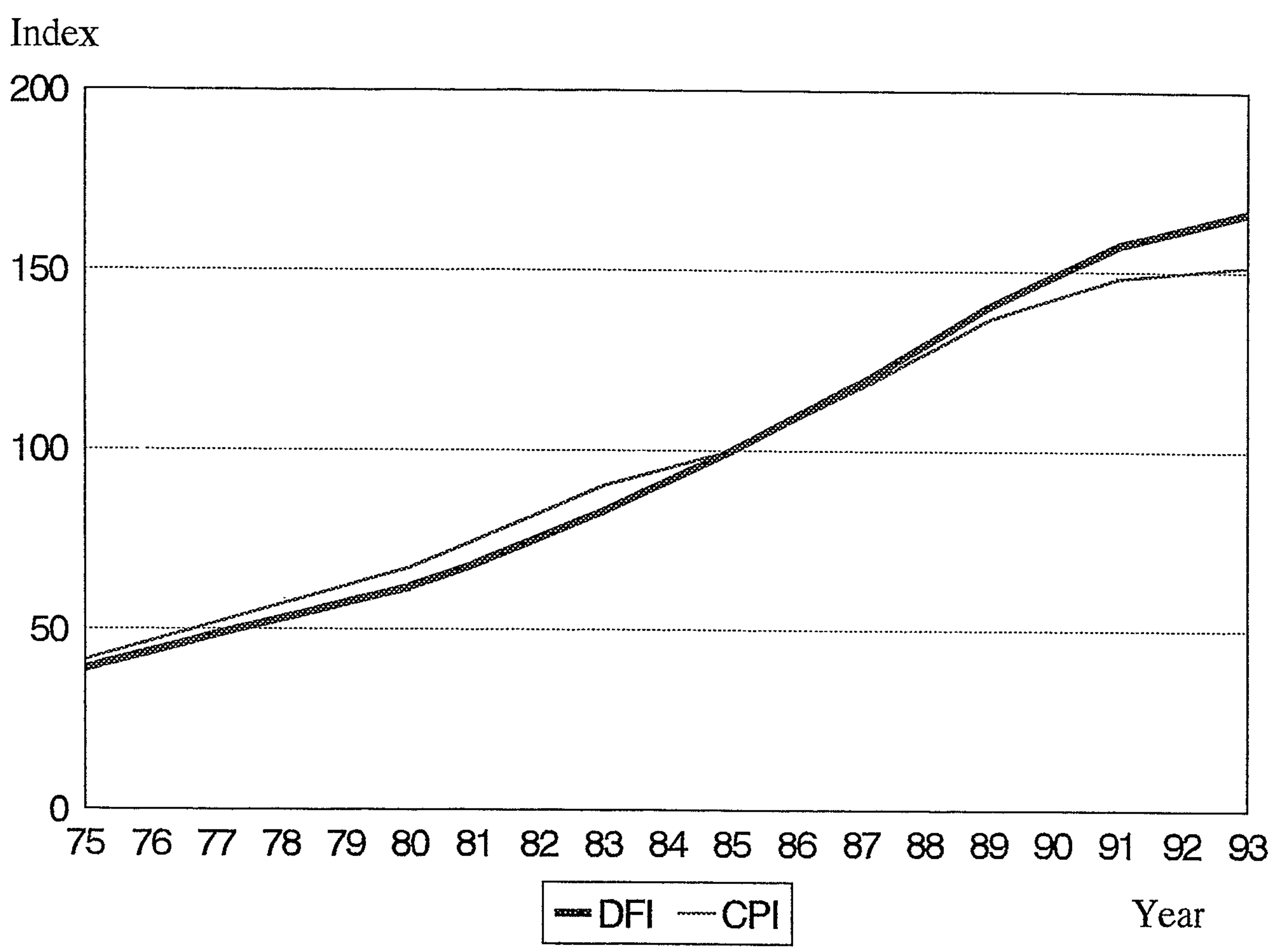
Table 30 Dental Fee Index and Consumer Price Index 1975-1993

Year	Dental Fee Index	Consumer Price Index
1975	38.9	41.5
1977	48.4	51.9
1980	62.0	67.2
1981	68.2	74.7
1983	83.0	90.1
1985	100.0	100.0
1987	119.0	117.7
1989	140.0	136.5
1991	157.2	148.0
1993	166.5	151.3

Increase in Dental Fee Index 1975-1993 = 428%

Increase in Consumer Price Index 1975-1993 = 365%

Figure 9
Dental Fee Index and Consumer Price Index 1975-1993



8. FEES CHANGES IN INDIVIDUAL ITEMS

In this chapter we shall compare fees changes in some individual items in the baskets with the change in CPI. We shall convert the fees for the items from their dollar values into new index values with 1985 as the base year having a value of 100.0.

Twelve items are chosen, they have continuous fee data for the whole period 1975-1993. Other items in the baskets requiring fee estimations are not included. **Table 31** to **Table 42** shows how the conversions are done; **Figure 10** to **Figure 21** compare the fees changes for individual items with the change in CPI.

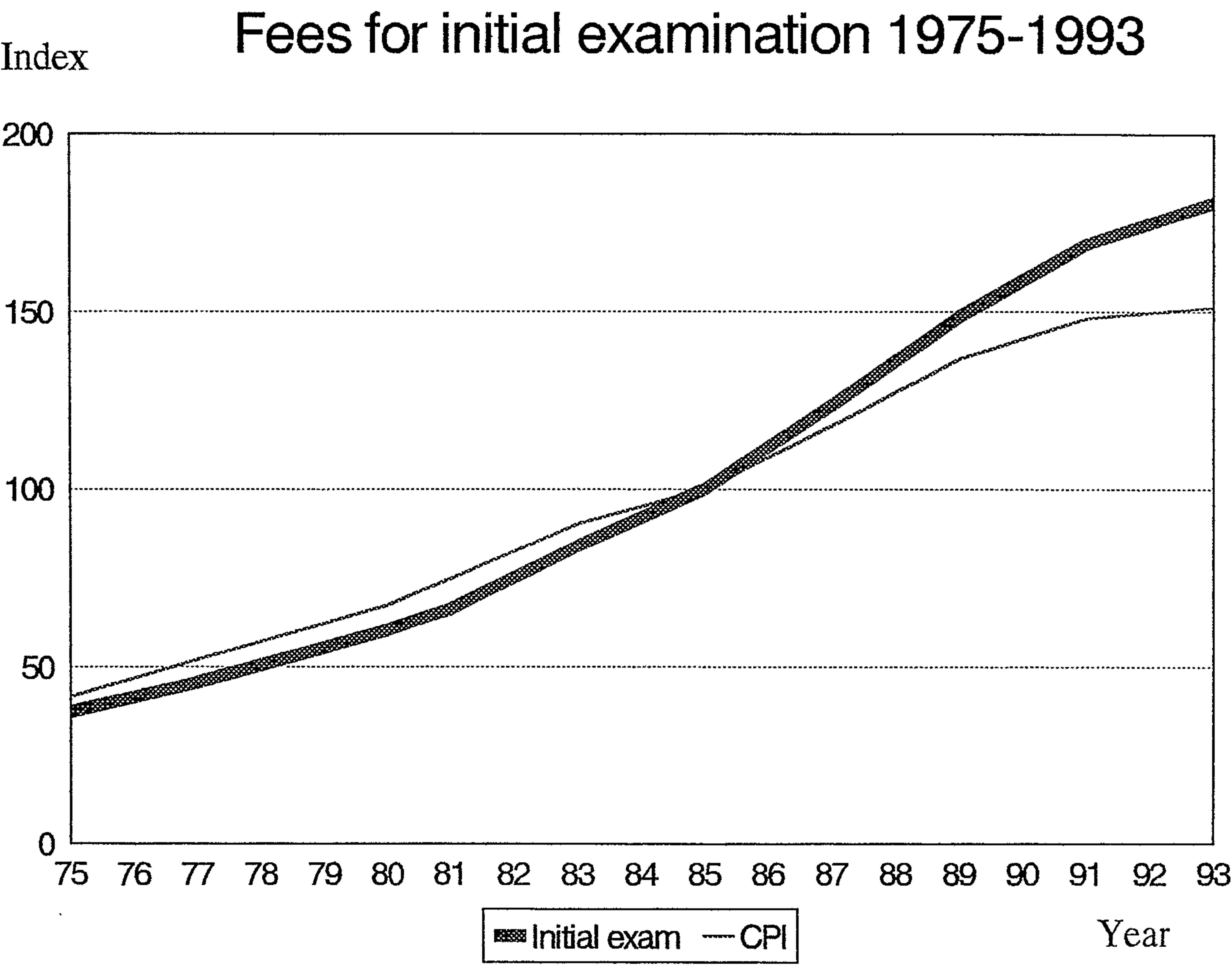
8.1 Initial examination

Table 31 Fees for initial examination 1975-1993

Year	Fee(\$)	Conversion
1975	5.67	37.3
1977	6.93	45.6
1980	9.16	60.3
1981	10.07	66.2
1983	12.75	83.9
1985	15.20	100.0
1987	18.79	123.6
1989	22.59	148.6
1991	25.70	169.1
1993	27.50	180.9

Increase in fee 1975-1993 = 485.04%

Figure 10

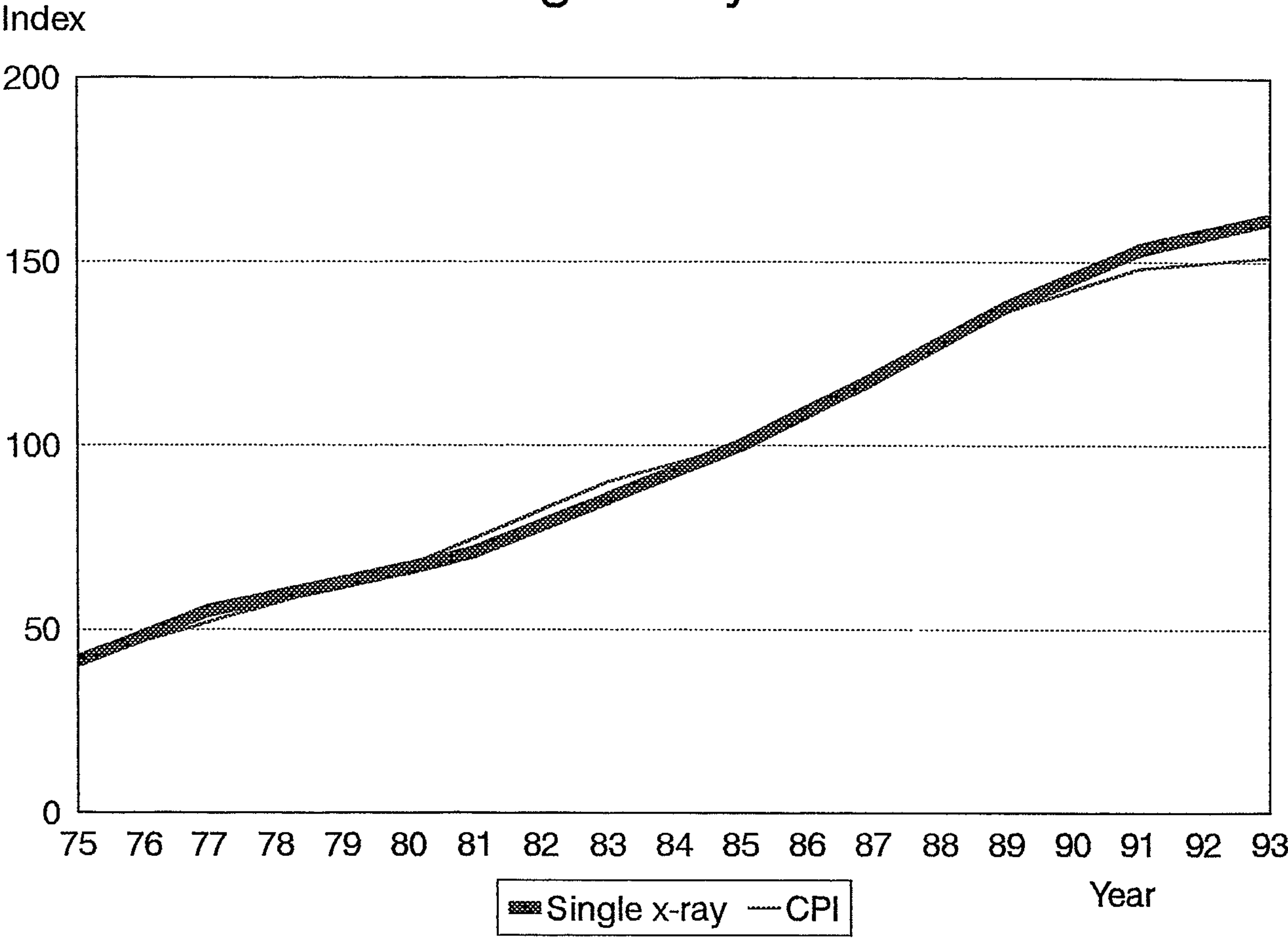


8.2 Single x-ray**Table 32 Fees for single x-ray 1975-1993**

Years	Fees(\$)	Conversion
1975	5.70	41.2
1977	7.61	55.0
1980	9.20	66.5
1981	9.83	71.0
1983	11.85	85.6
1985	13.84	100.0
1987	16.40	118.5
1989	19.09	137.9
1991	21.20	153.20
1993	22.40	161.8

Increase in fee 1975-1993 = 393.03%

Figure 11
Fees for single x-ray 1975-1993



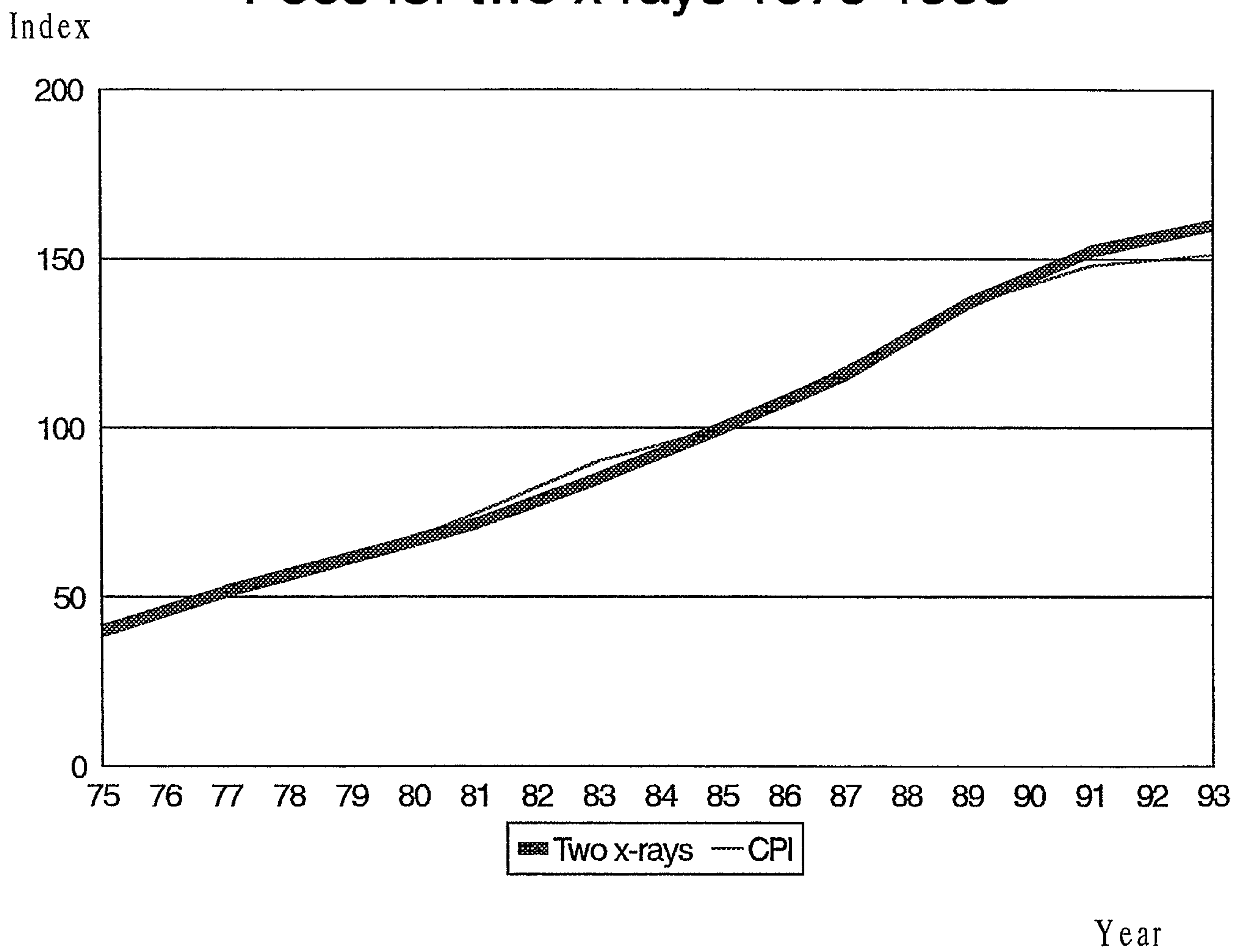
8.3 Two x-rays

Table 33 Fees for two x-rays 1975-1993

Year	Fees(\$)	Conversion
1975	9.06	39.9
1977	11.74	51.7
1980	15.14	66.6
1981	16.28	71.6
1983	19.34	85.1
1985	22.72	100.0
1987	26.29	115.7
1989	31.08	136.8
1991	34.60	152.3
1993	36.40	160.2

Increase in fee 1975-1993 = 401.73%

Figure 12
Fees for two x-rays 1975-1993



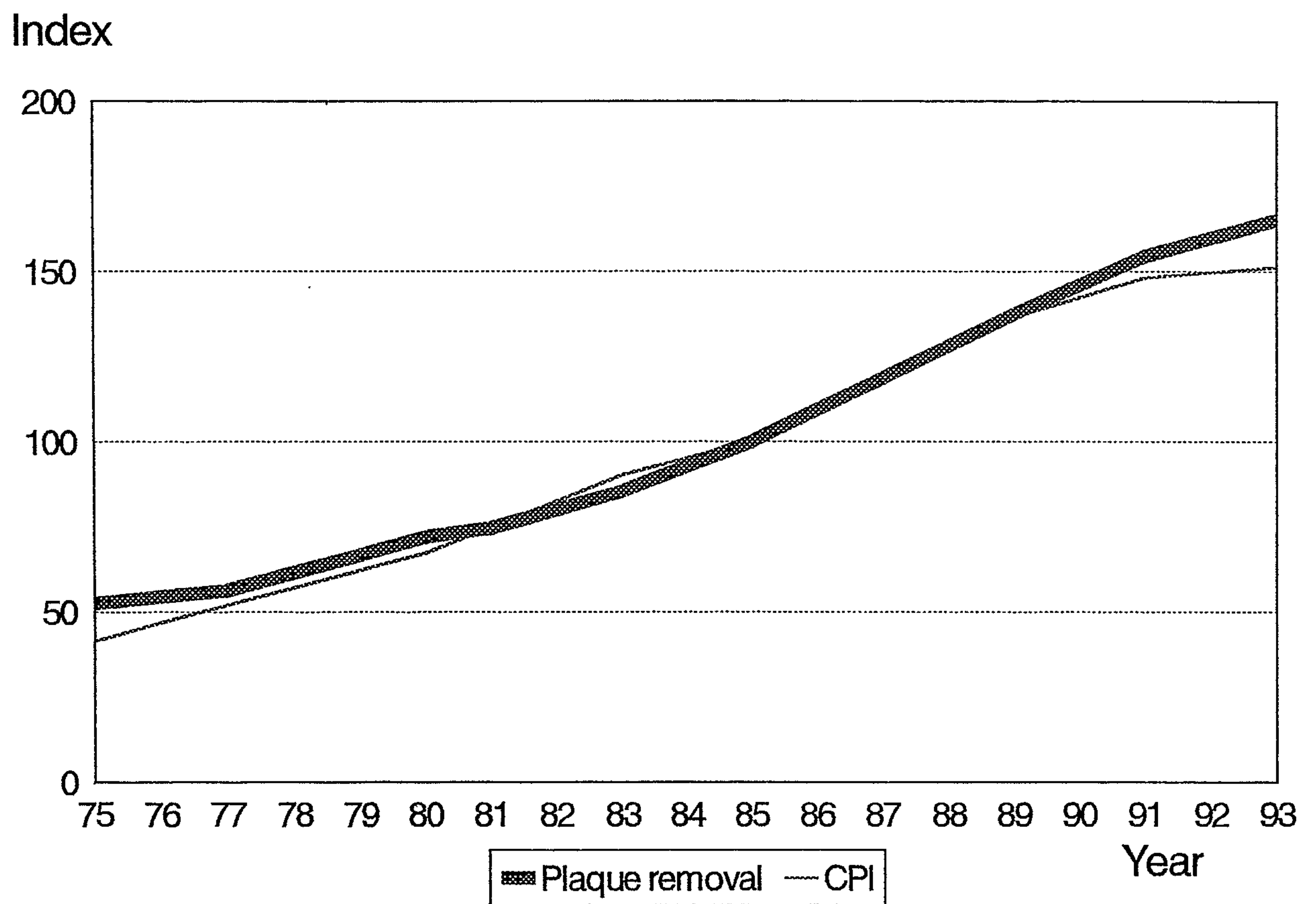
8.4 Plaque removal

Table 34 Fees for plaque removal 1975-1993

Year	Fees(\$)	Conversion
1975	9.19	52.4
1977	9.88	56.3
1980	12.64	72.0
1981	13.07	74.5
1983	15.01	85.5
1985	17.55	100.0
1987	20.84	118.7
1989	24.14	137.5
1991	27.10	154.4
1993	29.00	165.2

Increase in fee 1975-1993 = 315.58%

Figure 13
Fees for plaque removal 1975-1993

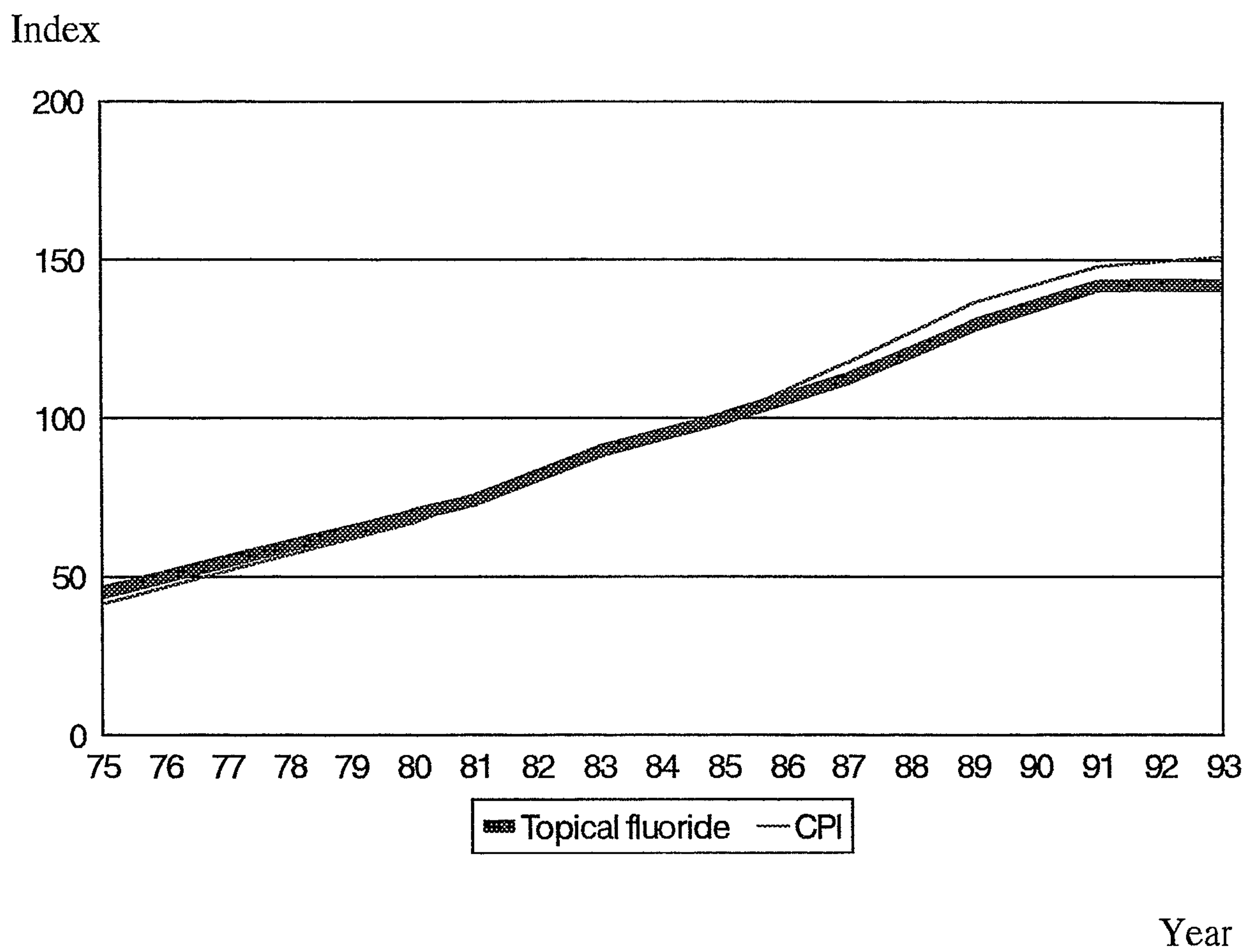


8.5 Topical fluoride**Table 35 Fees for topical fluoride 1975-1993**

Year	Fee(\$)	Conversion
1975	11.33	45.0
1977	13.83	55.0
1980	17.56	69.8
1981	18.72	74.4
1983	22.54	89.6
1985	25.16	100.0
1987	28.32	112.6
1989	32.58	129.5
1991	35.70	141.9
1993	35.80	142.3

Increase in fee 1975-1993 = 316.00%

Figure 14
Fees for topical fluoride 1975-1993



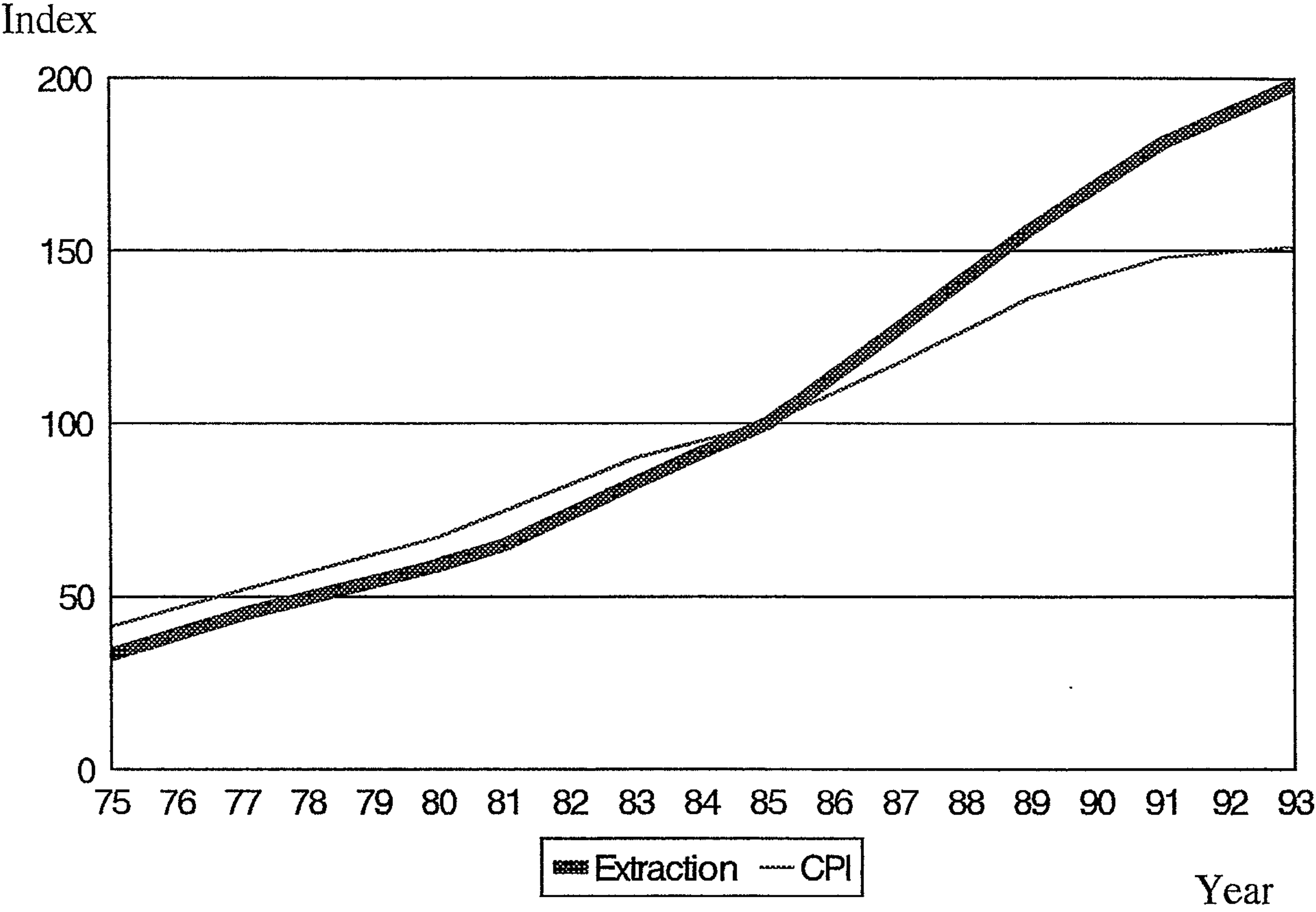
8.6 Extraction

Table 36 Fees for extraction 1975-1993

Year	Fees(\$)	Conversion
1975	9.68	33.4
1977	13.07	45.1
1980	17.11	59.0
1981	18.86	65.0
1983	24.01	82.8
1985	29.01	100.0
1987	37.08	127.8
1989	45.343	156.3
1991	52.60	181.3
1993	57.60	198.6

Increase in fee 1975-1993 = 595.00%

Figure 15
Fees for extraction 1975-1993



8.7 Amalgam (1 surface)

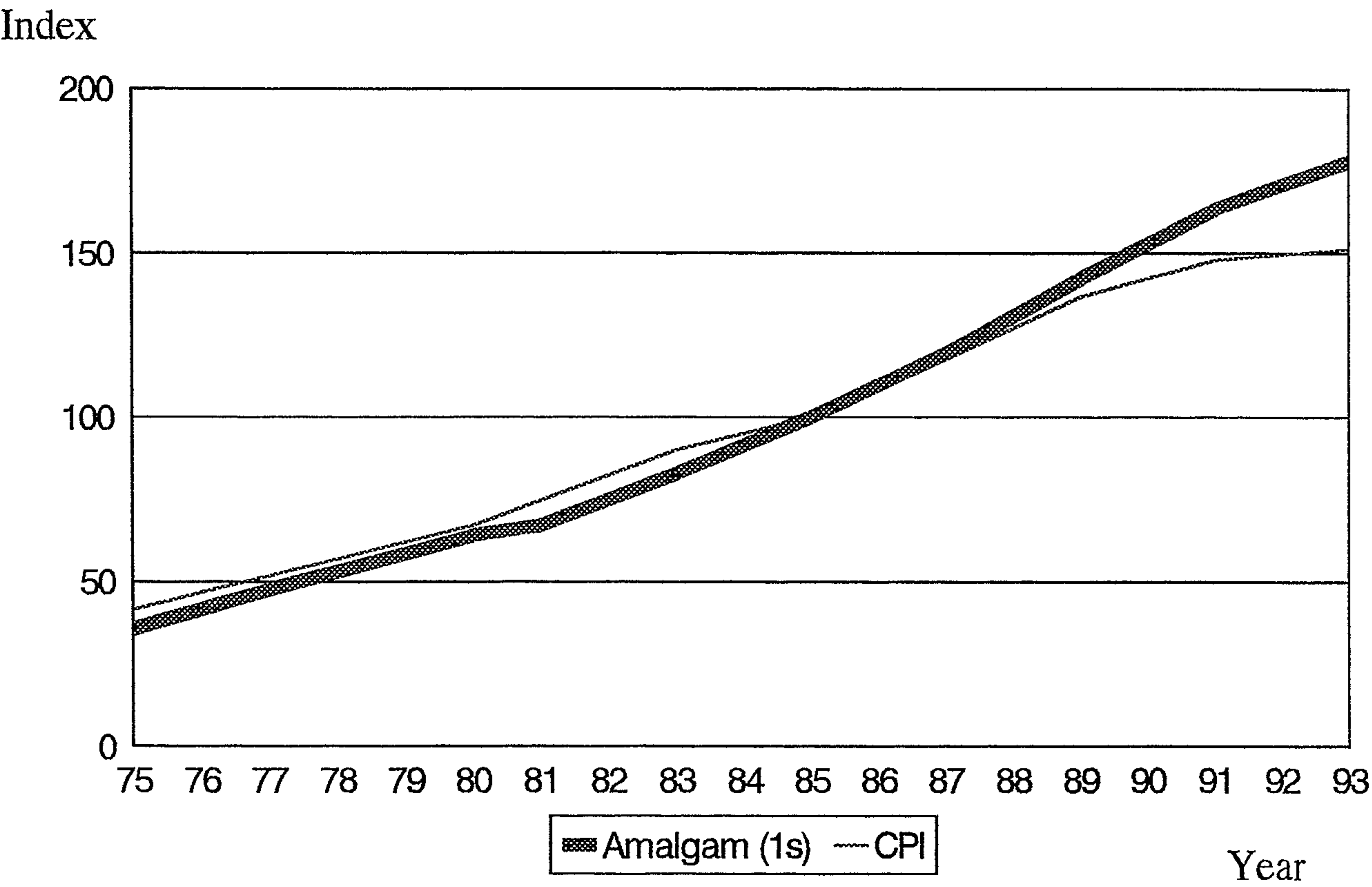
Table 37 Fees for one surface amalgam 1975-1993

Year	Fee(\$)	Conversion
1975	9.98	35.8
1977	13.27	47.6
1980	17.90	64.2
1981	18.72	67.1
1983	23.08	82.8
1985	27.89	100.0
1987	33.26	119.3
1989	39.68	142.3
1991	45.60	163.5
1993	49.70	178.2

Increase in fee 1975-1993 = 498.04%

Figure 16

Fees for one surface amalgam 1975-1993

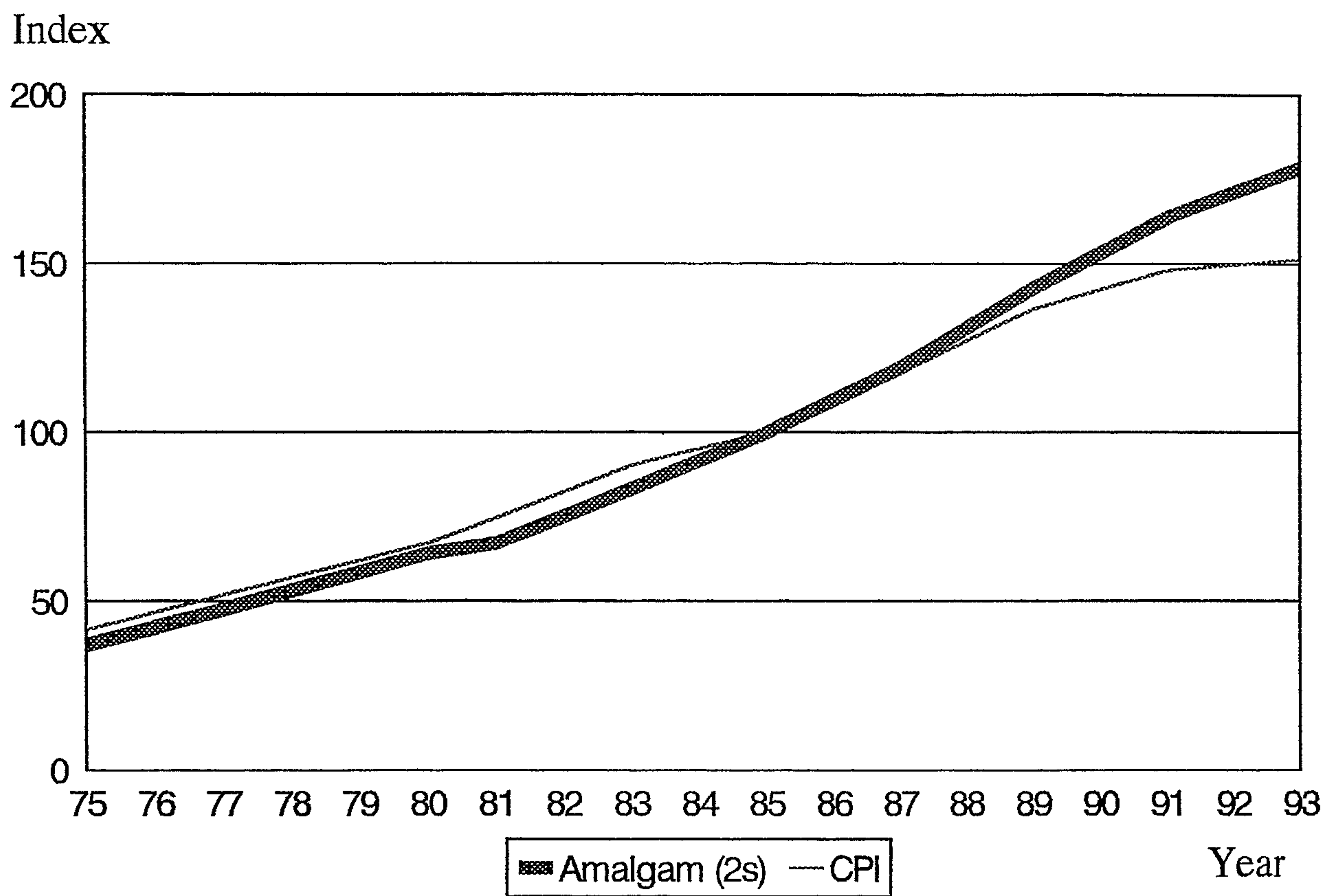


8.8 Amalgam (2 surface)**Table 38 Fees for two-surface amalgam 1975-1993**

Year	Fee(\$)	Conversion
1975	12.70	37.0
1977	16.32	47.6
1980	22.01	64.2
1981	23.07	67.2
1983	28.54	83.2
1985	34.31	100.0
1987	40.90	119.2
1989	48.88	142.5
1991	56.20	163.8
1993	61.20	178.4

Increase in fee 1975-1993 = 481.82%

Figure 17
Fees for two surface amalgam 1975-1993



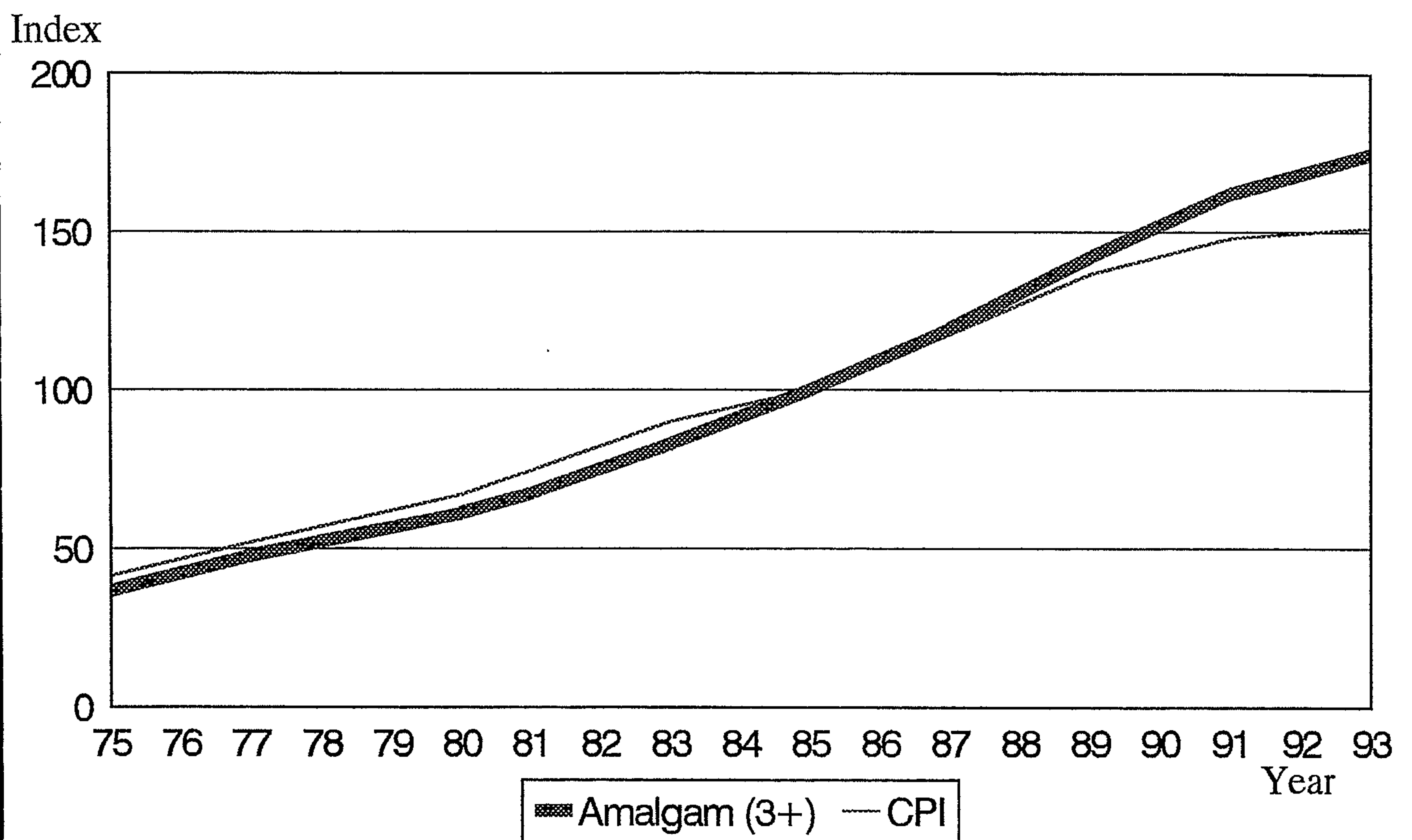
8.9 Amalgam (3 or more surfaces)**Table 39 Fees for three-surface amalgam 1975-1993**

Year	Fee(\$)	Conversion
1975	16.10	36.8
1977	20.93	47.9
1980	26.82	61.4
1981	29.52	67.5
1983	36.32	83.1
1985	43.71	100.0
1987	52.26	119.6
1989	62.09	142.1
1991	70.90	162.2
1993	76.30	174.6

Increase in fee 1975-1993 = 473.96%

Figure 18

Fees for amalgam (three or more surfaces) 1975-1993

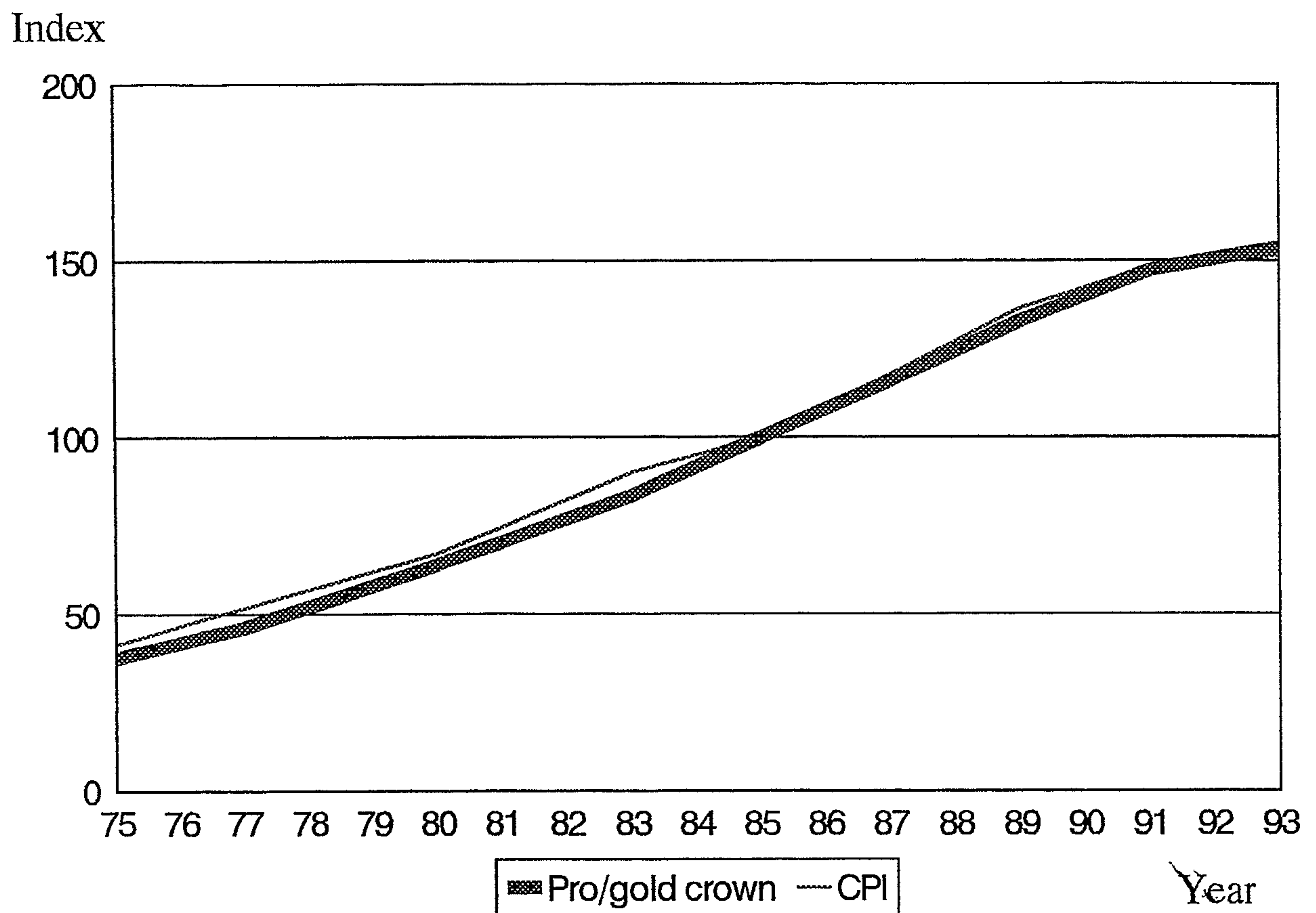


8.10 Porcelain fused to gold jacket crown**Table 40 Fees for porcelain fused to gold jacket crown 1975-1993**

Year	Fee(\$)	Conversion
1975	182.7	37.6
1977	224.5	46.2
1980	312.3	64.2
1981	342.4	70.4
1983	406.4	83.6
1985	486.1	100.0
1987	563.94	116.0
1989	645.49	132.8
1991	716.00	147.3
1993	747.00	153.7

Increase in fee 1975-1993 = 408.83%

Figure 19
Fees for porcelain fused to gold crown 1975-1993



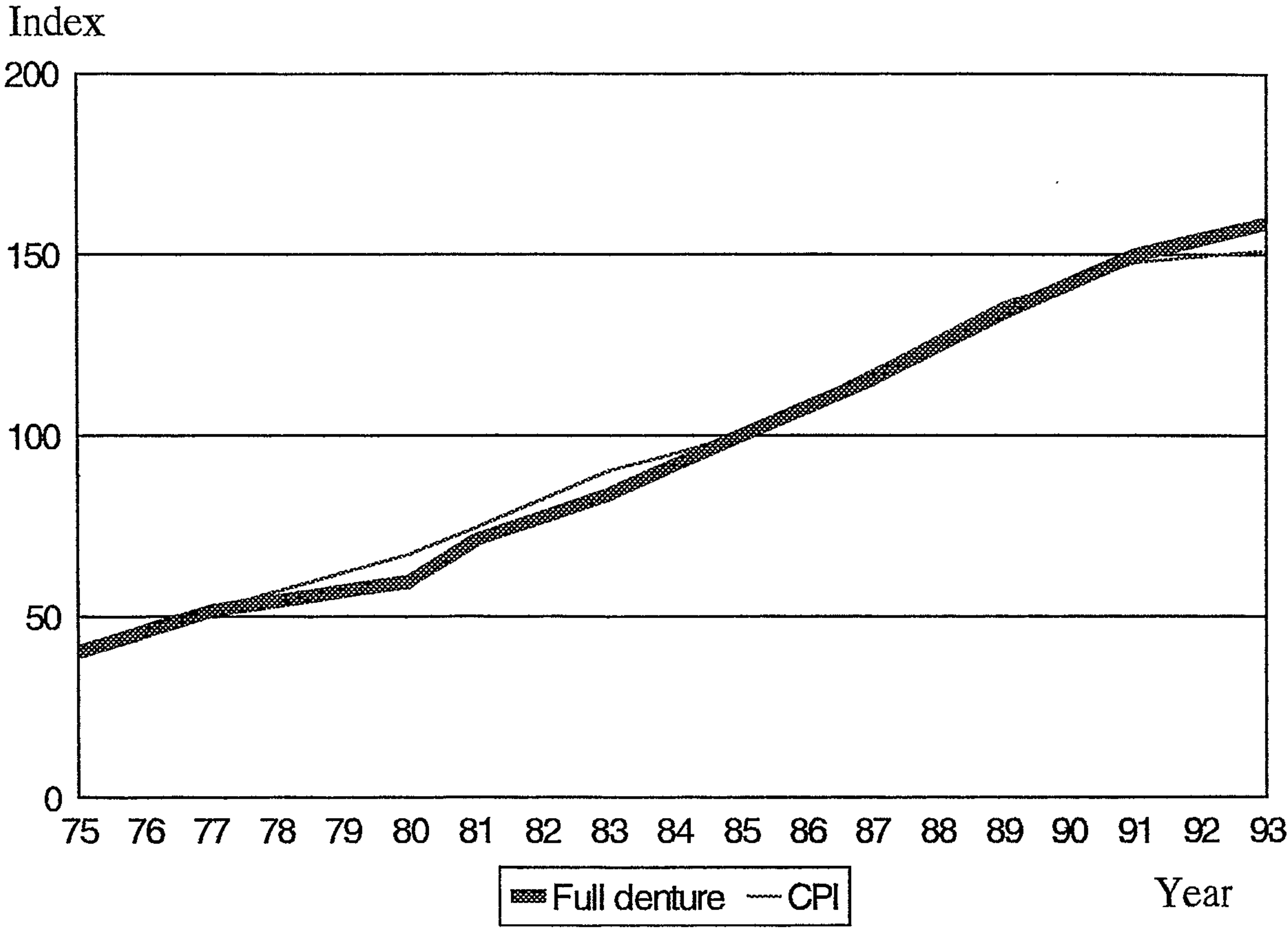
8.11 Full Denture

Table 41 Fees for full denture 1975-1993

Year	Fee(\$)	Conversion
1975	227.84	40.3
1977	291.66	51.6
1980	338.46	59.9
1981	402.44	71.2
1983	472.84	83.7
1985	565.09	100.0
1987	653.36	115.6
1989	756.39	133.9
1991	847.00	149.9
1993	898.00	158.9

Increase in fee 1975-1993 = 394.12%

Figure 20
Fees for full denture 1975-1993



8.12 Partial denture- cobalt chromium

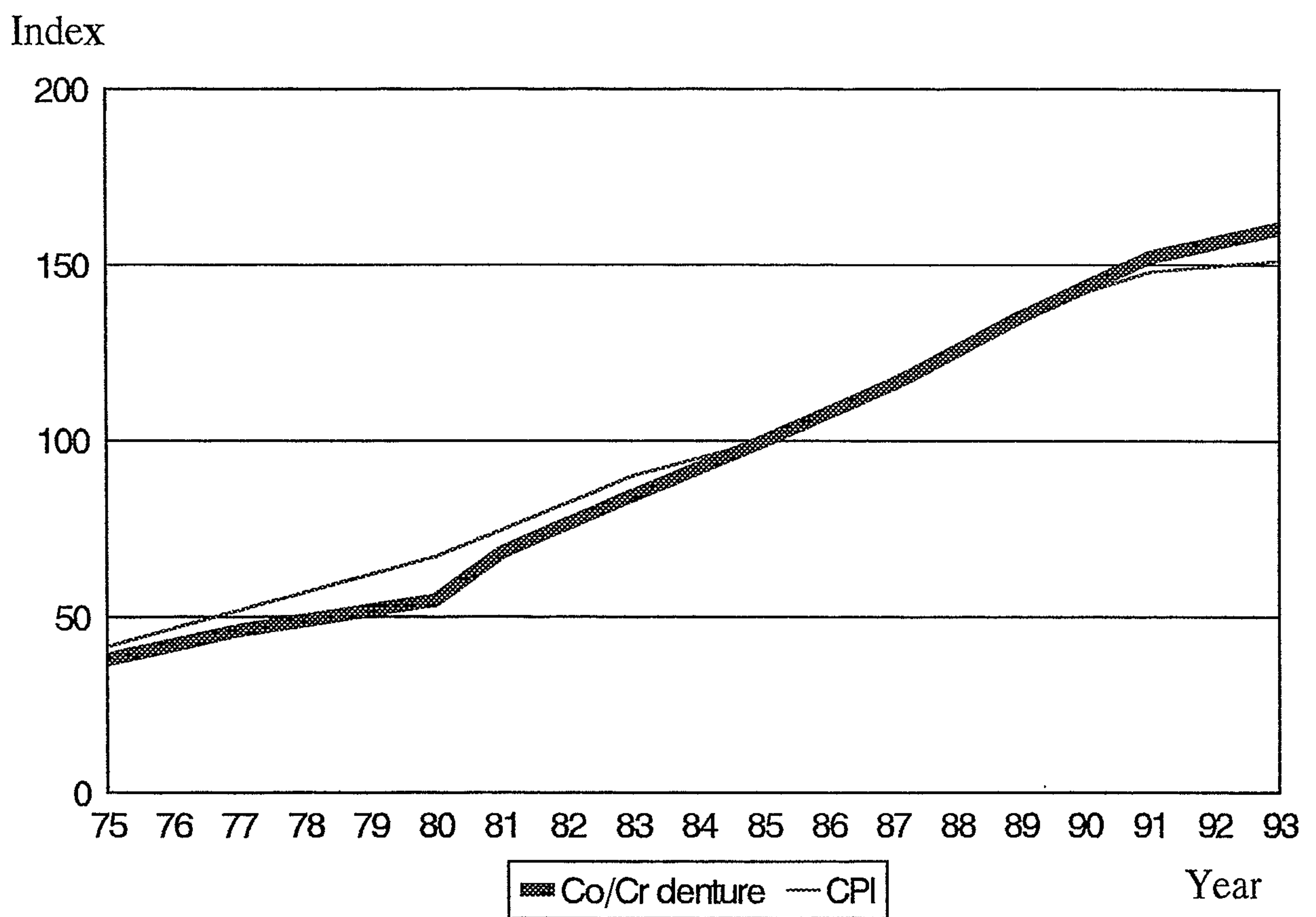
Table 42 Fees for partial denture (cobalt chromium) 1975-1993

Year	Fee(\$)	Conversion
1975	163.16	37.8
1977	199.31	46.2
1980	236.22	54.8
1981	295.08	68.4
1983	364.89	84.6
1985	431.11	100.0
1987	500.96	116.2
1989	583.09	135.3
1991	656.00	152.2
1993	692.00	160.5

Increase in fee 1975-1993 = 424.10%

Figure 21

Fees for cobalt chromium partial denture 1975-1993



9. DISCUSSION

9.1 THE DENTAL FEE INDEX

9.1.1 The Dental Fee Index Population

In our construction of the DFI Baskets we made use of claim data from health funds. It is important that we decide whether utilization patterns of the health fund population is truly representative or not.

Little is known about the effect of dental insurance on utilization. The few non-experimental studies that exist have produced widely varying estimates, perhaps because of problems with self-selected or unrepresentative populations or other methodological flaws (Manning, Benjamin, Bailit & Newhouse 1985).

In the United States, Gotowka (1985) did a study on insurance effects on dental fees and case mix using data from the Michigan Blue Cross/ Blue Shield claims file. The study design required the identification of 2 groups of dentists, those with high and low insurance claims frequencies. Looking at the case mix of the dental treatment performed by the 2 groups of dentists, it was found that, although ranked differently, the 15 most frequent procedures were identical for both groups. Specifically, dentists with high insurance volume provided fewer oral surgery and removable prosthetic

services; dentists with lower insurance volume provided relatively more endodontic services.

In Australia, the Telephone Interview Survey conducted by the Australian Institute of Health and Welfare in 1992/1993 looked at the differences in services received by insured and non-insured people (Slade 1993). It was found that there was little variation in percentage of persons reporting fillings, and only small differences in the mean number of fillings. However, health card holders (those with low income) without insurance were approximately twice as likely to report having an extraction.

Sivaneswaran, Allister and Barnard (1994) used the records of 2291 persons aged 35-44 years who had answered the 1987-88 NOHSA and found that those persons with dental insurance (56% of the sample) showed the following significant differences to those without dental insurance: more had teeth cleaned at last visit (29%:21%); less had dentures (10%:16%); less had extraction (10%:15%). The 2 groups had similar DMFT, but the group without dental insurance had more edentulous (8%:5%); more teeth with treatment need; and greater perceived and nominative need for denture.

As the effect of dental insurance on the service mix is not well documented, it is hard to decide whether the utilization pattern of people with health fund cover is truly representative of the population as a whole. Nevertheless, as mentioned earlier, the similarity in the characteristics and number of the CPI

population and the insurance group makes our choice appropriate.

9.1.2 Significance of the weighted fee

When we analyse how individual items contribute to the DFI it is important that we not only look at the frequency at which items are performed, but also at the fees. The weighted fees (weight x fee) in **Table 14** to **Table 24** are the real indicators of the contributions. This can be best illustrated by an example: porcelain fused to gold crown has a composition weight of only 0.96% in the 1975-1985 Basket but, due to its high fee, contributes 12.24% to the overall DFI value.

9.1.3 Comparison of Composition of the DFI Baskets

When we look at the second DFI Basket, more weights are given to examination (22.31%:17.23%), x-ray (13.19%:11.72%), periodontics (4.05%:0.16%) and crown & bridge (2.22%:1.06%). Less weights are given to oral surgery (3.50%:5.53%), restorative (29.11%:35.69%) and prosthodontics (0.98%:1.33%).

As to individual items, in the second basket, more weights are given to periodic examination (14.59%:9.29%), topical fluoride (7.95%:6.49%), and porcelain fused to gold crown (1.76%:0.96%). Less weights are given to plaque removal (1.99%:2.26%), scaling (13.45%:17.13%), extraction (3.04%:5.09%), one surface amalgam (5.19%:11.34%), two surface amalgam (8.23%:13.28%), three or more surface amalgam (6.54%:8.50%) and full denture (0.18%:0.39%).

9.1.4 Comparison of Weighted Fees of Items in the Two DFI Baskets

In the second basket higher weighted fees are obtained for periodontics (3.65%: 0.11%) and crown & bridge (24.27%:13.17%). Lower weighted fees are obtained for preventive (13.96%:18.61%), restorative (25.88%:31.84%) and prosthodontics (8.96%:13.71%).

As to individual items, in the second basket higher weighted fee is obtained for porcelain fused to gold crown (19.63%:12.24%) while lower weighted fees are obtained for scaling (8.71%:12.85%), one surface amalgam (3.59%:8.20%), two surface amalgam (7.02%:11.87%), three or more surface amalgam (7.05%:9.62%) and full denture (2.36%:5.85%).

9.1.5 Changes in the Dental Fee Index

For the period 1975-1993 the DFI increased by 428% while the CPI increased by 365%. Changes in dental fees and the CPI were similar from 1975 to 1989 (360% for DFI and 329% for CPI) but DFI had been increasing at a faster rate than CPI since 1989.

The difference recorded in the last 4 years (1989-1993) could be due more to a slower growth in CPI than a faster growth in DFI. According to the Australian Bureau of Statistics analysis of the CPI of the last 10 years (Castle 1994) the CPI had increased steadily from the September quarter 1982 to the December quarter 1990. Since December quarter 1990 the rate of growth in the CPI slowed down considerably with the index actually falling in the March and June quarter 1991 (-0.2% and -0.3% respectively). The other possible factors contributing to the different rates of change in the DFI and the CPI are covered in Section 9.3.

9.1.6 Changes in Fees of Individual Items

Table 43 shows how the fees for the 12 items included in Chapter 8 changed during 1975-1993. While more detailed studies into the factors affecting fees changes in individual items are required before any explanation or generalisation could be made, it is interesting to note that amalgam filling and extraction, both of which showed substantially decreasing importance in the DFI Basket weights, had the greatest increase in fee.

Table 43 Fees change for individual items in the DFI Baskets 1975-1993

Type of Service	Percentage Increase
Extraction	595
Amalgam (1 surface)	498
Initial examination	485
Amalgam (2 surfaces)	481
Amalgam (3 or more surfaces)	474
Dental Fee Index	428
Partial cobalt chromium denture	424
Porcelain fused to gold crown	409
Two x-rays	401
Full denture	394
One x-ray	393
Consumer Price Index	365
Topical fluoride	316
Plaque removal	316

9.2 OTHER USES OF THE DENTAL FEE INDEX

Besides using the DFI to compare dental fees changes with inflation, the Index and its baskets can also be used in the following ways:

1. The DFI Baskets and the weights of their components provide information on how the utilization pattern of dental services change with time.
2. The "weighted fee" used in the calculation of the aggregate value can be used to monitor the appropriateness of the choice of dental items by the ABS in the CPI calculation.
3. The DFI can be used in the calculation of economic growth of the Australian dental industry.
4. The DFI can be used as an index in Government fee scales negotiation.

9.2.1 Analysis of Utilization Pattern Changes

Our choice of items in the DFI Baskets were restricted by the availability of ADA Fee Surveys data. Nevertheless, they covered about 55% of the total health fund claims in both period (1975-1985, 1985-1993) and were representative enough to provide insight into the changes in utilization pattern during those periods.

The changes in the two Baskets have already been covered in Section 9.1.3. The most significant changes are the sharp drop in amalgam fillings (33.12% to 19.96%) and the increase in periodic examination (9.29% to 14.59%). Looking at the overall picture we can say that in the last two decades dental service mix has shifted from mainly amalgam filling, extraction and full denture to more periodic examination, topical fluoride and crown and bridge.

9.2.2 Determining Items for CPI Calculation

In calculating the CPI "Dental Services Expenditure Class" five items are used. They are examination, two bitewing x-rays, single extraction, single surface amalgam and full upper and lower denture. If we look at our 1975-1985 Basket these five items constitute 41.04% of basket weight by volume and 28.35% of weight by weighted fee (**Table 44**). For the 1985-1993 Basket the figures drop to 37.75% and 20.04% respectively (**Table 45**).

Table 44 Share of items included in the CPI calculation of dental services in the 1975-1985 DFI Basket

Item	% by volume	% by weighted fee
Examination	17.23	6.29
Two bitewing x-rays	6.99	4.30
Extraction	5.09	3.71
One surface amalgam	11.34	8.20
Full denture	0.39	5.85
TOTAL	41.04	28.35

Table 45 Share of items included in the CPI calculation of dental services in the 1985-1993 DFI Basket

Item	% by Volume	% by weighted fee
Examination	22.31	7.96
Two bitewing x-rays	7.03	3.75
Extraction	3.04	2.38
One surface amalgam	5.19	3.59
Full denture	0.18	2.36
TOTAL	37.75	20.04

Table 44 and **Table 45** shows that, using our DFI Baskets:

-The representative values of the 5 items are decreasing, this is especially true for one surface amalgam.

-If we look at weighted fee instead of volume, the 5 items are not really the most important ones. Their total contribution to the aggregate value in the 1985-1993 Basket is only 20.04%.

As explained in Section 9.2, the weighted fee is in fact more important than the volume of service in determining the cost of dental service. If we want the CPI Dental Service Expenditure Class to truly reflect the public's out-of-pocket expenses for dental services we should change some of the items to include those with higher weighted fee values. In our 1985-1993 Basket, the 5 services with the highest weighted fees are:

- porcelain fused to gold crown;
- scaling;
- examination;
- two surface amalgam; and
- three or more surface amalgam.

These 5 items contribute 50.37% to the aggregate value of the second DFI Basket (**Table 46**), which is higher than the 37.75% of the present items. If we look at the volume contribution, the 5 suggested items contribute 52.29% to the total volume, this is again substantially higher than the 20.04% of the

present items. For the CPI to be truly representative, we suggest that these 5 new items should be used in the future.

Table 46 Share of items included in the 5 suggested items of dental services in the 1985-1993 DFI Basket

Item	% by volume	% by weighted fee
Porcelain gold crown	1.76	19.63
Scaling	13.45	8.71
Examination	22.31	7.96
Two surface amalgam	8.23	7.02
Three or more surface amalgam	6.54	7.05
Total	52.29	50.37

9.2.3 Measuring Economic Growth of the Dental Industry

The concept of growth is often applied to certain sectors of the economy. A growth industry in the strict sense is a particular industry that has grown faster, in real terms, than the economy as a whole. One method of identifying growth industry is to compare the rate of growth of the Gross Domestic Product (GDP) with the real business income of the sector for a continuous period (Doherty 1981).

To measure the growth in the dental industry, a measure of its business income is a good indication. Figures on average gross annual income of dentist for Australia are available from the ADA, this series can be compared with the GDP. Since both series are expressed in nominal dollars they must be first adjusted by their respective indices before any meaningful comparison can be done. The GDP can be adjusted by using the CPI but there is at present no suitable index in Australia to adjust the dentist's income. The Dental Fee Index we have constructed can be used in the same way as the "CPI for Dental Services" in the United States to adjust the dentist's income to measure the real change in output. The DFI can also be used to adjust the total dental expenditure as another way of measuring output (Bentley 1984, Doherty 1981).

9.2.4 Government Fee Scale Adjustment

The Dental Fee Index can be used as an index to adjust the Treasury scale and other dental fee scales. This will be covered in Section 9.5.

9.3 FACTORS AFFECTING DENTAL FEES CHANGES

While studying the rate in which dental fees change it is also important that we also look at the possible factors affecting such changes, this is especially important for the last few years in which dental fees are rising faster than inflation, as shown by our DFI/CPI comparison.

In this Section we shall look at a few factors affecting the cost of providing dental service in a private practice setting, they are:

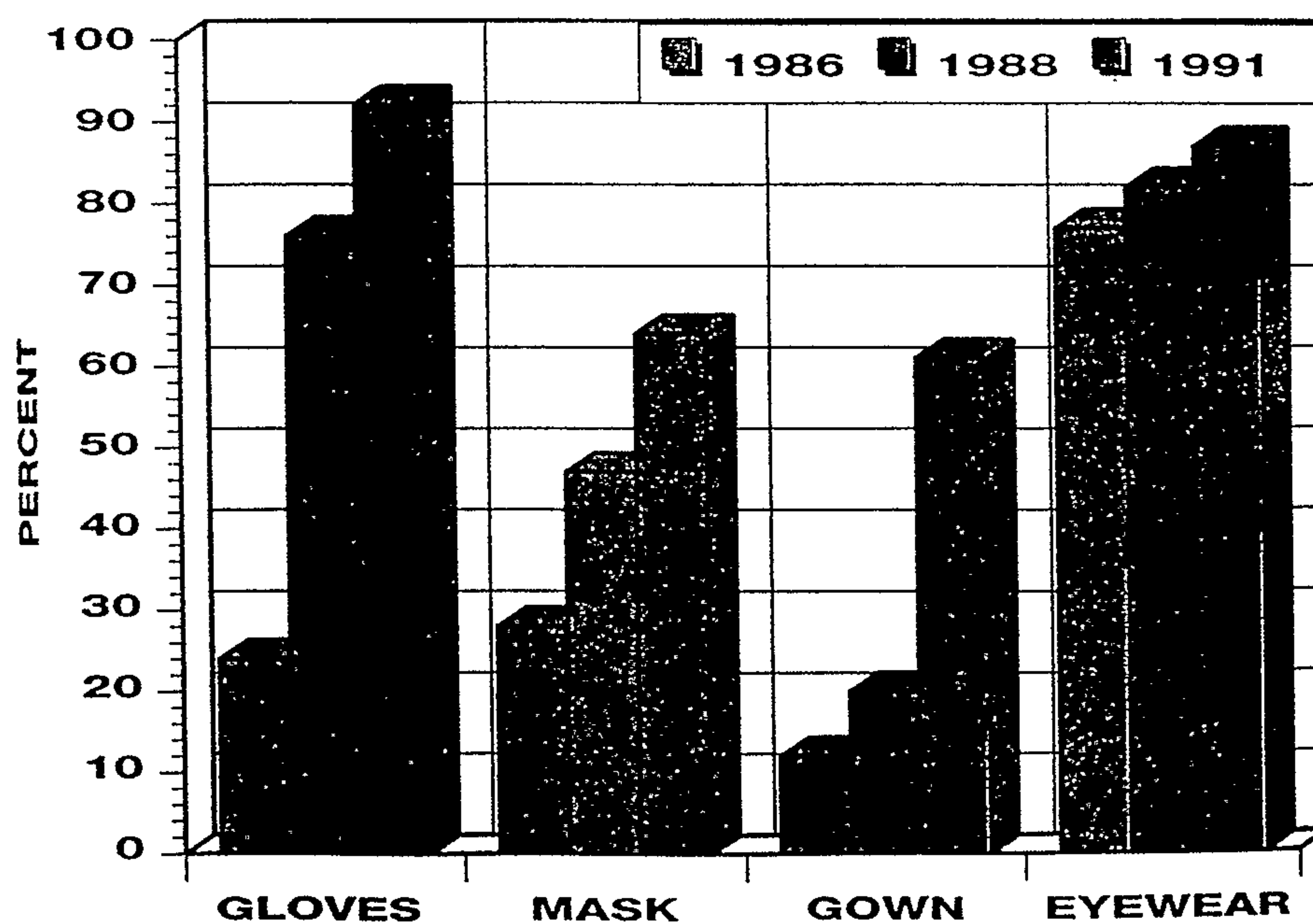
- cost of infection control;
- cost of dental material and equipment;
- professional insurance fee; and
- asset prices.

9.3.1 Cost of Infection Control

In the last few years more and more emphasis were placed on infection control. In the United States, the use of gloves, mask, gown and protective eyewear has become standard in many dental practices just within the past 5 years (Nash 1992). Figure 22 shows how, according to an American Dental Association survey, the proportion of U.S. dentists using barrier technique increases dramatically from 1986 to 1991.

Figure 22 Percentage of dentists in the United States using gloves, mask, gown and protective eyewear in 1986, 1988 and 1991

Source: Nash (1992)



In Australia, guidelines are being drafted by the National Health and Medical Research Council (NHMRC) on infection control for doctors and dentists working in their own surgeries (Larriera 1994b). Media coverage regarding the possibility of contacting Human Immune Deficiency Virus (HIV) and Hepatitis B or C Virus also increases the pressure on dentists to adopt tighter infection control in dental surgeries (Australian Dental Association, South Australia Branch 1993).

Infection control measures do not come cheaply but they are becoming essential for a modern dental practice. In the U.S.A., there has been signs that dentists are beginning to add these extra cost to patients in the form of higher fees (Nash 1992). Dental fees surveys done by the Dental Economics (Anderson 1994) showed that in 1993 general dental fees in the U.S.A. increased by an average of 4.5 percent while fee charged for infection control (it was listed as a separate survey item) increased by 28.6 percent- from US \$7 in 1992 to US \$9 in 1993. This was the largest increase for any single item. According to Schaper (1994), in most practices, it costs from US \$3 to US \$5 to simply seat a patient.

In Australia, a recent study by Clinical Research Associates (Dewhurst 1994) has shown that to sit a patient in the dental chair costs the dentist approximately \$20.00. According to Widdop (Australian Dental Association 1994), recent developments in infection control guidelines, which had been voluntarily adopted by ADA members, had affected costs of treatment by

between \$12 and \$15 per client. He indicated that many of the costs were associated with the disposables used in dentistry (such as gloves, masks and wraps), as well as the cost related to autoclaving.

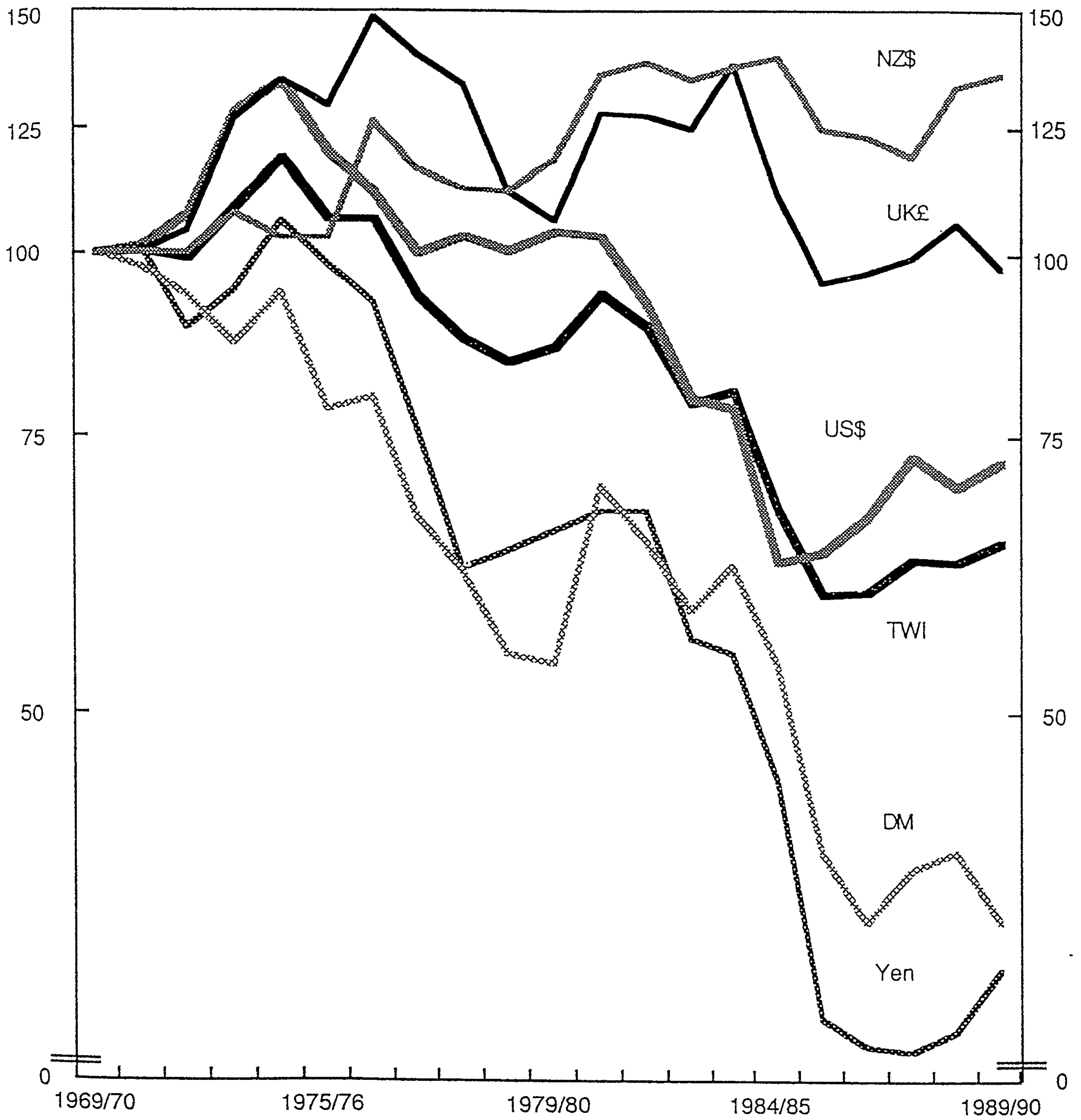
In our comparison of the DFI with the CPI in Chapter 6 it was only in the last 4 years that dental fees showed higher increase than the CPI. The higher cost for infection control could be a contributing factor.

9.3.2 Cost of Dental Material and Equipment

Changes in the Australian Dollar exchange rate could affect the cost of setting up and running a dental practice due to its effect on the cost of material and equipment imported from overseas. **Figure 23** shows how the value of the Australian Dollar changed in the last 20 years. There had been a dramatic fall in the exchange rate, especially against the Japanese Yen and the German Mark. This had a more marked effect on dental practice than in other industries due to the fact that the major portion of dental material and equipment were purchased from overseas and paid for in foreign currency (Australian Dental Association 1986b).

Figure 23 Australian Dollar exchange rates 1970-1990

Source: Clark (1992)



9.3.3 Professional Insurance

The increasing complexity and size of work undertaken by dentists has exposed them to increasing risk of liability (Australian Dental Association 1989b). In Table 47 we list out the insurance fee of the Medical Defence Union from 1975 to 1994 (Mcintosh 1994). Insurance has jumped sharply since 1989 (a 10 times increase from \$136 to \$1400 in 5 years). Figure 24 shows how the insurance fee, after conversion from the dollar values into an index with a value of 100 at 1985, changes with the CPI from 1975 to 1993.

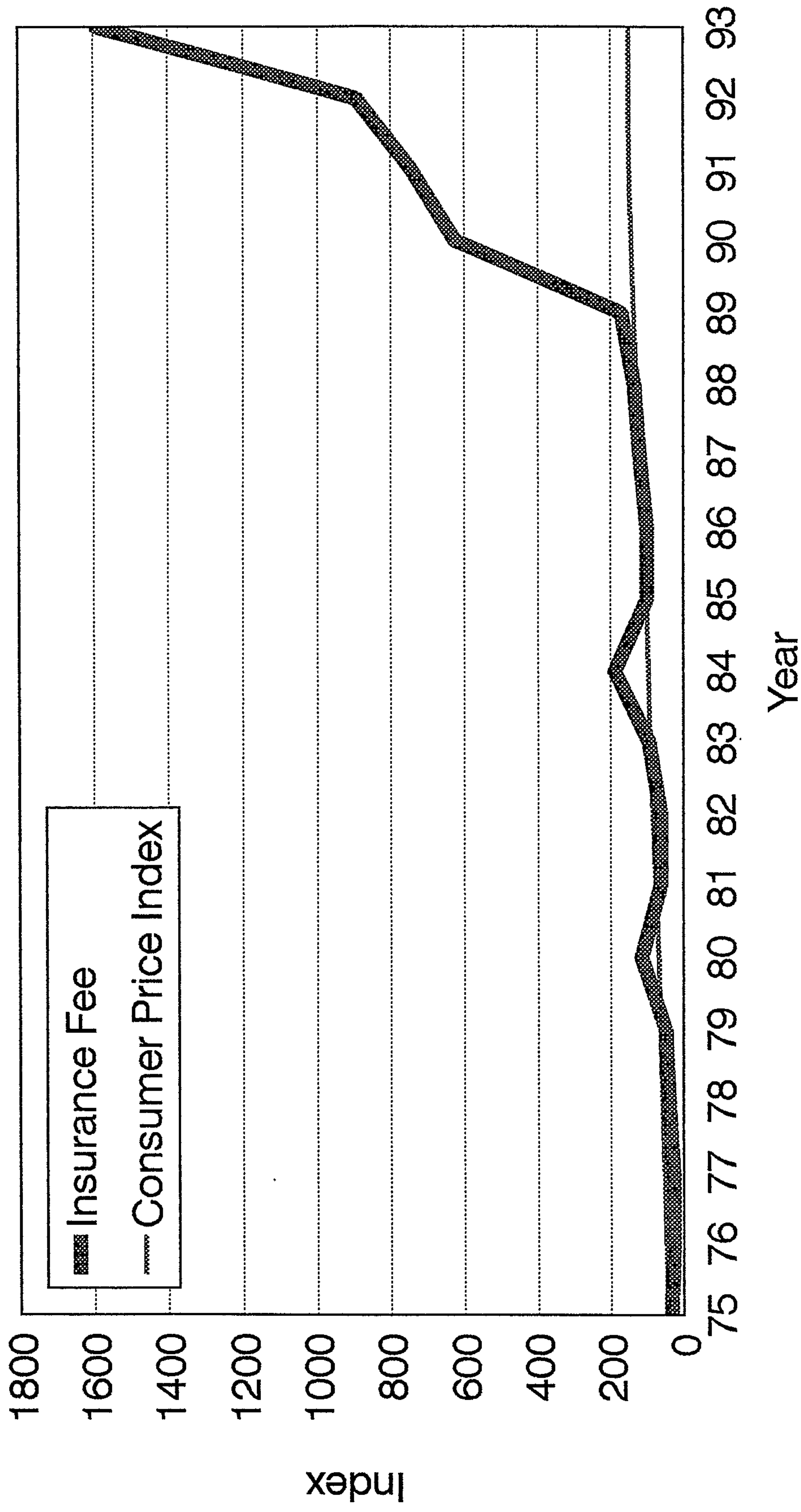
Table 47 Insurance fees of the Medical Defence Union 1975-1994.
Source: McIntosh (1994)

1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Stg£15	Stg£15	Stg£15	Stg£20	Stg£20	Stg£45	\$50	\$50	\$75	\$150

1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
\$80	\$80	\$96	\$108	\$136	\$500	\$595	\$715	\$1,275	\$1,400

Figure 24

Insurance fee of the Medical Defence Union and the Consumer Price Index
Index 1975-1993

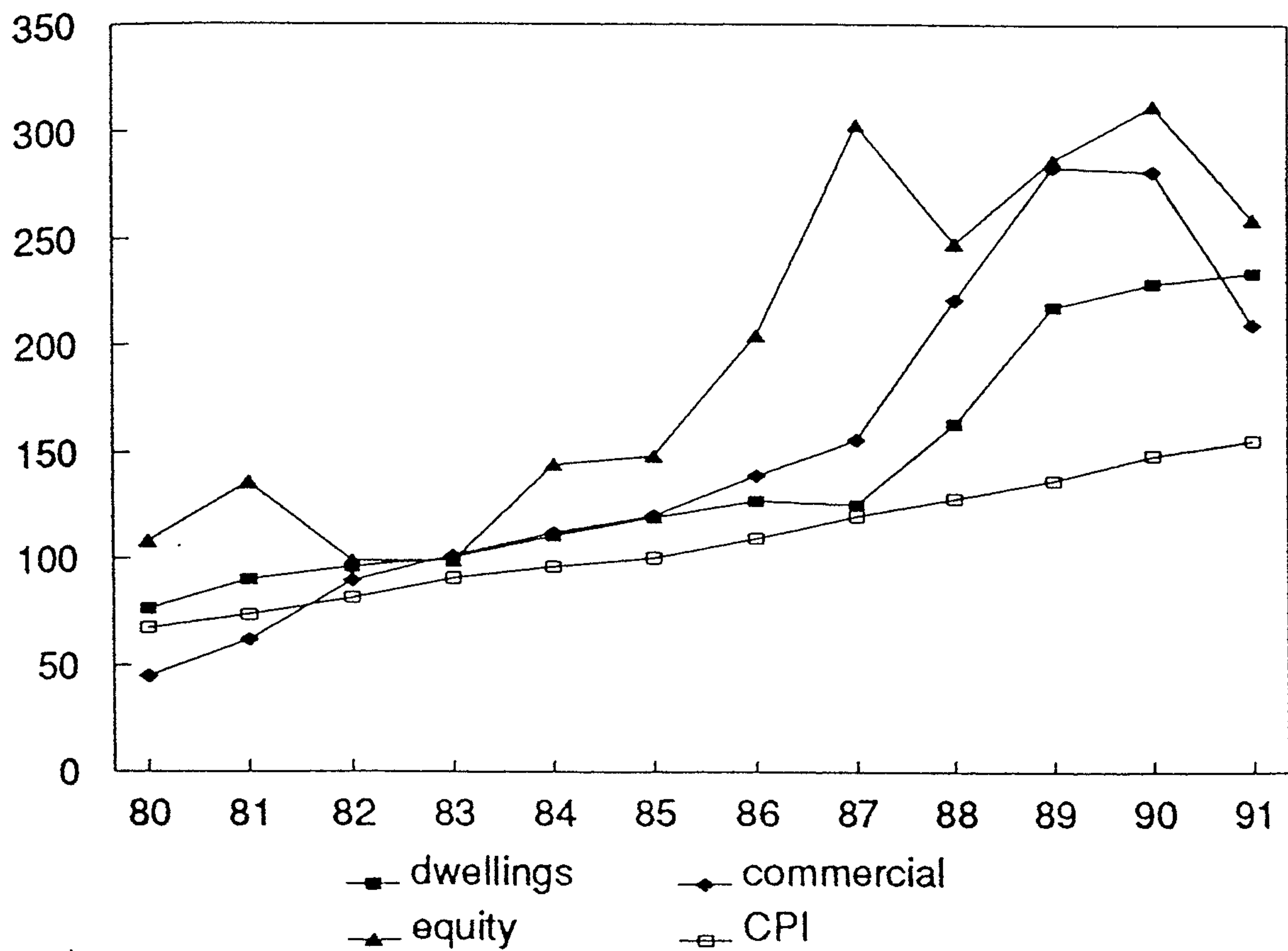


9.3.2 Asset Prices

Asset prices in Australia have risen more than the CPI in the last 10 years (Figure 25). This has a significant effect on the cost of running a private dental practice.

Figure 25 Asset Prices and the CPI

Source: Allen & Unwin (1992)



9.4 RESTRAINT IN DENTAL FEES

One of the aims of this thesis is to compare dental fees changes with inflation in Australia for the last two decades. Our Dental Fee Index shows that the dental profession has been exercising restraint in restricting fee increases. From 1975 to 1989 fees changed in line with inflation. From 1989 to 1993 dental fees rose more than the CPI to cover some of the extra increases in overhead.

In our present study we are not looking at the actual fee levels. It is interesting to note the result of a consumer research conducted for the Victorian Branch of the ADA (1980b). Respondents were asked to rank fees charged by six occupational groups in order of most expensive through to least expensive. The results were:

1. Lawyer/solicitor
2. Plumber
3. Doctor
4. Dentist
5. Mechanic
6. Accountant.

An article in the Sydney Morning Herald in January 1983 did a comparison of the real percentage rates of change of Australian wages in various occupations between 1973 and 1982. Increases were recorded for engineers

(30%), nurses (38%), doctors as salaried hospital staff (20%), teachers (20%). Dentists were one of the few occupations to record a decrease (minus 11%).

The ADA has been cooperating with the Government by urging its members to exercise fee restraint. In 1977 the Prime Minister wrote to ADA requesting a voluntary freeze on wage and prices (Australian Dental Association, Victorian Branch 1977). The same request were made in 1983 (Australian Dental Association 1983a) and 1986 (Australian Dental Association 1986d). Each time the ADA made an appeal to its members. In 1983, the ADA Western Australian Branch (1983) cooperated by not producing an updated guide to fee determination during the period of the wage pause.

9.5 THE TREASURY SCALE

The Treasury Scale was initially designed as a concessional fee scale for a small group in the community. It is now being used extensively in most Government programs and is a constant source of conflict between the profession and the Government. In 1988, the South Australian Branch of the ADA withdrew from endorsing the Pensioner Denture Scheme and the General Dental Scheme (Australian Dental Association South Australian Branch 1988) and in 1994 the New South Wales Branch urges its members to boycott the Commonwealth Dental Scheme (Larriera 1994a). For the scale to be acceptable for widespread use it is important that its method of adjustment be fair and well based.

9.5.1 Improvement for the Formula

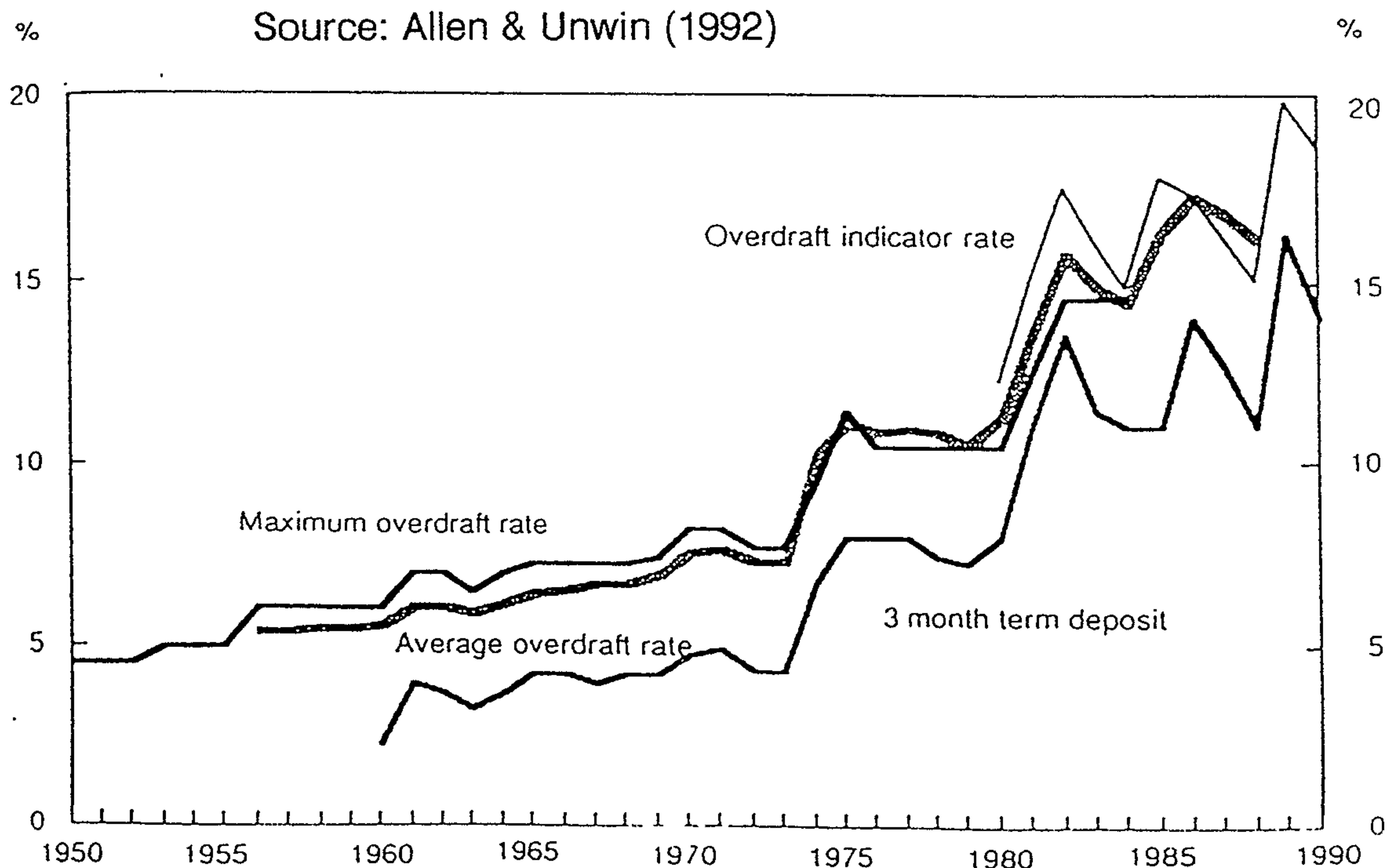
Improvement is needed in some aspects of the formula which is nearly 20 years old. At least three extra factors have to be considered in any future review. They are the cost of capitalisation, the choice of a suitable wage index and the cost of infection control.

1. The cost of capitalisation

The volatility of interest rate (Figure 26), and the fact that changes in prices of imported equipment had no steady relationship with Australian costs, means that capital cost in a practice should not be assumed to move in a manner similar CPI movement. The adjustment formula should, therefore, treat capital costs separately.

Figure 26 Banks interest rates in Australia 1950-1990

Source: Allen & Unwin (1992)



2. Use of a suitable wage index

In 1984 the Government started using the National Wage Case percentage increase as the basis for adjustment of the income component of the formula. Such a policy has the effect of eroding the value of the income component of fees. There are more benefits, in cash and non-cash forms, accruing to wage earners than are taken up in National Wage Case calculation. Most workers in the private sector receive an "over-award payment". Using data from a comprehensive 1989-1990 national investigation, Flora Gill of the University of Sydney found that 70 percent of private sector work places paid at least some employee above the award rate (Allen & Unwin 1992). She noted a mean value of the over-award amongst private sector to be 15.7 percent of the award wage. Moreover, in the private sector there is some scope for enterprise wage determination. Recently the Accord was under threat over an ever widening gap between the Government and the ACTU in key industrial issues (Russell 1994). The National Wage award should not be used as the only basis for adjusting dentist income component in the formula.

3. The cost of infection control

It is important that the high cost of infection control be taken into account in the fee scale. To justify such change it is important that studies be initiated by the ADA to look at the actual cost of infection control in private dental practice.

9.5.2 Possible Methods of Adjustment

The American and British methods of fee determination are currently under review. From their experiences it is obvious that at present no single theory of fee determination is satisfactory.

In 1975, when the present Treasury Scale was formulated it was agreed that the market place fees at that time would form the basis of the scale (Australian Dental Association 1991). It is the method of adjustment that is presently in dispute. It is impossible to have a fool-proof formula. As the scale is now widely used in Government programs its acceptance by all parties is essential. The only way to achieve such consensus is by referring to the real market situation; there are two ways to achieve this:

1. By using an index such as our Dental Fee Index to adjust the scale instead of the outdated formula presently in use.
2. By using the results of the ADA Dental Fees Surveys.

The ADA Dental Fees Survey is in fact the best indicator of the market. It is conducted regularly, it covers nearly all actively practising dentists in the country and the response have been excellent. The Government might have difficulties directly adopting the actual fees obtained from the Survey due to budget restraint and the suspicion of possible over-reporting of fees by dentists in the survey. This could be overcome by the following ways:

1. If there is budget restraint in actually paying the market fee a discount could be negotiated with the ADA. It is important that such discounting be made known to the public to avoid misunderstanding that greedy dentists are charging their patients more than the "schedule fees".

2. ADA Dental Fees Survey results could be audited by an independent accounting firm to establish their accuracy. In the 1970s the South Australian Branch of the ADA substantiated the changes to their recommended fees by having some members submitting their accounts periodically to an accounting firm. Similar arrangement could be worked out between the Government and the ADA.

9.6 RECOMMENDATIONS TO THE AUSTRALIAN DENTAL ASSOCIATION

9.6.1 Dental Fees Survey

The surveys done by ADA covered all members who were in active private practice. In the last 5 surveys it had response rates of 66-88%. This was much more representative than similar surveys done in the U.S.A.. The American Dental Association surveys covered 4-5% of US dentists and had a response rate of 43-60% (Schneider 1991) while the 1993 Dental Economics Fees Survey had a sample of only 2,500 dentists with a response rate of 37% (Anderson 1994).

At present, some State Branches of the ADA also do their own surveys. It would be more desirable if a single survey is conducted covering all the information required by the different Branches. This would not only save resources but also present a united front in any negotiation with third parties.

To ensure acceptance of the survey results, the following changes could be made:

1. Government and health fund representatives should be involved in the surveys.
2. An independent accounting firm could be employed to audit the results.

3. The number and types of items to be included in the surveys should be decided after consultation with the State Branches and third parties.
4. The survey should be conducted more frequently.

9.6.2 The Dental Fee Index

As the ABS does not release information on dental fee movement the ADA should take up the responsibility of studying the changes in fees.

The Dental Fee Index we have constructed should be continuously compiled in the future. We recommend a reweighting of the basket in 1995. This would follow the ABS practice of reweighting the CPI every 10 years. The reweighting would also provide an opportunity for ADA to redesign the basket in the way it deems fit. Utilization data from health funds are essential for any new baskets, the Health Insurance Association of Australia can play an active role in compiling such information. The selection of items for future ADA Fees Surveys should include all items in the basket.

9.7 Conclusion

Dental fees in Australia are determined by the dentists themselves according to their own individual circumstances. The Australian Dental Association does play an active role in conducting fees surveys, giving advice to its members, negotiating fee scale with Government and a limited role in fee advice to the public.

The Dental Fee Index that we have constructed and the Inquiry by the Advisory Committee on Prices and Incomes both indicated that the movement of dental fees had been fair and reasonable. Since 1975, dental fees had been increasing in line with inflation except for the last 4 years where fees were rising faster than the Consumer Price Index. This could be due to changes in practice overheads and slower growth in CPI. Further observation over a longer period is necessary before the trend could be studied.

The Australian Dental Association should take up the responsibility of carrying on with the Dental Fee Index. It has a vital role in gathering information both on fee levels and utilization pattern. The Dental Fee Index is important not only in monitoring the overall fee movement, it is also essential for measuring economic growth of the dental industry and for fee negotiation with the Government, it is important that the series be continuously compiled in the future.

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10. APPENDICES

Appendix 1:

1993 Australian Dental Fees Survey Form

Appendix 2:

Example from computer report of the 1993 Australian Dental Fees Survey

Appendix 3:

Publication of the 1993 Dental Fees Survey results in the Australian Dental Association July 1994 News Bulletin

Appendix 1: 1993 Australian Dental Fees Survey Form

AUSTRALIAN DENTAL ASSOCIATION INC.



PO Box 520, St Leonards, New South Wales, 2065; Telephone (02) 906 4412

Facsimile (02) 906 4676 Administrative
(02) 906 4917 Publications

FEES SURVEY

Dear Member,

It is always pleasing to note the readiness of the dental profession to co-operate in our very necessary data collection exercises. Responses to our recent surveys have been most encouraging. Such co-operation demonstrates your understanding of the fact that your Association needs dependable data if it is to do battle on your behalf — and that data can only come from you, the member.

Once again, we are seeking a statement of your usual fees for a selected range of items of service. Please read the instructions carefully, fill in the blanks, and use the REPLY PAID envelope we have provided to return the Survey to the Federal Secretariat.

In order to get the maximum possible response, Federal Council has decided we should use the proven system from the last Survey. There is provision for a follow-up mailing in February, to jog the memory of those who may have been too busy to complete the Survey over the Christmas holiday period.

To make provision for recording the fact that you have responded, please write your name and address on the **back** of the REPLY PAID envelope. (DO NOT put your name on the Survey form itself.) When your Survey return arrives in the Secretariat, it will be opened by one trusted employee, and the envelope immediately separated from the return. The returns go directly into secure storage, and the envelopes to computer operators, who code your membership file to show you have responded. This will allow a reminder mailing to those whose return has not been received.

The form requests only *State* and *Metropolitan* or *Country* coding. Confidentiality is assured by this procedure. Once your Survey return has been separated from the reply envelope, there is no way in which it could be identified as coming from you.

Group practices and partnerships, please note that **one return per practice will suffice if all dentists usually charge the same fees**. In this case, please ensure that the **number** of dentists is clearly marked in the box on the Survey form, and that **all the names** are marked on the back of the envelope.

May I thank you in advance for your co-operation. Please read the instructions carefully and complete the form.

Yours sincerely,

F. T. Widdop
Federal President

1 December 1993

FEES SURVEY — 31 DECEMBER 1993

◀ Please read the Instructions and Definitions carefully

Nature of practice:

General practitioner

Specialist

Location of practice:

State

Metropolitan

Country

Group Practice, Partnerships

If all practice members charge the same fees, enter here the number of persons to whom this response applies. Ensure ALL names are written on the back of the REPLY PAID envelope.

Please list the fees usually charged to your private patients at 31 December 1993. Do not leave any box blank.

Where a particular service is not regularly performed in your practice, please place a line through the box

Where a service is performed in your practice but no charge is made, please place a 0 in the box

For items where your fee is based on an hourly rate, please place a H in the box

Item No.	Service	Fee \$
\$ hour	HOURLY RATE	
DIAGNOSTIC SERVICES		
011	Initial oral examination	
012	Periodic oral examination	
014	Consultation, including examination	
022	Intraoral periapical or bitewing radiograph — single film	
023	Intraoral periapical or bitewing radiographs — two films	
024	Each periapical or bitewing radiograph (up to 7) additional to item 023	
037	Panoramic radiograph (OPG)	
071	Diagnostic cast (single)	
PREVENTIVE SERVICES		
111	Removal of plaque	
112	Removal of supragingival calculus and plaque	
121/111	Topical application of fluoride (one treatment including plaque removal)	
161	Fissure sealing — per tooth	
PERIODONTICS		
222	Root planing and subgingival curettage per segment of eight teeth or less	
232	Periodontal flap surgery, per segment of eight teeth or less	
ORAL SURGERY		
311	Removal of permanent tooth or part(s) thereof	
316	Removal of additional tooth or part(s) thereof complementary to and in the vicinity of a procedure described by item 311, 313 or other 316	
323	Surgical removal of unerupted or partly erupted tooth, requiring removal of bone or tooth division	
ENDODONTICS		
415	Extirpation of pulp or debridement of root canal — one canal	
416	Extirpation of pulp or debridement of root canal — each additional canal	
417	Root canal obturation — one canal	
418	Root canal obturation — each additional canal	

Item No.	Service	Fee \$
RESTORATIVE SERVICES		
511	Amalgam restoration — one surface — permanent tooth	
512	Amalgam restoration—two surfaces — permanent tooth	
513	Amalgam restoration — three or more surfaces — permanent teeth	
522	Glass ionomer restoration — two surfaces	
529*	Adhesive restoration of non-carious cervical lesion (glass ionomer or composite resin)	
531	Composite resin restoration — one surface — posterior tooth	
532	Composite resin restoration — two surfaces — posterior tooth	
533	Composite resin restoration — three or more surfaces — posterior tooth	
537	Composite resin restoration — one surface — anterior tooth	
538	Composite resin restoration — two surfaces — anterior tooth	
573	Temporary crown	
575	Pin retention — per unit pin	
582	Enamel bonded composite resin facing (not covered by items 581 or 537)	
583*	Porcelain laminate veneer facing	
CROWN AND BRIDGE		
615	Porcelain fused to gold jacket crown	
643*	Bridge — porcelain or porcelain fused to gold — per pontic	
PROSTHODONTICS		
711	Complete maxillary denture	
719	Complete maxillary and mandibular dentures	
721/733/731	Partial denture: acrylic base; six teeth; two free end saddles; two retainers	
731	Each retainer (for acrylic partial)	
727	Partial denture, cast cobalt chromium base — one or two teeth	
763	Repairing broken base of complete denture	
ORTHODONTICS		
821	Active removable appliance — one arch	
834	Full arch banding — two arches	
GENERAL		
912	Sedative dressing for emergency treatment	
961	Minor occlusal adjustment — per visit	

*Definitions valid from 1.1.93.

DEFINITIONS

The definitions and item numbers are those valid from the 1 January 1993 Schedule.

There have been changes made to items 316 and 643 since the last Survey in 1991.

Two new items have been listed for the 1993 Survey — 529 and 583.

316 — Removal of additional tooth or part(s) thereof complementary to and in the vicinity of a procedure described by item 311, 313 or other 316

A procedure similar to items 311 or 313 involving removal of an additional tooth adjacent or regionally related to one already removed at the same visit.

529 — Adhesive restoration of non-carious cervical lesion (glass ionomer or composite resin)

A non-invasive procedure used to desensitise and restore non-carious, abrasion/erosion cavities at the necks of teeth, using a bonding technique. There is no preparation of the tooth other than enamel or dentine etching.

The restoration is achieved with either or both glass ionomer cement and composite resin.

583 — Porcelain laminate veneer facing

The attachment of a fused porcelain veneer to the labial or buccal surface of a tooth using an enamel bonding technique. Impressions are required and the veneer is constructed in a prosthetic laboratory using an indirect technique.

643 — Bridge — porcelain or porcelain fused to gold — per pontic

A bridge made using porcelain fused to gold for the pontic(s), i.e., the replaced tooth/teeth, joined to retainers or restorations on the abutment teeth. Frequently these restorations are porcelain fused to gold crowns, but may on occasions be other types of restorations.

When itemising, each bridge pontic is described with item 643 and the retainers are described using separate items.

Definitions valid for 1.1.93 (green Schedule).

INSTRUCTIONS

A full response to this Survey from **all** private practitioners (including employee dentists) is **very important**. Successful fee negotiations at Federal and State level are highly dependent on the accuracy of our fee data. Getting our data accepted by government is strongly dependent on the level of response — we need large numbers of returns. **The reply of every dentist is important.**

The Survey asks you to quote your usual fee for items of service. **This means you should quote the fee you would ordinarily charge to an average patient for a service of average content in time and material consumption.**

Group practices and partnerships

Where there is more than one dentist in a practice (whether principals or employees) and they each charge the same fees, you need complete **only one** Survey form, and mark in the box provided the number of dentists in the practice who charge those fees.

Make sure you write the names of all dentists covered by the one Survey return on the back of the REPLY PAID envelope. If this is not done, reminders will automatically be sent to them, as if they were non-respondents.

Completing the form

If any particular service is not regularly performed in your practice, enter — in the box.

If you do not make a separate charge for some items you do provide, enter 0 in the box.

If it is your custom to base some or all of your fees on an hourly rate, enter this rate in the box provided, and for those services where the rate is applicable, enter H in the box.

ALL BOXES MUST BE COMPLETED using one of the four possible entries viz.

fee quoted:	dollar amount
service not provided:	—
service provided at no fee:	0
fee based on hourly rate:	H

Deadline

In order to spread the workload of processing the Surveys, it would help us greatly to have as many returns as possible before New Year. Is there any reason why you should not do it NOW?

Please return the completed Survey to the Federal Secretariat **before 31 January 1994.**

RETURNING THE FORM

Detach the Survey after completion, and insert in the REPLY PAID envelope. On the back of the envelope (not on the Survey form) write your name(s) and address. As the President's letter explains, this information will be separated from your Survey return immediately it arrives in the office, and your Survey return will remain anonymous and confidential.

- 1. Insert in REPLY PAID envelope.
- 2. Write your name and address on the back of the envelope.
- 3. **Group practices, partnerships and employer dentists** wishing to submit one form for all practice members:

Write all names and one address on the envelope

Solo

NAME(S) J. Black

ADDRESS 2 The Boulevard

Box Hill Vic 3128

Group

NAME(S) A. White, C. Smith, J. Jones

ADDRESS 15 Abbotsford Way

Mentone Vic 3194

- 4. Mail your return — no stamp needed.

Appendix 2:

Example from computer report of the 1993 Australian Dental Fees Survey

Australian Dental Fees Survey - 31 December 1993
4669 Dentists

3369 Returns for National Fees of Metropolitan & Country G.P.s and Specialists as at 10-JUN-1994 Page 1

Item Number	Fee-range		Number				Total	Mean	Median	Std Dev	Std Error	
	Low	High	Sample	(-)	(H)	(Os)						
Hours	60	500	1723	2946			334552	194.16	180	52.20	1.25	Full Range
	140	260	1380				261439	189.44	180	28.78	.77	Central 80%
	140	260	1379				261179	189.39	180	28.72	.77	Cent 80%-Os
011	0	120	4322	315	32	37	126500	29.26	27	10.86	.16	Full Range
	20	42	3459				96920	28.01	27	5.41	.09	Central 80%
	20	42	3429				96386	28.10	28	5.38	.09	Cent 80%-Os
012	0	95	4337	297	35	114	105349	24.29	25	8.25	.12	Full Range
	17	31	3470				83760	24.13	25	3.77	.06	Central 80%
	18	31	3379				82298	24.35	25	3.64	.06	Cent 80%-Os
014	0	185	4173	405	91	38	125093	29.97	28	12.38	.19	Full Range
	20	42	3340				94330	28.24	28	5.04	.08	Central 80%
	20	42	3309				93776	28.33	28	5.05	.08	Cent 80%-Os
022	0	75	4313	333	23	5	97350	22.57	22	5.12	.07	Full Range
	16	29	3452				77267	22.38	22	2.87	.04	Central 80%
	17	29	3448				77202	22.39	22	2.84	.04	Cent 80%-Os
023	0	91	4306	341	22	7	157854	36.65	36	8.04	.12	Full Range
	29	45	3445				125192	36.34	36	4.28	.07	Central 80%
	29	45	3441				125092	36.35	36	4.30	.07	Cent 80%-Os
024	0	90	4148	495	26	17	60960	14.69	15	5.20	.08	Full Range
	10	20	3319				47434	14.29	15	2.75	.04	Central 80%
	10	20	3305				47304	14.31	15	2.75	.04	Cent 80%-Os
037	22	120	979	3679	11		61171	62.48	63	12.58	.40	Full Range
	45	77	784				48751	62.18	63	7.68	.27	Central 80%
	45	77	785				48796	62.16	63	7.68	.27	Cent 80%-Os
071	0	150	3701	936	32	345	102209	27.61	25	15.31	.25	Full Range
	10	45	2962				81056	27.36	25	8.71	.16	Central 80%
	16	46	2686				78245	29.13	29	7.96	.15	Cent 80%-Os
111	0	140	3810	719	140	72	111691	29.31	29	10.58	.17	Full Range
	19	40	3049				87931	28.83	29	5.35	.09	Central 80%
	20	40	2992				86937	29.05	29	5.25	.09	Cent 80%-Os
112	0	212	4034	437	198	14	185294	45.93	45	12.48	.19	Full Range
	33	60	3229				146268	45.29	45	6.25	.11	Central 80%
	33	60	3216				145839	45.34	45	6.21	.10	Cent 80%-Os
121/111	0	160	3833	789	47	55	137974	35.99	35	16.69	.26	Full Range
	15	57	3068				108589	35.39	35	11.84	.21	Central 80%
	17	57	3024				108103	35.74	35	11.71	.21	Cent 80%-Os

Australian Dental Fees Survey - 31 December 1993

4669 Dentists

3369 Returns for National Fees of Metropolitan & Country G.P.s and Specialists as at 10-JUN-1994 Page 2

Item Number	Fee-range		Number				Total	Mean	Median	Std		Std Error	
	Low	High	Sample	(-)	(H)	(Os)				Dev			
161	0	161	3712	923	34	3	95003	25.59	25	8.83	.14		Full Range
	18	35	2971				73294	24.66	25	4.03	.07		Central 80%
	18	35	2969				73258	24.67	25	3.99	.07		Cent 80%-Os
222	12	400	2741	1503	425		184494	67.30	63	29.93	.57		Full Range
	40	95	2194				141111	64.31	62	15.51	.33		Central 80%
	40	95	2193				141016	64.30	62	15.49	.33		Cent 80%-Os
232	25	1000	870	3473	326		119048	136.83	120	77.62	2.63		Full Range
	68	219	697				87430	125.43	120	38.34	1.45		Central 80%
	68	219	696				87211	125.30	120	38.19	1.44		Cent 80%-Os
311	28	240	4248	391	30		250878	59.05	58	12.61	.19		Full Range
	48	72	3399				196273	57.74	58	6.23	.10		Central 80%
	48	72	3400				196321	57.74	58	6.20	.10		Cent 80%-Os
316	0	175	4126	486	57	7	158236	38.35	35	14.41	.22		Full Range
	25	55	3301				121572	36.82	35	8.14	.14		Central 80%
	25	55	3297				121502	36.85	35	8.10	.14		Cent 80%-Os
323	44	450	3487	823	359		446592	128.07	125	33.58	.56		Full Range
	89	170	2790				351251	125.89	125	20.31	.38		Central 80%
	89	170	2791				351340	125.88	125	20.30	.38		Cent 80%-Os
415	0	354	4040	525	104	13	474408	117.42	110	40.30	.63		Full Range
	75	155	3233				372975	115.36	110	24.15	.42		Central 80%
	75	155	3223				372305	115.51	110	24.08	.42		Cent 80%-Os
416	0	380	3952	607	110	29	205158	51.91	50	27.07	.43		Full Range
	30	80	3163				152496	48.21	50	11.19	.19		Central 80%
	30	80	3139				151876	48.38	50	11.14	.19		Cent 80%-Os
417	0	450	4035	534	100	1	478679	118.63	110	38.77	.61		Full Range
	80	158	3228				369880	114.58	110	19.69	.34		Central 80%
	80	158	3228				369880	114.58	110	19.69	.34		Cent 80%-Os
418	0	355	3962	601	106	1	209818	52.95	50	28.63	.45		Full Range
	30	80	3171				153580	48.43	50	13.75	.24		Central 80%
	30	80	3169				153470	48.42	50	13.76	.24		Cent 80%-Os
511	25	190	4111	522	36		209055	50.85	50	10.15	.15		Full Range
	40	63	3290				163840	49.79	50	5.74	.10		Central 80%
	40	63	3289				163777	49.79	50	5.70	.09		Cent 80%-Os
512	30	190	4122	512	35		257463	62.46	60	11.84	.18		Full Range
	50	75	3299				202160	61.27	60	6.45	.11		Central 80%
	50	75	3298				202085	61.27	60	6.41	.11		Cent 80%-Os

Appendix 3:

**Publication of the 1993 Dental Fees Survey results in the Australian
Dental Association July 1994 News Bulletin**

Dental Fees Survey — 31 December 1993

There was a 81 per cent response from members for the 1993 Dental Fees Survey. The 4669 usable responses listed dental fees (for 47 items of service) usually charged to patients of private practices.

The results presented on the table are from responses of General Practitioners (N=4202) with the fees shown for the central 80

per cent of responses, excluding zeros.

Not all items are compared with 1991 fees as there were definition

changes to some items. The increase in fees from those reported in December 1991 was around 6-8 per cent for 70 per cent of the items.

P.D. Barnard
M. Ho

TABLE 1

Item No.	Service	1993 Sample†	1993 \$ Range	1993 \$ St. Dev.	Mean Fee \$ 1991	Mean Fee \$ 1993	% change 1991-1993
\$ hour	HOURLY RATE.....	1283	140-250	26	175.70	186.40	6
DIAGNOSTIC SERVICES							
011	Initial oral examination.....	3272	20-40	5	25.70	27.50	7
012	Periodic oral examination.....	3234	18-30	4	22.40	24.20	8
014	Consultation, including examination.....	3060	20-38	4	26.00	27.40	6
022	Intraoral periapical or bitewing radiograph — single film..	3319	17-28	3	21.20	22.40	6
023	Intraoral periapical or bitewing radiographs — two films..	3326	29-45	4	34.60	36.40	5
024	Each periapical or bitewing radiograph (up to 7) additional to item 023.....	3215	10-20	3	13.30	14.30	8
037	Panoramic radiograph (OPG).....	672	50-80	7	61.00	63.60	4
071	Diagnostic cast (single).....	2505	16-45	8	27.40	29.00	6
PREVENTIVE SERVICES							
111	Removal of plaque.....	2962	20-40	5	27.10	29.00	7
112	Removal of supragingival calculus and plaque.....	3180	33-60	6	42.00	45.30	8
121/111	Topical application of fluoride (one treatment including plaque removal).....	3001	17-57	12	35.70	35.80	0
161	Fissure sealing — per tooth.....	2950	18-35	4	23.40	24.60	5
PERIODONTICS							
222	Root planing and subgingival curettage per segment of eight teeth or less.....	2166	40-92	15	59.30	64.00	8
232	Periodontal flap surgery, per segment of eight teeth or less	673	65-200	36	108.80	122.70	13
ORAL SURGERY							
311	Removal of permanent tooth or part(s) thereof.....	3321	48-70	6	52.60	57.60	9
316	Removal of additional tooth or part(s) thereof complementary to and in the vicinity of a procedure described by item 311, 313 or other 316.....	3228	25-55	8	33.40	36.80	10
323	Surgical removal of unerupted or partly erupted tooth, requiring removal of bone or tooth division.....	2724	88-170	20	115.80	125.30	8
ENDODONTICS							
415	Extirpation of pulp or debridement of root canal — one canal	3187	75-155	24	103.00	115.30	12
416	Extirpation of pulp or debridement of root canal — each additional canal.....	3105	30-80	11	47.00	48.20	3
417	Root canal obturation — one canal.....	3193	80-155	20	119.70	114.30	-4
418	Root canal obturation — each additional canal.....	3137	30-80	14	53.70	48.30	-10
RESTORATIVE SERVICES							
511	Amalgam restoration — one surface — permanent tooth...	3257	40-62	6	45.60	49.70	9
512	Amalgam restoration — two surfaces — permanent tooth.	3264	50-75	6	56.20	61.20	9
513	Amalgam restoration — three or more surfaces — permanent teeth.....	3258	60-92	8	70.90	76.30	8
522	Glass ionomer restoration — two surfaces.....	3109	45-70	7	51.80	56.20	8
529*	Adhesive restoration of non-carious cervical lesion (glass ionomer or composite resin).....	2778	32-65	8	*	47.10	*
531	Composite resin restoration — one surface — posterior tooth	3144	48-80	8	56.60	61.30	8
532	Composite resin restoration — two surfaces — posterior tooth	3097	60-99	11	70.80	76.70	8
533	Composite resin restoration — three or more surfaces — posterior tooth.....	3005	70-125	14	86.70	93.60	8
537	Composite resin restoration — one surface — anterior tooth	3296	46-74	7	55.00	59.00	7

*These are the new definitions valid from 1.1.93. †Sample is central 80% of responses (excludes zeros) from general practitioners.

Continued on page 12

Item No.	Service	1993 Sample†	1993 \$ Range	1993 \$ St. Dev.	Mean Fee \$ 1991	Mean Fee \$ 1993	% change 1991-1993
RESTORATIVE SERVICES (Contd.)							
538	Composite resin restoration — two surfaces — anterior tooth.....	3299	55-86	8	65.30	70.30	8
573	Temporary crown.....	2353	45-110	16	67.40	72.00	7
575	Pin retention — per unit pin.....	3204	10-20	2.40	13.50	14.40	7
582	Enamel bonded composite resin facing (not covered by items 581 or 537).....	2661	80-178	23	108.50	117.20	8
583*	Porcelain laminate veneer facing.....	2337	300-530	57	*	406	*
CROWN AND BRIDGE							
615	Porcelain fused to gold jacket crown.....	3260	630-900	69	716	747	4
643*	Bridge — porcelain or porcelain fused to gold — per pontic.....	3021	450-850	105	640	652	2
PROSTHODONTICS							
711	Complete maxillary denture.....	3262	420-643	49	478	505	6
719	Complete maxillary and mandibular dentures.....	3253	750-1140	87	847	898	6
721/ 733/731	{ Partial denture: acrylic base; six teeth; two free end saddles; two retainers.....	3114	325-540	52	398	418	5
731	Each retainer (for acrylic partial).....	2159	15-35	5	20.80	21.90	5
727	Partial denture, cast cobalt chromium base — one or two teeth.....	3262	550-855	80	656	692	5
763	Repairing broken base of complete denture.....	3109	45-87	12	58.20	61.70	6
ORTHODONTICS							
821	Active removable appliance — one arch.....	1507	240-528	71	345	366	6
834	Full arch banding — two arches.....	368	750-3000	688	1741	1970	13
GENERAL							
912	Sedative dressing for emergency treatment.....	3119	25-50	7	32.20	35.20	9
961	Minor occlusal adjustment — per visit.....	2248	18-45	7	28.20	29.50	5

*These are the new definitions valid from 1.1.93.