



## **Centre for Actuarial Research (CARE)**

**A Research Unit of the University of Cape Town**

# **An Historical Study of Trends in Medical Schemes in South Africa: 1974 to 1999**

**CARE Monograph No. 1**

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## Synopsis

This monograph aims to present a pictorial overview of private sector medical schemes in South Africa over the period 1974-1999. The hitherto unseen material is the result of compiling a database using the historic Annual Reports of the Registrar of Medical Schemes and historic statutory Registrar's returns. The creation of a single historical database of medical scheme data is a significant development. This monograph is the first publicly available view of that database.

Medical schemes accounted for 73.0% of total private sector health expenditure in South Africa in 1998. When the out-of-pocket expenditure is included, medical scheme members accounted for 89.1% of private sector health expenditure.

There has been consolidation among medical schemes over the period. The number of Registered schemes decreased from 252 in 1974 to 160 in 1999. Of the 160 Registered schemes in 1999, 112 were Restricted schemes and 48 were Open. The number of Open schemes increased from 1990 to 1999 while the number of Restricted schemes decreased. The number of Exempted schemes has more than halved from 53 in 1974 to 21 in 1999.

Over the period, most Registered schemes have been small (fewer than 6000 members). The decrease in the total number of schemes is mainly due to the decrease in the number of these small medical schemes. The number of large (30 000 beneficiaries or more) and medium Registered schemes has increased slightly. The majority of Open schemes are large, while the majority of Restricted schemes are small.

Membership has increased considerably in medical schemes since 1974. The 0.99 million members in 1974 grew to 2.28 million in 1999, an average growth of 3.4% per annum. Two relatively very large schemes, Polmed and Transmed, were classified as exempt from 1993 onward. Excluding them, the 0.52 million members in Exempted schemes in 1974 declined to 0.17 million in 1999. Polmed and Transmed had a combined membership of 0.23 million in 1999. Membership in Open and Restrict was fairly similar from 1990 to 1994. Thereafter, membership in Open schemes increased, while that of Restricted schemes decreased. In 1999, there were 1.59 million Open scheme members and 0.69 million Restricted scheme members.

With the increase in membership and decrease in the number of schemes, the average number of members per Registered scheme increased steadily. However, for Exempted schemes, average membership fluctuated over the period of investigation. The number of beneficiaries in Registered schemes increased from 2.4 million in 1974 to 6.0 million in 1999. Most beneficiaries were in large schemes over the period, 81% in 1999. Small and medium schemes represented 9% and 10% respectively. 15.7% of the South African population was covered by medical schemes in 1999, compared to 14.1% in 1974.

The dependency ratio remained between 1.6 and 1.8 from 1974 to 1999 with the exception of 1989. The dependency ratio for Exempted schemes was less than that of Registered schemes. The dependency ratio for Open schemes was higher than that of Restricted schemes from 1990 to 1999.

Race data was only available from 1977 to 1991. There were more White members than any other race group, representing 77% of medical scheme members in 1977. This proportion decreased to 58% in 1991. Although being the least represented population group, Black membership increased by 388% over the period. Asian membership increased by 109%, Coloured membership by 98% and White membership by only 14%. The dependency ratio for the Black population increased considerably, Coloured and Asian ratios increased to a lesser extent, while that of the White population decreased. Of the White population, 77% had medical cover in 1991. By comparison, 33% of the Asian population was covered, 28% of the Coloured population and only 6% of the Black population.

The proportions of both continuation and pensioner beneficiaries increased from 1978 to 1993. In 1993, the pensioner proportion was 7.7% while the continuation proportion was 9.7%. The continuation beneficiary proportion decreased from 1995 to 1997 but increased thereafter to 10.6% in 1999. The pensioner member proportion for Open schemes was lower than that of Restricted schemes, as was the case for continuation member proportions.

For Registered schemes, actual benefits paid increased at an average compound rate of 22% per annum. Amounts were R0.14 billion in 1974 and R21.24 billion in 1999. After benefits paid were adjusted for inflation and changes in beneficiary numbers, the average compound rate of increase was 4.9% per annum, with most of the growth taking place between 1988 and 1993. Inflation-adjusted benefits paid per beneficiary per month (pbpm) was R92.60 in 1974, tripling to R303.86 in 1999. Inflation-adjusted benefits paid pbpm was lower for Exempted schemes. For Open and Restricted schemes, amounts fluctuated, but increased overall. Amounts were higher for Open schemes than restricted, except in 1992 and 1995.

In 1974, the largest proportion of benefits paid was to medical specialists, at 24%. This changed by 1999, where medicines represented the largest proportion at 31%, followed by hospitals at 24% and medical specialists at 20%. Medicine benefits had the highest growth, an average compound rate of 6.8% per annum. Private hospital benefits increased substantially from R25.32 pbpm (inflation-adjusted) in 1988 to R72.56 in 1999. The opposite occurred with State hospital benefits, with only R1.29 pbpm spent in 1999. Medical specialist benefits was greater than both general practitioner and dental, increasing at a faster rate than the other two from 1990 onwards. In 1999, medical specialist benefits were three times greater than those of general practitioners.

Gross contributions amounted to R0.154 billion in 1974, increasing at an average compound rate of 22.4% per annum to R24.008 billion in 1999. Exempted scheme (excluding Polmed and Transmed) contributions also increased and were at R0.897 billion in 1999. The combined contributions of Polmed and Transmed were R3.899 billion in 1999, much larger than the combined total of other Exempted schemes.

Inflation-adjusted contributions per member per month (pmpm) were R266.40 in 1974 and R908.67 in 1999 (more than three times as great). Open and Restricted scheme contributions were fairly similar, fluctuating over the period but increasing overall.

Administration expenses increased by an average compound rate of 21.5% per annum for Registered schemes. In 1999, administration expenses were R1.913 billion, compared to R0.015 billion in 1974. Inflation-adjusted amounts fluctuated slightly around R25.00 pmpm from 1974 to 1987, thereafter increasing rapidly to R72.41 pmpm in 1999.

Inflation-adjusted administration expenses pmpm for Open schemes were higher than Restricted schemes (except in 1994). Administration expenses as a percentage of gross contributions remained below the industry benchmark level of 10%. This percentage decreased from 1974 to 1992, but increased thereafter. Non-health expenditure amounted to R2.75 billion in 1999. Non-health expenditure as a percentage of gross contributions increased overall, with a decrease in 1997, and was greater than 10% in 1999.

The accumulated funds solvency ratio remained below the 25% benchmark level for Registered schemes. The ratio was 15.62% in 1990 and 20.13% in 1999. The net assets solvency ratio was greater than the 25% mark from 1994 onwards. The accumulated funds ratio for Exempted schemes decreased from 1990 to 1993, then increased to 25% in 1999. The accumulated funds ratio was greater for Restricted schemes than for Open schemes.

This study is limited by the data available in the earlier years of study. This monograph concentrates on **what** has happened and not **why**. Further monographs will build on this one to include an analysis of the environment and changes in legislation governing medical schemes from 1967 to 1999.

# Table of Contents

Synopsis.....	i
Table of Contents .....	v
Explanation of Terms and Abbreviations Used .....	vii
<b>1. Introduction.....</b>	<b>1</b>
1.1 Background and Objectives .....	1
1.2 Construction of the Database .....	1
1.3 The Period of the Study .....	2
1.4 Relationship to Private Sector Health Expenditure .....	2
1.5 Acknowledgements.....	3
<b>2. Medical Schemes .....</b>	<b>4</b>
2.1 Scheme Classification .....	4
2.1.1 <i>Registered and Exempted Schemes</i> .....	4
2.1.2 <i>Medical Aid and Medical Benefit Schemes</i> .....	4
2.1.3 <i>Open and Restricted Schemes</i> .....	5
2.2 Total Number of Schemes .....	5
2.2.1 <i>Registered and Exempted Schemes</i> .....	5
2.2.2 <i>Open and Restricted Schemes</i> .....	6
2.3 Number of Schemes by Size .....	7
2.3.1 <i>Registered and Exempted Schemes</i> .....	7
2.3.2 <i>Open and Restricted Schemes</i> .....	8
<b>3. Membership.....</b>	<b>10</b>
3.1 Total Number of Members.....	10
3.1.1 <i>Registered and Exempted Schemes</i> .....	10
3.1.2 <i>Open and Restricted Schemes</i> .....	11
3.2 Average Membership.....	12
3.2.1 <i>Registered and Exempted Schemes</i> .....	12
3.3 Beneficiaries .....	13
3.4 Dependency Ratios .....	14
3.4.1 <i>Registered and Exempted Schemes</i> .....	14
3.4.2 <i>Open and Restricted Schemes</i> .....	16
3.5 Beneficiaries by Scheme Size .....	16
3.6 Demographics .....	18
3.6.1 <i>Membership by race groups</i> .....	18
3.6.2 <i>Dependency ratios by race groups</i> .....	19
3.6.3 <i>Pensioner Ratios: Registered and Exempted Schemes</i> .....	20
3.6.4 <i>Pensioner Ratios: Open and Restricted Schemes</i> .....	22
3.7 Proportion of the population with medical cover .....	23

<b>4.</b>	<b>Analysis of Benefits</b> .....	<b>24</b>
4.1	Total Benefits Paid.....	24
4.1.1	<i>Actual benefits paid</i> .....	24
4.1.2	<i>Inflation-adjusted benefits paid</i> .....	25
4.1.3	<i>Inflation-adjusted benefits paid per beneficiary per month</i> .....	25
4.1.4	<i>A comparison with Exempted schemes</i> .....	26
4.1.5	<i>Comparing Open and Restricted Schemes</i> .....	28
4.2	Analysis of Benefits Paid by Benefit Category .....	28
4.2.1	<i>Inflation-adjusted benefits per beneficiary per month by benefit category</i> ....	28
4.2.2	<i>Benefit types as a proportion of total benefits paid</i> .....	30
4.3	Hospitalisation .....	32
4.4	Practitioners .....	32
<b>5.</b>	<b>Financial Aspects</b> .....	<b>34</b>
5.1	Contributions.....	34
5.1.1	<i>Total Contributions</i> .....	34
5.1.2	<i>Inflation-adjusted Contributions</i> .....	36
5.1.3	<i>Inflation-adjusted contributions per member per month</i> .....	36
5.1.4	<i>A comparison of Open and Restricted scheme contributions</i> .....	37
5.2	Administration Expenses .....	38
5.2.1	<i>Actual expenditure on administration</i> .....	38
5.2.2	<i>Inflation-adjusted Administration expenses per member per month</i> .....	40
5.2.3	<i>A comparison of Open and Restricted scheme administration expenses</i> .....	40
5.2.4	<i>Administration expenses as a proportion of Gross Contributions</i> .....	41
5.3	Contribution Income Not Spent on Healthcare.....	43
5.4	Further Analysis of Non-Health Expenditure .....	46
5.5	Solvency Ratios .....	47
5.5.1	<i>Registered and Exempted Schemes</i> .....	48
5.5.2	<i>Open and Restricted Schemes</i> .....	50
<b>6.</b>	<b>Limitations and Recommendations</b> .....	<b>51</b>
<b>7.</b>	<b>Bibliography</b> .....	<b>52</b>
<b>8.</b>	<b>Appendix</b> .....	<b>53</b>
8.1	Data Files Lodged with the Council for Medical Schemes .....	53
8.2	Open Scheme Classifications.....	53
8.3	Inflation Factors .....	56
8.4	Population Data.....	56

# Explanation of Terms and Abbreviations Used

## TERMS

<b>Actual amounts</b>	amounts not adjusted for inflation
<b>Beneficiary</b>	any person that is entitled to receive benefits from a scheme (includes members and dependants)
<b>Continuation dependant</b>	the dependant of a continuation member
<b>Continuation member</b>	a member who is retired, or the spouse of a deceased member who has continued with the payment of contributions
<b>Council for Medical Schemes</b>	a statutory body established by the Medical Schemes Act to serve the interests of the public and of members of medical schemes; consists of up to 15 members
<b>Dependency ratio</b>	the ratio of dependants to members
<b>Exempted scheme</b>	a scheme that operates as medical schemes but is exempt from certain provisions of the Medical Schemes Act; previously regulated under separate legislation
<b>Gross claims</b>	all claims incurred (also called total benefits paid); no adjustments made
<b>Gross contributions</b>	all contributions paid by members with no adjustments made
<b>Healthcare management expenses</b>	expenses incurred as a result of the implementation and maintenance of Managed Care programmes
<b>Inflation-adjusted amounts</b>	amounts adjusted for the effects of inflation; uses the Consumer Price Index (CPI) to inflate amounts in different years to equivalent January 2000 amounts
<b>Large scheme</b>	a scheme with 30 000 or more beneficiaries
<b>Managed Care programme</b>	any programme aimed at reducing claims expenses without compromising quality of care; schemes often employ the services of professional managed care organisations
<b>Medium scheme</b>	a scheme with more than 6 000 members but less than 30 000 beneficiaries
<b>Net contributions</b>	gross contributions adjusted for items such re-insurance premiums, savings plan and pre-funding plan reserves; there is no consistent definition; values will differ for different definitions used

<b>Non-health expenditure</b>	proportion of contributions not spent on claims
<b>Office of the Registrar</b>	the Office headed by the Registrar; regulates and monitors the activities of medical schemes and is responsible for protecting the interests of all medical scheme members; is currently also referred to (rather confusingly) as the Council for Medical Schemes
<b>Open scheme</b>	a scheme whose membership is open to any member of the public; a scheme that must accept any member that makes application and can afford the contribution
<b>Principal dependant</b>	the spouse or child of a principal member; has recently been extended to include any of the member's immediate family for whom the member is responsible for family care and support
<b>Principal member</b>	the main member in a family responsible for paying contributions
<b>Registered scheme</b>	a medical scheme that reports to the Office of the Registrar in compliance with the Medical Schemes Act
<b>Restricted scheme</b>	a scheme that restricts membership on the basis of employment, profession, professional association, union, trade, industry or calling
<b>Savings plan</b>	an option for members to save a portion of their contributions for day-to-day expenses; all unused savings can be recovered by the member
<b>Small scheme</b>	a scheme with 6000 members or less
<b>Solvency ratio</b>	accumulated funds or net assets as a percentage of gross contributions; recommended to be 25%
<b>Total benefits paid</b>	total amount paid to suppliers of healthcare to settle claims; includes benefits paid from savings accounts

## ABBREVIATIONS

pmpm	per member per month
pbpm	per beneficiary per month



# 1. Introduction

## 1.1 Background and Objectives

The Office of the Registrar of Medical Schemes is a statutory body set up in terms of the Medical Schemes Act, No. 131 of 1998. The Office was fully functional from mid-2000. Prior to the new Act, during the period of the study, the Registrar's Office had been part of the Department of Health.

Medical schemes submit statutory returns to the Office on an annual basis. The information includes membership details, income statement, balance sheet and detailed information of the composition of benefits paid.

The Office of the Registrar produces a report each year using these returns. The report aggregates data over all schemes and summarises the main results. The way in which data was analysed in the historic reports changed from year to year. Some reports included data from 10 years prior to the date of the report, but otherwise no comprehensive study of any trends had yet been performed.

The research project was commissioned by Steven Harrison, head of Research and Monitoring at the Council for Medical Schemes. The first objective was to gather all the existing historical data from the Registrar's returns, that was stored on different media, into one comprehensive database. That database has been lodged with the Council for Medical Schemes, to be used for further study.

The second objective was to use the collated database to produce a definitive study of trends in private sector medical schemes in South Africa from 1974 to 1999. This monograph outlines the trends found in the collated database. It does not attempt to provide reasons for trends observed, unless a direct function of the data.

## 1.2 Construction of the Database

The database was collated at the Council for Medical Schemes in Pretoria in December 2000. The raw data was stored at the offices of Council for Medical Schemes, and could only be accessed on the premises.

The main sources of information were :

- The Annual Reports of the Registrar
- The main databases containing the statutory returns used in producing the Annual Reports of the Registrar

The Annual Reports contained summarized data for previous years. This was useful in the instances of missing Annual Reports. Reports relating to data for the following years were missing: 1974-1976, 1978, 1981 and 1983-1984.

Certain data was not detailed in the Annual Reports and was extracted from the main databases. The availability of the main databases was as follows:

- 1974 to 1981: available in hand-written ledger books.
- 1982 to 1984: missing (with unsuccessful efforts to locate these databases).
- 1985 to 1991: available in printed hardcopy.
- 1990 to 1996: available electronically on a mainframe system incompatible with the Council's current IT systems. Data could be extracted by creating short reports using the programme and importing each report to an Excel spreadsheet.
- 1997 to 1999: available electronically in Excel spreadsheets.

### **1.3 The Period of the Study**

In South Africa, the earliest record of a medical scheme was in 1889. The report of the Snyman Commission, published in 1962, using data from 1960, gives statistics concerning friendly societies, the forerunners to medical schemes. The data was however incomplete as some friendly societies did not submit statistics (Annual Report of the Registrar 1978)

The first Medical Schemes Act was promulgated in 1967. During the first few years of the Act, problems were experienced in obtaining information from schemes. In 1969, only 263 of the 348 schemes submitted information. Matters improved as better relationships were established with medical schemes and by 1974, data was almost complete (Annual Report of the Registrar 1978).

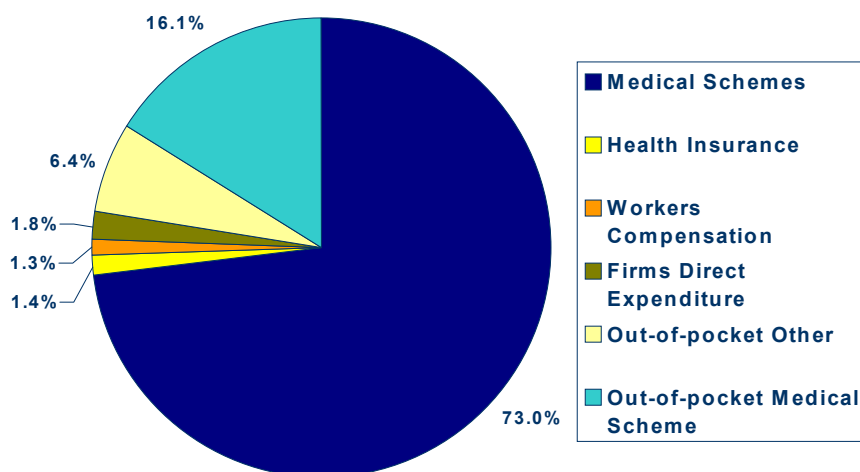
Although Annual Reports were available for 1968 and 1969, the main databases were available from 1974 only. Given the unavailability and unreliability of the earlier data, it was agreed with the Council for Medical Schemes to begin this study from 1974. The study ends in 1999 as data was not available for the year 2000 at the time the monograph was compiled.

The most significant limitations on the study period relate to inconsistencies in the data from year to year, as well as some data being unavailable. Some graphs shown in this monograph are incomplete, but trends can still be established without these missing data points. Certain variables could not be explored for the entire period 1974 to 1999, but were shown for the shorter period for which the data was available.

### **1.4 Relationship to Private Sector Health Expenditure**

The National Health Accounts Private Sector Report was completed in early 2001. The authors of that report estimated the size of private sector health expenditure to be R33.254 billion in 1998. Figure 1 below shows that medical scheme expenditure on health services accounted for 73.0% of private sector health expenditure.

If the estimated out-of-pocket expenditure by medical scheme members is added, then almost 90% of private sector health expenditure is accounted for by medical scheme members.



Source : National Health Accounts, 1998

**FIGURE 1: Total Private Sector Health Expenditure**

Health insurance emerged as a parallel market to medical schemes during the early 1980's. Products covering major surgical procedures and hospital accommodation were initially introduced by life assurers under the Long-term Insurance Act. Short-term insurers followed with hospital cash plans, covering hospital accommodation. With the de-regulation of the medical schemes environment in 1989 to allow age-rating and underwriting, the life assurers switched their attention to medical schemes and new business in health insurance products diminished from 1989 to 1998. (Van den Heever and McLeod 2000).

The National Health Accounts for 1998 showed that health insurance represented only some 1.4% of total health expenditure.

It is likely that the out-of-pocket expenditure by households has been underestimated. This is however a particularly difficult part of total health expenditure to measure.

## 1.5 Acknowledgements

The authors are grateful to the Council for Medical Schemes for their logistical support in making the historic data available for study.

Preeta Rama wishes to thank all staff members at the Council for Medical Schemes for making her time at the Council enjoyable and a great working experience. In particular, she thanks Steven Harrison and the Research and Monitoring team. She also thanks Rumalan Govender for his support.

## 2. Medical Schemes

This chapter examines how the total number of medical schemes in operation has changed over the period 1974 to 1999. However, before that, the scheme classifications used in this report are described below.

### 2.1 Scheme Classification

Medical schemes are categorised in a number of ways according to certain characteristics: Registered or Exempted; Open or Restricted; and Medical Benefit or Medical Aid.

#### 2.1.1 *Registered and Exempted Schemes*

Registered schemes register with the Office of the Registrar and must comply fully with the requirements of the Medical Schemes Act. These schemes are required to submit annual returns.

In terms of the Medical Schemes Act of 1967, a number of schemes are exempted from compliance with certain provisions of the Act, since they are controlled by other legislation administered by other Government departments (Annual Report of the Registrar 1989). Most Exempted schemes are low cost schemes and their benefits structures often differ significantly from Registered schemes. One example of this non-compliance is the inability to provide the prescribed minimum benefits. A number of Exempted schemes have a different financial year-end to that required by the Office of the Registrar [Interview with D. Kolver, December 2000]. A number of Exempted schemes did not submit returns, and even that which was submitted may not have been accurate or complete. For these reasons, the findings of this report are stated separately for Registered and Exempted schemes.

Exempted schemes are schemes traditionally set up for industrial companies and government departments. Two schemes in particular, Polmed and Transmed, were included in Exempted schemes from 1993 to 1999. These two schemes are larger than the typical Exempted scheme and have, in certain sections, been considered separately from other Exempted schemes.

#### 2.1.2 *Medical Aid and Medical Benefit Schemes*

Two types of Registered schemes existed before 1993: Medical Aid schemes and Medical Benefit schemes. Medical Benefit schemes differ from Medical Aid schemes in that they rendered services to their members by means of their own facilities and practiced managed healthcare. Medical Benefit schemes thus managed to contain costs more effectively than Medical Aid schemes (Annual Report of the Registrar 1992). However, the Medical Schemes Amendment Act of 1993 stated that the distinction between a Medical Aid scheme and a Medical Benefit scheme was no longer necessary and thus this distinction would no longer be made (Annual Report of the Registrar 1993). For this reason, this report combines the data of Medical Aid

schemes and Medical Benefit schemes (for the applicable years) under one category: “Registered schemes”.

### 2.1.3 Open and Restricted Schemes

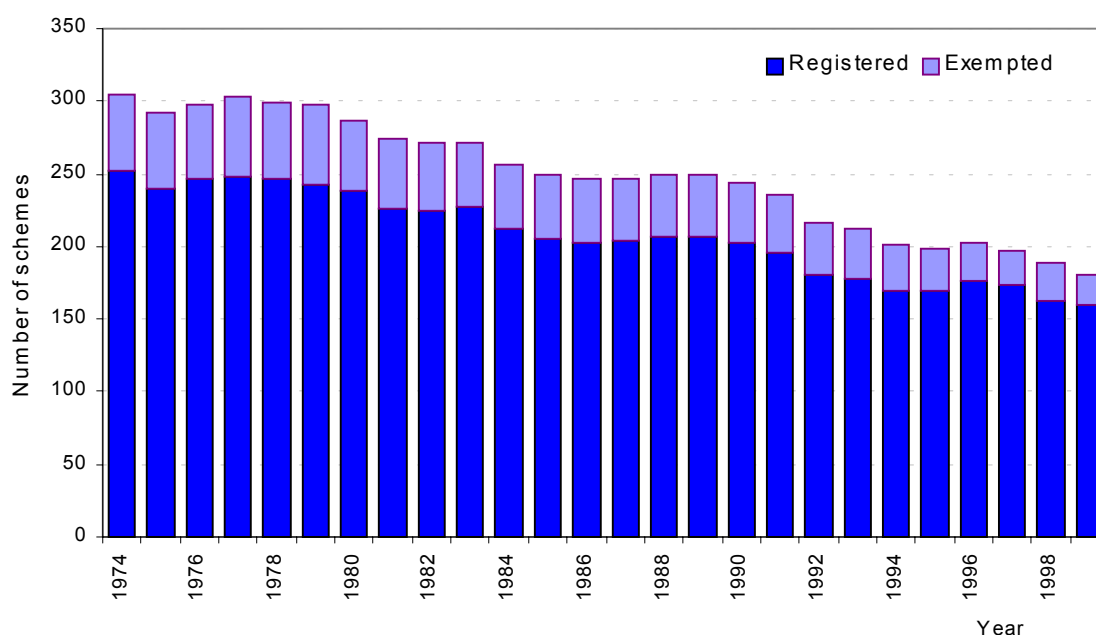
Registered schemes can be classified as Open or Restricted. Restricted schemes restrict membership based typically on employment, membership of a union or professional association. Membership in Open schemes is open to the public. Currently, Open schemes cannot refuse membership to anyone. The administration and risk pools of these two types of schemes often differ. For this reason some sections show separate results for Open and Restricted schemes.

Before 1997, the Office of the Registrar did not record whether schemes were Open or Restricted. Over the period investigated, some schemes changed from being Restricted to Open, and some from being Open to Restricted. How schemes were classified for the period before 1997 is detailed in the Appendix. Open and Restricted scheme analysis is limited to the period 1990 to 1999 only.

## 2.2 Total Number of Schemes

### 2.2.1 Registered and Exempted Schemes

The graph below shows the number of Registered and Exempted schemes in operation in each year over the period 1974 to 1999. The number of schemes represents the number of schemes that were in operation at the year-end 31 December. A number of Exempted schemes did not report to the Office and this must be considered when looking at their numbers.

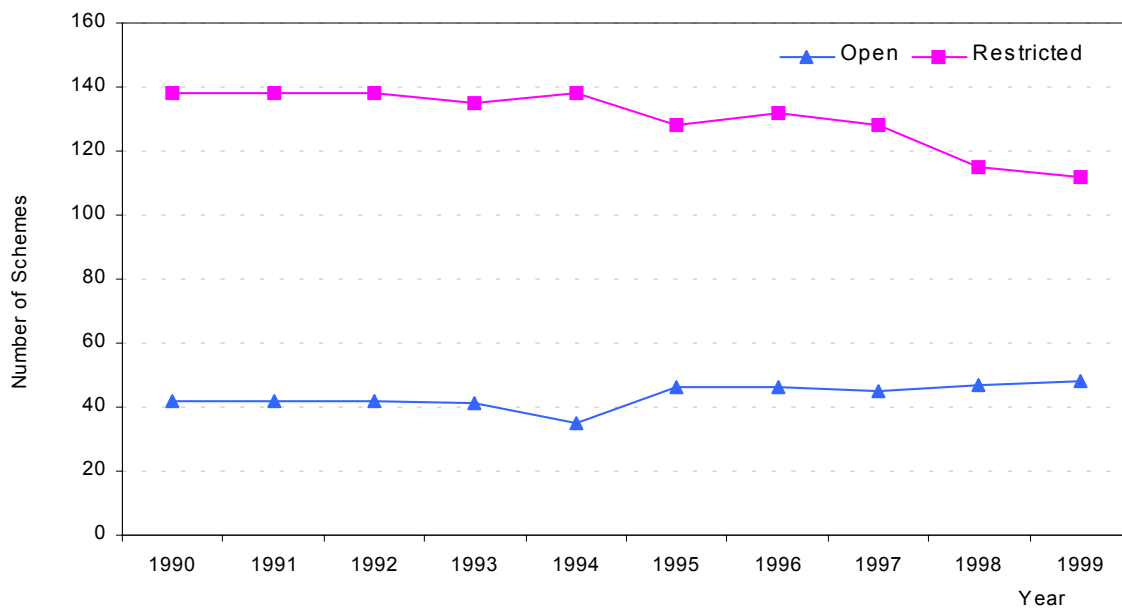


**FIGURE 2: Number of Registered and Exempted schemes**

There are far more Registered schemes than Exempted schemes. There has been an overall decrease in the number of both Registered and Exempted schemes from 252 Registered schemes and 53 Exempted schemes in 1974 to 160 and 21, respectively, in 1999. This decrease is as a result of a number of schemes merging or being liquidated each year, with only a few new schemes registering each year. From 1980 to 1989, 33 new schemes were registered, while 65 schemes were either amalgamated, liquidated or de-registered. From 1990 to 1999, 42 new schemes were registered and only 75 were amalgamated, liquidated or de-registered.

### 2.2.2 Open and Restricted Schemes

The number of Open and Restricted schemes from 1990 to 1999 is shown in Figure 3 below.



**FIGURE 3: Number of Open and Restricted schemes**

There are far fewer Open schemes than Restricted schemes. Open schemes represented 30% of all Registered schemes, and Restricted schemes 70%. The number of Restricted schemes was relatively steady from 1990 to 1994, but decreased from 138 in 1994 to 112 in 1999. Meanwhile, the number of Open schemes increased only slightly from 42 in 1990 to 48 in 1999. Thus, the decrease in the total number of Registered schemes can be attributed to the decrease in Restricted schemes. There was a slight drop in the number of Open schemes in 1994. This was due to a number of Open schemes closing in 1993 followed by a number of new schemes registering only in 1995.

## 2.3 Number of Schemes by Size

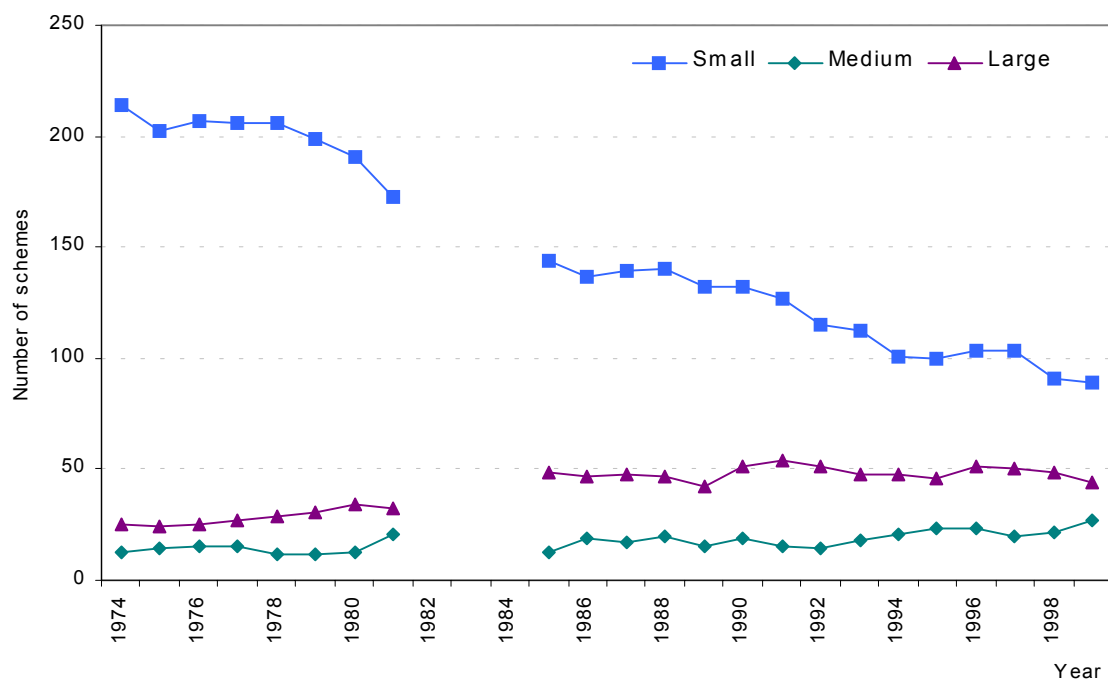
The Office of the Registrar categorises schemes as follows:

- Small Schemes: less than 6000 members
- Medium Schemes: more than 6000 members but less than 30 000 beneficiaries
- Large Schemes: more than 30 000 beneficiaries.

### 2.3.1 Registered and Exempted Schemes

Dividing schemes into categories according to size provides further insight into which types of schemes (small, medium or large) have contributed most to the decrease in the number of schemes. Data was unavailable for 1982 to 1984 (inclusive). Figure 4 shows the number of Registered schemes by size as categorized by the Office of the Registrar.

The Office of the Registrar previously required a minimum of 2 500 members at the date of registration (Annual Report of the Registrar 1992). In some early Annual Reports, schemes with 2 500 members or less were considered 'small'. The authors have re-categorised all schemes based on the current definitions.



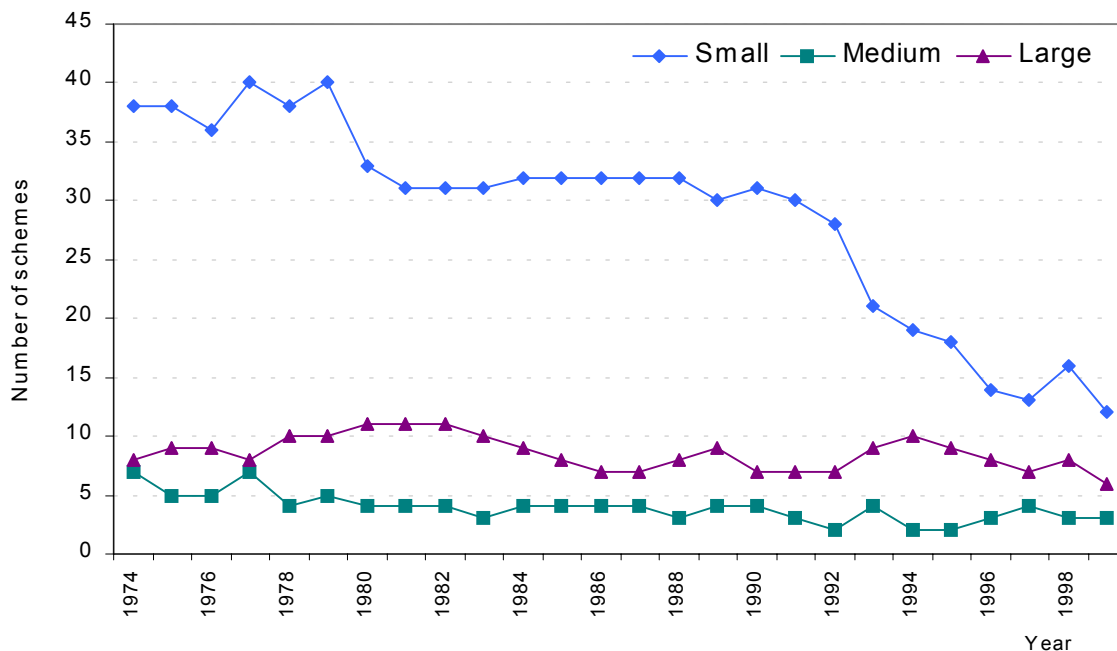
**FIGURE 4: Registered schemes: Number of schemes by size**

This graph shows a significant decrease in the number of small Registered schemes, with the number of medium and large schemes increasing slightly. Thus, the decrease in the number of small schemes from 214 in 1974 to just 89 in 1999 is the main contributor to the decrease in the total number of schemes. Of the 89 small schemes, 51 schemes had 2 500 or fewer members.

Small schemes represented 85% of schemes in 1974. This proportion dropped to 56% in 1999. Meanwhile, 71% of Registered schemes had 2 500 or fewer members in 1974, compared to just 32% in 1999. The proportion of medium schemes was 5% in 1974 and 17% in 1999, while large schemes represented 10% and 27% in 1974 and 1999 respectively.

This decline in the number of small medical schemes is to be expected as it reflects Government’s policy to encourage consolidation so that there are a few, large medical schemes in the industry. This will enable schemes to benefit from economies of scale and create larger risk pools.

A similar trend was found with Exempted schemes, although there was a slightly more erratic pattern. The majority of Exempted schemes were small schemes. In 1999, there were 12 small schemes, 6 large and 3 medium. The graph of the number of Exempted schemes by size can be found in the Appendix.

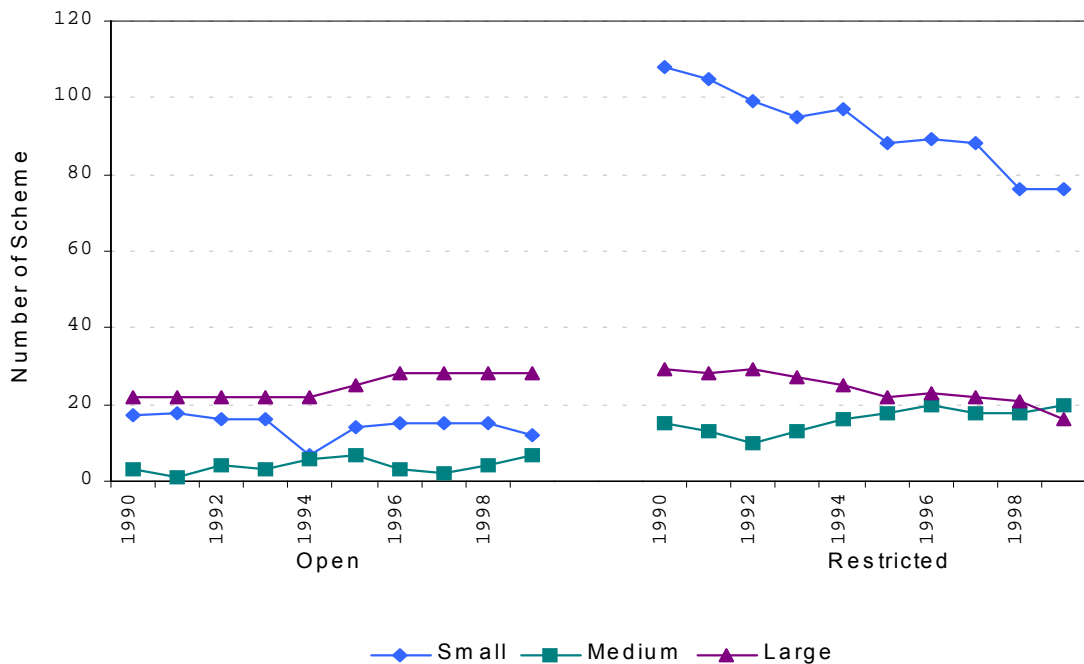


**Figure 5: Exempted Schemes: Number of schemes by scheme size**

### 2.3.2 Open and Restricted Schemes

The number of schemes, by size, is shown separately for Open and Restricted schemes in Figure 6.





**FIGURE 6: Open and Restricted schemes: Number of schemes by size**

The majority of Open schemes are large schemes (60% in 1999), followed by small schemes (26% in 1999). The number of large Open schemes remained constant from 1990 to 1994 at 22 schemes, then increased to 28 in 1996, remaining at this level through to 1999.

Small Open schemes decreased **overall** (17 in 1990 to 12 in 1999) and medium Open schemes increased **overall** (3 in 1990 to 7 in 1999). The sharp decline in the number of small Open schemes in 1994 corresponds with the decline of all Open schemes in 1994.

Small Restricted schemes represented 71% of all Restricted schemes in 1990, declining to a proportion of 68% in 1999. The decrease in the total number of small Registered schemes seen in the previous section can be attributed largely to the decrease in small Restricted schemes.

There was a greater proportion of large Restricted schemes (19%) than medium Restricted schemes (10%) in 1990. However, in 1999, the proportion of medium Restricted schemes (18%) was greater than that of large Restricted schemes (14%).

### 3. Membership

Medical schemes are examined in terms of the number of members and beneficiaries, average membership, membership by scheme size and dependency ratios. This chapter also explores some demographic aspects, namely membership and dependency ratios by race as well as pensioner ratios.

#### 3.1 Total Number of Members

One indication of the overall size of the medical scheme industry is the total number of members that belong to medical schemes.

##### 3.1.1 Registered and Exempted Schemes

Membership numbers represent members as at the year-end 31 December. Figure 7 below shows total membership over the period of investigation for both Registered and Exempted schemes. Exempted schemes **including** Polmed and Transmed are shown separately from Exempted schemes **excluding** these two schemes.

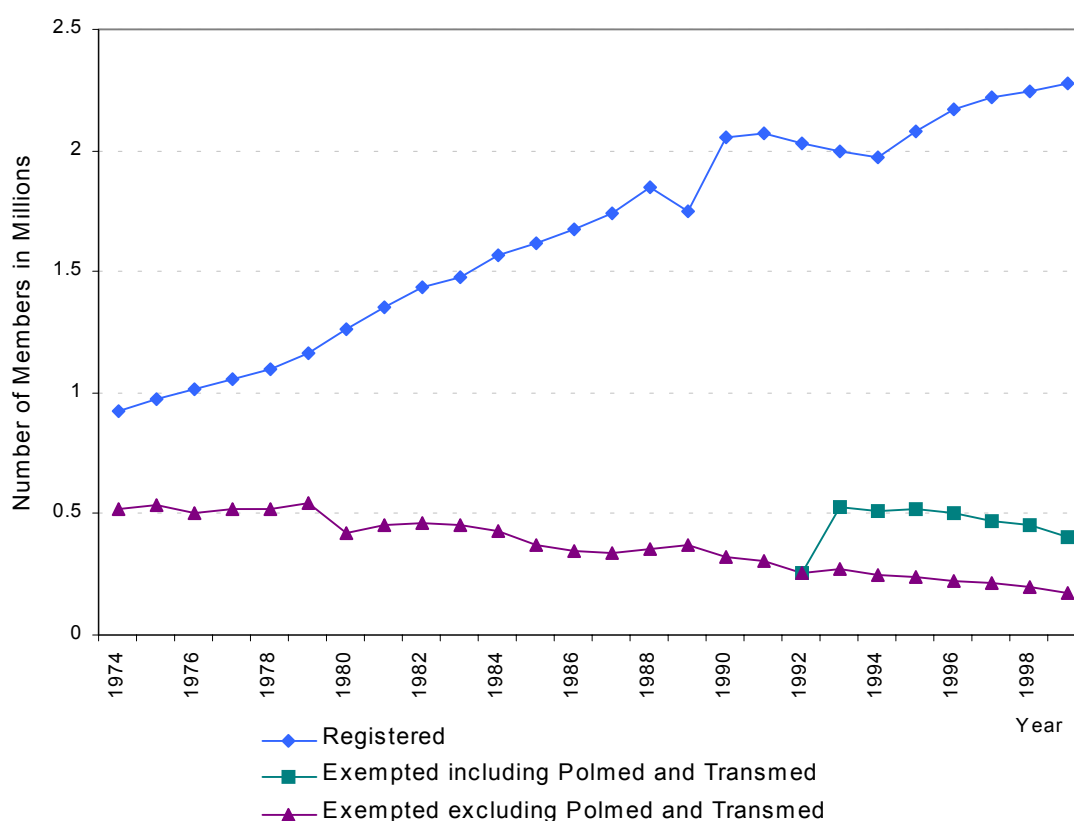


FIGURE 7: Registered and Exempted schemes: Membership

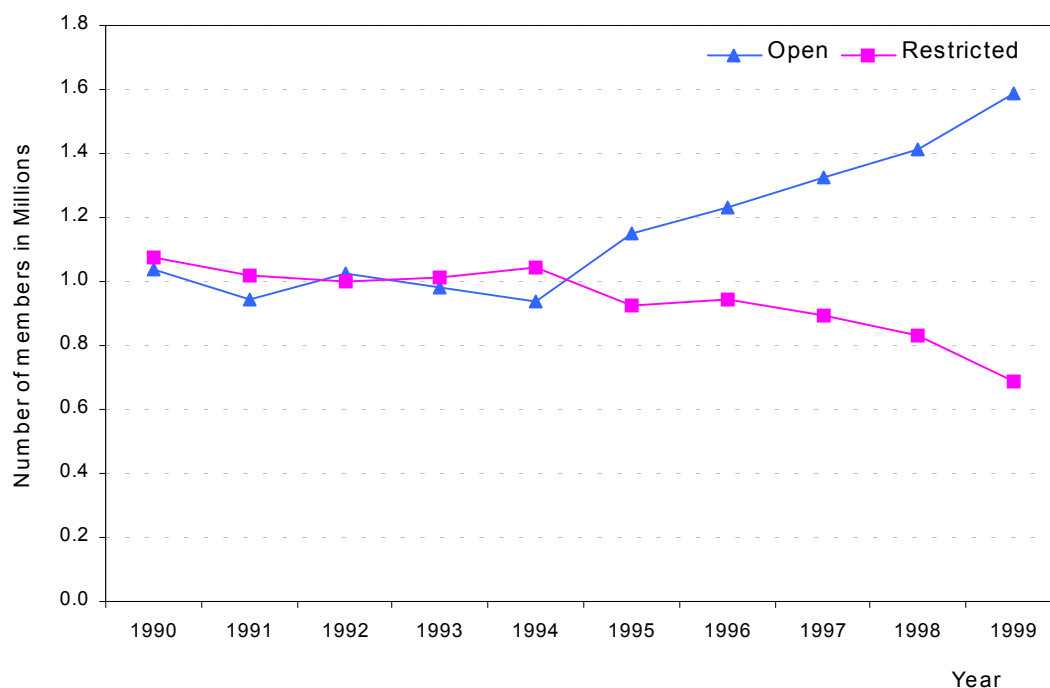
Membership in Registered schemes has grown at an average compound rate of 3.4% per annum over the period of investigation, from 0.99 million members in 1974 to 2.28 million members in 1999. There was an unexplained decrease in membership in Registered schemes in 1989.

The Report of the Registrar for 1993 suggests that the decline over the period 1992 to 1995 was mainly due to the “adverse economic situation (in South Africa) and consequent large scale retrenchments”.

Membership in Exempted schemes (excluding Polmed and Transmed) declined steadily from 0.52 million members in 1974 to 0.17 million in 1999. Polmed and Transmed held a combined membership of 0.26 million in 1993. The membership in **all** Exempted schemes (including Polmed and Transmed) increased from 0.28 million in 1992 to 0.52 million in 1993.

### 3.1.2 Open and Restricted Schemes

Figure 8 shows membership separately for Open and Restricted schemes.



**FIGURE 8: Open and Restricted schemes: Membership**

From 1990 to 1994, membership in Restricted schemes was similar to that in Open schemes. From 1994 to 1999, membership in Open schemes increased substantially, while that of Restricted schemes decreased. In 1994, 47.3% of members were in Open schemes and 52.7% in Restricted schemes. By 1999, 69.8% of members were in Open schemes and only 30.2% in Restricted schemes.

The increasing divergence of membership seen after 1994 clearly shows the shifting of members from Restricted schemes to Open schemes.

There were 1.6 million Open scheme members and 0.7 million Restricted scheme members in 1999.

## 3.2 Average Membership

Average membership gives an indication of the average size of medical schemes. Average membership is calculated as total membership divided by the number of schemes.

### 3.2.1 Registered and Exempted Schemes

There has been an increase in overall membership in Registered schemes and simultaneously a decrease in the total number of Registered schemes in operation, thus leading to an increase in the average number of members per scheme. The average was 3 661 members per scheme in 1974 growing to 14 219 in 1999. The average size of schemes increased at an average compound rate of 5.6% per annum over the period of investigation, as shown below.



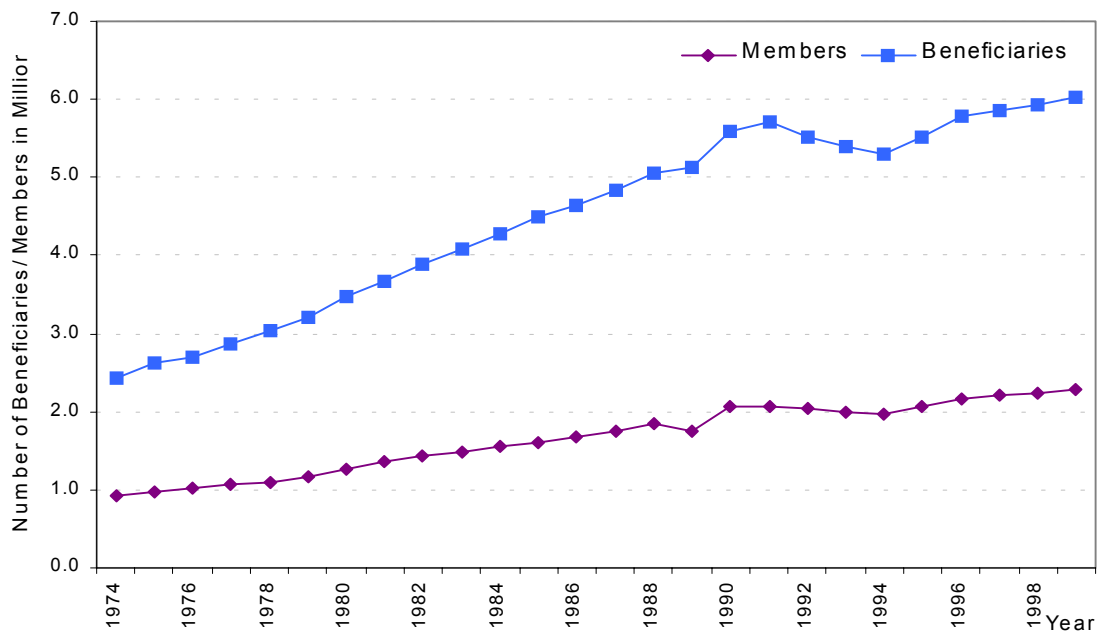
**FIGURE 9: Registered and Exempted schemes: Average membership**

For Exempted schemes, average membership fluctuated, possibly due to incomplete data or no data from certain schemes in different years. Average membership was 9 769 in 1974 and 8 983 in 1999. Although excluded from the graph above, the average number of members in Polmed and Transmed combined was 129 303 in 1993 and 115 641 in 1999, much greater than the average size of other Exempted schemes.

The average size of Exempted schemes was greater than that of Registered schemes from 1974 to 1985, but less thereafter. This outcome is expected, bearing in mind from the previous section, the decrease in the number of Exempted scheme members and the increase in Registered scheme membership, while the number of both Registered and Exempted schemes decreased.

### 3.3 Beneficiaries

A dependent is defined by the Office of the Registrar as a member who is a spouse or child of a Principal member (a principal member being the main member in a family responsible for paying contributions). This definition has recently been extended to include “any of the member’s immediate family for whom the member is responsible for family care and support” (Alexander Forbes Survey of Open Medical Schemes: 1999). The number of beneficiaries is the sum of the number of members and dependants and is compared to the number of members in Figure 10.

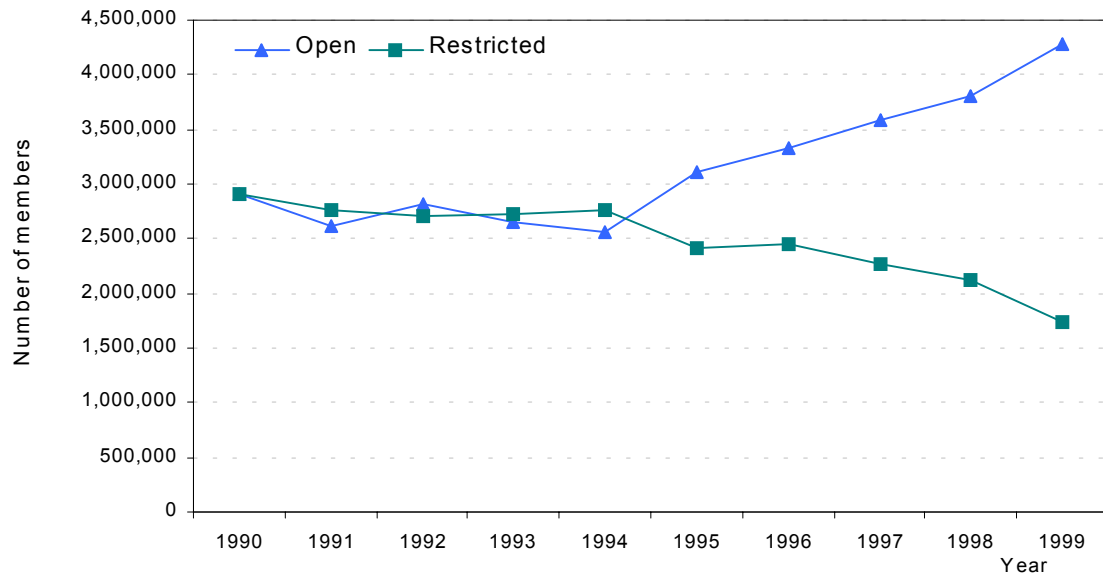


**FIGURE 10: Registered Schemes: Number of Beneficiaries and Members**

The upward trend in beneficiary numbers for Registered schemes is similar to that of membership numbers. The number of beneficiaries in Registered schemes increased **overall** from 2.4 million in 1974 to 6.0 million in 1999, 2.5 times greater than in 1974. However, there was a decline from 1991 to 1994, as seen earlier with membership.

In 1974, there were 1.21 million beneficiaries in Exempted schemes, decreasing to 0.39 million (excluding Polmed and Transmed) in 1999. Polmed and Transmed had combined beneficiaries of 0.57 million in 1999.

A comparison of the number of beneficiaries in Open and Restricted schemes is graphed below. In 1990, there were 2.90 million beneficiaries in Open schemes and 2.91 million for Restricted schemes. In 1999, there were 4.28 million beneficiaries in Open schemes and 1.73 million in Restricted schemes.



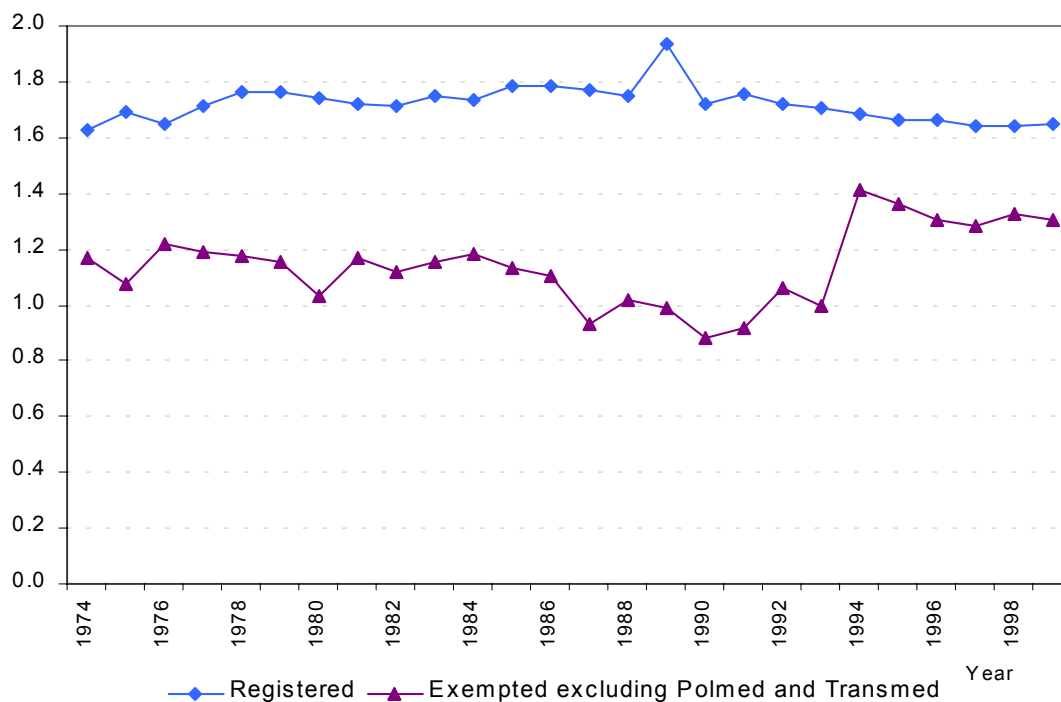
**Figure 11: Open and Restricted Schemes: Beneficiaries**

### 3.4 Dependency Ratios

A dependency ratio indicates the average number of dependants that are covered by each member in a medical scheme. Members with a higher number of dependants are expected to claim more **per member** than those with a fewer number or no dependants (Alexander Forbes Health Care Consultants, 1999).

#### 3.4.1 Registered and Exempted Schemes

Dependency ratios for Registered and Exempted schemes are compared in Figure 12 below.



**FIGURE 12: Registered and Exempted schemes: Dependency ratios**

The graph shows that the dependency ratio for Registered schemes has remained consistent over the period of the study, lying between 1.6 and 1.8 dependents per member, with the exception of 1989 where the ratio increased to 1.94. This increase in 1989 corresponds with a decrease in recorded membership during this year.

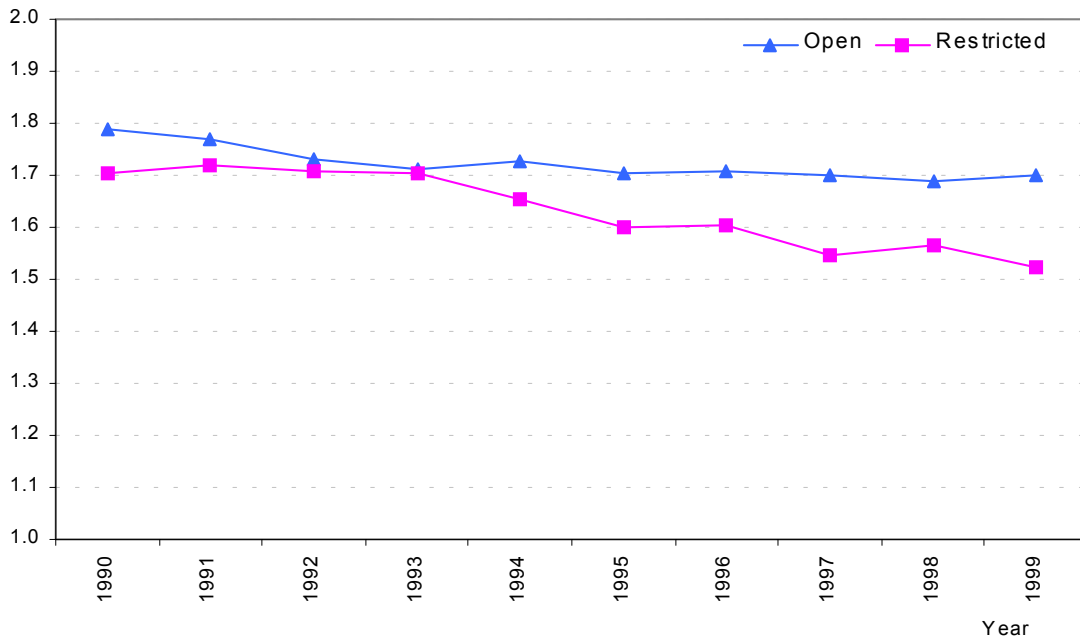
The data concerning the number of dependents in Exempted schemes was not as reliable as that of Registered schemes. A number of Exempted schemes did not supply any information regarding dependents. Furthermore, some Exempted schemes do not make provisions for dependants to be covered by the scheme and consequently, dependency ratios for Exempted schemes are lower than those of Registered schemes.

The graph shows dependency ratios for Exempted schemes excluding Polmed and Transmed, although their inclusion did not substantially affect the overall dependency ratios for Exempted schemes.

The trend of dependency ratios for Exempted schemes is erratic from 1974 to 1994. There was a sharp increase from 0.99 dependents per member in 1993 to 1.41 in 1994, due to a large increase in the number of reported dependants over this period. This increase was mainly due to the Natal Furniture Industry and Cape Clothing Industry including dependants in their annual returns for the first time in 1994. The dependency ratio then decreased steadily to 1.3 dependants per member in 1999.

### 3.4.2 Open and Restricted Schemes

Dependency ratios were determined separately for Open and Restricted schemes for the period 1990 to 1999.



**FIGURE 13: Open and Restricted schemes: Dependency ratios**

The dependency ratio for Open schemes was higher than that of Restricted schemes from 1990 to 1999. The number of dependents per member of Open schemes decreased from 1990 to 1993, but remained steady around 1.7 dependants per member from 1993 to 1999. For Restricted schemes, the ratio remained steady around 1.7 dependants per member between 1990 and 1993, but decreased thereafter to 1.52 in 1999.

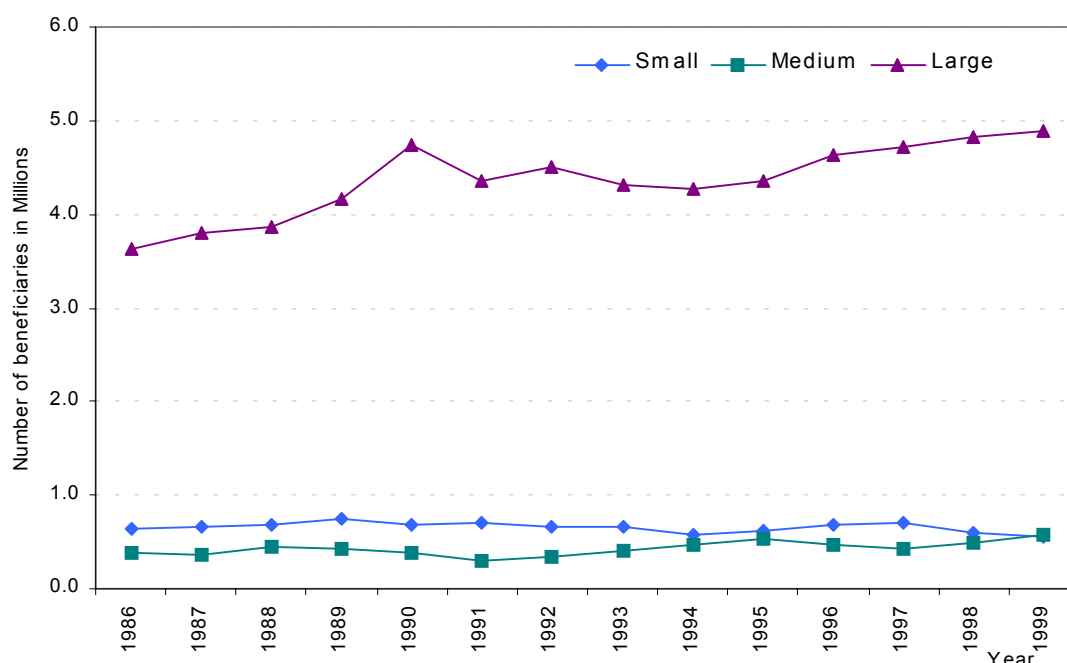
### 3.5 Beneficiaries by Scheme Size

Figure 14 shows the number of beneficiaries in Registered schemes for each scheme size category: small, medium and large, over the period 1986 to 1999.

The number of beneficiaries in large schemes increased from 1986 to 1990, but decreased from 1990 to 1994. Thereafter the number increased steadily to 4.88 million beneficiaries in 1999. The trend in the number of beneficiaries in large schemes follows closely to that of the total number of beneficiaries in Registered schemes.



The number of beneficiaries in small and medium schemes fluctuated over the period. The number of beneficiaries in small schemes was higher than in medium schemes except for 1999 where there were 0.55 million beneficiaries in small schemes and 0.58 million in medium schemes.



**FIGURE 14: Registered schemes: Beneficiaries by scheme size**

The largest proportion of beneficiaries were in large schemes (78% of beneficiaries in 1986 and 81% in 1999). 8% of beneficiaries were in medium schemes in 1986 increasing to 10% in 1999. Small schemes represented 14% and 9% of beneficiaries in 1986 and 1999 respectively.

The table below shows the average number of members and beneficiaries per scheme, categorized by scheme size for 1986, 1992 and 1999.

**TABLE 1: Registered schemes**  
Average number of members and beneficiaries by scheme size

	Members			Beneficiaries		
	1986	1992	1999	1986	1992	1999
Small	1639	2115	2329	4607	5746	6218
Medium	7527	8979	8259	20534	23963	21620
Large	27738	32490	41927	77197	88498	111021

Average membership and average number of beneficiaries per scheme has increased for large and small schemes.

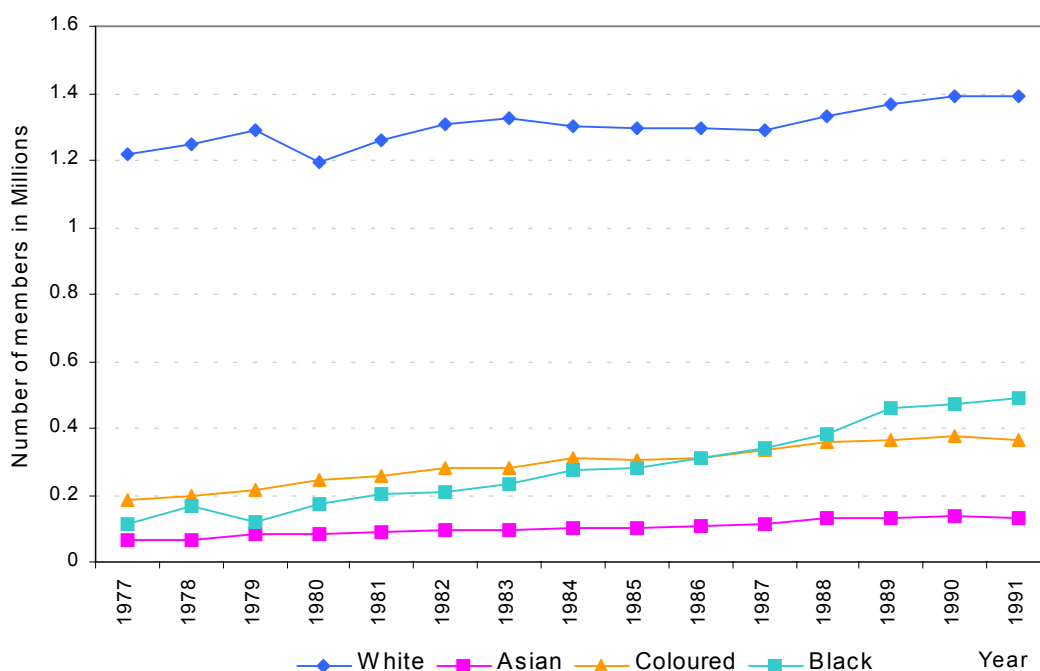
## 3.6 Demographics

The following demographic characteristics are explored in this report: membership by race groups, dependency ratios by race groups and the proportion of pensioners in schemes. Other demographics, such as income levels and age profiles of members could not be explored due to no such information being available. Current statutory returns require more detailed information so that, for example, the age structure of members can be determined.

### 3.6.1 Membership by race groups

Members were categorised into race groups as follows: Asians, Blacks, Coloureds and Whites. In earlier years, different race groups were encouraged to join schemes designed for their specific race group. The argument was that members of the same race group would have similar claims experience and thus be paying a fair rate according to their claims experience (Annual Report of the Registrar 1978). In South Africa, race is often used as an indicator of income levels [Interview with Steven Harrison, December 2000]. Data pertaining to membership by race was only available from 1977 to 1991. Data was not available separately for Registered and Exempted schemes.

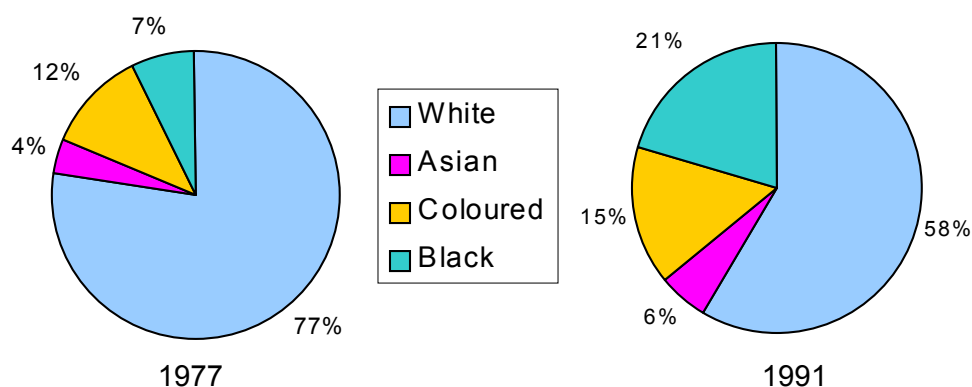
Figure 15 shows that of all the race groups, Black membership has increased the most significantly, from 111 988 members in 1977 to 490 428 in 1991, representing a 338% increase over the 14 year period. By comparison, Asian membership increased by 109%, Coloured membership by 98% and White membership by only 14%. Note that total membership increased by 51% over the same period.



**FIGURE 15: Registered and Exempted schemes combined:  
Membership by race groups**

Unfortunately, race data was unavailable after 1991. The Office of the Registrar is requesting such data again from 2000 onwards.

Figure 15 shows there were a far greater number of White members than any other race group. Figure 16 shows the **proportion** of total membership for each race group.



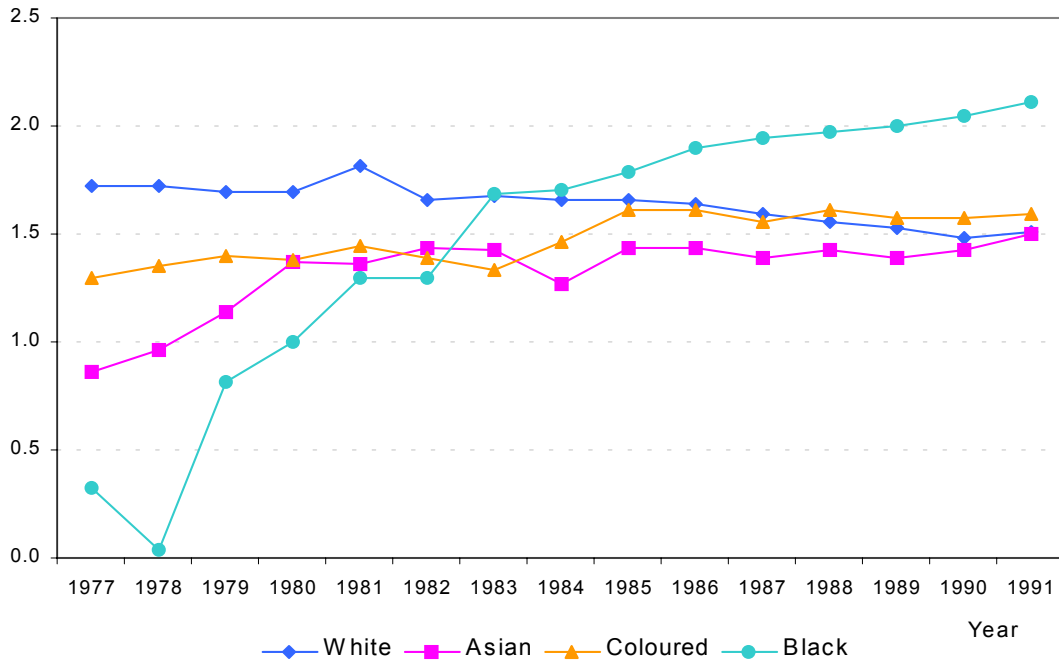
**FIGURE 16: Registered and Exempted schemes combined:  
Proportion of membership by race group**

White membership as a **proportion** of total membership decreased from 77% in 1977 to 58% in 1991, while the Black membership **proportion** increased from 7% in 1977 to 21% in 1991. Coloured and Asian membership as a **proportion** of total membership both increased slightly.

### **3.6.2 Dependency ratios by race groups**

Figure 17 below compares dependency ratios across race groups. Race groups with a higher dependency ratio are expected to claim more per member than race groups with lower ratios.

The number of dependents per Black member has increased considerably from 0.32 in 1977 to 2.11 in 1991, while dependency ratios for the White population has decreased slightly from 1.72 to 1.51 over the same period. Dependency ratios for Asian and Coloured groups has also increased, but to lesser extent than that of the Black population.



**FIGURE 17: Registered and Exempted schemes combined  
Dependency ratios by race groups**

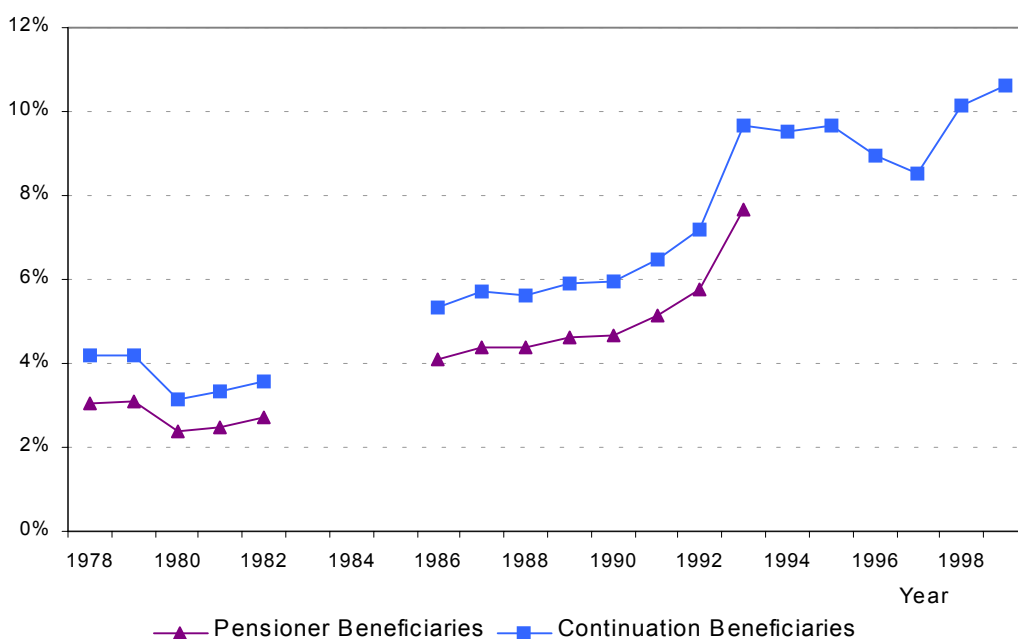
### 3.6.3 Pensioner Ratios: Registered and Exempted Schemes

A pensioner ratio of a scheme indicates the proportion of retired beneficiaries in the scheme (generally beneficiaries over the age of 65). Pensioners are expected to claim more per beneficiary than non-pensioners.

The Annual Report of the Registrar for 1991 states that pensioners claim more than 4 times as much as ordinary members (this is according to general information from medical schemes). Furthermore, pensioners receive concessions with membership fees, as their monthly pensions are often unable to support ordinary membership fees. Thus, pensioners are heavily subsidised by younger members.

Before 1994, schemes were required to submit information detailing the number of retired beneficiaries and the number of widows in the scheme. After 1994, the term ‘continuation’ **member** was created by the Office of the Registrar which includes **both** retired members **and** spouses of deceased members. Similarly, a ‘continuation’ **beneficiary** could be a retired member, retired dependant, or spouse of a deceased member.

Figure 18 below shows both the proportion of beneficiaries that are **pensioners** and the proportion of **continuation** beneficiaries. Data concerning the number of pensioners and widows was only available from 1978-1982 and 1986-1993.



**FIGURE 18: Registered and Exempted schemes combined**  
**Proportion of pensioner and continuation beneficiaries**

The pensioner ratios and the continuation beneficiary ratios follow a similar trend over the period 1978 to 1993. The continuation beneficiary ratio was 4.19% (pensioner ratio 3.05%) in 1978 and rose to 9.65% (pensioner ratio 7.68%) in 1993. Note the decrease in both ratios from 1979 to 1980. The proportion of continuation members was relatively steady from 1993 to 1995. A sharp decrease in the proportion of continuation members occurred from 1995 to 1997, thereafter it increased to 10.64% in 1999.

The proportion of pensioner and continuation **members** was greater than that of beneficiaries over the period investigated. These member ratios are shown for comparison in the table below.

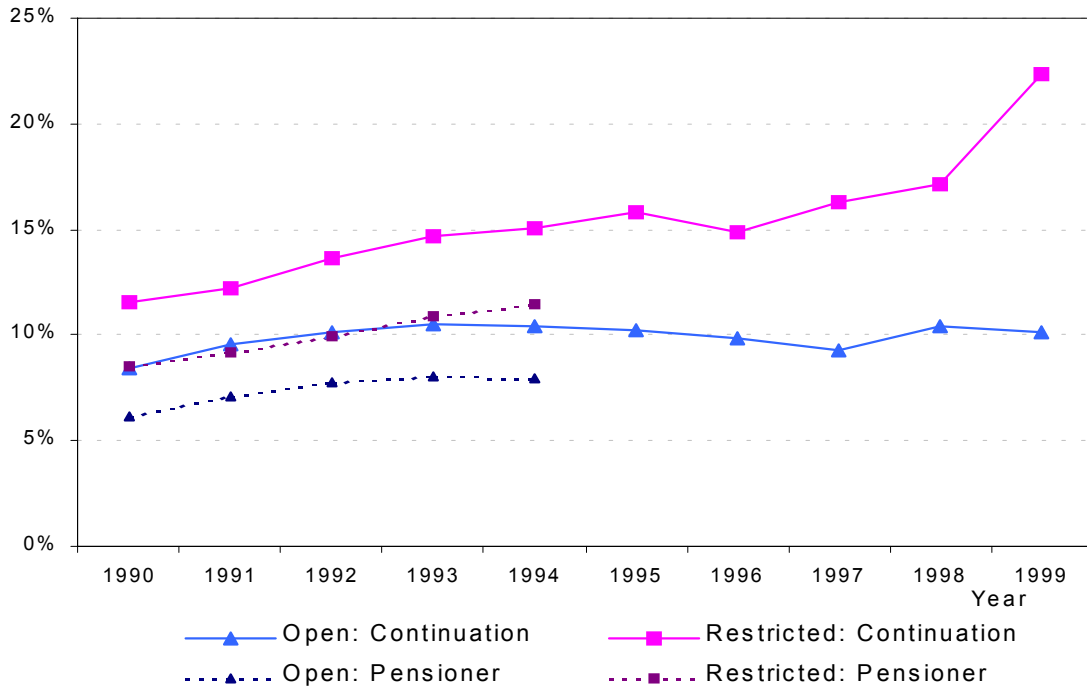
**TABLE 2: Registered schemes**  
**Proportion of pensioner and continuation members**

	1978	1993	1999
Pensioner members	5.27%	9.97%	-
Continuation members	7.90%	13.98%	14.59%

The data collected for 2000 includes the number of beneficiaries over the age of 65 (normal retirement age) which can then be used to determine pensioner ratios once again (although some beneficiaries may retire before the age of 65).

### 3.6.4 Pensioner Ratios: Open and Restricted Schemes

The proportion of continuation **members** is shown in Figure 19 for Open and Restricted schemes from 1990 to 1999. The proportion of pensioner **members** is also shown, represented by dotted lines.



**FIGURE 19: Open and Restricted Schemes  
Proportion of Pensioner and Continuation Members**

The proportion of both pensioner and continuation members for Restricted schemes was higher than with Open schemes. The proportion of continuation members in Restricted schemes almost doubled from 11.6% in 1990 to 22.4% in 1999, with a particularly sharp increase from 1998 to 1999. By comparison, the proportion of **pensioner** members in Restricted schemes was 11.5% in 1994, while the ratio for **continuation** members was 15.1%. For Open schemes, the continuation member ratio increased slightly from 1990 to 1993, then fluctuated around 10% from 1993 to 1999 (10.2% in 1999). In 1994, the proportion of **pensioners** in Open schemes was 8.0% compared to the continuation member ratio of 10.4%.

### 3.7 Proportion of the population with medical cover

This section aims to establish the proportion of South Africans that are covered by medical schemes. Table 3 shows the number of beneficiaries in Registered and Exempted schemes (combined) as a percentage of the total South African populations. The table also shows the percentage of beneficiaries by race group covered by medical schemes. Population figures used as the denominator may be found in the Appendix in section 8.4.

**TABLE 3: Proportion of the population (and population groups) covered by medical schemes**

	Asian	Black	Coloured	White	Total
1974	-	-	-	-	14.1%
1977	15.3%	0.8%	16.9%	76.7%	14.8%
1991	33.3%	5.5%	28.3%	70.7%	17.0%
1999	-	-	-	-	15.7%

In 1974, 14.1% of South Africans were covered by medical schemes. This percentage grew to 17.0% in 1991, but decreased to 15.7% in 1999.

Less than 1% of the Black population was covered by medical schemes in 1977, much lower than any other population group. This percentage increased almost 5 times by 1991, but was still lower than the other population groups.

76.7% of the White population was covered by medical schemes in 1977, decreasing to 70.7% in 1991. Meanwhile, the percentages of both Asian and Coloured groups approximately doubled over the 14 year period for which data was available.

## 4. Analysis of Benefits

Gross claim amounts include claims paid from both the main risk pool and members' savings accounts. The scheme is not considered to be at risk for the claims paid from the savings account. Savings accounts became more prevalent in medical scheme design from the middle of the 1990's.

The focus of this chapter is the actual amounts spent by medical scheme members through their scheme on different benefits, and not just the amounts for which the scheme was at risk. Thus, in this chapter, the definition of benefits paid is gross claims paid by the medical schemes.

### 4.1 Total Benefits Paid

#### 4.1.1 Actual benefits paid

The graph below shows the actual Rand amounts paid by Registered schemes.

The benefit amounts paid have increased considerably from R0.14 billion in 1974 to R21.24 billion in 1999. This represents an average compound growth of 22% per annum. Contributing to this increase are the effects of inflation and the increasing number of members and beneficiaries in Registered schemes. The following two sections adjust for these factors to isolate the underlying trend.

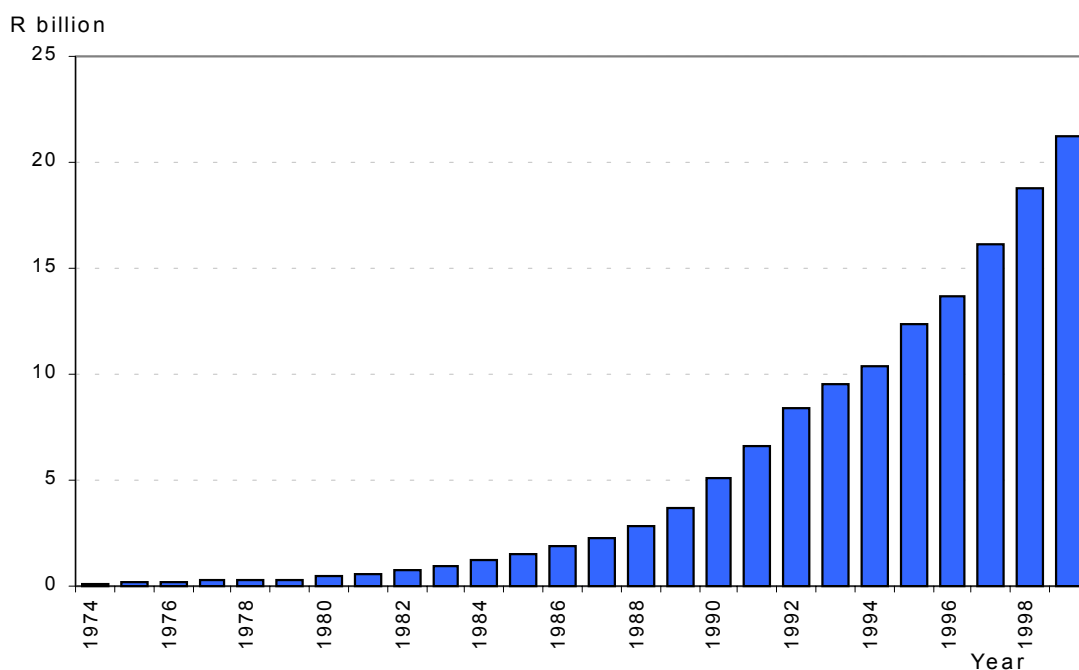


FIGURE 20: Registered schemes: Actual benefits paid



### 4.1.2 Inflation-adjusted benefits paid

The actual benefits paid were adjusted for inflation using general CPI, converting all amounts to year 2000 Rands (details in the Appendix). Inflation-adjusted benefits paid increased by an average compound rate of 8.7% per annum. The amount of R21.8 billion in 1999 was 8 times as much as the R2.7 billion in 1974.

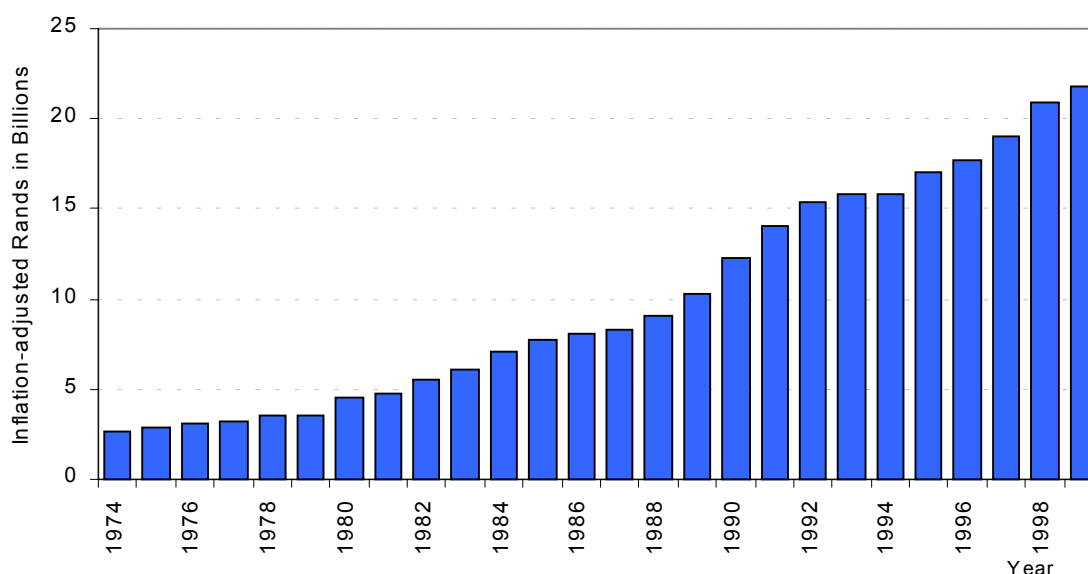
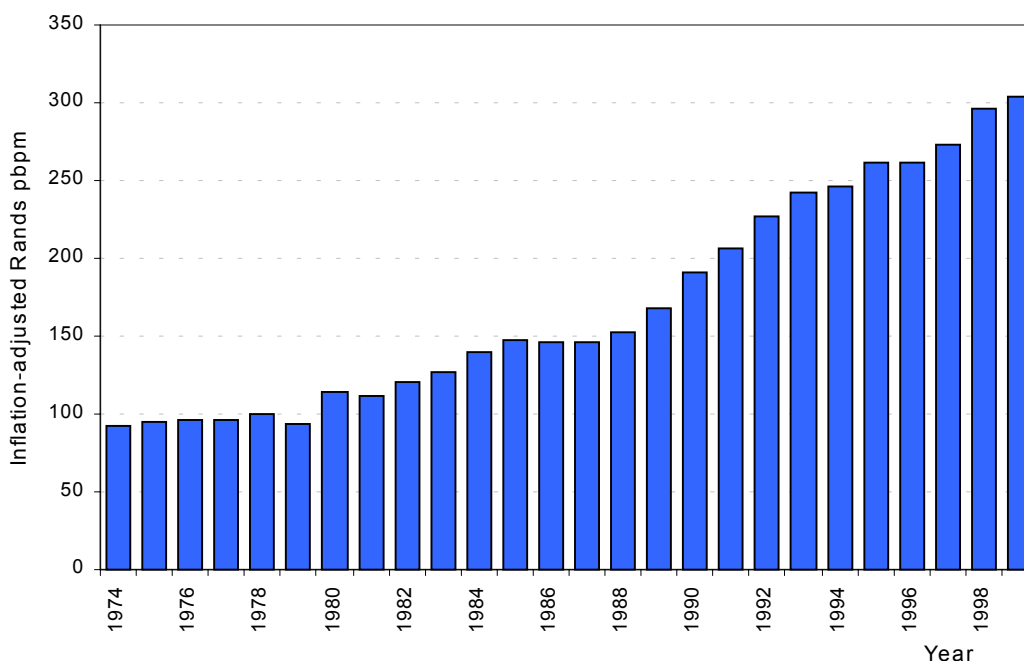


Figure 21: Registered Schemes: Inflation-adjusted benefits paid

### 4.1.3 Inflation-adjusted benefits paid per beneficiary per month

The graph below shows the **real** change in benefits paid, once the effects of both inflation and increasing beneficiary numbers have been factored out. Average beneficiaries over a particular year was used to calculate these **per beneficiary** amounts.

There has been an increase in total benefits paid, even after the effects of inflation and beneficiary numbers has been taken into account. The average compound growth rate was 4.9% per annum over the 25-year period, with the greatest amount of growth occurring over the period 1988 to 1993 (with an average growth rate of 10.6% per annum over this 5-year period). Note the sharp increase from 1979 to 1980 (21% increase), which will be further examined when benefit types are considered.



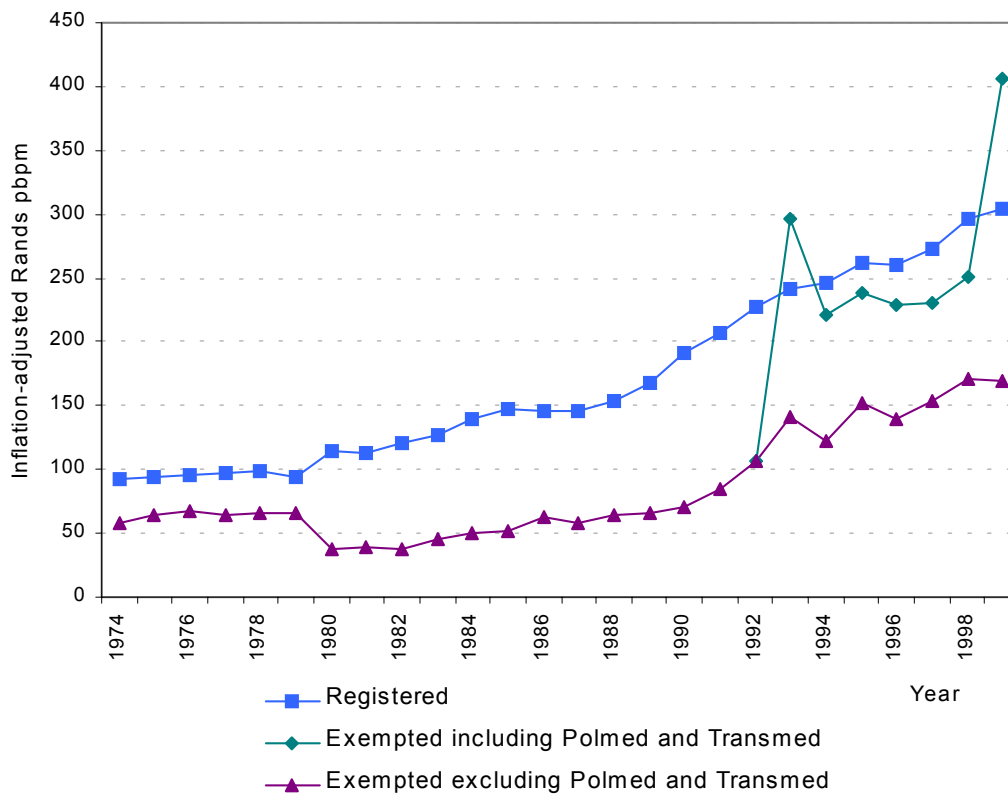
**FIGURE 22: Registered schemes  
Inflation-adjusted Benefits paid per beneficiary per month**

A beneficiary claimed on average R92.60 (in year 2000 Rand terms) per month in 1974. This escalated to more than 3 times as much at R303.86 per month in 1999.

Some reasons for this increase include: medical inflation (in excess of general inflation), tariff increases for providers of service, increased utilisation of services and benefits and over-servicing by healthcare providers. There have been many advances in medical technology over period being investigated which have had the effect of giving members more choices in treatments on offer, in this way increasing the usage of medical services. Thus it is not just the increase in medical costs but also the **usage** that may cause benefits paid to escalate at such a rate. Fraud perpetrated against medical schemes also contributed to these rising costs (Annual Report of the Registrar 1992).

#### **4.1.4 A comparison with Exempted schemes**

Total inflation-adjusted benefits paid per beneficiary per month (pbpm) are compared between Registered and Exempted schemes in Figure 23 below.



**FIGURE 23: Registered and Exempted schemes  
Inflation-adjusted benefits paid per beneficiary per month**

The inflation-adjusted benefits paid pbpm for Exempted schemes excluding Polmed and Transmed, was less than that of Registered schemes. This can be expected as many Exempted schemes are low-cost schemes, providing fewer or lower cost benefits.

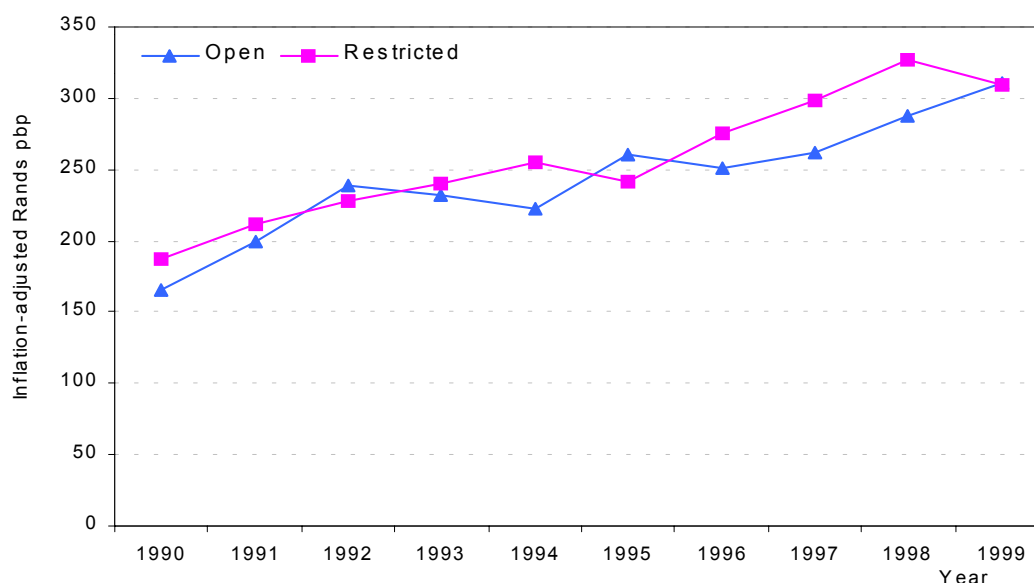
In 1974, inflation-adjusted benefits paid pbpm for Registered schemes was only R34.62 more than that of Exempted schemes (excluding Polmed and Transmed), but in 1999 this difference was R135.06.

Amounts for Exempted schemes were fairly consistent from 1974 to 1979, dropping in 1980, then rising steadily to R140.47 (excluding Polmed and Transmed) in 1993. From 1993 to 1999, benefits paid by Exempted schemes (excluding Polmed and Transmed) fluctuated, but increased **overall** to R168.80 in 1999.

The inclusion of Polmed and Transmed increased the benefit amount to R296.13 in 1993. Another sharp increase occurred in 1999, due to a doubling of benefits paid by Polmed. This occurred at a time when there was no significant increase in beneficiaries in Polmed.

### 4.1.5 Comparing Open and Restricted Schemes

Figure 24 shows inflation-adjusted benefits paid pbpm separately for Open and Restricted schemes from 1990 to 1999.



**FIGURE 24: Open and Restricted schemes  
Inflation-adjusted benefits paid per beneficiary per month**

The inflation-adjusted benefits pbpm for both Open and Restricted schemes fluctuated over the period investigated, but both increased **overall** from 1990 to 1999. Benefits paid pbpm for Open schemes were higher than Restricted schemes, except in 1992 and 1995.

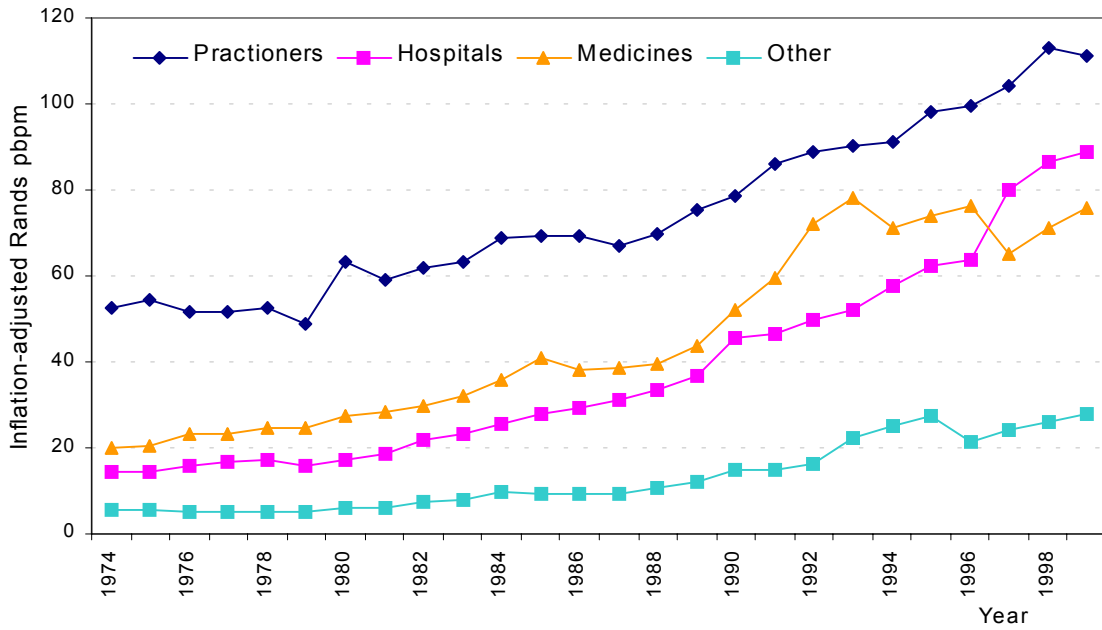
In 1990, inflation-adjusted benefits pbpm was R165.35 for Open schemes and R197.82 for Restricted schemes, rising to R310.59 for Open schemes and R309.37 for Restricted schemes in 1999.

## 4.2 Analysis of Benefits Paid by Benefit Category

Total benefits is the sum of the following benefit categories: practitioners, hospitals, medicines and other. Practitioners can be further divided into general practitioners, medical specialists, dentists and dental specialists. The hospital category includes Private and Public hospitals.

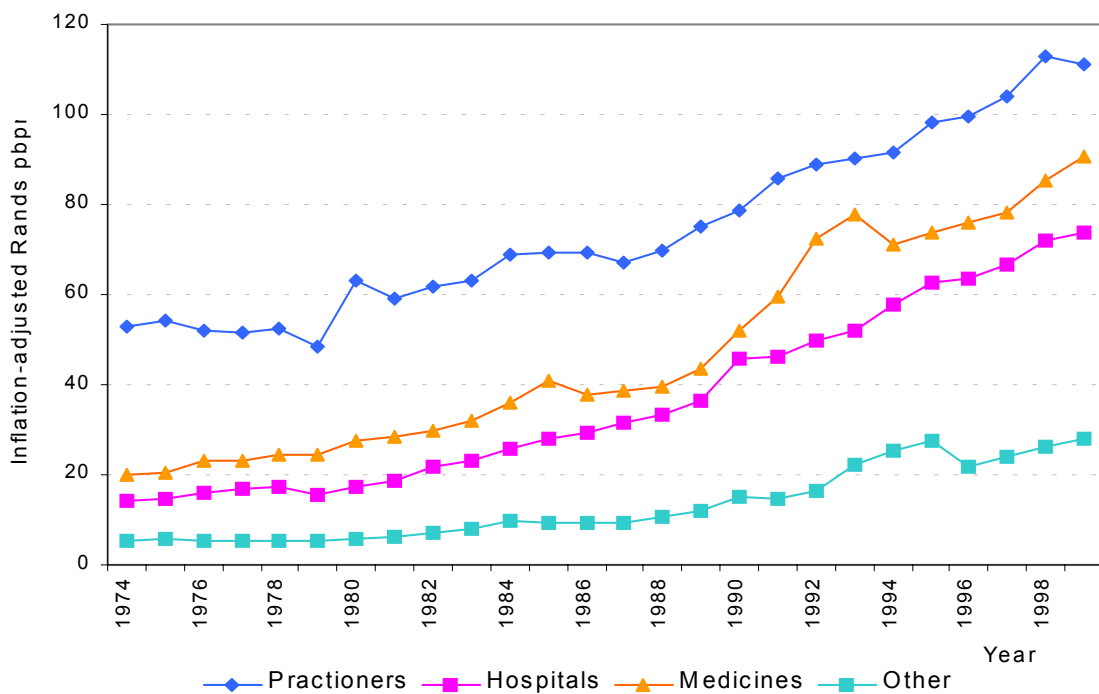
### 4.2.1 Inflation-adjusted benefits per beneficiary per month by benefit category

Figure 25 compares the inflation-adjusted Rand amounts pbpm spent **per benefit category** for Registered schemes, as recorded in the raw data.



**Figure 25: Registered Schemes: Analysis of inflation-adjusted benefits per beneficiary per month (medicine and hospital not corrected)**

There was a change in how medicines dispensed by hospitals was treated in the Reports of the Registrar. Prior to 1997, the total medicine amount was divided according to how the medicines were dispensed: by practitioners, pharmacists or hospitals. From 1997 onwards, medicines dispensed by hospitals were included in the **hospital** amount, thus distorting the values for both hospital and medicines. This is corrected in Figure 26.



**FIGURE 26: Registered schemes  
Inflation-adjusted benefits paid per beneficiary per month by type of benefit**

Figure 26 makes adjustments for the change in definition by subtracting the amount for medicines dispensed by hospitals from the hospitals amounts, and adding it back to **medicine** amounts from 1997 to 1999.

All the benefit categories have increased **overall** over the period of investigation, with the largest benefit amount going to Practitioners. Practitioners and hospitals will be further examined in later sections.

In 1974, R20.05 was spent per beneficiary on medicines each month, increasing to R90.77 in 1999 (4.5 times as much as 1974). There is a noticeable reduction in medicine benefits from 1991 to 1994. This coincides with the development of chronic medicine benefit managers, but further analysis would be needed to draw a firm conclusion.

Table 4 shows the average annual percentage growth for each type of benefit, over the period from 1974 to 1999.

**TABLE 4: Registered schemes**  
**Average annual percentage growth by benefit type**

Average annual percentage growth	
Practitioners	3.0%
Hospitals	6.2%
Medicines	6.8%
Other	6.7%

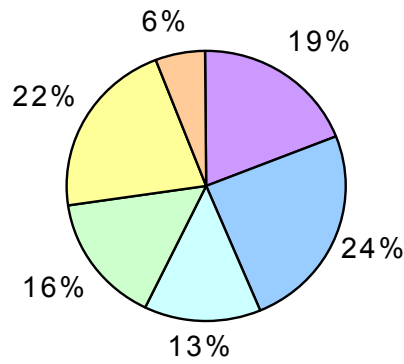
Although the largest amount is spent on Practitioners, it has the lowest average annual compound growth rate of 3%. The benefit category with the highest average annual percentage growth is medicines at 6.8%.

#### **4.2.2 Benefit types as a proportion of total benefits paid**

The pie charts below show general practitioners, medical specialists, dental, hospitals, medicine and other as a percentage of total benefits in 1974, 1985 and 1999. Accompanying each pie chart is a table detailing the inflation-adjusted Rand pbpm amounts for each benefit category shown in the pie chart.

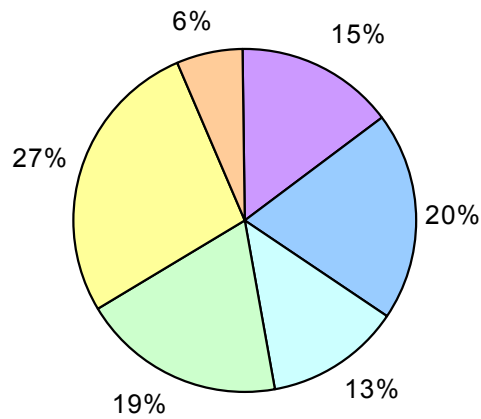
Medical specialists represent the greatest proportion of total benefits in 1974, but in 1985 and 1999; medicine represents the largest proportion. Note that medicine doubled over an 11-year period from R20.05 in 1974 to R40.95 in 1985 and then more than doubled over the next 14-year period to R90.77 in 1999. The **proportion** of total benefits represented by general practitioners has decreased over the period of investigation, while that of hospitals has increased.

1974



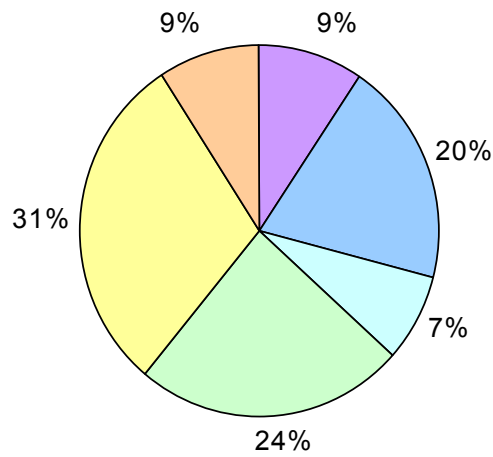
General Practitioners	R 17.63
Medical Specialists	R 22.86
Dental	R 12.21
Hospitals	R 14.36
Medicines	R 20.50
Other	R 5.50

1985



General Practitioners	R 22.14
Medical Specialists	R 28.89
Dental	R 18.50
Hospitals	R 28.04
Medicines	R 40.95
Other	R 9.26

1999



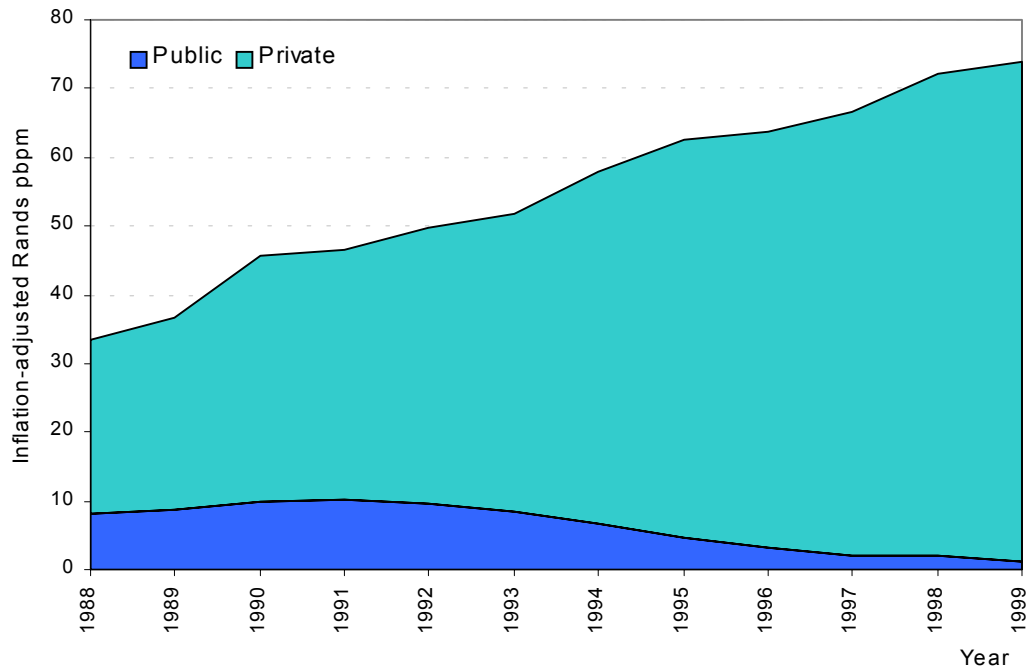
General Practitioners	R 28.55
Medical Specialists	R 60.13
Dental	R 22.46
Hospitals	R 73.83
Medicines	R 90.77
Other	R 28.11



**FIGURE 27: Registered schemes  
Benefit types as a proportion of total benefits**

## 4.3 Hospitalisation

As mentioned earlier, hospitalisation can be categorized as private hospitals and public (State and Provincial) hospitals. Separate information for private and public hospitals was only available as of 1988.



**FIGURE 28: Registered Schemes**  
**Hospitalisation in Inflation-adjusted Rands per beneficiary per month**

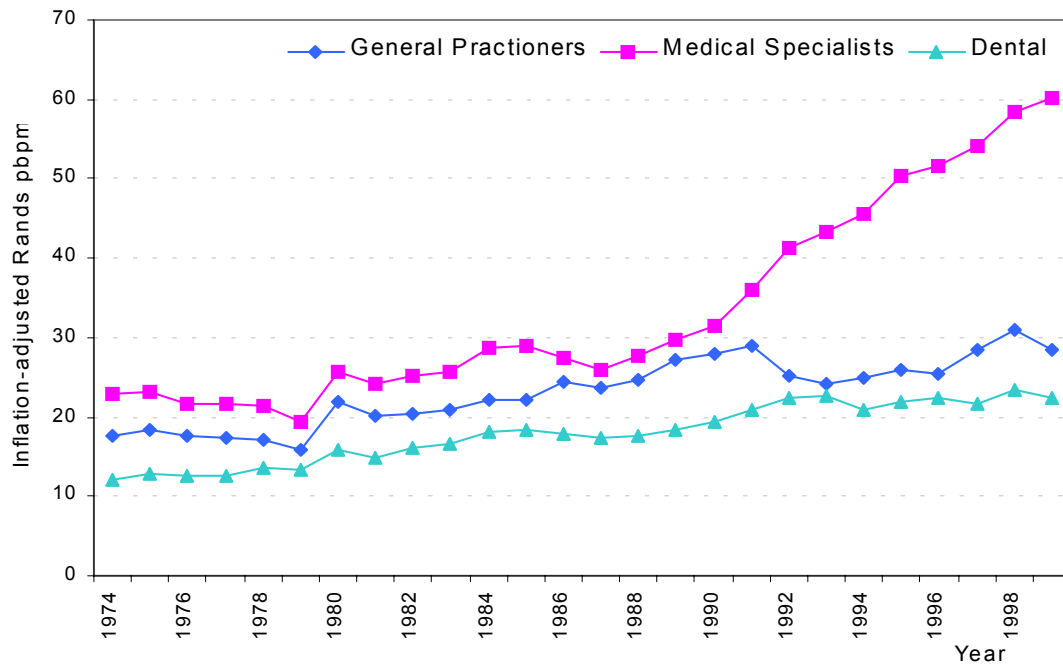
As can be expected, a far greater proportion of hospitalisation is in private hospitals. Inflation-adjusted amounts spent on private hospitalisation have increased considerably from R25.32 pbpm in 1988 to almost 3 times that amount in 1999 (R72.56).

The opposite trend is seen with public hospitalisation, with an **overall** decrease in amounts. Inflation-adjusted public hospitalisation amounts increased from 1988 (R8.15) to 1991 (R10.30), but decreased steadily thereafter to only R1.26 in 1999. These trends indicate the increasing usage of private hospitals rather than public hospitals by medical scheme members. It also reflects the lack of effective billing by public hospitals.

## 4.4 Practitioners

Practitioners include general practitioners, medical specialists, dentists and dental specialists. Figure 29 below examines practitioners divided into these categories, although dental and dental specialists have been grouped together since the data for some years does not separate these items.





**FIGURE 29: Registered schemes  
Practitioners in inflation-adjusted Rands per beneficiary per month**

All categories have increased **overall** from 1974 to 1999. Medical specialists remained consistently higher than general practitioners and dental before 1991, then became increasingly higher after 1991. Looking comparatively at the growth in the amounts for each category, the average compound rate of growth was 3.9% per annum for medical specialists, 2.5% for dental and 1.9% for general practitioners. Notice that the average annual compound growth rate for medical specialists is approximately double that of general practitioners. Examining the rate of increase for medical specialists further shows that most of this growth occurred over the last 10 years (at an average annual compound rate of increase of 7.3% from 1989 to 1999).

A characteristic for all practitioners is the sharp increase from 1979 to 1980. This can be attributed to a change in legislation concerning tariff structures. An amendment of the 1967 Medical Schemes Act in May 1978, stated that tariffs for all the professions registered with the South African Medical and Dental Council could be determined by this Council (Annual Report of the Registrar 1978). This tariff structure replaced the Remuneration Commission system in place prior to the amendment.

Although there was an **overall** increase in inflation-adjusted Rand amounts pbpm for general practitioners, the amounts for each year did not consistently increase. There was a decrease in amounts over the period 1991 to 1995 as well as a decrease of 7.6% from R30.89 in 1998 to R28.55 in 1999.

In 1974, inflation-adjusted amounts pbpm were: R17.63 for general practitioners, R22.86 for medical specialists and R12.21 for dental. In 1999 these amounts rose to R28.55 for general practitioners, R60.13 for medical specialists (double that of general practitioners) and R22.46 for dental.

## 5. Financial Aspects

All medical schemes registered in terms of the Medical Schemes Act are required by law to submit detailed financial information for each year ending 31 December (there are a few exceptions to this financial year end). Currently, medical schemes are accounted for on an accrual basis and financial statements are prepared in accordance with the SAICA (South African Institute of Chartered Accountants) Audit and Accounting Guide for Medical Funds.

Accounting standards have changed considerably over the period of investigation and thus results calculated over different years may not be directly comparable. Before 1979, information pertaining to the balance sheet was not submitted by schemes. Although detailed financial information is currently available, much of it could not be historically explored due to the lack of detailed information in the earlier years.

This chapter focuses on how contribution levels, administration and other non-health expenses have changed over the period of investigation. It also looks at the solvency of medical schemes over the period 1979 to 1999.

### 5.1 Contributions

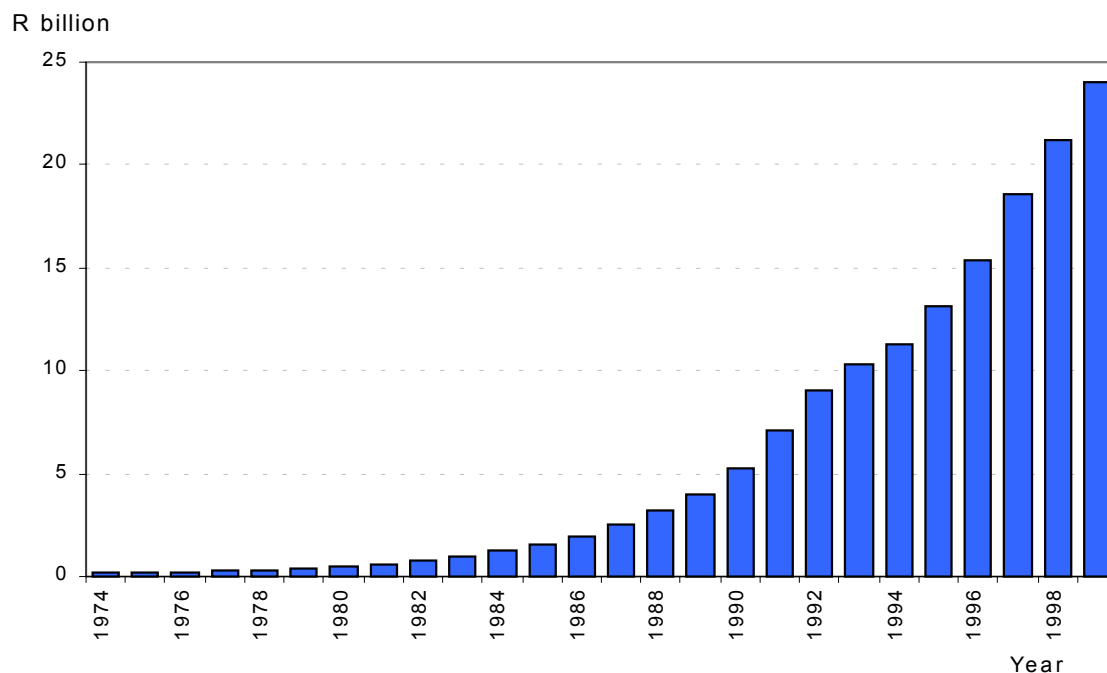
Medical schemes generally operate on a pay-as-you-go basis. Contributions charged in a particular year will be based on the total expenditure the scheme expects to incur in that year. Contributions are used to pay claims, administration and various other expenses, and to contribute to reserves.

From 1997-1999, values for both gross and net contributions were recorded by the Council for Medical Schemes. For official purposes, net contributions represented the amount of contribution income in respect of benefits for which the scheme was at risk. Adjustments were made to gross contributions for items such as contributions towards savings plans and pre-funding plans, re-insurance premiums and other contributions in respect of benefits for which the scheme was not at risk, to give the net contribution amount. Net contributions can however be defined in a number of different ways, as will be done in later sections.

In this section, the gross contribution amount was used for 1997, 1998 and 1999, since we are interested in the amounts actually paid by members. For the periods before 1997, there is no indication from the Reports of the Registrar (and the schemes themselves) whether the 'Contribution' amount stated is the gross amount or the net amount.

#### 5.1.1 Total Contributions

Figure 30 below shows the actual Rand amount of total contribution income over time for Registered schemes.



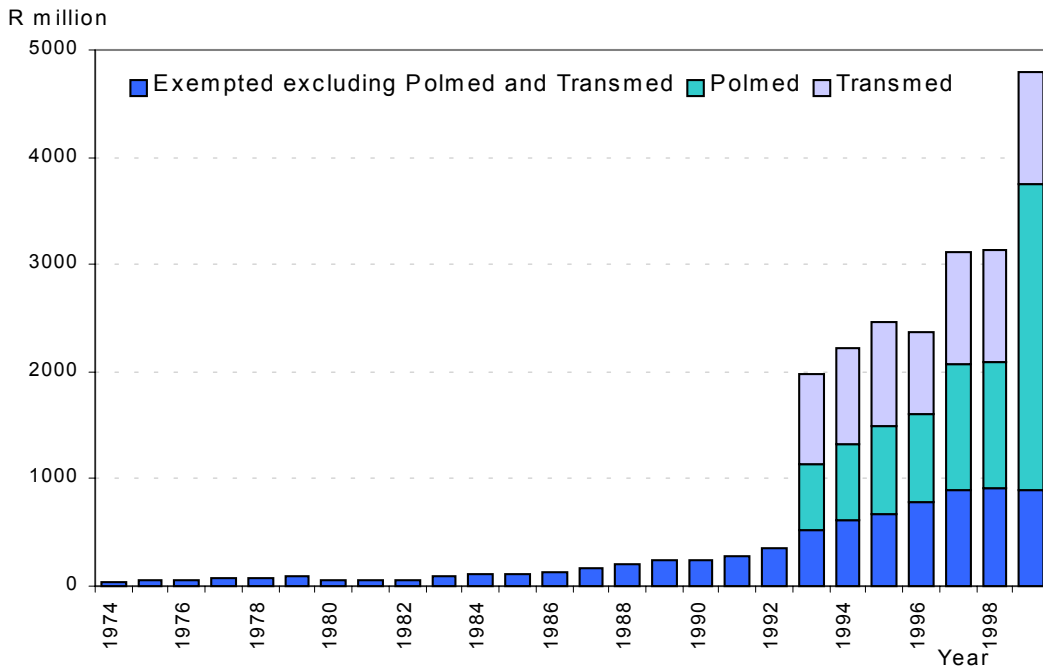
**FIGURE 30: Registered schemes: Actual contributions**

The graph above shows an increasing exponential trend in actual contributions (in Rand amounts **not** adjusted for inflation) over the period of investigation. Actual contributions from all Registered schemes increased from only R0.15 billion in 1974 to R24 billion in 1999, with the average **annual** compound rate of increase being 22.4%.

Actual contributions per annum are plotted for Exempted schemes, with the contribution levels of Polmed and Transmed shown separately in Figure 31 below.

An interesting pattern can be seen for the contribution levels of Exempted schemes. Contribution levels were stable around R65 million from 1974 to 1983. From 1984 to 1992, there was a gradual increase in contributions. The inclusion of Polmed and Transmed increased the actual contributions of Exempted schemes by 5 times from 1992 to 1993. Looking at the pattern of Exempted schemes excluding Polmed and Transmed, contributions continued to increase from 1993 to 1998, but decreased in 1999 to R0.897 billion.

Polmed and Transmed represented R1,4 billion of Exempted scheme contributions in 1993. These combined contribution levels generally increased from 1993 to 1999. However, the contribution levels of Polmed more than doubled from 1998 to 1999, which corresponds to the doubling of benefits paid from 1998 to 1999, with no significant increase in the membership in Polmed.



**FIGURE 31: Exempted schemes: Actual contributions**

### 5.1.2 Inflation-adjusted Contributions

Contributions were adjusted for inflation (to year 2000 Rand terms) using general CPI values, as described in the benefits section

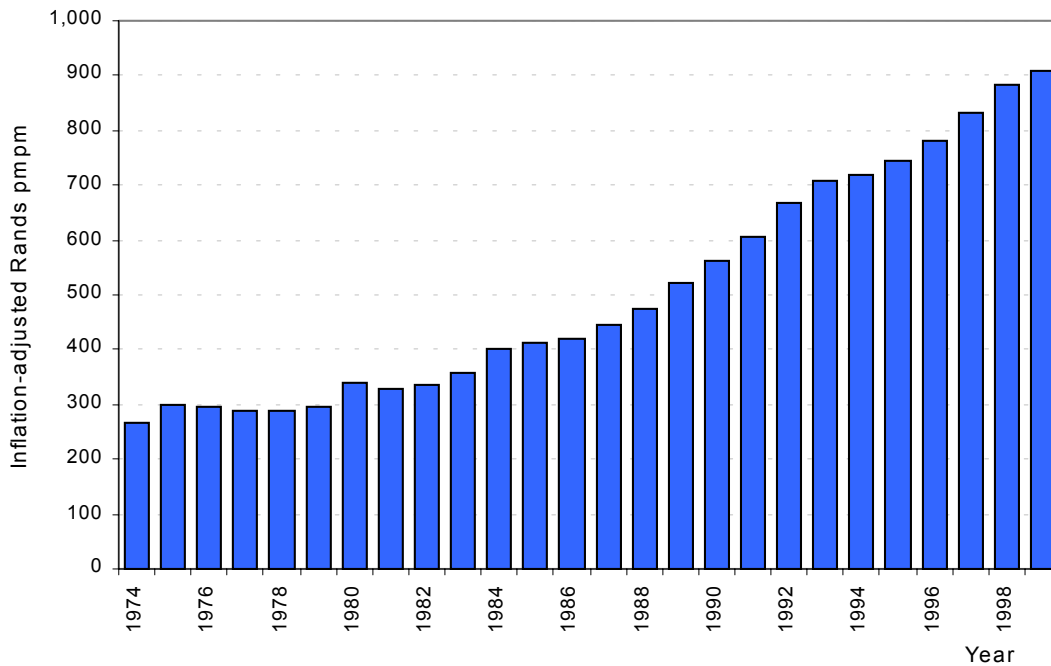
Even after adjusting for inflation, contribution levels increased. Inflation adjusted contributions received by Registered schemes was R2.9 billion in 1974 and R24.6 billion in 1999, with an average **annual** compound rate of increase of 8.9% over the period. Part of this increase can be attributed to the increase in membership in Registered schemes.

### 5.1.3 Inflation-adjusted contributions per member per month

Inflation-adjusted contributions per member per month (pmpm) give an indication of the average monthly cost to members of subscribing to a medical scheme. Average membership over a particular year was used to calculate these **per member** amounts, as shown below.

The actual contribution per member in Rands (before adjusting for inflation), was only R13.94 pmpm in 1974. This had risen to R855.58 pmpm by 1999.

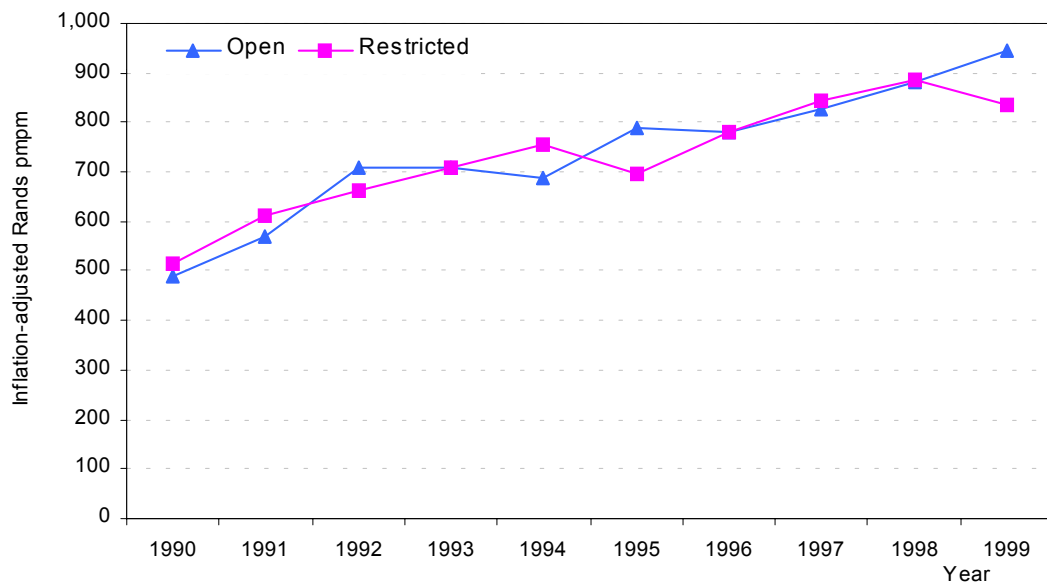
The average monthly cost (adjusted for inflation) of medical cover for a member was R266.40 in 1974. In 1999, this cost was over three times higher at R908.67 pmpm. The **real** cost of medical cover per member increased on average by 5% per annum. This trend in increasing inflation-adjusted contributions mirrors the increases in benefits paid to members over the same time.



**FIGURE 32: Registered Schemes  
Inflation-adjusted Contributions per member per month**

#### 5.1.4 A comparison of Open and Restricted scheme contributions

Inflation-adjusted contributions pmpm for Open and Restricted schemes are compared from 1990 to 1999 in Figure 33 below.



**FIGURE 33: Open and Restricted schemes  
Inflation-adjusted contributions per member per month**

Inflation-adjusted contributions pmpm fluctuated for both Open and Restricted schemes. Neither group was consistently higher or lower than the other. An Open scheme member contributed on average R487.39 per month in 1990, while a member of a Restricted scheme contributed on average R515.15 per month. In 1999, a member of an Open scheme contributed R945.51 per month, just more than R100.00 higher than a Restricted scheme member (R835.83).

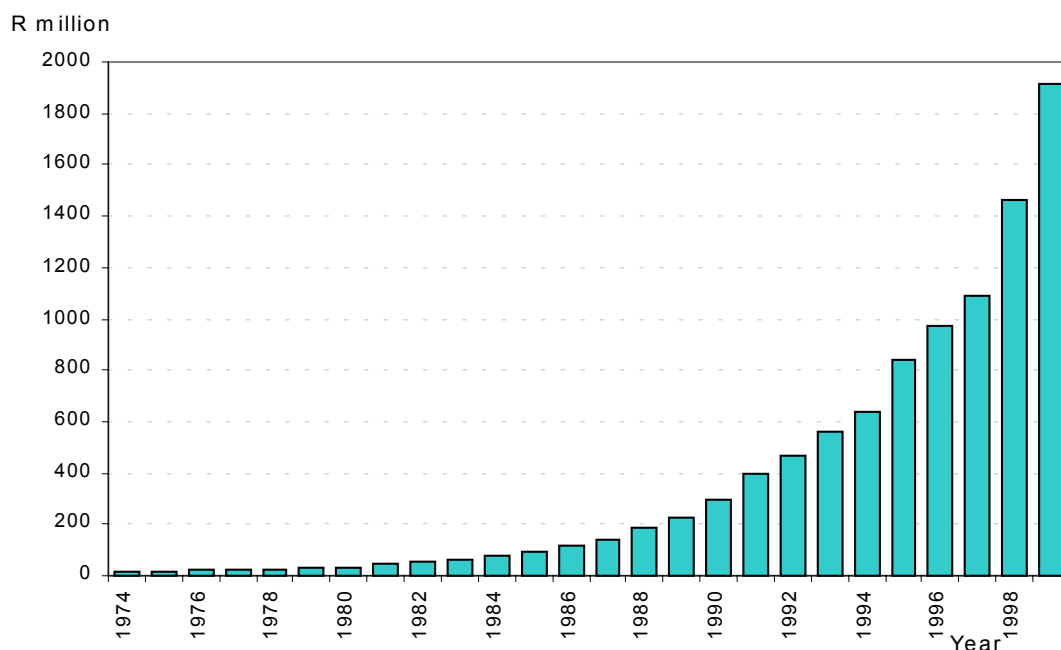
## 5.2 Administration Expenses

A portion of total contributions is used to cover the expenses of administering a scheme. Schemes are either self-administered (have their own staff to administer the scheme) or professionally administered. Administration expenses consist of administration fees, trustees' fees, audit fees, staff remuneration, management fees and other expenses paid directly by a scheme.

Since 1997, healthcare management expenses have been recorded separately from administration expenses. However, some schemes may have included these expenses under administration expenses. Before 1997, any healthcare management expenses would also have been included under administration expenses. Thus, the administration expense amounts used may not accurately reflect the actual administration expenses incurred (as it is currently defined).

### 5.2.1 Actual expenditure on administration

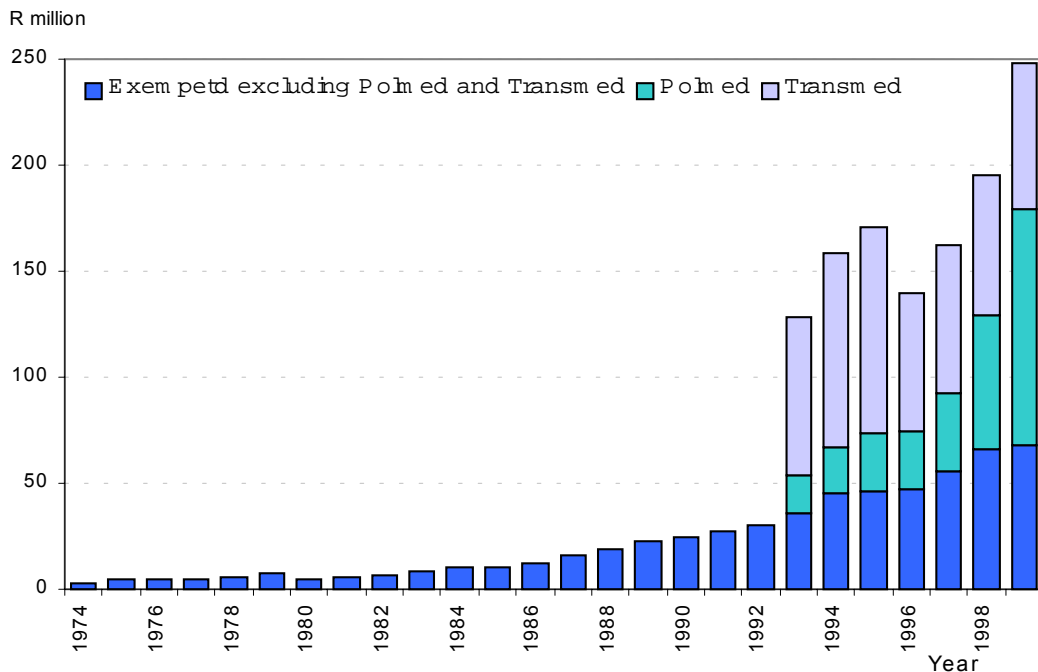
Figure 34 below shows the amount spent on administration by Registered schemes.



**FIGURE 34: Registered schemes: Actual administration expenses**

There has been a substantial increase in administration expenses over the period, particularly from 1997 to 1999. Administration expenses amounted to R14.7 million in 1974, growing on average by 21.5% **per annum** to R1 913 million in 1999. This rate of growth of 21.5% per annum was lower than the growth in contributions (22.4% per annum). This relationship will be explored in more detail when administration expenses are considered as a proportion of contributions.

Figure 35 shows the pattern of administration expenses for Exempted schemes, with Polmed and Transmed again shown separately.



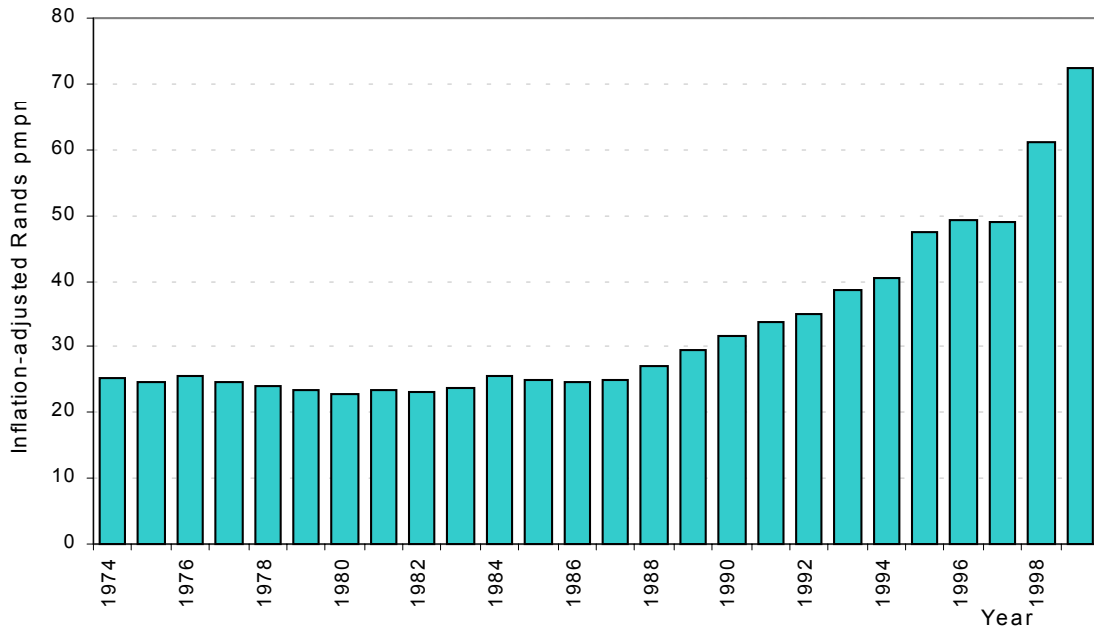
**FIGURE 35: Exempted schemes: Actual administration expenses**

In 1974, R3.3 million was spent on administration by Exempted schemes. The level of administration expenses remained fairly steady from 1974 to 1982, thereafter levels increased at a greater rate. By 1999, the level of administration expenses in Exempted schemes (excluding Polmed and Transmed) was R67.5 million. The average rate of increase in administration was 12.9% per annum, much lower than that of Registered schemes at 21.5% per annum over the same period. This rate of increase of 12.9% is also less than the average rate of increase in contributions of 15.5% per annum for Exempted schemes.

The administration expenses of Polmed increased from 1993 to 1999, most significantly from 1998 to 1999 (corresponding to large increases in both contributions and benefits paid). Administration expenses incurred by Transmed decreased over the same period. However, both Polmed and Transmed had increases in contributions over this time.

### 5.2.2 Inflation-adjusted Administration expenses per member per month

Figure 36 shows administration expenses adjusted for inflation and the impact of changing membership.



**FIGURE 36: Registered schemes  
Inflation-adjusted administration expenses per member per month**

Inflation-adjusted administration expenses pmpm increased by an average compound rate of 4.3% **per annum**. However, most of this growth occurred after 1987. From 1974 to 1987, amounts were relatively stable around R25.00 pmpm.

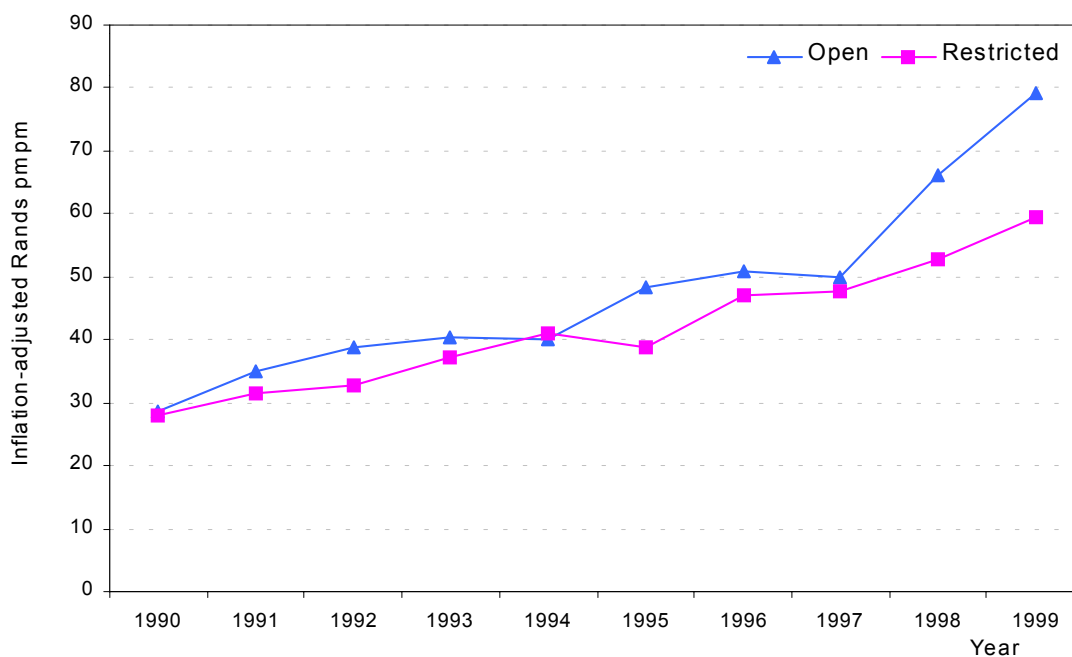
From 1987 to 1997, the average **annual** compound rate of increase (after inflation) was 6.9% over this 10-year period. More significant is the rate of increase of 21.6% **per annum** in real terms from R49.01 in 1997 to R72.41 in 1999.

### 5.2.3 A comparison of Open and Restricted scheme administration expenses

Figure 37 shows inflation-adjusted administration expenses pmpm for Open and Restricted schemes from 1990 to 1999.

Inflation-adjusted administration expenses pmpm increased for both Open and Restricted schemes. However, administration expenses were consistently higher for Open schemes, with an exception in 1994. From 1997 to 1999, the difference between administration expenses of Open and Restricted schemes increased considerably.





**FIGURE 37: Open and Restricted schemes**  
**Inflation-adjusted administration expenses per member per month**

In 1990, inflation-adjusted administration expenses were R28.62 pmpm for Open schemes and R28.03 for Restricted schemes. In 1997 there was also very little difference between Open and Restricted schemes (R49.95 and R47.70 respectively). This difference grew to nearly R20.00 in 1999, with R79.04 per Open scheme member per month and R59.32 per Restricted scheme member per month.

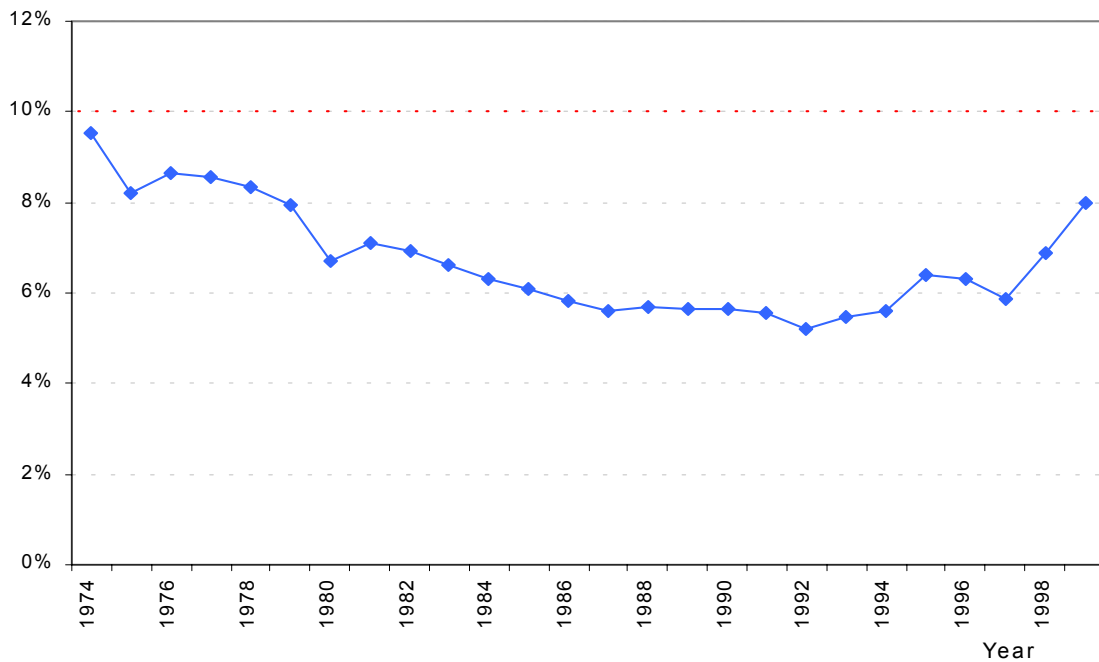
#### **5.2.4 Administration expenses as a proportion of Gross Contributions**

It is generally expected that administration expenses as a proportion of contributions should remain fairly constant from year to year. The Registrar of Medical Schemes has long used a benchmark that expenses should not exceed 10% of total contributions.

Pure administration expenses as a proportion of gross contributions has remained between 5% and 10% over the period. There was a decreasing trend in the proportion from 1974 to 1992. The proportion increased from 1997 (6%) to 1999 (8%).

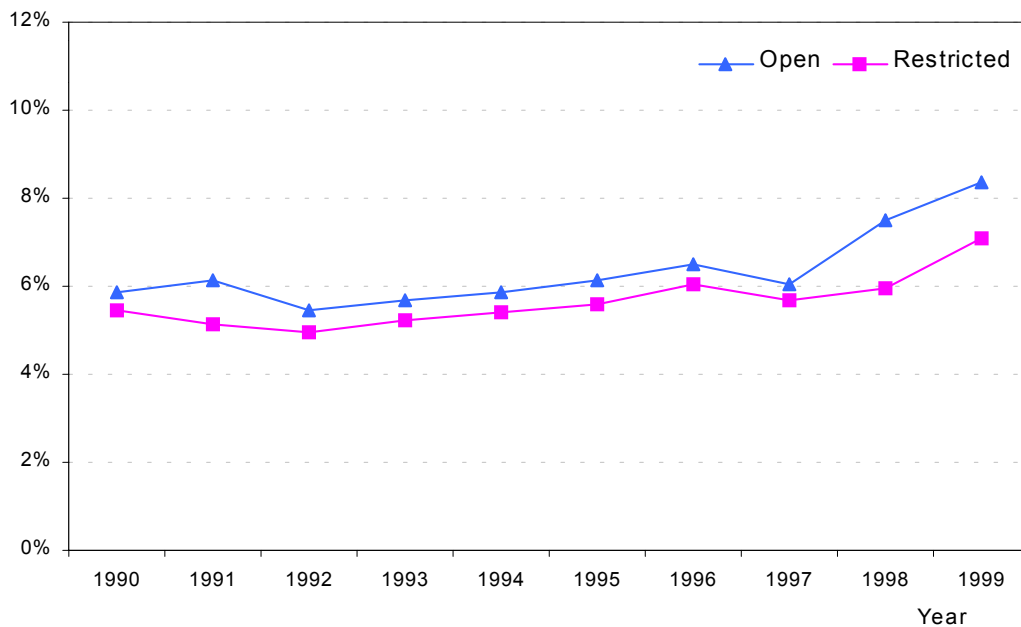
Before 1993, all expenses that were not benefits paid, were considered administration expenses. After 1993, many more expenses were recorded separately from administration expenses and these will be considered in the next section, in order to gain a more meaningful comparison of expenses not spent on healthcare over this time period.

It must be noted that the graph shows the average percentage aggregated over all schemes, but this percentage differs considerably from scheme to scheme. The percentage is also extremely vulnerable to different definitions of contributions.



**FIGURE 38: Registered schemes**  
**Administration expenses as a percentage of gross contributions**

Figure 39 below compares administration expenses as a percentage of gross contributions for Open and Restricted schemes from 1990 to 1999.



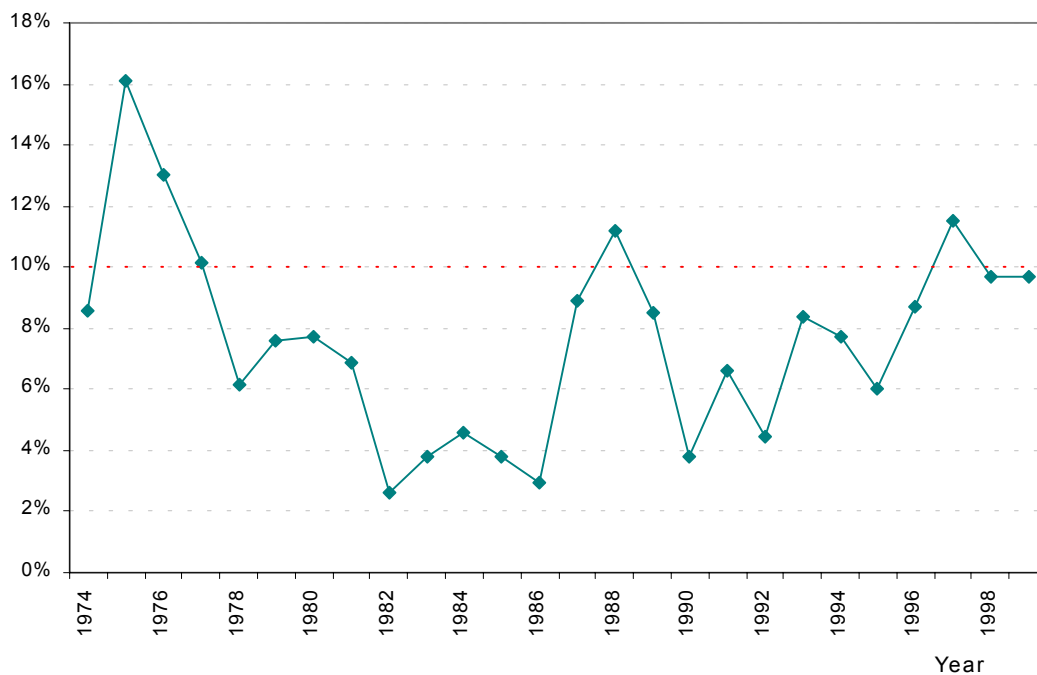
**FIGURE 39: Open and Restricted schemes**  
**Administration expenses as a proportion of gross contributions**

The graph shows that the proportion spent on pure administration was higher for Open schemes than for Restricted schemes. From 1992 to 1997, the proportions followed the same trend. The difference between the proportions increased in 1998 and 1999. In 1999, administration expenses as a proportion of gross contributions was 8.36% for Open schemes and 7.1% for Restricted schemes.

### 5.3 Contribution Income Not Spent on Healthcare

Members of schemes should insist that the highest possible percentage of the amount they contribute is used to pay healthcare benefits. Non-health expenditure can be defined as the portion of member contributions not spent on healthcare. To determine this amount, it is necessary to consider what happens to contribution income after it is received.

First consider total contributions less benefits paid (or claims incurred). This amount represents the amount of contributions not spent on **claims** in a particular year. Note that the graph below uses gross contributions.



**FIGURE 40: Registered schemes**  
**Gross contributions less Claims as a proportion of gross contributions**

Contributions less claims as a proportion of contributions fluctuates from year to year. The proportion remained below 10% except in 1975-1977, 1988 and 1997. The proportions for 1998 and 1999 were the same at 9.7%. However, contributions less claims does not actually represent non-health expenditure since a proportion of this amount will contribute towards reserves. Thus, the above proportions are sensitive to the amounts transferred to reserves each year. Here amounts transferred to reserves are considered ‘healthcare’ expenditure since their purpose would be to pay claims in the case of poor claims experience.

The graph below uses another method of capturing the proportion of contributions not spent on healthcare. Here, non-health expenditure is calculated as the sum of the components of total expenses incurred that are not spent on healthcare. Non-health expenditure includes: provision for bad debts, bad debts, interest paid (only applicable for certain years), administration, healthcare management, own facility costs, re-insurance result and other (only applicable for certain years). The re-insurance result is calculated as re-insurance premiums paid less re-insurance recoveries.

It has been convention in the past to consider reinsurance adjustments as part of healthcare expenditure. However, many schemes used this mechanism through the 1990's to remove profit from schemes. Some have argued that they did so purely in order to pay brokers (which was illegal at the time). The consistent losses on reinsurance contracts in these situations represent an expense to members. Where the money has been used to pay illegal commissions, this is certainly a non-healthcare expense. The volume of reinsurance from 1996 onwards, that does not seem to have had a genuine risk-sharing purpose, is detailed in McLeod, Slattery and Van den Heever (2000). On the basis of that investigation, we have chosen to classify the reinsurance result as non-healthcare expenditure.

Figure 41 compares non-health expenditure as a percentage of gross contributions and three definitions of net contributions.

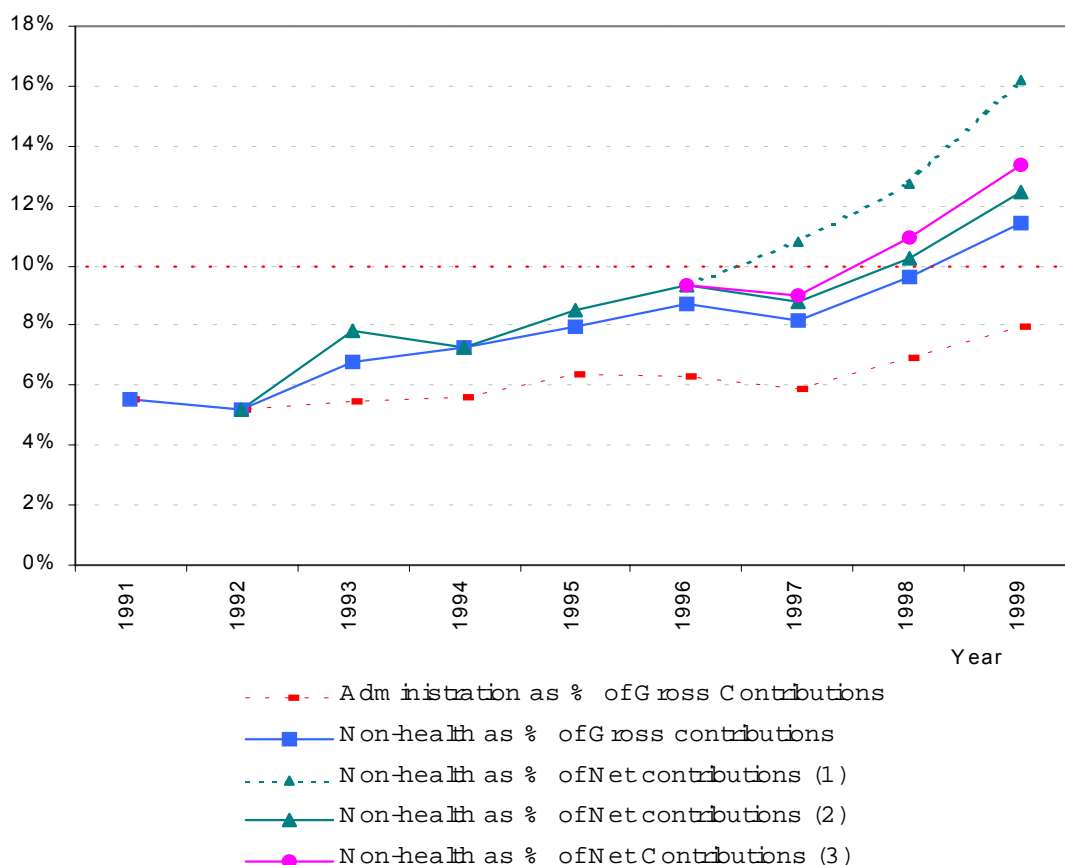
The definition of net contribution used by the Office of the Registrar in 1997, 1998 and 1999 is as follows : net contributions are derived by adjusting gross contributions for re-insurance contributions, savings plan contributions, pre-funding plan contributions and other non-risk contributions. Prior to 1997, the Office calculated net contributions as gross contributions less re-insurance premiums paid.

Figure 41 uses the following three definitions of net contributions:

- **Definition 1:** Net contributions as currently defined
- **Definition 2:** Gross contributions less re-insurance premiums paid
- **Definition 3:** Gross contributions less contributions towards savings plans, pre-funding plans and other contributions towards benefits for which the scheme is not at risk

Re-insurance premium data was only available from 1993 onwards, so the calculation of net contributions under Definition 2 was not possible prior to 1993. Definition 3 is only applicable from 1997 onwards.

Administration expenses as a proportion of gross contributions is included in Figure 41 for comparison. The graph starts at 1991 only, since prior to this the graph will be as shown in Figure 38.



**FIGURE 41: Registered Schemes  
Non-health expenditure as a proportion of Contributions**

Non-health as a proportion of gross contributions increased from 5.2% in 1992 to 11.46% in 1999, with one decline in the proportion in 1997. 1999 was the only year where the proportion was greater than the 10% industry benchmark. The trend in non-health as a proportion of net contributions (using definition 2) follows the proportion using gross contributions, except in 1994 when the re-insurance premium was low. This proportion first exceeded the 10% level in 1998, continuing to do in 1999 with a proportion of 12.44%.

Non-health as a proportion of net contributions (using definition 1) is much greater than the other proportions and is over 10% from 1997 to 1999. The proportion using definition 3 for net contributions was 8.99% in 1997, but above the 10% level in 1998 and 1999 (13.38%).

Administration as proportion of gross contributions was much lower than that of non-health expenditure. During the 1990's, brokers increasingly reported on the proportion spent by medical schemes on administration. There has thus been a significant shift of expenditure from the more visible "administration" item to other items.

Members, trustees and brokers should monitor **non-healthcare** expenditure rather than simply administration costs. This should be shown as a percentage of both gross and net contributions. Definition 3 is the preferred definition for net contribution calculations in the future.

## 5.4 Further Analysis of Non-Health Expenditure

This section examines non-health expenditure subdivided as administration expenses, healthcare management expenses, re-insurance results and other non-health expenses. Other expenses include bad debts, provisions for bad debts, interest paid, own facility costs and 'other' costs.

Healthcare management expenses are expenses incurred in the implementation and maintenance of managed care techniques. Managed care expenses were only available as a separate item in the financial statements from 1997. As more use gets made of capitated arrangements, so managed care expenses will need to be separated into healthcare expenditure and non-healthcare expenditure.

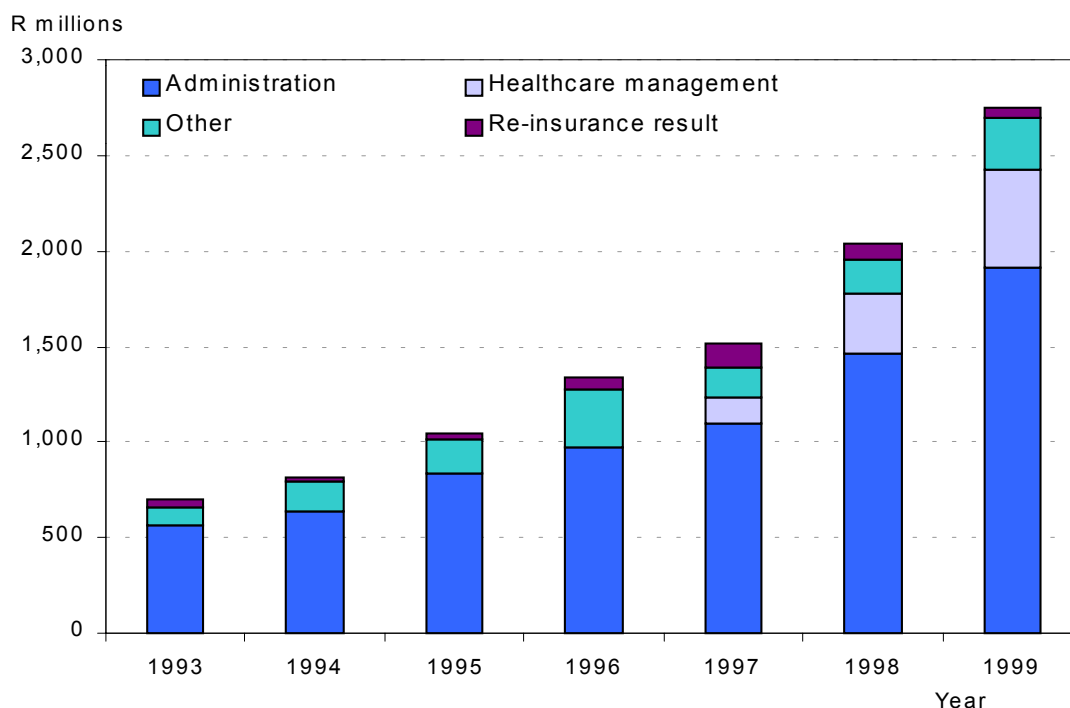
The basis for the separation needs to be on whether there is risk transfer to the providers. Where no risk transfer occurs and the managed care programme is effectively a service, then the expenditure needs to be shown as non-healthcare expenditure. Where the providers are taking risk, then the amount should be shown as healthcare expenditure, with a component for non-healthcare administration. The Office of the Registrar has begun to clarify this issue in data to be gathered from 2000 onwards.

Own facility costs are a mixture of healthcare and non-healthcare expenditure. For this report, own facility costs were considered as non-health expenses as no distinction could yet be made. However, from 2000 onwards own facility costs will be subdivided into a healthcare and a non-healthcare portion.

Figure 42 below shows non-healthcare expenses from 1993 to 1999 only, since prior to 1993, non-health expenditure was equivalent to administration expenses.

Non-health expenditure increased by 4 times from R699 million in 1993 to R2 751 million in 1999. Healthcare management expenses increased by 15.6% from 1997 to 1998 and by 65.3% from 1998 to 1999. This period is known to include a substantial increase in capitated agreements with primary care providers. It illustrates the importance of separating healthcare and non-healthcare expenditure for managed care.

Healthcare management expenses represented 18.7% of non-healthcare expenditure in 1999, the re-insurance result represented 2.0%, administration 69.6% and other 9.8%.



**FIGURE 42: Registered schemes  
Analysis of actual Non-healthcare expenditure**

## 5.5 Solvency Ratios

Schemes are required to hold reserves to buffer the scheme against unforeseen and adverse claim fluctuations. The amount of reserves held by a scheme demonstrates its financial security and sustainability (Annual Report of the Registrar 1999).

The measure of solvency used currently in the industry is reserves (in the form of accumulated funds) expressed as a percentage of gross contributions. The Office of the Registrar had long suggested to schemes that they maintain a level of 25%. The Medical Schemes Act of 1998 formalised the solvency requirements. By December 2000, schemes were required to maintain a level of at least 10% and by December 2004, the full 25% will be required by law.

The Medical Schemes Act of 1998 requires that accumulated funds) should exclude any funds set aside for specific purposes and unrealized non-distributable reserves. Difficulty lies in how to classify these reserves. The Annual Report of the Registrar 1999 states that the nature of these ‘other’ reserves (that are to be excluded) is not clear and that estimates must often be made for the accumulated funds amount, due to the limitations of data supplied.

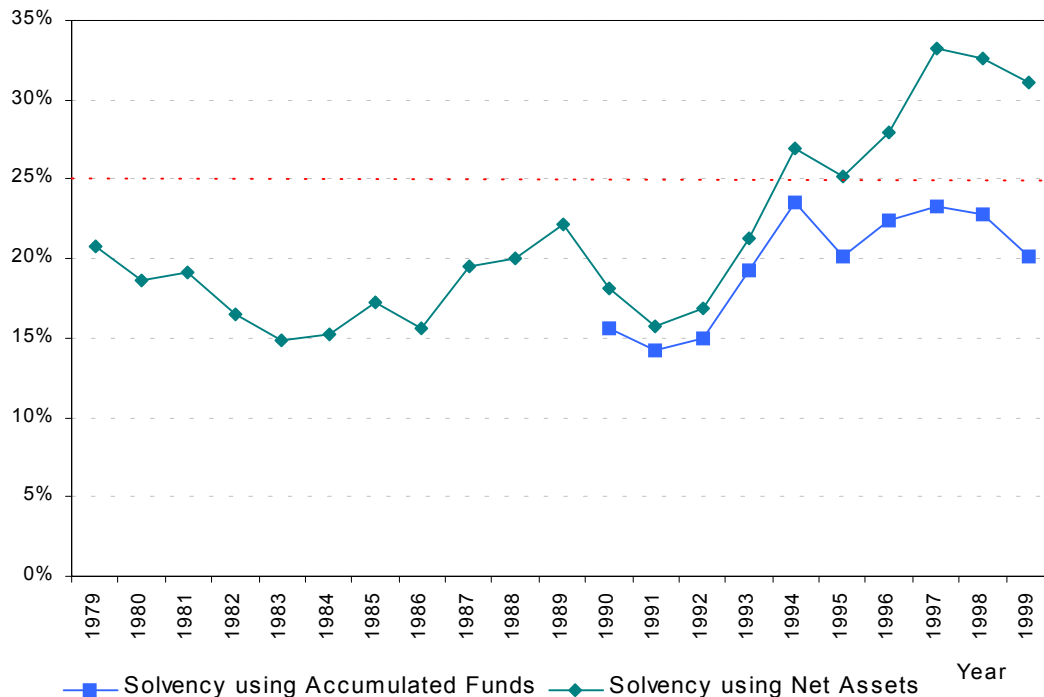
Historically, the Office of the Registrar used the ratio of net assets to gross contributions as the measure of solvency. The terms ‘net assets’ and ‘accumulated funds’ were used interchangeably. Currently, the net assets of a scheme include accumulated funds, revaluation reserves, saving plan reserves and other reserves, and thus these terms now represent different values. Furthermore, accumulated fund amounts could only be obtained from 1990 onwards due to limitations of the data.

For these reasons, the graphs in this section will show both the net assets ratio (useful for the years where an accumulated funds amount was not available) and the accumulated funds ratio (which is the ratio required for the purposes of the new Act).

### 5.5.1 Registered and Exempted Schemes

Before 1979, no balance sheet information was available from schemes. From 1979 to 1989, the balance sheet section of the Reports of the Registrar gave details of only fixed assets, current assets and current liabilities. These values were used to calculate the net asset values for each year. No details of funds employed (reserves and long-term liabilities) was available and therefore no accumulated funds amounts could be determined.

Figure 38 shows the net asset solvency ratio and the accumulated funds solvency ratio for Registered schemes.



**FIGURE 43: Registered schemes: Solvency ratios**

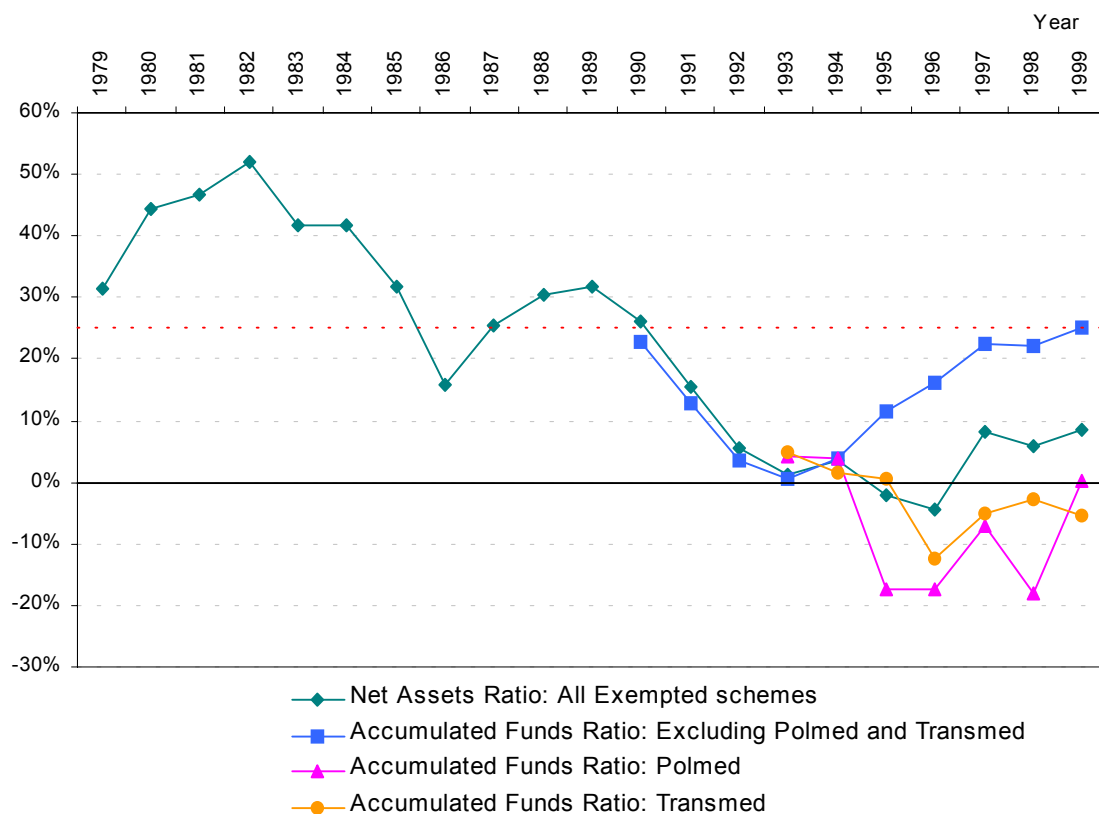


Although the accumulated funds solvency ratio was below the recommended level of 25%, the ratio increased overall from 15.6% in 1990 to 23.3% in 1997. However, the ratio decreased to 22.8% in 1998 and decreased further to 20.13% in 1999. The ratio peaked in 1994 at 23.57%.

Solvency ratios of the individual schemes varied considerably and examining the ratios for individual schemes would add meaning to the above ratios for industry as a whole. In 1999, 82 of the 160 Registered schemes had accumulated funds ratios of 25% or more and 39 schemes had ratios of 10% or less.

From 1979 to 1989, the net asset solvency ratio remained between 14.8% and 22.1%. The trend observed from 1990 to 1999 was similar to that of the accumulated funds ratio, with the ratio above the 25% level from 1994 to 1999. The difference between the two ratios increased progressively from 1994 to 1999, indicating the increasing amounts held in reserves other than accumulated funds.

Figure 44 below shows the net assets ratio for all Exempted schemes (including Polmed and Transmed where applicable) and the accumulated funds ratio for Exempted schemes (excluding Polmed and Transmed), Polmed and Transmed.



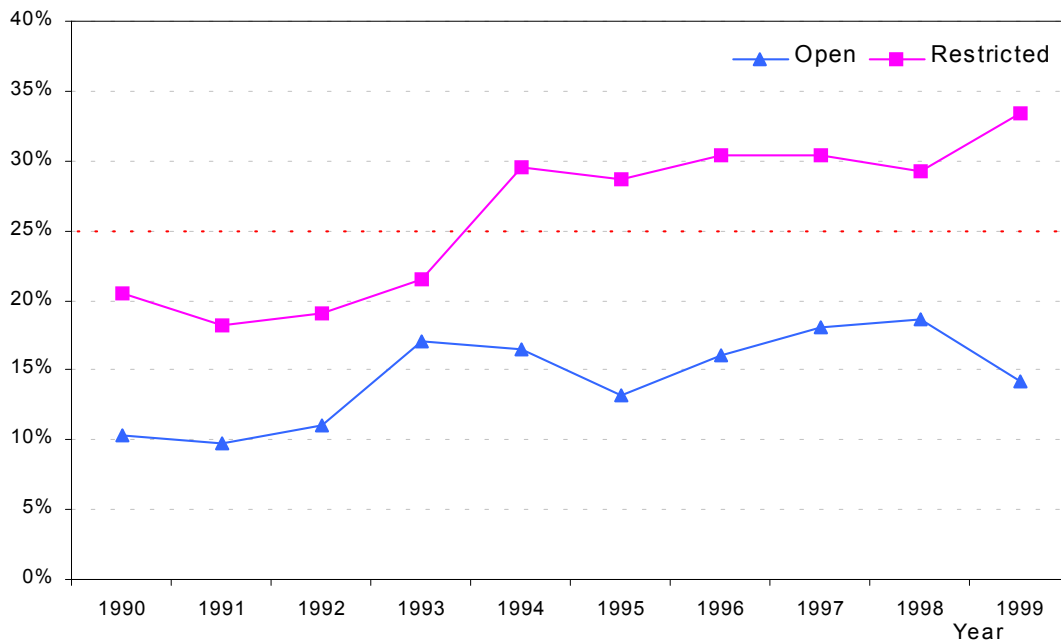
**FIGURE 44: Exempted schemes: Solvency ratios**

The net asset solvency ratio decreased considerably from 31.3% in 1979 to just 8.5% in 1999. The ratio peaked in 1982 at 51.9% and was below 0% in 1995 and 1996. The accumulated funds ratio for Exempted schemes (excluding Polmed and Transmed) decreased from 22.8% in 1990 to only 0.6% in 1993. Thereafter, the ratio increased steadily to 25.0% in 1999.

This pattern is similar to that followed by Registered schemes around the period 1989 to 1995. The accumulated funds ratios for Polmed and Transmed fluctuated and were negative for most of the period up to 1999.

### 5.5.2 Open and Restricted Schemes

The Accumulated fund ratio is shown in Figure 45 for Open and Restricted schemes from 1990 to 1999.



**FIGURE 45: Open and Restricted schemes  
Accumulated funds solvency ratio**

For Open schemes, the ratio increased from 1990 to 1993, decreased thereafter, then increased from 1995 to 18.7% in 1998. The ratio decreased again in 1999 to 14.2%.

The Restricted scheme solvency ratio is consistently higher than that of Open schemes. The ratio increased for Restricted schemes from 1990 to 1994, then fluctuated around 30% until 1998. There was an increase in the ratio to 33.3% in 1999. In 1999, the ratio for Restricted schemes was more than double that of Open schemes.

## 6. Limitations and Recommendations

Over 25 years there have been many changes in the medical schemes industry, including changes in legislation governing medical schemes and with it changes in the data required from medical schemes. The type of data collected has changed from mainly covering demographic data to covering, in addition, financial and healthcare delivery information (Research and Monitoring, CMS, 2000).

In addition to changes in data requirements there have been some definitional changes. An example would be the introduction of the term 'continuation' member, which combines pensioners and widows. Changes in accounting standards have also placed difficulties in interpreting the data and comparing data across periods. Particular difficulties lay in determining gross and net contributions and accumulated funds.

The reader must consider whether it is relevant to compare data from 1974 to that of 1999, considering the substantial changes in the medical schemes environment. However, this study does highlight the trends observed, often a function of these changes. It is not feasible to extend the study further backwards because, as described in the introduction, the first complete set of data dates from 1974.

The quality of the data is, at times, questionable. With regards to the data available in hardcopy prior to 1991, it unclear what measures were undertaken to maintain the quality of data. Data would have to be captured in a database where validation could be performed to improve the quality (Research and Monitoring, CMS, 2000). Furthermore, verification of some of the data would no longer be possible since some schemes no longer exist. The trade-off between value gained from capturing this data and the cost of capturing it must be considered. There is also data missing or not collected for certain years, posing a further limitation on the study.

The depth of analysis possible with current data cannot be applied to this study, due to a lack of detailed information in the earliest years. However, this study concerns itself at a broad level looking at general **trends**, not requiring the level of detail now available. An obvious recommendation is to continue the study to include year 2000 and future data.

The 1990-1996 electronic database contains a wealth of detailed information not explored by the Reports of the Registrar in those years. Although not at the same level of detail as year 2000 data, the information in this electronic database can be fruitfully used to examine the trends shown in this monograph in more detail. A recommendation is to perform a more detailed historic study of the industry beginning in 1990.

A long-term study depicting the changes in the industry is useful for examining the impacts of changes in the environment and legislation. This monograph concentrates on **what** has happened and not **why**. The latter question will be the subject of a further study.

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## **8. Appendix**

This Appendix contains additional material that is required to maintain the historical study in future years.

### **8.1 Data Files Lodged with the Council for Medical Schemes**

- GRAPHS Part1
- GRAPHS Part2
- Registered Schemes/ Membership
- Registered Schemes/ Benefits
- Registered Schemes/ Financial Aspects
- Exempted Schemes/ EMembership
- Exempted Schemes/ Ebenefits
- Exempted Schemes/ EFinancial Aspects

### **8.2 Open Scheme Classifications**

Before 1997, the Office of the Registrar did not keep an official record of whether schemes were Open or Restricted. A list of schemes classified as either Open or Restricted was drawn up for 1992 with the help of Mr. D. Kolver and Mrs. B. Lissner, based on their memory.

Some schemes changed from being Open to Restricted and from Restricted to Open between 1992 and the year of the first official list, 1997. Most of these schemes were contacted to determine when the crossover occurred. Where it was not able to determine the crossover, assumptions were made. Some schemes restricted membership to different race groups and were considered Restricted in 1992. However, to keep in line with the current definition of Restricted schemes, these schemes were classified as Open (since membership was not restricted based on employment or other professional association). For 1990 and 1992, definitions in 1992 were used.

Table A1 gives lists of Open schemes for the years 1990 to 1996. Lists for 1997 to 1999 are available in databases of the Office.

**TABLE A1: List of Open Schemes (1990 to 1999)**

1990		1991		1992		1993	
Code	Scheme Name	Code	Scheme Name	Code	Scheme Name	Code	Scheme Name
1465	ALLIANCE	1496	ALLCARE	1496	ALLCARE	1496	ALLCARE
1021	BELAND	1021	BELAND	1021	BELAND	1021	BELAND
1512	BONITAS	1512	BONITAS	1512	BONITAS	1512	BONITAS
1034	CAPE MED	1034	CAPE MED	1034	CAPE MED	1034	CAPE MED
1048	CIMAS	1048	CIMAS	1048	CIMAS	1048	CIMAS
1491	COMPCARE	1491	COMPCARE	1491	COMPCARE	1491	COMPCARE
1190	EAST COAST	1190	EAST COAST	1190	EAST COAST	1464	ERICA
1464	ERICA	1464	ERICA	1464	ERICA	1083	FEDSURE
1083	FEDSURE	1083	FEDSURE	1083	FEDSURE	2295	FERROMED
1420	FINMED	1420	FINMED	1420	FINMED	1466	GOOD HOPE
1067	HEALTHSHIELD	1537	HOSMED	1067	HEALTHSHIELD	1067	HEALTHSHIELD
1537	HOSMED	1109	INSBROKE	1537	HOSMED	1537	HOSMED
1109	INSBROKE	1536	LIFEMED	1109	INSBROKE	1109	INSBROKE
1536	LIFEMED	1493	MAXIMED	1536	LIFEMED	1536	LIFEMED
1493	MAXIMED	1139	MEDDENT	1493	MAXIMED	1501	MASTER BUIL
1140	MEDICAID	1140	MEDICAID	1140	MEDICAID	1493	MAXIMED
1149	MEDIHELP	1149	MEDIHELP	1149	MEDIHELP	2139	MEDDENT
1142	MEDS	1142	MEDS	1142	MEDS	1140	MEDICAID
1475	MK	1475	MK	1475	MK	1149	MEDIHELP
1143	MSP	1143	MSP	1143	MSP	1142	MEDS
1483	MULTIMED	1483	MULTIMED	1483	MULTIMED	1475	MK
1170	NBC	1170	NBC	1170	NBC	1125	MOMENTUM LIF
1166	NIMAS	1166	NIMAS	1166	NIMAS	1483	MULTIMED
1167	NMP	1167	NMP	1167	NMP	1215	MUMED 850
1485	PREMIER	1485	PREMIER	1485	PREMIER	1170	NBC
1454	PRO SANO	1454	PRO SANO	1454	PRO SANO	1166	NIMAS
1196	PROTEA	1196	PROTEA	1196	PROTEA	1167	NMP
1202	REEF	1202	REEF	1202	REEF	1454	PRO SANO
1453	SANITAS	1453	SANITAS	1453	SANITAS	1196	PROTEA
1422	SANMED	1422	SANMED	1422	SANMED	1202	REEF
1486	SIZWE	1486	SIZWE	1486	SIZWE	1422	SANMED
1249	SOUTHERN	1249	SOUTHERN	1249	SOUTHERN	1486	SIZWE
1257	SYMED	1257	SYMED	1257	SYMED	1249	SOUTHERN
1539	UNIVERSAL	1539	UNIVERSAL	1539	UNIVERSAL	1257	SYMED
1148	VISIMED	1148	VISIMED	1148	VISIMED	2285	VAALMED
2295	FERROMED	2295	FERROMED	2295	FERROMED	1148	VISIMED
2167	NMP	2285	VAALMED	2139	MEDDENT	1420	FINMED
2285	VAALMED	1466	GOOD HOPE	2285	VAALMED	1143	MSP
1466	GOOD HOPE	1501	MASTER BUIL	1466	GOOD HOPE	1485	PREMIER
1501	MASTER BUIL	1125	MOMENTUM LIF	1501	MASTER BUIL	1453	SANITAS
1125	MOMENTUM LIF	1215	MUMED 850	1125	MOMENTUM LIF	1539	UNIVERSAL
1215	MUMED 850			1215	MUMED 850		

**TABLE A1 continued .....**

1994		1995		1996	
Code	Scheme Name	Code	Scheme Name	Code	Scheme Name
1496	ALLCARE	1496	ALLCARE	1496	ALLCARE
1021	BELAND	1021	BELAND	1021	BELAND
1512	BONITAS	1512	BONITAS	1512	BONITAS
1034	CAPE MED	1034	CAPE MED	1034	CAPE MED
1048	CIMAS	1048	CIMAS	1048	CIMAS
1491	COMPCARE	1552	COMMED	1552	COMMED
1464	ERICA	1491	COMPCARE	1491	COMPCARE
1202	FEDHEALTH	1554	DOCMED	1554	DOCMED
2295	FERROMED	1464	ERICA	1464	ERICA
1466	GOOD HOPE	1202	FEDHEALTH	1202	FEDHEALTH
1537	HOSMED	1083	FEDSURE	2295	FERROMED
1536	LIFEMED	2295	FERROMED	1466	GOOD HOPE
1501	MASTER BUIL	1466	GOOD HOPE	1537	HOSMED
1139	MEDDENT	1537	HOSMED	1556	KWAZULU
1140	MEDICAID	1556	KWAZULU	1536	LIFEMED
1549	MEDICOVER	1536	LIFEMED	1501	MASTER BUIL
1149	MEDIHELP	1501	MASTER BUIL	1139	MEDDENT
1548	MEDIPOS	1139	MEDDENT	1549	MEDICOVER
1142	MEDS	1140	MEDICAID	1149	MEDIHELP
1125	MOMENTUM LIF	1549	MEDICOVER	1506	MEDIMED
1215	MUMED 850	1149	MEDIHELP	1548	MEDIPOS
1170	NBC	1506	MEDIMED	1142	MEDS
1166	NIMAS	1548	MEDIPOS	1140	MEDSHIELD
1167	NMP	1142	MEDS	1560	METHEALTH
1454	PRO SANO	1125	MOMENTUM LIF	1125	MOMENTUM LIF
1196	PROTEA	1215	MUMED 850	1215	MUMED 850
1486	SIZWE	1170	NBC	1170	NBC
1249	SOUTHERN	1166	NIMAS	1166	NIMAS
2285	VAALMED	1167	NMP	1167	NMP
1148	VISIMED	1555	PHILA	1555	PHILA
1420	FINMED	1454	PRO SANO	1454	PRO SANO
1143	MSP	1194	PROFMED	1561	PROMED
1485	PREMIER	1196	PROTEA	1196	PROTEA
1453	SANITAS	1558	PUBLISERVE	1558	PUBLISERVE
1539	UNIVERSAL	1446	SELFMED	1446	SELFMED
		1486	SIZWE	1486	SIZWE
		1249	SOUTHERN	1249	SOUTHERN
		1422	TOPMED	1422	TOPMED
		2285	VAALMED	2285	VAALMED
		1148	VISIMED	1148	VISIMED
		1190	EAST COAST	1190	EAST COAST
		1420	FINMED	1420	FINMED
		1143	MSP	1143	MSP
		1485	PREMIER	1485	PREMIER
		1453	SANITAS	1453	SANITAS
		1539	UNIVERSAL	1539	UNIVERSAL

## 8.3 Inflation Factors

Inflation adjustments were made using general CPI available from the StatsSA site: <http://www.statssa.gov.za>. Annual inflation rates were multiplied in order to obtain inflation factors that will inflate all values to year 2000 Rand (1 January 2000).

Table A2 shows the inflation factors used for all inflation calculations in this report.

**TABLE A2: Inflation Factors**

Year	Inflation factor
1974	19.2
1975	16.7
1976	14.9
1977	13.5
1978	12.1
1979	10.8
1980	9.5
1981	8.2
1982	7.2
1983	6.4
1984	5.7
1985	5.1
1986	4.3
1987	3.6
1988	3.2
1989	2.8
1990	2.4
1991	2.1
1992	1.8
1993	1.7
1994	1.5
1995	1.4
1996	1.3
1997	1.2
1998	1.1
1999	1.0

## 8.4 Population Data

Population data for South Africa was obtained from Professor R. Dorrington of the University of Cape Town and the Centre for Actuarial Research. Table A3 shows total population and population group data for 1974, 1977, 1991 and 1999. The 1974 and 1977 figures had to be interpolated from estimates for 1970 and 1980. All populations are as at 1 July of the year concerned.

**TABLE A3: Population Data**

	Asian	Black	Coloured	White	Total
1974	717924	17961895	2346496	4125740	25152055
1977	767953	19502472	2515704	4326958	27113087
1991	989400	27828200	3355000	4938900	37111500
1999	1098213	34660931	3815300	5014900	44589344