

▪ PHILLIPS FOX ▪

ACTUARIES & CONSULTANTS

**CHOICE OF
SUPERANNUATION FUND
COSTS & BENEFITS TO THE
COMMUNITY**

*An Analysis of the Government's Proposal to offer Employees a
Choice of Superannuation Arrangements, including a review of the
Costs and Benefits to Society.*

Report prepared for Investment & Financial Services Association Limited

November 1999

Phillips Fox Actuaries & Consultants

Our actuarial practice is fully owned by our key consultants and is independent of any financial institution. We provide advice on superannuation to government agencies, large companies and to financial institutions.

This report was prepared by Michael Rice with assistance from Paul Murphy, Stephen Freeborn and Soren Soengkoeng. Further details of our organisation and people can be found on our web-page (www.pfac.com.au).

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In June 1989, Michael founded Rice Kachor Research with economist Mark Kachor. He is an Executive Director of this company which is now the premier research house operating in the life insurance and superannuation industries.

In addition to his consulting work, Michael writes frequently on topical issues affecting the life insurance, funds management and superannuation industries - more than 100 articles have been printed in the last five years. He is also frequently quoted in the financial press, on matters relevant to financial services.

Michael was a member of the Knox Committee set up by Senator Richard Alston (then Shadow Minister for Superannuation) to review superannuation in 1992. Later, he provided assistance to Hon. David Connolly in the development of the current government's superannuation policy.

Michael co-authored a paper on Industry Superannuation which was presented at an Actuarial Conference and subsequently incorporated in the syllabus for the final exam on Superannuation. During 1996, he presented a critical analysis of retirement incomes policy to the Institute of Actuaries of Australia (IAA). These Melbourne and Sydney workshops of the IAA were designed for actuaries to discuss their policy in the light of government policy and demographic trends. More recently Michael has authored "The Age Pension - Our Unstable Pillar", a new assessment of the role of Social Security in retirement incomes policy.

Michael is a Councillor of the IAA and chairs its Financial Services Committee. He has participated in various task-forces, including a recent one on tax reform and the *Finance the Ageing* committee. Michael is also on the Expert Reviewers Panel of the Australian Insurance Institute.

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SECTION A

EXECUTIVE SUMMARY

A.1 OVERVIEW OF REPORT

Phillips Fox Actuaries and Consultants (Phillips Fox) has been engaged by the Investment & Financial Services Association (IFSA). Our brief is to analyse the costs and benefits of the Government's proposed legislation relating to *Choice of superannuation fund* ("*Choice*").

The scope of our research is to:

- Model the costs and benefits to *superannuation* flowing from the introduction of *Choice*. This is explained in terms of its impact on the level of retirement benefits for consumers;
- Compare the costs and returns to the consumer of the various types of superannuation arrangements (eg corporate fund, industry fund, master trust, personal fund);
- Address the issue of whether *Choice* will require funds to maintain a higher level of liquidity; and
- Provide information in relation to trends in the U.S.A. and Australia on whether investors choose inappropriately conservative investment strategies when given *Choice*.

The arguments for and against *Choice* are now well known. Although it is necessary to understand these in terms of assessing its likely impact, it is outside the scope of this report to discuss these issues. We have provided IFSA with a separate background report that contains a comprehensive summary of superannuation trends, the proposed legislation and market developments.

Section B examines the impact of choice on member expenses. Section C examines the impact on investment returns. Section D examines the impact on insurance.

A.2 MODEL AND RESULTS

In section B of this report, we construct an expense model of the superannuation industry. This shows the industry incurs costs of \$5 billion a year. We then review the likely *Choice* behaviour of all participants, whether members, employers or funds. We are then able to calculate the impact on expenses resulting from these changes. **The result is a major reduction in expenses for members and employers.**

Our results depend on the level of consolidation of member accounts, the adoption of e-commerce administration savings and the reduction in "lost accounts".

The following are savings that would occur each year, once charges have fallen to the assumed levels. By account consolidation, we mean a reduction in the number of people with multiple accounts subject to multiple fees.

	15% consolidation of member accounts	30% consolidation of member accounts
(All figures in \$ million)		
Current annual charges	4,989	4,989
Estimated savings due to e-commerce (regardless of Choice)		
Member charges	248	248
Employer subsidy	11	11
Subtotal	259	259
Charges after e-commerce		
Total	4,730	4,730
Charges after e-commerce and the Choice savings outlined below		
Total	4,402	4,306

The following table summarises the estimated savings due to Choice (in an e-commerce environment).

All figures in millions of dollars

	15% consolidation	30% consolidation
Member charges	296	387
Employer subsidy	32	37
Subtotal	328	424

There are also other potential savings.

1. There is currently \$3.5 billion held in "lost member" accounts. Choice will lead to a potential one-off saving from the consolidation of these accounts. We have estimated this to be in the range of \$346 to \$865 million.
2. E-commerce (with or without Choice) will lead to faster payment of contributions. Based on the reported contributions of \$34 billion for 1997/98, we have estimated on-going extra earnings for members of \$113 million per annum.

In section C, we use historical investment performance data and the asset allocations offered by industry funds and master trusts to show how members can be affected by their investment decisions. We make some recommendations to minimise the risk of members making poor decisions.

In section C, we also conclude that fears that *Choice* will lead to higher liquidity and lower returns are groundless.

In section D, we analyse the input of *Choice* on insured benefits and calculate that there will be little practical impact.

A.3 CONCLUSIONS

- The government's policy to allow members to choose their own superannuation fund will be beneficial for the Australian economy and superannuation members.
- Unlimited *Choice* will lead to higher savings than the government's four-fund model.
- *Choice* will lead to immediate savings for members and regular savings in future years. It should be introduced as soon as practical to reduce member costs.
- The maximum savings arise from account consolidation. It is vital that there be full portability of existing and future benefits to allow members to consolidate.
- We can expect considerable rationalisation of members' accounts with a consequent saving in unproductive administration charges.
- The introduction of *Choice* will lead to further competition amongst superannuation funds culminating in lower fees.
- Competition will lead to higher standards of service and to an enhanced range of investments and insurance options.
- Once members obtain ownership of their fund, they will be in a better position to make informed decisions and will demand better service. This will also lead to improved service and lower costs within a short period.
- E-commerce developments will lead to high administrative savings. These will be considerably higher in a *Choice* environment.
- Some special forms of fund such as defined benefit funds and those funds with capital guaranteed investments may have liquidity issues. Effective mechanisms can be easily developed to deal with these issues in a *Choice* environment.
- The insurance market is highly adaptable and flexible. Group insurance arrangements will be adapted to a *Choice* environment with minimal impact on members.

SECTION B

CHOICE OF FUND – IMPACT ON EXPENSES

B.1 SUPERANNUATION MARKET SEGMENTS

The superannuation industry was segmented as follows at 30 June 1999:

Industry Segments 30/06/99	Funds	Members	Assets \$million
Corporate	3,332	1,367,000	69,418
Industry	101	5,945,000	29,492
Public Sector	41	2,808,000	95,371
Retail	238	9,245,000	111,040
Self-managed	192,245	377,000	52,188
Balance			51,135
Total	195,957	19,742,000	408,644

Source: APRA (the Australian Prudential Regulation Authority)

The number of member accounts exceeds the adult population because many people belong to more than one fund. APRA has calculated the following figures by comparing the number of accounts with the number of employees covered by superannuation -

Date	Average accounts
August 1998	2.7
August 1996	2.5
November 1995	2.4

The "balance" shown in the above table is made up of superannuation amounts included in life office statutory funds that APRA has not attributed to the fund types listed. It includes products such as deferred annuities.

We divided the "retail" segment plus part of the "balance" into five segments. The Retirement Savings Account (RSA) and Eligible Rollover Fund (ERF) data is based on APRA publications and the other data is based on Rice Kachor Research (RKR) publications. Note that master trusts are the employer-sponsored parts of these funds.

Retail Segments 30/06/99	Members	Assets \$million
Master Trust	2,772,000	26,300
RSA	250,000	550
ERF	2,200,000	2,090
Personal	3,688,000	74,100
Retirement income	335,000	26,800
Total	9,245,000	129,840

Source: Rice Kachor Research (RKR)

This reduces the "balance" to \$32,335 million.

B.2 METHOD

Each segment of the superannuation industry charges its members in different ways and the benefits and service levels vary between them.

In this section of this report, we use research to:

- construct a more detailed picture of the segments;
- explain the costs charged to superannuation fund members by the various segments;
- combine the two previous items to calculate the total expenses charged by the superannuation industry; and
- make reasonable assumptions about the way segment data would alter as a result of choice and calculate the effect on expenses.

We then:

- make reasonable assumptions about the way the number of accounts in each segment would change as a result of different styles of choice and calculate the effect on expenses; and
- show the overall effect of choice on expenses.

B.3 CHARGING METHOD

Funds charge their members a variety of fees as shown in the following table. Some funds (such as master trusts) apply all of these charges, while others (such as industry funds) prefer to combine all charges into a simpler structure comprising just a member fee and an asset fee.

In this report, we have converted complex charging scales back to simple scales.

Type of cost	Method of charging
Administration costs	Dollar per member; Percent of assets and Percent of contributions (for smaller sub-funds)
Trustee costs	
Cost of compliance	
Asset costs	Percent of assets;
	Difference between earning rate and rate credited (for Capital Guaranteed options)
Loading on insurance	Percent of insurance premium
Cost of distribution	Percent of contributions;
	Percent of assets

In addition, several funds charge fees for the advice provided in establishing an account. These amounts vary from case to case.

B.4 CORPORATE FUND EXPENSES

B 4.1 Nature of Corporate Funds

A Corporate Fund is an employer-sponsored, regulated superannuation fund. It is sponsored by a single employer or several closely related employers.

Each fund has its own trust deed. The trustee must comprise equal numbers of employer and member representatives. The trustee, as with all superannuation funds, is responsible for all compliance; including audit, lodgment of statutory returns and communications with members.

Corporate funds may have defined benefits or defined contributions. The charging method shown below applies to defined contribution funds. However, in determining whether a defined benefit fund complies with the superannuation guarantee, a "minimum requisite benefit" is calculated after deducting similar expense charges.

Asset based fees are not usually charged by corporate funds to their members. Typically, where members of corporate funds pay administrative fees, these are around \$70 - \$100 per member per annum. They are charged as fixed dollar fees.

B 4.2 Market Data

Market data was obtained by examining the charging structures of a sample of 28 corporate defined contribution funds with combined assets of \$2,420 million. The data was obtained from an examination of the 30 June 1998 annual reports of the funds, supplemented by any other published material. The sample therefore amounts to 3.5% of corporate fund assets and 1% of corporate funds. All of the funds in the sample had assets of more than \$5 million.

Charges for smaller corporate funds were extrapolated from the larger funds. The extrapolation leads to differences in assumptions about large and small corporate funds that are consistent with the differences between large and small corporate clients of master trusts.

The raw data had 12 categories of expenses. For our model we identified the common expense points that are charged to members. These are the Member Administration fees and the Investment fees. For consistency with the other sectors, these were expressed as a dollar per member charge and a percent of account balance charge. After smoothing, the data yielded the following charge rates:

Fund Size (\$m)	Member Admin fees	Investment fees	Total	Annual Average Member Fee	
				\$	% of assets
<10	96,945	30,000	126,945	78	1.74%
10 - 50	573,714	739,829	1,313,543	78	1.10%
60 - 100	1,298,134	1,955,332	3,253,466	78	0.90%
100+	2,341,087	4,576,914	6,918,001	78	0.72%

The data clearly showed that expense rates reduce with fund size.

B 4.3 Current Expense Charges

It can be argued that members of defined benefit funds do not pay expenses as the employer meets these costs. The trust deed defines the benefit and the employer pays the amount needed to fund the benefit. However, as noted above, the "minimum requisite benefit" is determined after expenses and we have treated all members of corporate funds as paying charges at the level that applies in defined contribution funds.

On this basis and based on the APRA data and the detailed segment information, we estimate that the corporate sector is currently charging members \$759 million per year. This is 1.09% of assets.

Fund Size (\$m)	Funds	Members	Assets \$ million	Expenses \$ million
<10	2,519	164,000	8,330	158
10 - 50	389	191,000	9,718	122
60 - 100	258	356,000	18,049	189
100+	167	656,000	33,320	290
TOTAL	3,333	1,367,000	69,417	759

B 4.4 Employer Subsidy

The above amounts are those charged to the members. Corporate funds are typically subsidised by the employer. It should be noted that these subsidies are reducing each year. The same study showed the following amounts charged to the employer -

Fund Size (\$m)	Member Admin fees	Investment fees	Total	Annual Average Member Fee	
				\$	% of assets
<10	76,800	220,000	296,800	39	0.22%
10 - 50	161,280	381,749	543,029	39	0.18%
60 - 100	476,160	591,773	1,067,933	39	0.10%
100+	1,221,119	1,190,180	2,411,299	39	0.07%

On this basis and based on the APRA data and the detailed segment information, we estimate that the corporate sector is currently paying subsidies of \$131 million per year.

Fund Size (\$m)	Funds	Members	Assets \$ million	Expenses \$ million
<10	2,519	164,000	8,330	25
10 - 50	389	191,000	9,718	25
60 - 100	258	356,000	18,049	32
100+	167	656,000	33,320	49
	3,333	1,367,000	69,417	131

B.5 INDUSTRY FUND EXPENSES

B 5.1 Nature of Industry Funds

An Industry Fund is a mutual, regulated superannuation fund providing full administration and communication services, and a limited number of insurance and investment options. Some of the larger industry funds have public offer status.

Industry Funds have an umbrella trust deed and trustee which is independent of members and employers. Board members of the trustee company are usually appointed by employer associations and trade unions.

B 5.2 Market Expense Data

The following table sets out the key details of large industry funds in relation to their profile and operating costs. This information has been extracted from the respective industry fund annual reports and accounts at 30 June 1998. **The figures understate actual expenses as the unit-costs of smaller funds are higher.**

FUND	DETAILS AT 30/6/98			OPERATING COSTS (\$M)		
	Assets (\$m)	Number of Members	Annual Contribution (\$m)	Invest mgmt (\$m)	Admin. (\$m)	Total (\$m)
ARF	1756.4	390,000	397	7.85	14.86	22.71
SUNSUPER	1237.1	500,000	332	4.46	12.29	16.75
C+BUS	1981.5	324,000	294	8.86	15.10	23.96
HESTA	1393.2	350,000	322	6.23	11.20	17.43
REST	1909.4	800,000	507	6.70	21.30	28.00
STA	1674.8	338,000	359	7.48	12.70	20.18
AVERAGE	1658.7	450,000	368	6.93	14.58	21.51

For industry funds, we considered:

- Average investment management charges of the large funds is 0.42% per annum. However to allow for the smaller funds that make up the rest of this sector, we have used a slightly higher assumption of 0.45% per annum;
- Average administration costs of \$32.40 per member per annum are incurred. However, due to other operational costs such as marketing, the actual charge per member may be greater than this. To allow for this and the smaller funds that make up the rest of this sector we have used \$1 per member per week or \$52 per member per annum; and
- Overall, the average total cost of participating in an industry fund is 1.30% of total fund assets, per annum. It should be noted that industry fund members have low average balances.

Many industry funds have large numbers of “protected” members. The experience of industry funds has been that the investment earnings foregone on protected members’ account balances are sufficient compensation for expenses incurred in maintaining these accounts. Consequently, protected members are typically not credited with any investment earnings. Hence, there is no requirement for unprotected, active members to subsidise the “protected” members through a reduction in the overall fund crediting rate.

B 5.3 Smoothing Costs

Many industry funds apply an adjustment to the rate earned by the fund before determining the "crediting rate". The purpose of the adjustment is to "smooth out" the investment performance.

In theory, members who stay in a fund for a long time, should not be disadvantaged by smoothing. In years when performance is good, the trustees will add to reserves; when returns fall, crediting rates will be topped-up by drawing on these reserves.

However, the process can take from some members and give to others based on the timing of their membership. It also reduces all members' returns if, over time, there is an overall drawing akin to an asset-based fee.

The history of the adjustments in the five years to 30 June 1998 is shown below. The average reduction in the declared rate has been 0.45%.

FUND	5 YEAR AVERAGE		AVERAGE ANNUAL COST OF RESERVING
	Earning Rate	Crediting Rate	
ARF	NA	10.23%	NA
C+BUS	11.08%	10.49%	0.59%
SUNSUPER	9.09%	10.0%	-0.91%
HESTA	9.60%	9.27%	0.33%
REST	10.00%	9.12%	0.88%
STA	11.30%	9.92%	1.38%
AVERAGE	10.21%	9.76%	0.45%

Source: Annual Report of Industry Funds

We examined the reserve history of four of the largest industry funds where we had data for a number of years. This is summarised in the following table:

	1992	1993	1994	1995	1996	1997	1998
Total Assets (\$m)	955	1,720	2,122	3,407	4,313	5,712	6,806
Reserves (\$m)	78	117	85	110	153	184	119
Reserves as % of assets	8%	7%	4%	3%	4%	3%	2%

These funds are typical of all industry funds. By extrapolating, we estimate that there would be about \$400 million in reserves held within all industry funds. They are gradually running down their reserves as a percentage of assets (though they were generally rising in dollar terms until the 1998 year). As the reserves are not being built up or used to top-up earning rates, the 0.45% shown above must be used by funds to subsidise their expenses. **Nonetheless, we have ignored the smoothing costs in our model.** It is clear that this will not be a genuine ongoing cost under *Choice*.

We also considered the additional marketing costs which will be incurred by industry funds in a *Choice* regime. It should be noted that some of the larger industry funds already hold public-offer status and they have begun to market beyond their captive client-base. This trend will continue irrespective of *Choice*. However, it is also clear that the use of the several hundred million dollars currently held in reserves will pay for these costs for some years into the future. This is assuming that the reserves of these funds are typical of the whole sector.

B 5.4 Current Expense Charges

Based on the previous sections, expenses charged to members are, on average, \$52 per year plus 0.45% of assets. This excludes smoothing costs.

Using these charges and the APRA data, we estimate that industry fund members are currently being charged \$442 million. This is 1.50% of assets.

Funds	101
Members	5.945 million
Assets	\$29,492 million
Charges	\$442 million

B 5.5 Cross Subsidies

The simple charging structure adopted by industry funds means that employees of large businesses subsidise employees of small businesses. An example is REST, the retail industry fund. The majority of active members are employed by one of the big three retailers – Coles Myer, Woolworths or Franklins. These employers supply computer data of contributions for their employees, giving REST a substantial flow of cheaply administered contributions. This subsidises the cost of administering contributions received from small shopkeepers for one or two casual staff. The REST costs are above average for an industry fund and would be higher for employees of small business without the cross subsidy.

By contrast, public-offer funds operated for profit do not have the same level of cross-subsidies. The different attitude to cross subsidies is reflected in the volume discounts offered to large sub-funds. This has implications for the effect of choice, which are discussed later.

If industry funds can maintain their current level of charges, they will benefit from the introduction of *Choice*. We expect that their costs will rise, but this is largely a function of conversion to public offer status (which they are already doing of their own volition).

B.6 GOVERNMENT SECTOR FUND EXPENSES

B 6.1 Nature of Public Sector Funds

Public sector funds are funds operated by government funds and agencies for the benefit of their employees. There is a strong trend away from unfunded defined benefit plans to defined contribution plans, particularly for new employees.

B 6.2 Market Data

The average public sector fund has 70,000 members and assets of \$2.3 billion. The results of a survey conducted by ASFA and published in July 1998 showed that funds of this size experience costs of \$1 per week per member plus 0.28% of assets. Some smaller public sector funds would have higher costs, particularly those that are internally administered.

Nonetheless, we have taken the average cost for large funds as the expense charged to members. Using the same rationale as we applied to corporate funds, we have assumed these charges apply to both defined benefit and defined contribution members.

B 6.3 Current Expense Charges

Based on the previous section and the APRA data, we estimate that government sector fund members are currently being charged \$413 million. This is 0.43% of assets.

Funds	41
Members	2.808 million
Assets	\$95,371 million
Charges	\$413 million

B.7 MASTER TRUST EXPENSES

B 7.1 Nature of Master Trust Funds

A Master Trust is a public-offer, regulated superannuation fund providing full administration and communication services, and a number of insurance and investment options.

It must have the facility to accept contributions from any employer and cater for the needs of a typical employer-sponsored plan. The funds have an umbrella trust deed and a trustee that is independent of members and employers

B 7.2 Market Data

We examined the charging scales of the following 12 master trusts, which are the most successful on the market.

- AMP CustomSuper
- ASGARD
- AXA Tailored Super
- BT Lifetime Super - Employer Plan
- Colonial
- Mercer Retirement Trust
- MLC Corporate Super
- Mercantile Mutual Corporate Super
- NAFM Business Super
- Plum Financial Services
- Salomon Smith Barney
- Westpac Master Fund

We then applied this scale to funds of different size to determine the typical amount charged to funds of a particular size. The total was then translated into a fee of \$52 per year plus an asset charge of the same value as the balance of the costs. The results are summarised in the following table:

MASTER TRUST EXPENSES										AVERAGE ANNUAL MEMBER FEE	
Fund Size (\$m)	Member	Contribution	Asset Admin	Investment Management	Expense Recovery	Trustee	Exit	Other	Total	\$ per member	% of assets
<10	98,938	1,010	59,180	208,655	7,558	3,112	11,023	21,179	410,655	52	1.23%
10 - 50	532,713	0	193,193	1,131,187	41,250	16,982	60,167	101,315	2,076,807	52	0.85%
60 - 100	561,398	0	179,314	1,198,107	43,750	18,011	63,812	104,400	2,168,792	52	0.83%
100+	480,555	0	151,376	1,026,681	37,500	15,438	54,696	88,811	1,855,057	52	0.83%
	1,673,604	1,010	583,063	3,564,630	130,058	53,543	189,698	315,705	6,511,311		

B 7.3 Marketing Considerations

Prospectus documents shows the maximum fees for the service. In practice, large funds can negotiate substantially reduced fees. The following table sets out the difference between the charges quoted in the prospectuses of master trust providers and those quoted in their tender to specific companies.

Provider	FUND SIZE		ANNUAL FEE	
	Members	Assets (\$m)	Recent Prospectus	Recent Tender
A	2,771	50	\$1,301,946	\$515,883
B	700	10	\$159,070	\$114,475
C	300	3	\$72,857	\$48,132

The table shows that the bigger the sub-fund involved, the larger the discount available on fees.

B 7.4 Current Expense Charges

We estimate that master trust members are currently being charged \$432 million. This is 1.64% of assets.

The division of the master trusts by fund size was based on our market knowledge. There is one \$100 million and one \$250 million employer fund, and several others in the \$50-100 million range.

Fund Size	Members	Assets \$ million	Expenses \$ million
<10	1,799,000	17,067	304
10 – 50	899,000	8,533	119
60 – 100	37,000	350	5
100+	37,000	350	5
Total	2,772,000	26,300	432

B.8 RETIREMENT SAVINGS ACCOUNT EXPENSES

B 8.1 Nature of RSAs

Retirement Savings Accounts are capital guaranteed superannuation accounts operated by financial institutions without any trust arrangement. Contributions may be made by employers or members.

B 8.2 Market Data

Nine institutions offer RSAs. There are also RSA "look-alikes" offered as an investment-option in some master trusts. Account fees vary based on whether an explicit fee or an interest rate spread is used. The weighted average cost is \$9 per year.

B 8.3 Current Expense Charges

Based on the previous section and our sub-division of the APRA data, we estimate that RSA account holders are currently being charged \$2 million per year which is 0.4% of assets. It should be noted that the bulk of the "fee" is derived from an interest rate margin which impacts on the expected earnings.

Funds	9
Members	0.25 million
Assets	\$550 million
Charges	\$2 million

B.9 ELIGIBLE ROLLOVER FUND (ERF) EXPENSES

B 9.1 Nature of ERFs

When a member leaves a fund and gives no direction as to how his or her account is to be dealt with, the trustee of the fund may transfer the account to an Eligible Rollover Fund. ERFs consist of many small accounts with a conservative investment style and low account keeping fees.

B 9.2 Market Data

The December 1998 APRA Bulletin reports that there were 1 million ERF accounts at 30 June 1997 and 1.6 million at 30 June 1998. We have assumed that this increased to 2.2 million at 30 June 1999. We have also assumed that the growth trend in account balances has continued and averages \$950 at June 1999 (the average balance was \$693 in 1997 and \$798 in 1998).

The same Bulletin states that administration expenses are 25 cents per week, which is \$13 per year per account.

B 9.3 Current Expense Charges

We estimate that ERF members are paying expenses of \$29 million. This is 1.39% of assets.

Members	2.2 million
Assets	\$2,090 million
Charges	\$29 million

B.10 PERSONAL SUPERANNUATION FUND EXPENSES

B 10.1 Nature of Personal Super Funds

Personal Superannuation covers a range of individual retail, regulated products. They provide full administration and communication services, and a number of insurance and investment options.

They accept contributions (single or regular) from a single person. The major participants are the self-employed and people with preserved benefits.

B 10.2 Market Data

There are a wide group of policies ranging from whole-of-life contracts through to savings plans. The cost structures vary considerably. Although there is a trend to lower fees, we have not explicitly taken this into account. Based on Rice Kachor Research surveys of the personal superannuation market, we estimate that the average charge paid by members of personal superannuation funds equates to \$78 plus 2% of assets.

B 10.3 Current Expense Charges

Based on the previous section and our sub-division of the APRA data, we estimate that personal superannuation fund members are being charged \$1,770 million per year. This is 2.39% of assets.

Members	3.688 million
Assets	\$74,100 million
Charges	\$1,770 million

B.11 RETIREMENT INCOME PRODUCT EXPENSES

B 11.1 Nature of Retirement Income Products

Retirement Products cover a range of individual, retail regulated products. They provide full administration and communication services, and a number of insurance and investment options.

They do not accept contributions, being designed to convert a lump sum amount into a regular income stream. Products include lifetime and term certain annuities and allocated pensions.

B 11.2 Market Data

Charges for retirement products are similar to charges for personal superannuation and, again, we estimate that the average charge equates to \$78 plus 2% of assets.

B 11.3 Current Expense Charges

Based on the previous section and our sub-division of the APRA data, we estimate that retirement income investors are currently being charged \$562 million per year. This is 2.10% of assets.

Members	0.335 million
Assets	\$26,800 million
Charges	\$562 million

B.12 SELF-MANAGED EXCLUDED FUND EXPENSES

B 12.1 Nature of Self-Managed Funds

Excluded or "Do It Yourself" Funds have just been re-styled Self Managed Funds. Each member must be a trustee or a director of the trustee. Funds may have no more than four members and the typical fund has two.

B 12.2 Market Data

The cost per member is high because the fund needs to pay its annual audit fee (typically \$600) and supervision fee (which was \$200 per half million of assets). However, investment fees may be low because the fund self-invests and may use a discount broker. There is often a significant "hidden cost" in the management time of the trustee / members.

It is difficult to obtain information on these funds due to the fragmented market. It should be noted that the assumptions made have minimal impact on the conclusions - but we are confident that they are reasonable.

B 12.3 Current Expense Charges

We have assumed that the expenses are \$1,000 per fund per year (ie \$500 per member) plus 0.5% of assets. We estimate that members of excluded funds are paying \$449 million in charges. This is 0.86% of assets.

Funds	192,245
Members	0.377 million
Assets	\$52,188 million
Charges	\$449 million

B.13 SUMMARY OF CURRENT EXPENSES

B 13.1 Current Expense Rates

The current charging scale of the various segments of the superannuation industry can be simplified to:

Segment	Employer Fund Size \$m	Member Fee \$	Asset Fee %
Corporate	<10	78	1.74
	10 – 50	78	1.10
	60 – 100	78	0.90
	100+	78	0.72
Industry		52	0.45
Public Sector		52	0.28
Master trust	<10	52	1.23
	10 – 50	52	0.85
	60 – 100	52	0.83
	100+	52	0.83
RSA*		9	>2.00
ERF*		13	>2.00
Personal		78	2.00
Retirement		78	2.00
Self-managed		500	0.50

* An RSA does not have an explicit asset charge but uses an interest margin. An ERF is capital guaranteed and also has an undisclosed margin.

B 13.2 Current Total Expense Charges

We estimate that superannuation fund members currently pay \$4.86 billion per year in charges. This is 1.19% of assets. In addition, employers with corporate funds subsidise superannuation by meeting various costs. We estimate these to be \$131 million p.a. Total costs are \$5.0 billion p.a.

	Member Accounts	Assets \$million	Charges \$million
Corporate	1,367,000	69,411	
- employers (subsidiaries)			131
- members			759
Industry	5,945,000	29,492	442
Public Sector	2,808,000	95,371	413
Master Trust	2,772,000	26,300	432
RSA	250,000	550	2
ERF	2,200,000	2,090	29
Personal	3,688,000	74,100	1,770
Retirement	335,000	26,800	562

Self-managed	377,000	52,188	449
Balance		32,335	
Total	19,742,000	408,644	4,989

Keith Finkelde of BTPS¹ estimated the total cost of administration to be \$2.5 billion pa. Applying an average investment management fee of 0.6% to the assets of \$408.6 billion gives an investment management charge of \$2.5 billion pa and total charges of \$5.0 billion. This is comparable with our figure of \$5.0 billion for total expenses.

B.14 CHOICE IMPACT – MOVEMENT BETWEEN FUNDS

Under *Choice*, one would expect three types of movement:

- Unwilling "conscripts" will move to another type of fund. "Conscripts" include people who have been placed in corporate, industry, public sector or master trust funds against their will. ERF members are apathetic. Most RSA and personal super fund members are volunteers (although some may have been placed in the fund by their employers). Owners of retirement products and members of excluded funds are all volunteers.
- Some people will move to get a better deal. For example, an employee of a small business who has been placed in a master trust may move to an industry fund (or vice versa).
- Some people will move because they are attracted by the marketing of their new fund - for example, they may be attracted to the name, security and convenience of dealing with a fund operated by their bank.

The conventional wisdom has it that marketing will be very important and that organisations with expensively developed brand names such as the big banks and life offices will have an advantage over industry funds and less well known master trusts.

Our view is that the outcome will partly depend on the skill of ASIC in devising simple meaningful forms of disclosure and regulating sales practices. A lot of good work has already been done in this area and we would expect most people to make intelligent choices even without any adjustments to the regulatory regime in response to *Choice*.

One of the problems that will need to be addressed is that of members who have high risk tolerance and others who are totally risk-averse. It is possible for members to chase unrealistically high returns by taking excessive risks. One way of protecting such members is to insist on a formal investment strategy similar to that required of self-managed funds. This strategy could be documented as part of an adviser's financial needs analysis or the member could develop it in other ways. Of course, it would not be practical for funds to monitor this in respect of all members, so the onus must be on the member not the trustee. Given the high adoption of the default fund by members, we expect that this problem will only occur at the fringe.

¹ Superannuation Electronic Commerce - An initiative to reduce the cost of administration 18/03/99

Overall, we expect:

- There will be a significant flow from corporate funds to master trusts. This will be driven more by employers than by employees. Companies are already deciding that superannuation is "too hard" and *Choice* will accelerate the trend. However, some employers have a strong incentive to maintain current defined benefit funds. Many of these funds have a substantial accumulated surplus as a result of the favourable investment conditions in the nineties. Employers who sponsor these funds can use the surplus in lieu of paying contributions. This factor means that the flow from corporate funds will not be as high as one might otherwise expect;
- There will be a small flow from the industry funds as "conscripts" leave. Some of these employees might have a master trust option negotiated for them by their employers but we have assumed that they will move to personal funds. Employers are unlikely to attempt to orchestrate a move from industry funds because they gain nothing and incur industrial relations risks;
- Some "conscripts" will leave public sector funds. However, the movement should be modest because of the low charges and because public sector employees are often more comfortable with financial services supplied by the public sector. The comfort factor was evidenced by the flow of public sector retirement payments to the Commonwealth bank and state insurance offices when they were publicly owned. The flow from public sector funds will be increased following the tender for default funds. Some departments will award the tender to master trusts and others to industry funds;
- Some members of master trusts will leave for industry funds. The flow to industry funds will mostly come from people who currently pay retail expense rates and have no other means of obtaining wholesale rates. They will therefore be employees of small business who do not want to pay for the flexibility and advice associated with master trusts;
- The net personal fund movement should be small. Some employees who have been placed in personal funds by their employers will move to industry funds with lower charges; and
- There will be a flow into new self-managed funds from senior employees who are currently required to belong to corporate or public funds and who have enough in their superannuation account for the cost structure of excluded funds to be efficient.

Our best estimate model assumes the following flows of assets and members:

MOVEMENT OF MEMBERS POST - CHOICE OF FUND		
Current Segment	Flow Out	Destination
Corporate	15%	70% master trust, 20% industry, 10% excluded
Industry	2%	Personal
Public Sector	10%	70% master trust, 20% industry, 10% excluded
Master Trust	5%	Industry
RSA	Nil	
ERF	Nil	
Personal	2%	Industry
Retirement	Nil	
Self-managed	Nil	

We should note that this movement will not occur instantaneously. The flows are intended to represent our estimate of the flows that can be expected in the first few years of *Choice*, excluding flows that would have occurred under current trends anyway. Hence, the estimated flow from corporates to master trust does not include the flow we expect to occur even without *Choice*.

The advantage of unlimited *Choice* is that these savings will occur on existing assets, as well as future SG contributions.

Although the costs may take several years to reduce to the level we have projected, the savings from each incremental drop in costs is permanent and therefore has an impact on the long-term retirement benefits of members.

B.15 CHOICE IMPACT – ACCOUNT CONSOLIDATION

B 15.1 Identified accounts

Choice will lead to account consolidation. The degree of consolidation will depend on the form of Choice introduced and on the ease of consolidation. For example, consider a woman who:

- joined the public service and voluntarily left her superannuation in the public sector fund when she resigned; and
- was placed in an industry fund in her next job and was compelled to leave her superannuation behind; and
- took the super from her next job and placed it in a personal fund, which has since delivered performance she has been pleased with; and
- is now in a corporate fund operated by her employer, which has investment performance she regards as poor.

Suppose that government's current proposal is adopted and that the employer opts for the four funds approach and does not include any of the woman's prior funds on the menu of choices. She will not consolidate at all.

Alternatively, suppose the form of choice must be unlimited (or the employer chooses the unlimited option). The woman is likely to move her employer super into her personal fund.

Finally, suppose there is full-fledged choice and members can direct old funds to transfer their accounts to a new fund. The woman would probably consolidate her four funds and shop for the best deal.

Turning now to the ease of consolidation, this will depend partly on the e-commerce options available and on ease of identifying and finding old accounts. At October 1999, 2.7 million accounts holding \$3.46 billion (average \$1,280) could not be consolidated because they were lost (see below). A facility to enable members to electronically "scoop up" their old accounts using their TFN would facilitate consolidation.

These considerations lead to four possible levels of consolidation:

- The government's current plan;
- Unlimited choice of current fund;
- Unlimited choice of current fund and right to move old funds; and
- Unlimited choice, right to move and e-commerce facilitation including ability to use TFN to consolidate.

At present each superannuation member has an average of 2.7 accounts. In other words, 63% of accounts are duplicates. Unlimited choice might produce a 15% reduction and the fourth option above ("maximum consolidation facilitation") might produce a 30% reduction. This would still leave nearly two accounts per member. In the very long term, we would expect further reductions. The consolidation would occur in all segments apart from retirement and self-managed.

Account consolidation leads to reduced costs in two ways. Firstly, the member will be only paying one set of dollar-per-member fees. Secondly, the larger consolidated account balance will lead to a reduction in the unit costs.

B 15.2 Lost accounts

There is \$3.46 billion in lost accounts, that is, where the owner is not known. The assets in these accounts eventually go to the government as consolidated revenue. As such, this constitutes a cost to the superannuation industry. Each account that is identified therefore represents a saving.

With the introduction of *Choice*, there will be more incentive for various interested parties to identify the owners of lost accounts so as to benefit when the assets are consolidated. It will also mean that accounts are less likely to become lost in the first place.

If we estimate the overall result of the reductions to be between 10% and 25% of lost accounts are identified, then the (one-off) savings to the superannuation industry will amount to between \$346 million and \$865 million.

B.16 EFFECT OF CHARGING SCALE ON RETIREMENT BENEFIT

In order to isolate the impact of costs on retirement benefits, it is necessary to assume that all funds earn the same rate of return.

EFFECT OF FEES ON RETIREMENT BENEFIT*				
ASSUMING EQUIVALENT EARNINGS**				
Segment	Employer Fund Size \$m	10 years	20 years***	30 years***
		Benefit as a multiple of salary		
Corporate	<10	0.83	1.88	3.18
	10 - 50	0.86	2.01	3.53
	60 - 100	0.87	2.05	3.65
	100+	0.88	2.09	3.77
Industry Fund		0.90	2.17	3.98
Public Sector		0.91	2.21	4.10
Master trust	<10	0.86	2.00	3.49
	10 - 50	0.88	2.08	3.72
	60 - 100	0.88	2.09	3.73
	100+	0.88	2.09	3.73
RSA**		0.93	2.32	4.36
ERF**		0.93	2.31	4.36
Personal		0.82	1.83	3.05
Retirement		0.82	1.83	3.05
Self-managed		0.75	1.82	3.32

CAVEAT: These results should not be used in isolation for the following reasons:

* Maintaining multiple accounts, as opposed to moving to a single account will undermine substantially these benefits.

** The model assumes equivalent earning rates for all funds. This is clearly an unrealistic assumption, which enables the table to show the expense effect only. The impact of this is clearly illustrated by the result for RSA's and ERF's. These are low cost products that deliver low returns because of the capital protected nature of the investment. After fees, performance is the critical criteria upon which determines members end balances. See section C.1.2.

*** 20 to 30 year membership of a single fund is somewhat unrealistic. Labour force turnover is such that employees will move between employers and industries during their working life. Furthermore, under *Choice* they may decide at various times to move to another fund.

The table above shows the retirement benefit as a multiple of annual salary that would be paid to members of the various types of fund on the following assumptions:

- Member stays in fund for 10, 20 or 30 years;

- Salary of \$32,000;
- Contributions of 9% of salary;
- Expenses as shown in the expenses summary table earlier in this section;
- Tax on contributions of 15% (excluding the member fee);
- Fund earnings for all funds of 4% net of tax and net of the annual rate of increase in salary. This rate is reduced by the asset charge shown in the expenses summary table.

The following points can be noted from this table:

- The results for self-managed funds are not meaningful. A person with an annual contribution of 9% of \$32,000 would not usually establish a self-managed fund;
- Some people might quite reasonably elect to pay higher than average fees because they value the service or the investment performance; and
- Senator Sherry tabled a paper in the Senate on 25 May 1998 which showed master trusts paying around 25% less than industry funds after a 40 year career. The table, which was prepared by IFS, assumed that the master trust member would be charged the fees applicable to individuals and employees of small businesses. Our table shows that the impact of fees on master trust benefits depends on the employer fund size. A more detailed analysis of Senator Sherry's analysis is set out in Appendix A.

B.17 E-COMMERCE

The development of *e-commerce* will significantly cut costs within superannuation funds. This will occur irrespective of whether *Choice* is introduced. However, the benefits will be more pronounced in a *Choice* environment where payment and reconciliation of contributions, compliance with SG and general administration would be more complicated.

B 17.1 What it is

The application of e-commerce solutions for participants in the superannuation industry has developed significantly in recent years and some initiatives have occurred within recent months. As industries embrace new technology to access efficiency gains generally, the requirement to minimise the cost of administering the company superannuation arrangements is also growing.

Superannuation funds have to record many relevant dates and types of contributions. This easily leads to errors. Furthermore, there are a large number of members with "lost accounts". E-commerce addresses many of these problems by forcing the employer and members to provide all necessary information. Once the correct data has been collected, administration becomes significantly easier.

A further use of e-commerce is to simplify the provision of information to and from members. If a member is able to change their own address electronically (through a web page), this

removes the need for a number of paper-based procedures together with the people required to use them.

B 17.2 Who uses it

The drive for implementing e-commerce solutions has been driven by the product providers, initially. Principally, this has been due to the high cost involved in traditional administration techniques (ie human capital is labour intensive and retains a high potential liability as a result of errors).

B 17.3 Who wins

The efficiency gains from e-commerce are being shared by all participants – the employer, the superannuation fund and the member.

The employer is able to free up much of the payroll administration time and effort involved in processing the company's regular superannuation remittances. Building an interface that uploads the contributions directly into the superannuation administration system allows the product provider to capture efficiencies. Specifically, the internal administration time associated with reconciling contributions to an associated payment is eliminated and the allocation to members is automatic.

Many product providers now promote two pricing scales – one for an electronically remitted contribution (with associated EFT payment) and one for manual paper remittance and associated cheque payment. The electronically remitted contribution (with associated EFT payment) will typically attract a discounted member fee over the manual remittance. Further, electronic remittance and allocation means that contributions are allocated to members accounts more efficiently which leads to a faster turn-around time for allocating the contributions to the members' investment choices. That is, the contribution spends less time in a holding (or cash) account pending re-investment and more time in the nominated investments.

B 17.4 Quantification

Currently there is an average lag of a month between the time when contribution is earned by the member and when it is credited to his account. E-commerce will force employers to link superannuation payments to the company's payroll system. This will have two effects:

1. There will be no time lag. This means members will earn on average an extra month's interest on their contributions.
2. There will be a reduction in costs to the fund administrators. Competitive pressures will force the providers to pass this on to members as lower charges.

Without *Choice* only 50% of employers will switch to e-commerce. With *Choice* 100% will switch.

In his 18 March 1999 paper, Keith Finkelde of BTPS estimated that the reduction in administration costs would be "in excess of 50% for specific transactions". We have incorporated a conservative reduction of 40% of the dollar-per-member charges in our model.

The results are shown in the next 2 sections.

The extra month's interest earned is harder to estimate. Also, it cannot be incorporated easily into our model. Using the total contributions of \$34 billion as reported by APRA for 1997-98 and fund earnings of 4% after tax, we have estimated the extra earnings to be \$113 million. This will be the same whether or not *Choice* is introduced.

B 17.5 Current Total Expense (with E-commerce, but without *Choice*)

We have recalculated the table in section B13.2, applying a 20% (= 50% x 40%) reduction to the dollar-per-member charges.

	Members	Assets \$million	Charges \$million
Corporate	1,367,000	69,418	
- employers			120
- members			737
Industry	5,945,000	29,492	380
Public Sector	2,808,000	95,371	384
Master Trust	2,772,000	26,300	403
RSA	250,000	550	2
ERF	2,200,000	2,090	23
Personal	3,688,000	74,100	1,712
Retirement	335,000	26,800	557
Self-managed	377,000	52,188	412
Balance		32,335	0
Total	19,742,000	408,644	4,730

B 17.6 Expected Total Expense (with E-commerce, with Choice)**B.17.6.1 Expected Asset Movement plus 15% Consolidation**

After applying the 40% reduction to the dollar-per-member charges, we have allowed for movement in memberships and assets as set out in the table in B14.

	Members	Assets \$million	Charges \$million
Corporate	957,000	59,005	
- employers			88
- members			599
Industry	5,244,000	35,689	324
Public Sector	2,106,000	85,834	306
Retail - Master Trust	2,558,000	38,950	506
Retail - RSA	213,000	550	1
Retail - ERF	1,870,000	2,090	15
Retail - Personal	3,180,000	73,208	1,613
Retail - Retirement	335,000	26,800	552
Self-Managed	426,000	54,183	398
Balance	0	32,335	0
	16,889,000	408,644	4,402

B.17.6.2 Expected Asset Movement plus 30% Consolidation

We have recalculated the table in section B16.2 applying the 40% reduction to the dollar-per-member charges.

	Members	Assets \$million	Expenses \$million
Corporate	752,000	59,005	
- employers			83
- members			590
Industry	4,352,000	35,689	297
Public Sector	1,685,000	85,834	293
Retail - Master Trust	2,142,000	38,950	493
Retail - RSA	175,000	550	1
Retail - ERF	1,540,000	2,090	12
Retail - Personal	2,627,000	73,208	1,587
Retail - Retirement	335,000	26,800	552
Self-managed	426,000	54,183	398
Balance	0	32,335	0
	14,034,000	408,644	4,306

B.18 SHIFT TO RETAIL

In this section we submit that unit costs will move towards a "mezzanine" level. By this we mean a level that is higher than the wholesale unit-costs, due to the higher level of service and flexibility; but lower than the retail unit-costs, due to competitive pressures and economies of scale.

B 18.1 Change in unit costs

Larger funds pay lower unit costs due to economies of scale generated by their size. Some commentators are concerned that *Choice* will lead to smaller groups with higher unit costs per member. We regard this as unlikely for the following reasons:

- superannuation is currently inefficient and the introduction of *Choice* will, through competitive forces, remove many of the high-cost funds;
- surviving funds will be larger and their fees will, in part, reflect the size of total membership as well as the costs of communicating with specific groups of members;
- large companies will maintain default funds which will have many of the characteristics of their existing arrangements;
- the self-employed and employees of small business may pay higher fees within master trusts or personal superannuation funds, but, if it suits them, they can avoid this by joining industry funds.

Industry funds have cross-subsidies and charge the same price for wholesale and retail members. If *Choice* leads to an increase in retail business for industry funds, this may place some pressure on the expense rates of industry funds.

B 18.2 Other Factors

It is not possible to predict member behaviour, though we can expect an informed public will largely make rational decisions. Couples will be able to use *Choice* to reduce retail fees by joining a fund that only charges one member fee where husband and wife both have superannuation accounts with the fund. At present, husband and wife are likely to be forced to join different funds.

The previous section discussed the emergence of superannuation e-commerce and we expect this to reduce and eventually eliminate the difference between wholesale and retail prices. In another financial service (stockbroking), retail investors already can pay very low fees if they use e-commerce and a discount broker.

B 18.3 Advice

The level of advice required by members will increase. Members will want advice not only on investment, but also on superannuation as a whole, taxation, contribution levels, retirement times, and insurance. This growth will affect all sectors of the superannuation industry, even industry funds. Some industry funds are already offering financial planning advice. The average account balances of their members will eventually reach a size where the members require a higher level of advice. If it is not provided at reasonable cost, *Choice* will enable them to take their business elsewhere.

B 18.4 Marketing Costs

The costs of industry funds will increase due to the marketing they will have to do to survive under *Choice* and take advantage of the new environment. This includes:

- Converting to public offer fund, to attract members outside their Award(s);
- Advertising, so they are not overlooked by members seeking a lower-cost alternative;
- Financial planning advice; and
- Evolving into (mutual) financial conglomerates, ie offering banking services, home loans, etc.

Marketing campaigns will have to be aimed at higher-account balance members, as there is little to be gained from an inflow of small account balances.

It should be noted that industry funds will be spending more on marketing regardless of whether or not *Choice* is introduced. They have already indicated that they intend to compete aggressively for business over a wide range of financial services. The question is how much more they will have to spend under *Choice*.

We suggest that industry funds are already using their reserves to pay for the increased marketing costs and they will continue to do so for some time. Hence, we do not expect member charges in these funds to increase greatly for the foreseeable future.

Retail funds will not need to dramatically increase their marketing budget. Rather, they will redirect their spending to the areas where opportunities arise in the new environment. Once again, we do not expect member charges to increase.

SECTION C

CHOICE OF INVESTMENT – IMPACT ON RATE OF RETURN

C.1 TRENDS IN MEMBER INVESTMENT CHOICE

C 1.1 Variety

Member Investment Choice has been available in Australia for many years. Master Trusts pioneered Member Investment Choice in employer-sponsored superannuation funds and this has been a large factor in their past growth. Many of these funds now offer a choice of:

- external managers;
- managed ("balanced") funds with varying degrees of equity exposure;
- specialist sectors; and
- personal investments (e.g. direct share holdings).

The majority of personal superannuation contracts are aggregated within master trusts so they can also access a wide range of investment options. Those people (usually with significant assets) who establish self-managed funds obviously have an unlimited choice of investments within the limits of the overall investment strategy.

C 1.2 Master Trusts

Within the employer-sponsored master trust market the majority of members remain invested in the more traditional unit linked (capital stable and balanced) funds and capital guaranteed funds. These are usually selected as the default fund and the majority of members accept this option.

One of the advantages of a managed fund is that members have a good spread of assets. Not only are they investing across a number of growth and debt classes but the individual investments within each class will be diversified. This reduces the volatility of the investment and limits potential losses from any poor investment.

Newer members within the employer groups are more likely to utilise the wider range of investment options available.

The following table shows the allocation of money between the various managed investment options and sector specific investment options (ie cash, Australian shares, fixed interest, etc) as at 30 June 1999.

ASSET ALLOCATION - EMPLOYER SECTIONS OF MASTER TRUSTS								
Table Type	No. of Funds	Total Size of Funds		Net Cash Flows 30/6/99 (\$M)	Average Returns			
		30/6/99 (\$M)	30/6/98 (\$M)		1 Yr %	2Yrs %	3 Yrs %	5 Yrs %
MANAGED INVESTMENTS								
Capital Guaranteed	63	5,905.5	5,400.6	276.9	3.9	3.9	4.2	4.3
Capital Stable	162	2,727.3	2,375.8	240.9	3.7	4.7	6.7	6.6
Managed (Pooled)	392	12,897.2	11,128.2	909.8	7.2	7.6	10.5	9.5
SECTOR INVESTMENTS								
Cash Funds	74	489.1	540.7	-83.3	3.1	3.3	3.9	4.5
Australian Shares	116	785.7	623.5	59.6	14.2	6.6	12.3	11.5
Fixed Interest	72	262.1	227.6	18.8	2.0	5.0	7.5	7.6
Property	56	172.5	1,7.6	19.7	4.2	7.4	8.7	8.2
International	102	23.2	182.3	57.0	4.0	14.3	17.4	13.3
Individual Choice	12	5.3	500.8	61.1	N/a	n/a	n/a	n/a
Fixed Rate	6	19.2	30.5	-10.9	N/a	n/a	n/a	n/a
Unallocated Funds	9	2,218.0	2,190.2	-8.1	N/a	n/a	n/a	n/a
TOTAL INVESTMENT OPTIONS	1064	26,309.0	23,327.9	1,541.5	6.6	6.8	9.5	8.6

Source: Master Trust Analysis - Rice Kachor Research

The table shows that approximately \$21.5 billion out of \$24.1 billion of fund assets (ignoring unallocated funds) remain invested in assets where the customer chooses the degree of risk (managed, stable or guaranteed) and the investment manager makes the rest of the decisions. The remainder are invested in assets where the customer chooses the specific asset class.

C 1.3 Personal Superannuation

Within the personal superannuation market investment choice has been available for a lot longer (in excess of twenty years). In this segment, many members will have made the investment decision with the assistance of a financial adviser.

Historically, the investment choices available in this market have tended to be choices of "managed" investment options. In a similar way to the master trust market, the movement into sector investment choices has only grown strongly in the last 5 years.

Consequently, for the foreseeable future, we expect the majority of investors to remain invested in this way.

Table Type	No. of Funds	Total Size of Funds			
		30/6/99 (\$M)	30/6/98 (\$M)	30/6/97 (\$M)	30/6/96 (\$M)
MANAGED INVESTMENTS					
Capital Guaranteed	122	4,671	4,585	4,876	5,249
Capital Stable	253	9,341	8,814	8,101	7,309
Managed (Pooled)	555	30,776	26,310	21,692	16,294
SECTOR INVESTMENTS					
Cash Funds	158	5,341	5,296	5,786	5,029
Australian Shares	174	3,761	2,997	2,542	1,691
Fixed Interest	110	863	986	950	961
Property	95	655	529	403	293
International	129	1,004	696	401	265
Individual Choice	9	1,898	1,562	997	702
Fixed Rate	28	1,009	939	1,253	1,416
TOTAL PRODUCTS	1,633	59,319	52,714	47,001	39,209

Source: Personal Superannuation Analysis - Rice Kachor Research

Once again, a high percentage of assets (76%) are invested in managed investments.

C 1.4 Industry Funds

In their early days, industry funds managed their assets by investing in capital guaranteed life insurance policies. During the 1990's, they have gradually changed, first to managed funds, then to more direct investment holdings.

They tended to hold fluctuation reserves and operated with a goal of providing positive crediting rates to members during each statement period. As a result, the underlying earnings on the fund were quite different to those allocated to members. SIS legislation prohibits funds from holding negative reserves, so it is conceivable that there will be negative crediting rates during periods when asset values decline. Hence, reserving will become unpopular and members will begin to receive returns more closely matched to the actual earnings.

Some of the larger funds have begun to offer member investment choice. These choices typically extend to a more conservative option and a more aggressive option. Some funds also offer a very aggressive strategy (eg 100% shares), while ARF has recently announced it will allow members to invest directly into specific shares listed on the ASX.

The 28th Report of the Senate Select Committee on Superannuation noted that:

- only 54 of HESTA's 125,000 members took advantage; and
- that only 310 of 250,000 members of C+BUS made a choice.

Other funds have had similar experiences. This is not surprising since:

- industry funds have low average balances (less than \$4,000 per member) so there is little interest in earnings at this level;
- members are generally from the lower to middle-income segments where education on financial matters is generally low; and
- good investment returns within the funds have led to little desire for people to improve performance.

As fund balances grow, members of industry funds will begin to demand the same type of services and flexibility as are currently provided by master trusts.

C 1.5 Future Trends

The statistics above indicate that members (within the retail sector including master trusts) generally prefer to leave asset allocation to the experts. Nonetheless, the funds which have attracted the most members tend to offer a wide range of options. This implies that members and employers (or their advisers) are attracted to funds where the money is not locked-in to an under-performing fund manager or asset class.

The overwhelming majority of these members stick to their original investment strategy and do not make regular switches. This may be a result of a number of factors, including:

- apathy;
- satisfaction over recent high returns (since dissatisfied people are generally the ones to move);
- choice of a managed fund (where there is already automatic switching done by the professional fund manager within the asset class); and
- ignorance (many members do not read their literature so they may well not be well informed about potential options).

We expect that members will become more active as their account balances grow and that they will simultaneously become more attracted to growth investments.

C 1.6 Summary

We conclude from the data:

- Many people already have investment choice;
- Where there is a default investment option, most people choose it. This is particularly true of industry funds; and
- Where there is no default, the most popular choice is the “managed pool”. The next most popular choice is capital guaranteed or cash. This is followed by the capital stable pool. Around 10% of investors construct their own pool by choosing directly from the various asset classes.

Note: A managed pool will typically have a majority of “aggressive” asset classes such as Australian and international shares and property and a minority of “defensive” asset classes such as Australian and international bonds and indexed securities and cash.

The balance of this section of this report sets out the effects of investment choice but it should be borne in mind that, for most people, these effects will occur regardless of whether *Choice* of fund is implemented.

C.2 IMPACT ON RETIREMENT BENEFITS

Appendix B examines the asset classes and uses historical data to determine the expected rate of return and expected variability in return. It also examines the asset allocations of the four main pool types and concludes that they are similar for master trusts or industry funds.

The variation in return has a major impact on retirement benefits. The following table shows the retirement benefit as a multiple of annual salary after 10, 20 and 30 year savings period. It assumes that 9% of salary is contributed to superannuation and that this is reduced by the 15% tax on contributions and that there is no superannuation surcharge. It also assumes that the rates of return derived in Appendix B are reduced by 1.2%. The expense analysis in this report shows that this is the average charge paid by superannuation fund members.

The “mean” benefit is the expected benefit and there is a 95% chance that the benefit will be in the range of the low to high benefit.

RETIREMENT BENEFIT AS MULTIPLE OF ANNUAL SALARY									
Investment	10 years			20 years			30 years		
	Low	Mean	High	Low	Mean	High	Low	Mean	High
Cap Gtd, Cash	0.83	0.92	1.02	1.94	2.25	2.62	3.43	4.16	5.07
Capital Stable	0.82	0.94	1.08	1.93	2.35	2.88	3.45	4.45	5.80
Balanced	0.75	0.99	1.31	1.73	2.62	4.04	3.13	5.30	9.38
Growth	0.72	1.02	1.45	1.66	2.77	4.81	2.99	5.79	11.98

As noted in the Appendix, the projections are based on data that relates to an unusually benign investment period. Translating this data to 30 year projection may yield over-optimistic results. Nonetheless, some of the conclusions that can be taken from the table are clearly valid:

- It takes a long time for a contribution of 9% of salary to amount to a substantial retirement benefit;
- There will be wide differences in retirement benefits even amongst people investing the same amount and using the same asset allocation for the same period; and
- It can be seen that, if returns are low, a defensive strategy (cash or stable) is not much better than an aggressive strategy (balanced or growth). However, if returns are as expected or high, the aggressive strategies are far superior to the defensive strategies.

C.3 SMOOTHING

Some funds have sought to insulate members from investment fluctuations. As noted in the expense section, smoothing has (an average) cost members of industry funds a reduction in earnings of an average of 0.45% per year. The cost to members of capital guaranteed funds has been much higher.

Smoothing was adopted because it was felt that many industry fund members would compare returns with savings account returns and be upset in years when the return was lower. This made sense when only one investment option was available. However, industry fund members can now select the investment style they want and it seems reasonable that they get the full return associated with that style.

Choice will put industry funds in a position where they have to be more aware of their competitive position and they are likely to decide that they cannot afford to reduce returns by building smoothing reserves.

C.4 LIQUIDITY

Some people have argued that *Choice* will cause trustees to place more of a fund's assets in liquid investments so that the fund can cope with a *Choice*-induced flow of withdrawals. It is further argued that this will result in an increased cash allocation, with consequent lower investment returns for members.

In considering whether this might happen, there are a number of points to consider:

- *Choice* does not constitute a systemic risk to the superannuation system that could be compared, for example, to the risk of a run on the banks. *Choice* simply gives members the right to change funds. All money withdrawn from one superannuation fund will be deposited with another;
- Nearly all the assets held by superannuation funds are highly tradeable. The exceptions are direct property holdings and the infrastructure component of Australian shares. These two segments amount to a small proportion of total assets. There is a negligible risk of *Choice* rendering these assets non-tradeable due to a rush to sell. Each superannuation fund that needs to sell will be matched by a superannuation fund that needs to buy. Funds will therefore continue to be able to convert large amounts of their assets into cash overnight;

- The current asset allocations have been optimised to produce the highest rate of return for the level of risk the member chooses (grading from low risk cash to higher risk growth). Any change to the allocation will be sub-optimal and make the fund uncompetitive; and
- Retail fund members do not switch investments frequently, even though there is little cost in doing so.

In short, trustees that changed their asset allocations would be behaving irrationally. The trustees of major funds currently set their asset allocations in a rational way and there is no reason to suppose that they will suddenly start behaving irrationally.

We consider that the concern that Choice will cause lower returns through higher cash allocations is groundless.

Nonetheless, liquidity could be a problem for some types of fund:

- capital guaranteed funds;
- funds which continue to smooth investment returns;
- defined benefit funds; and
- any other funds which invest in illiquid investments.

These funds can, in some circumstances, be vulnerable to a sudden outflow of funds. In a *Choice* environment, they may need to be protected against a large proportion of members leaving suddenly. The proposed legislation will allow employers to limit changes to one opportunity each year. This might exacerbate the position if all members stored up their requests to change and were forced to enact them simultaneously.

We consider it reasonable for these funds to be able to control the outflow of redemptions *provided that members accept the conditions*. This may require a change in the promotional material for these funds.

It could be argued that funds where liquidity might be a problem ought not to be used as a default fund in a *Choice* environment. However, this would (inappropriately) disqualify most industry funds and all defined benefit funds. It makes more sense for these funds to be required to advise members of any restrictions on switching out of the fund.

C.5 CONCLUSIONS

- Superannuation fund members should generally choose balanced or growth strategies. However, this does not guarantee an adequate retirement benefit. Under defined contribution funds, the member bears the investment risk and it is possible to obtain a poor return despite a sound asset allocation because the fund manager underperforms or because the member exits the system when asset values are low;
- Most members already bear the investment risk and have to choose an investment strategy within master trusts, major industry funds, personal superannuation, and many corporate funds. There is no reason to expect choice of fund to increase the risk of members making poor choices;
- RSAs have a cash strategy and ERFs have a cash or stable strategy. They are inappropriate long-term investment vehicles. RSAs already carry a warning to this effect; and
- Members of defined benefit funds are protected against the vagaries of investment returns. This is clearly an important benefit. The old argument against defined benefit plans was that members lost employer contributions unless they stayed with the employer for a very long time. The superannuation guarantee legislation and regulations concerning minimum requisite benefits have made this argument obsolete.

The Australian superannuation environment is very different to the UK environment and we will not see a repeat here of the UK personal pensions fiasco where members of good defined benefit plans were talked into transferring to private plans with high front end charges. Nonetheless, the regulation of sales procedures should take account of the need to make sure that members of defined benefit plans are properly advised.

We understand that there have been no reports of any bad advice or misselling occurring in Western Australia under its unlimited *Choice* model. This has existed under Western Australia State-based awards since July 1998.

SECTION D

CHOICE OF FUND – IMPACT ON INSURANCE

D.1 GROUP INSURANCE

Superannuation Funds have traditionally bought group life and total and permanent disablement insurance for their members. Group insurance has two main advantages over individual cover - it is cheaper and members are automatically accepted into the plan without having to give evidence of health.

There are no insurance requirements in the *Choice* legislation.

D.2 MEANING OF AUTOMATIC ACCEPTANCE

"Automatic acceptance" means that the insurer accepts the death and disablement risk (up to the "automatic acceptance limit") without assessing each individual's risk. This is different to insurance purchased by individuals where the insurer assesses each person's risk. The insurance companies' rationale for the different treatment of individuals and compulsory groups is simple. High risk individuals may "select against" an insurer. However, there is no "anti-selection" when an employer with a large number of employees requires them all to join a superannuation fund that provides an amount of cover determined according to a set formula.

D.3 BENEFITS OF AUTOMATIC ACCEPTANCE

Automatic acceptance provides important benefits to all of the stakeholders in a group insurance contract bought by a superannuation plan:

Administrators have less work to do in obtaining evidence.

Insurance companies have lower administration costs.

Trustees and *Employers* have less risk of being sued because an employee dies before being covered; have less administrative work; and pay lower insurance premiums because of lower administration costs.

Employees avoid the inconvenience of giving regular evidence; sometimes obtain cover not otherwise available; and pay lower premiums.

D.4 CONDITIONS FOR AUTOMATIC ACCEPTANCE

The key to automatic acceptance is compulsion. Insurers typically consider that the compulsion requirement has been met if:

- (a) The benefits are fully defined so that no member, trustee or employer has the right to vary the level of cover for a member.
- (b) The eligibility conditions governing membership of the fund are fully defined, so that no member, trustee or employer has the right to vary the date when the member is eligible for cover.
- (c) At least 75% of the employees who are eligible to join the fund at inception do so and at least 75% of all other employees who become eligible in the future join as soon as possible.
- (d) Members are actively at work on the date of entry into the fund.
- (e) The insurer is the sole insurer of the plan.

Under *Choice*, condition (b) is breached. Logically, it is only possible for a maximum of one of the funds sponsored by an employer to satisfy condition (c).

D.5 KEEPING AUTOMATIC ACCEPTANCE UNDER CHOICE

Insurers will face difficulties maintaining automatic acceptance under *Choice*. If they elect to keep offering automatic acceptance when employees have a choice of funds and choice of insurance levels, then they will face scenarios including the following:

- Employer 1 allows unlimited choice. Many employees choose funds offering low insurance cover. Some employees become sick and switch to funds offering high insurance;
- Employer 2 allows unlimited choice including a default employer sponsored fund with self-experience profit refunds. Employer 2 encourages sick employees to switch to other funds; and
- Employer 3 offers four funds - an Employer sponsored with high insurance, an industry fund with moderate insurance, a public offer and RSA both with negligible insurance. The sick employees gravitate to the employer sponsored fund.

The system can probably withstand this for quite some time. However, group insurance would enter a state of "destructive disequilibrium" as soon as the anti-selective behaviour described above drove claim rates high enough for group premiums to exceed individual premiums.

However, this does not mean that all or even many employees will lose the benefits of group insurance. There are ways employers can keep the current benefits of group insurance. Employers can opt to:

- retain compulsion by providing insurance in addition to the superannuation guarantee and providing this insurance through a single fund for all employees (even though their guarantee contributions may be paid to a variety of funds); or
- retain a high take-up rate in the case of unlimited choice by ensuring that the default fund is attractive.

Finally, employers could provide insurance outside superannuation, but this would then be an additional cost to the SG.

D.6 LEGISLATIVE CHANGE

Legislative solutions are also available. It would be possible to legislate to allow a company's superannuation policy committee (which is, of course evenly divided between employer and employee representatives) to decide to run a tender for the group insurance for all the company's employees. The insurance premium would be deducted from each employee's superannuation guarantee contributions before the contribution was paid to the employee's fund of choice.

This runs counter to the *Choice* philosophy of individual decision making. Instead, it involves a group obtaining better insurance terms by collectively deciding to establish a compulsory group.

D.7 END OF CROSS SUBSIDIES

Choice has another impact on the insurance premiums paid by superannuation funds. Current group insurance rates include varying degrees of cross subsidy. At one extreme, traditional employer plans pay the same percentage of salary for all employees. At the other extreme, master trusts have segregated rates that vary with age, sex and smoking status. In between, industry funds tend to have aggregate rates that vary only by age.

Under *Choice*, it is possible that older members will stay with the employer fund, while young non-smoking employees choose the master trust and young male smokers choose the industry fund. Insurers are likely to need to remove cross subsidies to eliminate their exposure to this form of "anti-selection".

In the case of funds where member accounts are debited with the cost of insurance, it is desirable on equity grounds to remove any subsidies.

D.8 CONCLUSION

There are grounds to consider alterations to the *Choice* legislation to reduce the risk of the loss of the price and automatic acceptance benefits of group insurance.

However, even if all funds converted to a similar structure as that used by master trusts, there would be the following benefits:

- cross-subsidies would disappear;
- each member would choose the amount of insurance which they need and pay for the cost of cover themselves;
- members in retail funds would hold the cover longer should they stay in one fund for an extended period - and this would reduce the cost of insurance through amortisation of initial costs over longer durations;
- minimum levels of cover can be set up as a default benefit design (as happens in practice now); and
- more members might be encouraged to take advantage of the tax-efficiency of holding death & TPD benefits within superannuation.

We have not attempted to quantify the costs and benefits of a change to the insurance regime as there are too many imponderables. However, we consider that, subject to possible simple legislative changes, *Choice* could be introduced without costing the community greatly in this area.

D.9 ACKNOWLEDGMENT

Parts of this section of this report are taken from a publication of Gerling Global and NAFM, which was written for them by Phillips Fox Actuaries & Consultants.

APPENDIX A

SENATOR SHERRY'S TABLE

A.1 Background

This section deals with Senator Sherry's presentation to the Senate on 25 May 1998, as recorded by Hansard (2988-2993).

We attempted to replicate the figures in Tables F and G of the Industry Fund Services (IFS) document. It became obvious that there were several major errors in the document. It is impossible to achieve the account balances shown using the stated 9% contribution rate. However, we were able to closely replicate the IFS figures by using a contribution rate of 6% (this was the SG rate at the time of the IFS calculations).

The assumptions in Table E of that document show overall master trust charges significantly higher than industry fund charges. Based on these assumptions, it is evident that Tables F and G will show account balances for industry funds that are higher than those of master trusts. So the crux of the matter is how accurately the charges of master trusts and industry funds are depicted in the model.

A.2 Weaknesses

There are several weaknesses in the assumptions as shown -

- Master trusts are depicted as having the same simple charging structure that applies to industry funds. In fact master trusts are more complex. For each of the 3 charging methods shown, master trusts have a scale of rates rather than the single rate charged by industry funds. Master trusts tailor the charges according to the number of members in a sub-fund, the total contributions to a sub-fund, or the total assets in a sub-fund. In general the larger the sub-fund the lower the rate of each charge;
- The projections are performed for an individual member. This is unrealistic given that the charges of a master trust vary depending on the number of members used in the projection. It should also be noted that most individuals joining master trusts (as single-member sub-funds) are self-employed. Not only are they not subject to the Superannuation Guarantee, but they are free to select any fund that will accept them (including industry funds);
- Senator Sherry states that "many fund managers charge their retail, rather than wholesale, rates to master trust investment funds". We submit that master trust providers are able to negotiate wholesale rates with fund managers;
- The costs of master trusts include the charges for advisory services. Therefore, the comparison is not on a like basis; and

- The comparison ignores the impact of higher insurance charges of industry funds and of differences in investment performance.

A.3 Comparison

A.3.1 Assumptions

The following table compares our assumptions with those of IFS.

Sub-fund size (\$m)	PFAC			IFS		
	\$ per member	% of contributions	% of assets	\$ per member	% of contributions	% of assets
Industry Funds						
	52.00	-	0.45	52.00	-	0.40
Master Trusts						
< 10	52.00	-	1.23	46.80 To 69.84	4.5 to 5.0	1.30 to 1.50
10 - 50	52.00	-	0.85			
60 - 100	52.00	-	0.83			
100+	52.00	-	0.83			

The table shows that we have simplified the master trust charges down to 2 categories.

The conclusion that can be drawn from this section is that, in order to depict the outcomes more accurately, the projections must be done on a range of sub-fund sizes and with appropriately varying charges.

A.3.2 Calculations

The following table shows our closest reproduction of the IFS figures. We have used all the stated assumptions, except for the contribution rate (6% instead of 9%). We have also assumed that IFS used a tax rate of 15% (this was not explicitly stated).

Year	PFAC				IFS			
	Industry fund	Colonial	MML	AMP	Industry fund	Colonial	MML	AMP
1	1,639	1,559	1,535	1,544	1,635	1,556	1,530	1,534
6	12,147	11,244	11,102	11,192	12,116	11,249	11,099	11,153
11	27,537	24,795	24,543	24,803	27,466	24,854	24,602	24,788
16	49,593	43,399	43,068	43,637	49,464	43,575	43,271	43,719
21	80,694	68,574	68,229	69,312	80,485	68,953	68,692	69,596
26	124,016	102,255	102,012	103,910	123,694	102,955	102,891	104,541
31	183,780	146,904	146,954	150,100	183,303	148,082	148,460	151,273
36	265,592	205,646	206,291	211,300	264,903	207,510	208,702	213,278
41	376,889	282,445	284,138	291,874	375,911	285,269	287,826	295,008

A.3.3 Correct Expense Assumptions

The following table shows the same model, but with our expense assumptions substituted. For comparison purposes, we maintained the (incorrect) 6% contribution rate.

Year	Industry fund	Master Trust			
		< \$10 m	\$10 - \$50 m	\$60 - \$100 m	\$100+ m
1	1,639	1,632	1,624	1,622	1,622
6	12,129	11,849	11,901	11,891	11,891
11	27,462	26,307	26,675	26,665	26,665
16	49,392	46,365	47,478	47,484	47,484
21	80,258	73,781	76,319	76,370	76,370
26	123,171	110,820	115,827	115,968	115,968
31	182,262	160,392	169,435	169,738	169,738
36	263,003	226,234	241,616	242,190	242,190
41	372,638	313,136	338,194	339,200	339,200

A.3.4 SG of 9%

The following table repeats the exercise, but with a 9% contribution rate.

Year	Industry fund	Master Trust			
		< \$10 m	\$10 - \$50 m	\$60 - \$100 m	\$100+ m
1	2,481	2,470	2,464	2,462	2,462
6	18,363	17,939	18,061	18,054	18,054
11	41,575	39,826	40,480	40,485	40,485
16	74,775	70,193	72,049	72,095	72,095
21	121,504	111,699	115,816	115,952	115,952
26	186,471	167,772	175,771	176,075	176,075
31	275,930	242,820	257,123	257,713	257,713
36	398,166	342,500	366,660	367,718	367,718
41	564,144	474,062	513,220	515,009	515,009

The above tables show a smaller gap between the 2 sectors. Master trusts still have overall higher charges - reflecting the higher level of flexibility and advice offered. The gap is more pronounced at the smaller sub-fund level.

A.4 Other Points

Besides the shortcomings of the IFS model, the comparison also ignores the fundamental differences between the 2 sectors.

- Master trusts are a marketed product. Sub-fund sponsors (whether employers or self-employed) are there of their own choice. They are therefore free to change providers at any time. No such freedom exists with industry funds. Employers are constrained by the industry that they belong to. Industry funds usually have a monopoly over their particular industry;
- Industry funds are essentially a grouping of individual accounts. Master trusts on the other hand are an aggregation of sub-funds. This is why their charging structures are also fundamentally different. For example, master trusts provide services to the employer, not just the employee. This includes reporting, education, and help with policy committees;
- Master trusts offer a much higher degree of flexibility in the insurance and investment functions of superannuation;
- Master trusts offer a higher level of advisory services to members; and
- The comparison does not allow for other cost differences between the 2 sectors, namely the higher insurance premiums and potentially lower returns of industry funds.

APPENDIX B

RISK AND RETURN OF VARIOUS ASSETS

B.1 Importance of Asset Classes

The most important investment decision made by long term investors is how to allocate their assets between the various classes of asset. This usually has much more impact than choosing particular assets within a class. For example, choosing to invest in bank shares or bank deposits is much more important than choosing which bank.

B.2 Risk and Return from the Asset Classes

We have used performance data published by W M Mercer to establish statistical measures of the various asset classes. These measures have been calculated after deducting tax at 15%, after allowing for imputation credits on Australian shares, and after deducting the rate of increase in average weekly ordinary time earnings (AWOTE). In other words, they are “real” after tax returns calculated net of wage increases, rather than net of price increases. This facilitates the calculation of retirement benefits later in this section.

The Mercers data goes back as far as 1972 for some asset classes. However, correlations between the performance of all asset classes were needed for our calculations and we have therefore only used the last thirteen years’ data (September 1986 to August 1999) because the data only goes back that far for some classes. The thirteen year period includes the stock market crash of 1987. Even so, it represents a very benign investment period overall. It is probably over optimistic to expect the results to be replicated in the future.

The table below shows the following for each asset class:

- the annual average rate of return (net of tax and AWOTE);
- the standard deviation of the net rate of return (a measure of its variability);
- the correlation of the net rate of return with each of the other classes; and
- the covariance of the correlation.

	Aust Shares	Int'l Shares	Direct Property	Listed Property	Aust Bonds	Int'l bonds	Aust cash
<i>Average return:</i>	7.76%	6.27%	1.31%	5.64%	5.88%	2.40%	3.43%
<i>Standard Deviation:</i>	16.11%	13.38%	3.99%	10.42%	4.00%	9.76%	1.04%
<u><i>Covariances</i></u>							
Australian Shares	2.59%	0.80%	0.04%	1.16%	0.15%	-0.51%	0.00%
International shares		1.79%	-0.03%	0.50%	0.08%	0.61%	-0.01%
Direct property			0.16%	0.02%	-0.02%	-0.06%	0.01%
Listed property				1.09%	0.11%	-0.15%	-0.01%
Australian bonds					0.16%	0.06%	0.01%
International bonds						0.95%	0.00%
Australian cash							0.01%
<u><i>Correlations</i></u>							
Australian Shares	100.00%	37.01%	6.83%	69.39%	22.86%	-32.43%	1.37%
International shares		100.00%	-4.89%	35.78%	15.63%	46.45%	-4.19%
Direct property			100.00%	4.03%	-10.02%	-15.58%	17.31%
Listed property				100.00%	27.16%	-14.52%	-5.35%
Australian bonds					100.00%	16.38%	28.93%
International bonds						100.00%	3.50%
Australian cash							100.00%

The data yields results much as one would expect. For example:

- The returns from shares are higher and more variable than the returns from bonds;
- The return from international shares is 37% correlated with Australian shares and 46% correlated with international bonds; and
- The return from Australian shares is 23% correlated with Australian bonds.

B.3 Asset Allocations

We have examined the asset allocations of the same major industry funds. We used the same funds as were used in our study of industry fund expense charges – ARF, SUNSUPER, C+BUS, HESTA, REST and STA. We found that the average asset allocation for the various investment options offered:

Investment Option	Aust Shares	Int'l shares	Direct Property	Listed Property	Aust Bonds	Int'l bonds	Aust cash	Total
Cap Gtd, Cash	1%	0%	0%	0%	39%	0%	60%	100%
Capital Stable	18%	8%	0%	9%	45%	0%	20%	100%
Balanced	42%	11%	0%	20%	17%	2%	8%	100%
Growth	58%	22%	0%	10%	5%	0%	5%	100%

Infrastructure investments have been included in Australian shares.

We also examined the asset allocations of Pooled Superannuation Trusts and found that the average asset allocations were:

Investment Option	Number of Trusts	Aust Shares	Int'l Shares	Direct Property	Listed Property	Aust bonds	Int'l bonds	Aust cash	Total
Capital Gtd	4	22%	2%	9%	2%	45%	6%	14%	100%
Capital Stable	26	13%	6%	2%	4%	30%	6%	39%	100%
Balanced	35	38%	19%	3%	6%	20%	4%	10%	100%
Growth	5	44%	28%	0%	11%	16%	0%	1%	100%

Source: W M Mercer, Annual Reports

B.4 Return and Volatility

We used the performance and allocation data in the two previous sections to determine the expected return and standard deviation of the return for each of the investment options. To reiterate, these results are after tax and deduction of the rate of increase in AWOTE.

Investment	Industry		Master Trust		Average	
	Return	SD	Return	SD	Return	SD
Cap Gtd	4.4%	1.9%	5.3%	4.5%	4.9%	3.2%
Capital Stable	5.7%	5.0%	4.9%	3.4%	5.3%	4.2%
Balanced	6.4%	9.2%	6.1%	8.2%	6.3%	8.7%
Growth	6.9%	11.5%	6.8%	10.2%	6.8%	10.9%

The asset allocations, expected returns and standard deviations are similar for industry funds and master trusts.

This is not surprising since the asset allocation strategies of industry funds and master trusts have been set using the same financial mathematics used to determine the above table. The table shows the investment options in increasing order of volatility, risk or deviation. Fund managers generally set the asset allocation for each investment option so as to produce the highest possible expected return for the specified level of deviation.

B.5 Range of Rate of Return

If funds are invested for just one year, there is a 95% chance that the return will be within 1.96 standard deviations of the average return. For example, an investor in the average growth portfolio has an expected after tax return of 7.5% in excess of AWOTE and there is a 95% chance that the actual return will lie in the range -13.9% (i.e. $7.5 - 1.96 \times 10.9$) to + 28.9% (i.e. $7.5 + 1.96 \times 10.9$).

If funds are invested long term, the variability diminishes. For example, if the term is 20 years, there is a 95% chance that the return will be within plus or minus 0.44 deviations of the expected return. The range of return for the growth investor becomes 2.7% to 12.3%.

The range of return for 10, 20 and 30 years for the average asset allocation for each of the main investment options is shown in the table below:

Investment	10 years			20 years			30 years		
	Low	Mean	High	Low	Mean	High	Low	Mean	High
Cap Gtd, Cash	2.9%	4.9%	6.9%	3.5%	4.9%	6.3%	3.8%	4.9%	6.0%
Capital Stable	2.7%	5.3%	7.9%	3.5%	5.3%	7.1%	3.8%	5.3%	6.8%
Balanced	0.9%	6.3%	11.7%	2.5%	6.3%	10.1%	3.2%	6.3%	9.4%
Growth	0.0%	6.8%	13.6%	2.0%	6.8%	11.6%	2.9%	6.8%	10.7%

APPENDIX C

SOURCE MATERIAL

Section B

The data on the segmentation of the superannuation industry was taken from APRA Superannuation Trends for June quarter 1999, which is published on their website

The data on the segmentation of the retail superannuation sector was obtained from Rice Kachor Research.

The data for corporate fund expenses and master trust expenses was taken from a report prepared by Phillips Fox Actuaries & Consultants for a client.

The data for industry fund expenses was taken from an analysis of the six largest funds.

The data for RSA expenses was taken from another report for a Phillips Fox Actuaries & Consultants' client.

The data for ERF expenses was taken from the APRA Bulletin for December quarter 1998.

The data for Personal Superannuation expenses and Retirement Income expenses was taken from Rice Kachor Research surveys.

Section C

Parts of this section are taken from a publication of Gerling Global and NAFM, which was written for them by Phillips Fox Actuaries & Consultants.

Appendix B

The data for the distribution of assets of master trusts and personal superannuation was taken from Rice Kachor Research surveys.

The historic investment returns were taken from data published by W M Mercer and Rainmaker.

The data for the asset allocations of industry funds and master trusts was taken from annual reports and from W M Mercer data.

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