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Retirement Financing Dilemmas Facing Singapore

By

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Abstract

Singapore's retirement financing arrangements are almost solely based on a mandatory savings pillar administered by the Central Provident Fund (CPF). Over the years, there have been many additional objectives such as housing and healthcare financing, which have also been entrusted to the CPF. Singapore is now an affluent and rapidly aging society. It is also searching for ways to regain competitiveness in the face of globalization and increasing competition from other countries. Even as the need for adequate social security provision is growing, Singapore's strong revealed preference for use of the CPF for socio-economic engineering and for political control are creating many dilemmas. These centre around governance, design of schemes, investment policies, and whether to shift to more appropriate multi-tier system. This paper analyzes the nature of these dilemmas and suggests measures which could assist in addressing them. The paper asserts that the current mono-centric power structure and the strong proclivity to regard even basic socio-economic information as a strategic tool rather than a public good are major constraints in addressing the dilemmas.

Keywords: Singapore, Retirement Financing, Social Security, Pension Funds.

1. Introduction

Singapore is an affluent and rapidly aging city-state in Southeast Asia¹. Singapore's retirement financing arrangements are almost solely based on a mandatory savings tier administered by the Central Provident Fund (CPF)² (Asher and Newman, 2003). There is therefore an absence of social risk pooling. It is thus ironic that a state which advertises itself as communitarian requires all of the retirement financing risks such as investment risk in the accumulation phase and longevity and inflation risks during the pay-out or decumulation phase to be borne by the individuals alone. In addition, the political risk of current arrangements is also borne by individuals without any benefit of social risk-pooling.

Singapore's reliance on a single-tier for retirement financing ignores the accumulated evidence over the last two decades that mandatory savings schemes cannot by themselves be sufficient in providing adequate and accessible retirement income security (Orzag and Stiglitz, 2001; Gill, Packard and Yermo, 2003). A multi-tier system is desirable on social and economic grounds as it provides diversification of avenues and therefore risks from which retirement financing is derived; and permits addressing of specific types of risks by different tiers and schemes. Such a system, particularly when it includes the zero tier of social assistance through the government budget, and the first tier social risk pooling through social insurance, permits alleviation of old age poverty, and maintenance of accustomed standards of living in retirement. The importance of each tier for a given country at a particular point in time may vary according to the level of development, political philosophy impacting on how a society views itself, demographic, and historical and cultural factors.

As at September 30, 2003, the total membership of the CPF was 3 million, but only 1.3 million or 43% were active members. The active members constituted about three-fifths of the total labor force. The foreign workers at all levels are not eligible for CPF membership. The self-employed may join voluntarily, but few do. Given that more than a quarter of Singapore's labor force is foreign, the labor force coverage of the CPF may be

regarded as satisfactory. The total number of active employers was 78, 724. The total members' balances as at September 30, 2003 were S\$102.1 billion, 66% of 2002 Gross National Income (GNI). This indicates high level of retirement savings in relation to GNI.

The current contribution rates to the CPF vary with age, and are subject to a wage ceiling (Table 1). The proportion of the contributions allocated for housing, retirement, and health care also varies by age. The rate structure is therefore quite complex. It is noteworthy that the rates decline with age, and so does the amount allocated for retirement purposes.

(Insert Table 1 here)

Over the years, there have been many additional objectives such as housing and health care financing, which have also been entrusted to the CPF (Table 2). As a result, it is important to note that various schemes reflecting different objectives have been added over the years. They have usually reflected *ad-hoc* responses to a particular economic or social problem at a particular point in time. They are therefore not a product of an overall system-wide view. Thus, Medisave scheme, which essentially represents mandatory savings allocated for acute healthcare services, was introduced in 1983 when the government wanted to increase the share of total health expenditure accounted for by the individuals. More recently, the contribution rates of the CPF and the rate ceiling were reduced as part of macroeconomic stabilization policies.

(Insert Table 2 here)

Affluent and rapidly aging Singapore is searching for ways to regain competitiveness in the face of globalization and increasing competition from other countries. Even as the need for adequate social security provision is growing, Singapore's strong revealed preference for use of the CPF for socio-economic engineering and for political control are creating many dilemmas. These centre around governance, design of schemes, investment policies, and whether to continue to rely on a single-tier system. This paper

analyzes the nature of these dilemmas and suggests measures which could assist in addressing them. The paper asserts that the current mono-centric power structure and the strong proclivity to regard even basic socio-economic information as a strategic tool rather than a public good are major constraints in addressing the dilemmas.

The main objective of this paper is to analyze the above dilemmas and suggest possible ways to address them. The rest of the paper is organized as follows: Section 2 discusses the dilemmas noted above. Broad directions of reforms which may help address the dilemmas are presented in Section 3. The final section provides the concluding observations.

2. The Dilemmas

This section discusses various retirement financing dilemmas facing Singapore.

2.1 Governance:

There are six core functions which any provident or pension fund organization needs to perform (Ross, 2000). These are: First, the reliable collection of contributions, taxes and other receipts; second, the payment of benefits in a timely and correct way without any side-payments; third, the timely repayment in case of pre-retirement loans; fourth, the effective financial management and productive investment of the assets; fifth, the maintenance of an effective communication network, which also includes development of accurate data and records-keeping mechanism; and sixth, the provision of adequate support for all these activities, including the production of financial statements and reports.

In addition to the organization specific core functions, there are also broader areas of governance which are similar to the corporate governance. These include composition of the governing board of the provident or pension fund; disclosure norms, actuarial valuations and their disclosure; fiduciary responsibility; transparency; and accountability. A combination of statutory requirements and conventions is needed to ensure good governance in these areas. From an overall economy's point of view, the governance

structure should permit professionalism and system-wide perspective. This usually requires an independent provident and pension fund regulator.

Singapore's CPF is under Ministry of Manpower. CPF has administrative, but not policy autonomy. The Minister appoints the representatives from the government, employers, employees and professional experts. Singapore does not have an independent provident or pension fund regulator.

The CPF has performed with high degree of effectiveness as far as the collection of contributions, maintenance of individual accounts, and administration of various rather complex benefit schemes, including the timely repayment at the withdrawal age are concerned. It has invested heavily in information technology, and has acquired considerable capacity for generating management information systems and detailed data on members.

The governance record of the CPF concerning investment management, fiduciary responsibilities which require it to perform in the sole interest of the members and in provision of timely and relevant information to stakeholders³ however is in need of considerable improvement.

A comparison of the CPF's Annual Report and the data available in its website with those of Malaysia's Employees' Provident Fund (EPF), Hong Kong's Mandatory Provident Fund Schemes Authority, and information provided by the Chilean pension system demonstrates the paucity of relevant and timely data provided by the CPF. This reflects the strong tendency in Singapore to regard even basic socio-economic information as a strategic resource to be employed by the policy makers for tactical purposes rather than regarding such information as a public good. The purpose is to prevent rigorous research, analysis and development of expertise, with a view to controlling public debate on social security. The governance shortcomings of the CPF concerning investment policies and design of various schemes will become clearer when these aspects will be discussed shortly.

The above discussion suggests that the key governance dilemma is how to obtain services of Board members who are both competent and independent-minded in a country with mono-centric power structure; where information is regarded as a strategic instrument rather than a public good; and when socio-economic engineering and political control are the overriding objectives.

2.2 Design of Schemes:

As noted earlier, the schemes under the CPF have been introduced at different points in time, and their design details have been altered fairly frequently (Table 2). The fundamental dilemma in this case is that too many objectives (such as housing, healthcare, macro-economic stabilization, developing Singapore as a funds management centre, and financing tertiary education, etc.) are sought to be achieved through a single CPF instrument. This is inconsistent with the theory of economic policy which suggests that a policy targeted at more than one objective will result in sub-optimal outcomes (Salvatore 2003).

The most recent illustration of this dilemma concerns the reductions in the contribution rates and in the wage ceiling for CPF contributions which were announced in 2003. The main purpose of these reductions is to reduce wage costs and make Singapore businesses more competitive. But this measure will effectively reduce the retirement income security that the CPF can provide. This is elaborated in Section 2.3.2. The use of retirement financing mechanism for short run stabilization purposes is not new in Singapore. When Singapore was growing rapidly until the mid 1980s, the CPF rates were frequently raised to reduce domestic demand.

It is now acknowledged by the policy makers that the design of housing and property schemes of the CPF has led to over investment in these areas. Maintaining property

prices, especially of residential housing has become a vital political necessity, but this substantially constraints restructuring of the CPF system (Lee 2004).

Another example of the design dilemma concerns health care. Because of inherent market failure in health care due to asymmetric information and adverse selection, and due to importance of access to health insurance, there is a strong case for mandatory requirement for purchase of health insurance. In the CPF's catastrophic illness insurance scheme i.e., Medishield, there is an opting-out provision⁴; the premiums vary with age; and the scheme does not currently cover those above 80 years of age, an age when such insurance is all the more socially compelling. Moreover, only around 25 to 30 per cent of hospital bill is covered by Medishield insurance (Lim 2001). As at September 2003, only about half of Singapore's citizens and residents were covered by Medishield insurance.

The above design of health care schemes under the CPF is inconsistent with efficient, equitable and accessible health care provisions. The government's objective appears to be to minimize its own liabilities for provision of health care and make individuals responsible for financing health care. It is therefore not surprising that before the health schemes were introduced under the CPF, the total national health expenditure accounted for by the public sector was 75 per cent and the private sector share was 25 per cent, roughly in line with the other high income countries. But the CPF schemes have contributed to reversing this ratio over the last twenty years.

With Singapore's rapid aging, increasing use of technology in the health care sector and high level of demand due to affluence, the current share of individual financing is unsustainable. There however does not appear much awareness among the policy makers of the urgent need to begin to reduce the share of national health expenditure borne by the individuals. It should be noted that the health financing schemes of the CPF have also reduced the retirement financing of the individuals. This is because a portion of the contributions to the CPF has been used for health care in the working

years. Moreover, the amounts accumulated in the Medisave account can not be withdrawn until death.

The inappropriate design of the CPFIS scheme resulting in high transactions costs to the members is discussed in the next sub-section.

2.3 Investment Policies and Performance

Investment policies should permit effective diversification of assets, and help maximize risk-adjusted rate of return net of transaction and investment management costs and taxes. This is an important aspect of the fiduciary responsibility of the governing board of the provident or pension fund.

The CPF balance sheet states that all of S\$102 billion of members' balances are invested in non-marketable government securities. The interest paid on securities is a weighted sum of fixed deposit and saving deposit interest rates; and is determined quarterly. The government guarantees a nominal interest rate of 2.5%. While the CPF savings are for the long term, the members are administratively provided returns applicable to short term funds.

While the government issues non-marketable bonds, in actuality, as the government has been consistently enjoying budget surpluses (Asher 2003), proceeds from the bonds are turned over to Singapore Government Investment Corporation (SGIC) for investments. The operations of the SGIC (and other government investment holding companies such as Temasek Holdings) do not have to be revealed, even to the Parliament or the President of the country, because of statutory provisions. The CPF balances ultimately however are widely believed to have been almost wholly invested abroad.

There is thus a disconnect between the administered interest rate paid on CPF balances and the actual investments and returns obtained. This is not consistent with transparency requirements, and the fiduciary responsibilities of internationally benchmarked provident

or pension funds. The political risk inherent in this arrangement is also very high. Predominant role of the government in Singapore in the savings – investment intermediation process (result of large structural budget surpluses, substantial public sector, and mandatory CPF savings), has raised efficiency concerns (Asher 2003).

This arrangement has not resulted in realizing the potential of the power of compound interest for members as shown in Figure 1.

[Insert Figure 1 here]

The key relationship in Figure 1 is that the rate of return is considerably lower than the wage growth. This implies that the replacement rate will be fairly low. Somewhat higher rate of return obtained for insurance funds (which amounted to only S\$3 billion in 2002) should also be noted. These funds, unlike the members' balances ultimately invested by GSIS, are contracted-out to private fund managers.

To the extent the government holding companies earn higher than what is paid to the CPF members, implicit tax on CPF wealth occurs. IMF has estimated that the Singapore Government Investment Corporation (SGIC) earned about 10.0 percent per annum during the 1990s, substantially higher than the average nominal return of 3.4 percent credited by the CPF. The implicit tax for 2000 is $(10.0 - 3.4 = 6.6)$ times \$90.3 billion, or \$5.96 billion, equivalent to 42 percent of contributions or 3.75 percent of GDP. The implicit tax is recurrent, and it is regressive as low-income individuals hold proportionally greater wealth in the form of CPF balances. At the minimum, the implicit tax is the difference between what is earned on insurance funds and the returns to members on their balance as shown in Figure 1.

Moreover, as only about a third of the labor force pays personal income tax, the low-income members do not receive tax subsidy for contribution, income on pre-retirement investments, and at the time of withdrawal. The cost of nominal rate of return guarantee of 2.5 percent is quite small, and does not counterbalance such a large implicit tax.

2.3.1 The CPFIS Scheme: In contrast to investments by the CPF Board, this scheme is a pre-retirement withdrawal scheme. A member may open a CPF investment account with approved agent banks, all of whom are locally controlled banks. Their charges and fees are not regulated. Individual CPF members may invest their Ordinary Account balance as well as Special Account balance in approved assets. There is no limit on investments in shares through the approved Unit Trusts.

There has been substantial liberalization of the CPF scheme over the years. As a result, members can currently exercise option for international diversification. But risks of such option remain high, particularly given relatively low level of financial literacy. The realized profits must be re-deposited in the CPF account and therefore can not be withdrawn. This may give rise to the lock-in effect, i.e. individuals may hold on to a particular stock for longer than the optimum time period.

Traditionally, the CPF Board annually released the realized gains and losses on an aggregative basis. The unrealized gains and losses were not released, and therefore a fuller picture of investment performance under the CPFIS was not possible even at an aggregative level.

However, the CPF Board has recently released data on the investment choices and performance of the CPF members who have invested under the CPFIS Scheme, incorporating both the realized and unrealized gains and losses on different instruments (www.cpf.gov.sg). It is to be hoped that the CPF Board will release similar data on an annual basis.

Tables 3A and 3B provide the officially released data for investments from the Ordinary Account (OA) and Special Account (SA) respectively. It should be noted that the reported data refer to values as at September 30, 2003 which do not include transactions costs of investments, and any applicable taxes. So the published returns are over-stated.

The following observations may be made from the data in Tables 3 A and 3B.

(Insert Table 3A and Table 3B here)

(i) As at 30th September 2003, \$28.1 billion was invested through the CPFIS; and the rate of return obtained on the whole portfolio under the OA was negative 14.77 percent, and on the SA it was negative 6.87 percent. If transactions costs, including investment management costs, and taxes were included the returns would be even more unfavorable.

(ii) Insurance products have been the most favorite form of CPFIS instrument among the members. Among these products, role of annuities has been minor; while endowment policies have been the most important.

On insurance products, the unrealized losses were \$ 802 million, equivalent to 5.77 percent of total investments.

(iii) Less than 5 percent of the 3 million members are invested through unit-trusts. In contrast, nearly twice as many CPF members have invested through a far more risky route of individual share selection.

The unrealized losses on the investments in unit trusts from the OA were 14.11 percent, while from the SA, they were 5.07 percent. In contrast, on shares invested by the members on their own, the losses were -32.64% for the OA. Such investments are not permitted from the SA.

The above pattern of investments and performance of the CPFIS suggests that it has been used by only a small proportion (no more than a sixth) of members. Thus, for the bulk of CPF members, this avenue appears to be not a preferred one. They rely on the returns from the members balances.

The above analysis also suggests that the participating members have invested in the main on insurance products, and on their own in the individual stocks. Both these choices

are unlikely to be consistent with sound investment strategies for retirement. Given only small amounts invested through unit trusts, and the oligopolistic nature of the asset management industry, it would not be surprising to find high expense ratios and large differences between offer and bid prices.

The expense ratios, calculated by dividing a fund's annual operating costs by the total value of assets under its management, have predictably been quite high. Thus, as at September 30, 2003, the CPF approved unit trusts with medium to high risks had median expense ratios of 1.92, and for higher risk unit trusts, the ratio was 2.23, substantially higher than the 1 per cent expense target (www.cpf.gov.sg). In Singapore, 5 to 7 percent spread between the offer and bid (buy and sell) prices by the unit trusts are not uncommon.

Professional investment management is expensive, and the CPFIS design has not encouraged economies of scale in fund management. It has perhaps encouraged large number of fund managers to set up operation in Singapore, a goal not necessarily consistent with the fiduciary responsibilities of a provident fund.

It can thus be summarized that there are inherent design limitations of the CPFIS scheme, and this has contributed to it not being successful. Proposed changes to the CPFIS, such as permitting members to also invest in pension funds⁵ can not be expected to make material difference.

2.3.2 Adequacy Issue and the CPF

The adequacy issue of retirement financing is conventionally measured by the replacement ratio, i.e. value of an annuity during retirement as a percentage of pre-retirement income. The replacement rate at retirement will however will not be sustained unless the annuity amount is indexed for inflation. Thus it is important to analyze the replacement rates throughout the retirement period. There is also an issue of longevity risk as the annuity purchased from accumulated balances under a mandatory savings or other such defined contribution schemes may be either spent too quickly or too slowly

during retirement. It is the former which has significance for public policy because if a person is left with too few resources in old age due to longer life, society may need to take the responsibility for provision of adequate income. As women live longer than men on the average, but usually have lower exposure to labor force and earn less than men on the average, there is also a gender issue that needs to be addressed.

The CPF Board usually does not provide data on the cash balances by age and sex, nor does it provide the balances withdrawn at age 55. However, in 2000, cash balances of contributors (43 percent of total members) were provided on an *ad-hoc* basis (Table 4). The data suggest that even for the 50 to 55 age group, nearly two-thirds of the contributors had balances of less than \$100,000. The average balance for active contributors 53,600 equivalent to 1.27 times the per capita GNP. These balances are indeed inadequate to finance retirement of more than 20 years duration on the average.

(Insert Table 4 here)

The generic reasons for low balances include highly unequal wage structure, high rate of pre-retirement withdrawals, low returns credited to members, and high transactions costs of investments. Converting property values into retirement income stream through reverse mortgage suffers from severe technical problems and high transactions costs (Asher, 2003).

A simulation study by McCarthy *et al.* (2002) suggests that for the base case the replacement rate was 28 percent of the final earnings provided the withdrawal age were increased from 55 to 62 years (Table 5). They also conducted a sensitivity analysis of the impact of various potential policy changes (Table 6). The analysis suggested that lowering of the contribution rates from 40 percent to 30 percent will reduce the base case replacement rate to 14 percent; and if the CPF contribution wage-ceiling is held at \$6000 per month without any adjustment for inflation, the replacement rate will fall to 17 percent.

(Insert Table 5 and Table 6 here)

The policymakers in Singapore have already reduced the contribution rate to 33 per cent from October 1, 2003 from 36 per cent applicable at the time of the simulation study. Further reductions in the contribution rates can not be ruled out. They have also announced plans to reduce the CPF wage ceiling to \$4,500 by January 2006 from \$6,000 when the simulation study was undertaken. The combined impact of these measures will be to reduce the replacement rate at best to between 10-15 percent. This is clearly inadequate and shows the limitations of reliance on single-tier mandatory savings scheme to finance retirement.

2.4 Continued Reliance on a Single-tier System?

The pension literature over the last decade has suggested that different tiers are necessary to address different types of risk; and that a multiple-tier pension system is to be preferred on social, economic and political grounds than near-exclusive reliance on a single-tier. Singapore's government's ideology has been strongly opposed to introducing the any social risk pooling arrangements, even when it is clear that the current near-exclusive reliance on a single tier will not provide adequate replacement rate.

The crux of the dilemma lies in the fact that Singapore's policies have been predicated on the basis of continuous high growth and requirements of being a business center. But an affluent and rapidly aging society experiences inevitable moderation in growth and an educated population has a tendency to express the need for genuine participation and voice in the running of the country. Thus the requirements of being a business center and demands of wanting to be a country eventually come into conflict. Singapore is showing signs of reaching this stage. The political economy of Singapore will therefore be crucial in whether the mindset set change comes about to accommodate the objective need to shift away from a single-tier to a multi-tier social security system.

3. Reform Directions

The analysis in the previous section has strongly suggested that the current retirement financing system of Singapore is unsustainable and is in urgent need of fundamental reforms designed to address various dilemmas discussed earlier. The following reforms are suggested in the current single-tier retirement financing system.

1. Reforms should result in much higher priority to fiduciary responsibility by the CPF Board; greater transparency of the investment process and outcome; and lower transactions costs.
2. The CPF Board should have independent and competent members regulated by the newly constituted Provident Fund Authority (PFA).
3. Between 10 to 15 percentage points of the CPF contributions should be diverted to the asset management company (with the rest for housing, health care, and others) remaining with the current CPF Board.
4. Formation of a separate asset management company with statutory requirement for fiduciary responsibilities and transparency should be considered.
5. Over the medium term (2 to 4 years) current accumulated balances of \$102 billion should be transferred to the new asset management company.
6. The current CPFIS scheme should be restructured to restrict individual choice and the funds should be also centrally managed.
7. The new asset management company can use its expertise and large pool of funds to provide choice to members to allocate their balances among limited number of portfolios of differing risk-return profile. A member may be given a choice to reallocate the portfolio every three to four years. Since the behavioral finance

literature (Mitchell and Utkus 2003) suggests that many individuals do not re-balance their portfolio towards more conservative investments as they get older, some provision for default option incorporating this feature may be built into the scheme.

8. The new asset management company can take advantage of its large pool of funds to reduce transactions and investment management costs; and to provide effective diversification of the portfolio while giving due weight to transparency. This is likely to encourage the funds management industry in Singapore on a more sustainable and financially viable basis.

Reforms are also required in the third-tier voluntary savings scheme i.e. the SRS; and in the tax treatment of pension providers and products. The SRS needs to be restructured to be more attractive to voluntary savers for retirement. As formal employer-employee relationship less of a norm due to globalization, restructuring should take this into account.

The tax treatment of both CPF-approved annuities and those provided by the private sector needs to be evenhanded. Currently, the latter are discriminated against as they are taxed while the CPF-approved annuities are not taxed. Similarly, tax disincentives against company pension schemes need to be removed. Currently, only the CPF contributions are effectively tax deductible. The monopoly of the CPF thus needs to be ended in the above areas.

Even if the above reforms are undertaken, theoretical and empirical evidence (Orzag and Stiglitz 2001; Gill et al 2003; and Mitchell and Utkus 2003) strongly suggests that a single-tier system will not be able to provide adequate retirement income security, and will not be able to diversify risks. Globalization has increased the necessity for strong social security systems and safety nets.

A strong case can be made for Singapore to introduce tax financed schemes to address the needs of the lifetime poor (through the zero-pillar social assistance scheme); and social risk pooling first-tier to address longevity and inflation risks. This case has become even stronger due to the unilateral alteration of the implicit social contract by the government. This contract provided for acceptance of government's socio-economic engineering and political control in return for job security and full employment. The government is not able to fulfill the latter element, but still wants to continue to undertake socio-economic engineering and maintain political control. This is a disequilibrium situation which will need to be resolved.

4. Concluding Remarks

Over the last half century, Singapore has evolved a large and complex mandatory savings scheme administered by the CPF. The socio-economic engineering and political control objectives have been important revealed objectives of the CPF scheme. Rapid growth and relatively young demographic profile until recently have permitted Singapore to pursue growth strategy in general, and retirement financing strategy in particular, based on it being a business centre rather than a country. What may have been acceptable during the earlier phase of development however may not be so as affluent and rapidly aging Singapore attempts to meet the challenges of globalization and increased internal demands for participation and appropriate social and economic institutions.

In the area of retirement financing, this is demonstrated by the objective need to shift from a single tier system based on mandatory savings to a multiple tier system. The paper has argued that constraints in making this shift are neither fiscal or other resources, nor technical and institutional capacities. The major constraint is the mind-set of the policymakers which does not perceive any need to alter the fundamental aspects of political economy, growth strategy, or retirement financing. Until such mind set change occurs, parametric reforms in the CPF system and related areas may

be expected, but no substantive shift away from the current single-tier system for financing retirement.

Table 1
CPF Contribution Rates¹
(Applicable as on January 1, 2004)

Employee Age (years)	Contribution By Employer (% of wage)	Contribution By Employee (% of wage)	Total Contribution (% of wage)	Credited Into		
				Ordinary Account	Special Account	Medisave Account
	Upto Wage ceiling of \$5500	Upto Wage ceiling of \$5500	Upto Wage ceiling of \$5500	%	%	%
35 & below	13	20	33	22	5	6
35 - 45	13	20	33	20	6	7
45 - 55	13	20	33	18	7	8
55 - 60	6	12.5	18.5	10.5	0	8
60 - 65	3.5	7.5	11	2.5	0	8.5
Above 65	3.5	5	8.5	0	0	8.5

¹ The information in the above Table applies to employees with monthly wages above S\$750. Workers included in the categories: (1) Private Sector (2) Government Non-Pensionable employees (3) Non-Pensionable Employees in Statutory Bodies & Aided Schools (4) Singapore Permanent Resident (SPR) employees from their 3rd year onwards.
Source: http://www.cpf.gov.sg/cpf_info/goto.asp?page=/cpf_info/Index_Members.asp

Table 2**Various Schemes under Singapore's CPF System**

Type	Scheme	Year Introduced
Home Ownership	Approved Housing Scheme	1968
	Approved Residential Property Scheme	1981
Investment	Singapore Bus Services (1978) Ltd Share Scheme	1978
	Approved Investment Scheme (AIS)	1986
	CPF Investment Scheme (CPFIS)-replacing AIS	1997
	Approved Non-residential Properties Scheme (ANRPS)	1986
	Share-ownership Top-up Scheme (SOTUS)	1993
Insurance	Home Protection Insurance Scheme	1982
	Dependents' Protection Insurance Scheme	1989
	Medishield Scheme	1990
	Eldershield Scheme	2002
Others	Company's Welfarism through Employers' Contribution (COWEC) Scheme	1984
	Medisave Scheme	1984
	Minimum Sum Scheme	1987
	Topping-up of the Minimum Sum Scheme	1987
	Loans for Tertiary Education in Singapore	1989
	CPF Top-up Scheme	1995

Source: CPF Board, Singapore

Table 3
CPF Investment Scheme (CPFIS)
Statistics on Cost of Investments and Market Value of Selected Instruments as at 30th
September, 2003

A. Ordinary Account

Investment Limits	Instruments	No. of members^a	Costs of investment (\$ million)	Market Value (\$ million)	Unrealised gains or losses (\$)	Unrealised gains or losses (%)
100%	Insurance	405,900	13,897.03	13,095.48	-801.56	-5.77%
	Unit Trusts	124,100	2,461.93	2,114.44	-347.49	-14.11%
	Others	-	123.76	126.47	2.71	2.20%
35%	Shares	277,200	7,244.33	4,880.09	-2,364.24	-32.64%
	Others		4.99	5.94	0.95	19.1%
10%	Gold		8.01	10.18	2.16	27.01%
	TOTAL		23,740.05	20,232.59	-3,507.45	-14.77%

B. Special Account

Investment Limits	Instruments	No. of members^a	Amount withdrawn for investment (\$ million)	Market Value (\$ million)	Unrealised gains or losses (\$)	Unrealised gains or losses (%)
100%	Insurance	346,600	3,650.51	3,386.36	-264.15	-7.24%
	Unit Trusts	76,500	719.56	683.11	-36.46	-5.07%
	Others		4.82	4.83	0.01	-
	TOTAL		4,374.90	4,074.29	-300.60	-6.87%

Source: Calculated from the data provided in the CPF website (www.cpf.com.sg)

Notes:

- a. It should be kept in mind that individuals may have invested in more than one instrument, and through both the OA and SA avenues, simply adding up the number of individuals in each category will result in substantial upward bias in number of CPF members who have utilized the CPFIS.

Table 4**Singapore: Cash Balances of CPF Contributors by Age as of December, 2000**

Net Balances ('000\$)	Age Group (Number in '000s)						Net Balance (\$ million)	Average Balance ('000\$)
	All Age Groups	Under 30	>30 - <40	>40 - <50	>50 - <55	Above 55		
< 10	199.2 (15.6)	118.4 (34.2)	31.4 (7.9)	22.1 (6.7)	6.6 (6.3)	20.8 (21.0)	906.8 (1.3)	4.6
>10-<50	558.2 (43.9)	184.8 (53.3)	178.1 (45.1)	104.6 (31.9)	29.0 (27.6)	62.1 (62.7)	15766.0 (23.1)	28.2
>50-<80	250.8 (19.7)	34.0 (9.8)	101.0 (25.6)	84.0 (25.6)	21.8 (20.8)	10.1 (10.1)	15845.5 (23.2)	63.2
>80-<100	97.8 (7.7)	6.9 (2.0)	38.7 (9.8)	37.6 (11.4)	11.5 (11.0)	3.1 (3.1)	8717.6 (12.8)	89.2
>100-<200	137.5 (10.8)	2.2 (0.6)	42.1 (10.6)	65.4 (19.9)	25.9 (24.7)	2.2 (2.2)	18244.7 (26.7)	132.7
>200	29.4 (2.3)	-	3.6 (0.9)	14.7 (4.5)	10.2 (9.7)	0.9 (0.9)	8741.0 (12.8)	297.2
All Groups	1272.9 (100.0)	346.0 (100.0)	394.8 (100.0)	328.2 (100.0)	104.8 (100.0)	99.1 (100.0)	68221.5 (100.0)	53.6

Source: Based on data supplied by the CPF Board; Annual Report of the CPF Board, 2000.
Notes: figures in brackets represent percentages. Total net balances (defined as balances after the pre-retirement withdrawals for housing, healthcare, investments, etc.) at December 2000, were \$68,221.5 million, and active contributors numbered 1.273 million, providing an average balance of \$53,600 equivalent to 1.27 times the per capita GNP. The active contributors in December 2000 were 58.1% of the labor force, and 44% of the total members numbering 2.9 million. By deduction, (\$90,298.3 – \$68,221.5) the average balance for the 1.6 million inactive members was \$13,800.

Table 5

Estimated Earnings and Total Assets, Wealth Allocation and Replacement Rate for Base Case

Age	Real Earnings (\$000)	Total Wealth (\$000)	Asset Allocation (% of total)					Implied RR: Retirement Income/Final Earnings (%)	
			CPF: Ordinary	CPF: Special	Housing	Mortgage	Other	Earnings	Subsistence
50	60.9	1093.5	15	6	76	-4	7	17	120
55	67.3	1384.1	16	6	73	-1	6	23	202
60	74.3	1659.1	14	5	74	0	6	26	268
62	77.3	1774.3	14	5	75	0	6	28	296
65	82.0	1955.9	13	5	77	0	5	30	343

Notes: Author's (McCarthy et al.) calculation; assumes male head of household married to same age non-working wife.

Source: McCarthy, Mitchell and Piggott (2002).

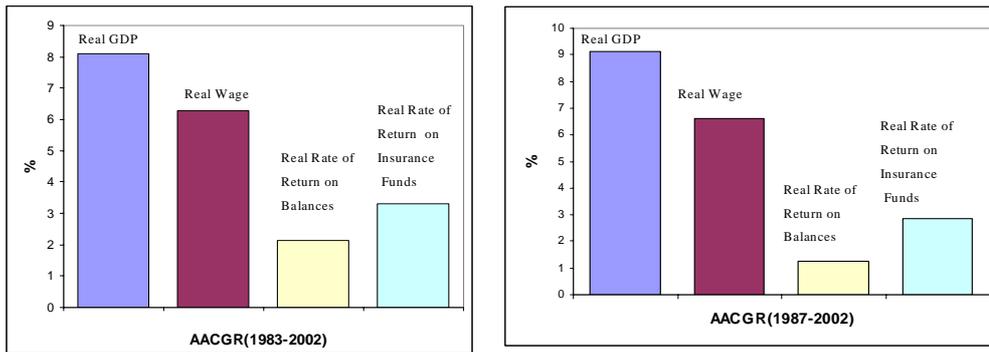
Table 6
Sensitivity of Results to Potential Policy Changes

	A	B	C	D	E
	Total Wealth (\$000)	Proportion in Housing	Replacement Rate		IRR on Property
			Earnings	Subsistence	
1. Base Case	1774.3	75%	28%	296%	582%
CPF Changes					
2. Both CPF Accts ROR up from 0% /1.5% to 5% real	2052.6	65%	34%	359%	4.60%
3. % to Special CPF Acct up from 4% to 8%	1800.3	74%	30%	319%	5.34%
4. CPF contribution ceiling held at 0% nominal instead of 0% real	1598.5	83%	17%	186%	5.23%
5. CPF contribution rates lowered from 40% to 30%	1604.6	83%	14%	148%	4.61%
HDB Changes					
6. ROR on HDB property falls 4% real to 0% real	768.5	36%	32%	339%	0.77%
7. ROR on HDB property 4% real->10 years, 0% real thereafter	749.1	37%	30%	322%	0.47%
8. ROR on HDB property 0% real->10 years, 4% real thereafter	1797.6	74%	30%	316%	6.04%
9.HDB resale levy falls from 22.5%/25% to 0%	2296.2	77%	34%	364%	7.42%

Notes: Author's (McCarthy et al.) calculation; assumes male head of household married to same age non-working wife.

Source: McCarty, Mitchell and Piggott (2002).

Figure 1
Singapore's CPF: Average Annual Compound Growth Rate (AACGR %)



Source: Estimated by the Author

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ENDNOTES

¹ In 2002, Singapore's per capita Gross National Income (GNP) was S\$36, 909 (US\$21, 091). Its total population was 4.2 million, while its resident population was 3.4 million. Singapore does not publish the division of residents into Singapore citizens and permanent residents (ROS: DOS, 2003). The above figures reflect substantial reliance of Singapore on foreign manpower. Singapore's Total Fertility Rate (TFR) in 2003 was 1.3, substantially below the replacement rate of 2.1. The TFR has been below replacement rate since 1975. Life expectancy at birth for males was 76.8 in 2002, while for females it was 80.6. (Source: Yearbook of Statistics Singapore, 2003).

² A voluntary tax-advantaged retirement scheme, called Supplementary Retirement Scheme (SRS) was introduced in April 2001, but its impact has been very limited. Details of the SRS are available from the following website. http://www.mof.gov.sg/taxation/home_user/srs/tax_hme_srshtml

³ The CPF does do a commendable job of providing information to each member on his or her own account details. The point referred to in the text concerns making available data such as cash balances of the members by age and sex, distribution of cash balances withdrawn at age 55 etc.

⁴ Under this provision, a member is deemed to have opted for it unless explicit instructions are given to the CPF Board to the contrary.

⁵ See <http://www.cpf.gov.sg> for the proposal. The CPF Board argues that the pension funds will be structured in such a way as to maximize the expense ratio. But if such products are in addition to current menu of CPFIS instruments, volumes are unlikely to be large enough to bring about this result.