

Social Protection in Singapore

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Abstract

This study analyzes the social protection system of the affluent, rapidly ageing city of Singapore. It thus needs to shift the focus of its social sector policies away from housing and education to social protection in health care. The study argues that Singapore's professed philosophy of emphasizing the individual and community (mainly extended family) for providing social protection, and its near exclusive reliance on a mandatory savings scheme, to finance old age will require substantive modifications if such a shift is to not only occur, but also to provide an adequate level of social protection and health care benefits. In particular, Singapore will need to introduce an adequate tax-financed redistributive first pillar in the social security system, and a more transparent and accountable investment regime for the CPF (Central Provident Fund), which also ends the large recurrent, and highly regressive tax on CPF wealth. The paper ends with suggestions for reform.

* In early January 2002, the exchange rate of the Singapore dollar against the US dollar was US\$1 = S\$1.85.

1. Institutional Framework

This study analyzes the social protection system in the Southeast Asian city-state of Singapore. The term social protection is conventionally defined to include public social security schemes as well as schemes with similar objectives which are not required by law, but are in existence both when there is a formal wage employment relationship, and when such a relationship is absent as in the informal sector (ILO, 2000). During the last four decades of the 20th century, Singapore has evolved from a middle-income economy with a young immigrant population to an affluent and rapidly ageing society. As a result, the focus of social sector policies in Singapore will increasingly shift from housing and education to social protection and health care.

1.1 General Political, Social and Economic Framework

General Data

Table 1 (see Appendix) provides selected demographic indicators, on the basis of which the following observations may be made. The total population of Singapore in 2000 was 4.02 million, of which 3.26 million were citizens and permanent residents, the rest being foreigners who have been residing in Singapore for more than one year. Non-permanent residents thus constitute about one-quarter of the resident population, one of the highest such proportions in the world.

Being a city-state, Singapore's non-urban population is negligible, and therefore no specific policy measures for the rural population are needed. The Southeast Asian region serves as Singapore's hinterland, including the supply of labor.

Singapore's resident population growth rate has varied between 1.3% and 2.2% during the 1991–2000 period. The Total Fertility Rate (TFR), the average number of births per woman, has been below the replacement rate of 2.1 since 1975 (the TFR was 1.6 in 2000). Singapore's population will begin to decline absolutely in the next decade, unless the rate of new permanent residents is maintained or increased. But the inflow of permanent residents during the past two decades is already beginning to subtly alter the social and political dynamics in Singapore. Any substantial increase in the net inflow of permanent residents is therefore not sustainable much longer. Thus, Singapore is unlikely to be able to rely in the future on an increasing population and a growing labor force to generate higher output, and thereby help finance old age. Indeed, the rate of labor force growth is likely to be negative around 2030 (Heller, 1997). Consistent with the experiences of affluent and ageing societies elsewhere, the average annual economic growth rate has already started to decelerate considerably from around 9.0% experienced during the last three decades of the 20th century.

The median age of the population has also been increasing rapidly from 29.8 years in 1990 to 34.2 years in 2000, and is projected to be 41.2 years in 2030; while the proportion of the population over 65 years of age is projected to increase by 2.6 times from 7.3% in the year 1997 to 18.9% in 2030 (ROS, 1999, Table 1.1, p. 29). The Old Dependency Ratio (ODR), defined as residents above 65 years of age divided by residents between 15–64 years, is expected to increase from 10.4 in 1999 to 29.5 by 2030 (ROS, 1999, Table 1.1, p. 29).

The life expectancy at birth was 76 years for males and 80 years for females in the year 2000; and is expected to increase further. As the pension needs are for old age, life expectancy at age 60 (and at age 65) is more relevant than life expectancy at birth. According to the Singapore life tables based on the 1990 Census estimated by K.C. Tan of the Nanyang Technological University, the average female at age 60 and at age 65 in 1990 was expected to live for 20.9 and 17.0 years, respectively; while the corresponding figures for males were 17.5 and 14.2. The females are expected to live longer than the males, and thus require greater resources to finance old age. Females will also constitute a disproportionate number of the old-old, i.e. those over 75 years, a period when health-care requirements and expenses rise sharply.

Thus, the female population in Singapore will have on average greater needs for old-age financing than males. Their labor force participation rate (defined as the number of females who are in the labor force divided by the total number of females) in 2000 at 55.5% was lower than the rate for males (81.1%), while their average monthly earnings at S\$2,530 were only 72% of the earnings of the males (ROS, MOM 2001, Tables 1.6, 2.3 and 2.4).

Singapore's literacy rate at 92.5% in 2000 is commensurate with its level of income. In 2000, the mean years of schooling in Singapore were 8.6, while 55% of the resi-

dents aged 25 years and over had attained secondary or higher qualifications. However in 2000, 28% of the male and 21% of the female labor force had qualifications at primary school level or below (ROS, MOM, 2001, Table 1.2, p. 4).

Economic Characteristics

Singapore is among the most internationalized economies in the world, with its economy dominated by multinational enterprises and state-controlled firms. These firms have traditionally enjoyed significant control over resources and significant monopoly power. About 85% of Singapore's land area is owned by the State and there is no constitutional or common law right to land ownership in Singapore. The State auctions the land use rights, and the resulting revenue is a significant proportion of the budgetary revenue.

In 1998, there were 91,283 active companies (not including partnerships and sole proprietorships) in Singapore, of which nearly four-fifths were locally controlled companies (ROS, DOS, 2001, Table 7.1, p. 81). Among the locally controlled companies, about 40% were in commerce, and 30% were in financial and business services, while social and personal services accounted for only 3.4% of the total in 1998.

Globalization and restructuring are reducing the monopoly power of state-controlled firms in the domestic market to some extent. Nevertheless, the concentration of economic (and political) power of the state-controlled firms and their management remains substantial. As a result, economic restructuring in Singapore faces a dilemma. Any restructuring that permits competitive market forces to play a major role in the economy (such as in the housing mortgage market), and brings about substantive changes in the current methods of economic (and social) management, will have a far-reaching impact on the political economy of Singapore.

Table 2 (see Appendix) provides selected economic indicators of Singapore, on the basis of which the following observations may be made. In 2000, Singapore had a per capita GDP (Gross Domestic Product) of S\$39,585, and a per capita GNP (Gross National Product) of S\$42,212, placing it firmly in the affluent group of countries. The higher value for per capita GNP reflects the fact that Singapore derives substantial income from abroad as a net lender. Thus, it is able to transcend limitations of the domestic economy by generating income from investments abroad. The share of wages and of private consumption in GDP at around 40% however remains low.

The extremely high degree of dependence on international trade implied by the trade to GDP ratio of 3.4 suggests that Singapore is both an export and import dependent economy. Since most of the consumption items are also imported, the trade-weighted exchange rate has a significant impact on real income and consumption. Currency depreciation (appreciation) will thus affect the real value of accumulated pension wealth, and therefore welfare of the elderly as well. The exchange risk thus must be considered in assessing Singapore's pension system. This risk is similar to the risk that tax increases (or an introduction of a new tax such as the sales tax) could reduce

the real value of pension wealth by raising the price level, either on a one-time basis only or leading to a permanent rise in the inflation rate.

In the year 2000, Singapore had 360 manufacturing establishments which received fiscal incentives. They accounted for nearly half of the total domestic exports. Most of these establishments are MNCs (multi-national corporations), suggesting a high concentration in the manufacturing sector.

In 2000, services accounted for 68% and manufacturing for 26% of GDP. The share of manufacturing in total employment is around 20%. Thus, it is the services sector that provides the bulk of GDP in Singapore.

Singapore is a high-savings economy, with its gross domestic savings (GDS) to GDP ratio being 49.8% in 2000. The gross domestic fixed capital formation (GDFC) to GDP ratio was 29.5%, the difference being potentially available for net lending abroad. Most of the savings are generated by the public sector through large structural budget surpluses (IMF, 2001, p. 54), and accounting profits of state-controlled firms. The government thus controls most of the flow and stocks of savings, including mandatory savings schemes for retirement.

Labor Market Structure

Table 3 (see Appendix) provides selected indicators of the labor market structure in Singapore, on the basis of which the following observations may be made. In June 2000, Singapore had a total labor force of 2.2 million, of which 60% were males and 40% were females. The labor force participation rate in 2000 was 68.6%. The participation rate however was much lower for those above 60 years, being only 10.4% for persons 65 years and over. The proportion of labor force above 54 years was 6.1%.

As in the case of non-resident population, about a quarter of the labor force is made up of foreign workers. These workers are divided into two categories according to their monthly wage. Those earning below S\$2,500 per month are granted work permits, and are subjected to the foreign workers' levy. This levy varies according to occupation and skill levels. In the year 2000, total revenue from these levies was S\$1.5 billion, equivalent to 6.5% of the total revenue or 1.1% percent of GDP (Ramesh, 2000). These levies are a type of wage income tax, and a substantial proportion of their burden is likely to be on the foreign workers.

A significant implication for social protection is that with the foreign workers Singapore has a larger labor force to generate output, and an enhanced tax base to finance the retirement needs of its residents. However, from a wider perspective, it raises the issue of provision of social amenities in general, and social protection in particular, for the foreign workers in Singapore. There may be some merit in regional co-operation to bring about a more comprehensive set of social amenities and protection for these migrant workers.

About one-fifth of the labor force has either a diploma or a degree; while about a quarter of the labor force has an educational attainment of primary schooling and

below. The government has recognized the need to ensure that the mix of skills available is consistent with the requirements of the economy as it restructures.

The manufacturing sector accounts for about one-fifth of total employment, while the services sector including construction accounts for the rest. The average wage in 2000 was S\$3,063, with only financial services with an average wage of S\$4,931 registering significantly higher than the average wage.

It is in the services sector where the globalization forces and restructuring of the economy are making the employer-employee relationship more flexible, and increasing the opportunities for self-employment. This in turn will have an impact on the formal pension systems, which are based on relatively stable wage employment.

In June 2000, membership in the trade unions was 314,000, equivalent to 14.3% of the labor force. The manufacturing sector had a much higher degree of unionization accounting for about a quarter of the total membership.

The retirement age in Singapore was 55 years until July 1993, when it was raised to 60 years through the introduction of the Retirement Age Act (ROS, MOL, 1997, p. 1). The retirement age was raised to 62 from January 1, 1999; and is expected to gradually rise to 67 years over time. The current retirement age of 62 is however applied quite flexibly across sectors, activities, and organizations. The raising of the retirement age since 1993 has been accompanied by lower wages and statutory benefits, including contribution rates for mandatory retirement savings.

Over the next two decades, the skills-mix of Singapore's labor force will need to be more conducive to the service sector, as the role of the manufacturing sector in generating jobs is likely to decline. As many relatively less skilled are currently employed in the manufacturing sector, such a shift represents a major challenge. The average worker is also likely to be older over time, and less likely to be receptive to continuous re-training needed to sustain high employment. Implications of these likely trends are discussed in Section 2.2.

Distribution of Income and Allocation of Budget

Singapore's growth strategy of creating an environment for the MNCs and the state enterprises to earn high profits has contributed to significant inequalities in the wage structure and income distribution. Singapore had an overall Gini coefficient of 0.43 in 1974, and 0.48 in 1999 (Mukhopadhaya, 2002, p. 8).

The budgetary allocation of the Singapore government for 1997-98 and for 2000-01 is provided in Table 4 (see Appendix). The total revenue to GDP ratio of 37.2% in 1997-98 is comparable to other high-income countries, though the ratio of 30.5% for 2000-01 is towards the lower end for these countries. The government expenditure, including net lending to GDP ratio (27.3% in 1997-98 and 23.8% in 2000-01), is however much lower than in the other high-income countries.

The social sector expenditure was 6.3% of GDP in 1997-98, 6.9% in 2000-01. The government has emphasized education and housing in the social sector, while health

care, public assistance, and other social protection schemes have received negligible budgetary allocation. Indeed, unlike in other high-income countries, about three-quarters of the total national health expenditure is by individuals and employers, while only one-quarter is from the government budget. This is due to the deliberate policy design and objectives. The social security arrangements, as will be discussed shortly, are outside the budget, as these almost exclusively rely on mandatory savings. The pension payments for civil servants are also outside the budget (see section on civil service pension arrangements).

The government has traditionally generated large and persistent budgetary surpluses (see Table 4, Appendix). These were equivalent to 10.1% of GDP in 1997–98, and 9.2% in 2000–01. Whether surpluses of these magnitudes on a persistent basis are optimal from economic and social points of view is an issue that has been little debated in Singapore. Nevertheless, it is an issue that must be addressed because of the need to substantially increase allocation of resources for health and social security. Indeed, if the allocation of these components were to be comparable to those in the other high-income countries (7% to 9% of GDP for health; 5% to 8% for social security), then the level and the structure of Singapore's budgetary expenditure would also resemble that of other high-income countries.

Political System

Singapore has a parliamentary system, presided by an elected president. Parliament is based on the Westminster model, but has limited powers to overturn government legislation. The ruling regime, the People's Action Party (PAP), has been in power since 1959. The undisrupted tenure has created a one-party state and a monocentric power structure. Therefore, there is little contestability in the social, political and cultural spheres. Much of the key discussions are internalized and decisions reached are communicated through the state-controlled and guided media.

The PAP has also created a social structure to support its economic and social policies. The People's Association (PA), a government statutory board financed from the government budget, is an important supporting organization. The function of the PA is to foster public support and help implement social assistance schemes. To accomplish this role it has developed an extensive network throughout the country, providing it with requisite capabilities and information.

The fact that Singapore has persistent and large budgetary surpluses (see Table 4, Appendix) suggests that Singapore has the resources to meet the challenges of financing old age. With rapid ageing, those above 65 years are expected to be a quarter of the electorate by the year 2030, and if the near elderly are included, a substantial proportion of the electorate is likely to have an interest in allocating a larger share of GDP to health and social security. However, whether the political structures will enable them to express these preferences will depend on how the current monocentric power structure evolves to accommodate greater political and social contestability.

1.2 Availability and Quality of Data

Singapore's political economy and investments made in data collection have provided substantial capacity to generate socio-economic information relevant for analyzing public policies. However, the information is regarded as a strategic resource in Singapore, to be used by the policymakers for tactical advantages rather than as a public good. Therefore, very little of the available data is routinely provided to the general public and to the analyst.

This makes the task of analyzing public policies and institutions in general, and of social protection policies in particular, much more difficult. It also severely hampers informed public debate on social protection issues. While this may serve short-term political ends, it is ultimately a self-defeating exercise.

1.3 Existing Institutional Framework

Singapore has a monocentric power structure. As a result, the social and economic institutions are closely interwoven with the governing party. Thus, the National Trades Union Congress (NTUC), an umbrella organization constituting all the authorized trade unions in Singapore, has a symbiotic relationship with the ruling party. It has representation in cabinet, and in various bodies, including those concerned with social protection. While there is a formal arrangement for tripartite representation, such as in the National Wages Council (NWC), in practice, there is no substantive independence of those bodies from the government.

Another institution providing an array of social services such as financial assistance, job-matching programs, and day care for the elderly are the Community Development Councils (CDCs). Each CDC encompasses several parliamentary constituencies. In some cases, their activities duplicate those undertaken by other agencies in each constituency. The CDCs are headed by mayors who are political appointees. There are plans to expand their scope from social and welfare services to public education, lifelong learning and skills training, as well as culture. The operating budgets of the CDCs have increased from S\$19 million in 1997 to S\$153 million in 2001. The CDCs do have the institutional capacity, in terms of logistics and financial resources, to oversee more comprehensive and long-term social assistance schemes.

The role of civil society groups which are independent of the political structures is quite small. There is also considerable uncertainty concerning the legal scope of operations of the civil society groups. This uncertainty acts as a major deterrent, particularly as it concerns a wide-ranging discussion of social protection issues.

1.4 Traditional and Contemporary Perception of the Social Protection System

The Singapore policymakers have consistently emphasized that the best form of social security for a worker is to pursue economic and human resource policies which provide continuous high employment. The government has also strongly emphasized

the responsibility of the individual and the community (seen as an extended family) to provide for old age, including long-term illnesses.

Social assistance (or protection) schemes which undermine 'self-reliance' are deemed 'welfarist'. Financial assistance schemes, even when they are introduced, are provided on a temporary and ad hoc basis. They are mainly interim provisions designed to restore 'self reliance'. The government has through its control over the media, and other avenues, successfully restricted public dialogue on the appropriate social protection policies. The term 'welfarist' has, as a result, become quite pejorative in the political discourse in Singapore. At the same time, top policymakers and appointed or elected officials are provided with pensions and other benefits more commensurate with the defined-benefit pay-as-you-go schemes prevalent in the welfare states.

It is therefore not surprising that the financial and other support for old age in Singapore has traditionally relied on the family. Thus, according to the Ministry of Health's National Survey of Senior Citizens in 1995, two-thirds of the persons 60 years and above were not part of the formal pension system, but instead relied on the family (ROS, MOH, 1996). In 1997, 78% aged 60 and above lived with children without their spouses (because some are single or widowed, and some elderly couples may have decided to live separately with different children), while 15% (about one in six) lived with their spouses only (ROS, 1999, Tables 1–3, p. 31). Thus, family support and living with children have been the primary coping mechanisms during old age. The future elderly however will have much fewer children to rely on due to the persistent below replacement rate (TFR), while higher educational and income levels would have shifted their and their children's preferences towards greater independence and privacy. Thus, the role of informal arrangements is likely to continue to decline, and correspondingly the formal mechanisms will need to play a larger role.

It should be stressed that the main constraints in bringing about a shift to a more formal and elaborate social protection and health care system in Singapore are not due to lack of technical and professional capabilities but in the realm of ideology and politics.

2. Review of the Existing System

2.1 Social Protection in the Formal (Organized) Sector

2.1.1 Categorization of the Formal Sector

Singapore being a city-state has an urbanized workforce, which is predominantly employed in the formal sector. The self-employed are a relatively small proportion of the total workforce, accounting for about 15% of the population. The workers in Singapore have traditionally exhibited a marked preference for formal wage employment.

2.1.2 Social Insurance and Savings Schemes: The Multi-Tier System

The Multi-Tier System

An important insight from the extensive literature on pension reform is that a multi-tier system of social security is better able to guard against various risks in old age, and help address issues of social adequacy, individual incentives, and financial market development (The World Bank, 1994; Holzmann and Stiglitz, 2001).

The Multi-tier System as an Analytical Framework

There are several ways to characterize a multi-tier system. For the purposes of this paper, a modified three-tier system of social security adapted from Fox and Palmer (2001) is used. The first tier consists of a mandatory public system financed from taxes (or earmarked social security contributions), which has a defined benefit (DB) formula, with large coverage, and incorporates social risk pooling. The primary function of this tier is to ensure a minimum income in old age, which is protected against inflation and longevity risks, and usually includes survivors' benefits features. Thus, the first tier is for poverty alleviation. The other two tiers build on the first tier to help provide adequate income to maintain customary living standards in old age.

The second tier is a defined contribution (DC) system, which in formal (or nominal) terms is by definition fully funded. The benefits thus are determined by the contributions (less pre-retirement withdrawals) and returns on investment of balances (less administrative and investment management costs, and taxes). While in a DB system the plan sponsor (government or employer) bears the investment risk, in a DC system, the individual members of the plan bear the investment risk. The third tier may be described as a tax-advantaged but usually regulated, voluntary (or semi-voluntary) savings scheme which is usually (but not always) privately managed.

It is however important to recognize that pension systems in practice are quite complex as there are many variations in the design and implementation of each tier. Moreover, details of design, and /or implementation may fundamentally alter the nature of a particular tier. Thus, the three-tier classification is only a convenient first step in the analysis.

Singapore's Social Protection System and Multi-tier Framework

Using the above three-tier framework, the most striking characteristic of Singapore's social protection system is the near exclusive reliance on the mandatory, publicly managed, portable, defined contribution (DC) tier. The main vehicle for this tier is the Central Provident Fund (CPF), mainly providing support for housing, retirement and health care. Only Singapore citizens and permanent residents are eligible for membership in the CPF.

There is a virtual absence of a mandatory tax financed, defined benefit (DB), social risk pooling and redistributive first tier. Singapore, however, does administer a Public Assistance Scheme. It is stringently means-tested, provides extremely low benefits,

and has negligible coverage. A health-care scheme started in 1993, which is targeted at the poor and indigent residents, is called the Medifund Scheme. It is a health endowment fund to assist those who pass stringent means tests to pay for inpatient as well as outpatient care. In January 2000, the government established another endowment fund called the Eldercare Fund to finance the operating subsidies for the entire range of elderly and community care. Its aim is to enhance future affordability of step-down facilities, especially for elderly Singaporeans from low- and lower-middle-income households. The government has also encouraged Singaporeans aged 61–69 to be members of the Medishield scheme by providing two years of premium rebate.

In April 2001, Singapore introduced the Supplementary Retirement Scheme (SRS), which is a tax-advantaged voluntary savings scheme open to both residents and foreigners. The SRS may be characterized as belonging to the third tier.

Singapore's pension system merits special attention because it is the only high-income, rapidly ageing country to almost exclusively rely on a mandatory savings second tier to finance old age. Since the main instrument for this tier is the CPF scheme, it is essential to examine it in some detail.

The Main Features of the CPF Scheme

The CPF is a national provident fund (NPF) established in 1955, before Singapore attained independence. It is a statutory authority under the Ministry of Manpower. The twelve-member CPF Board, appointed by the Minister of Manpower, has representation from the government, employees, employers, and the professionals. The key challenge has been to get competent and independent representation on the Board.

The CPF Board is essentially an administrative entity, with little autonomy in policy or in investment of the accumulated balances. It also has little research expertise. However, its size and scope puts at its disposal a vast amount of socio-economic data. It has invested heavily in information technology to utilize this data for administration and for social engineering purposes.

Multiple Roles of the CPF

Since 1955, but particularly since 1968, the Singapore Government has vastly expanded the scope of the CPF to achieve a wide variety of economic, social, and other objectives (see Table 5, Appendix). These include home-ownership, pre-retirement investments, a compulsory medical savings account, life, property, retirement, health-care insurance, and loans for financing tertiary education. From September 2002, another insurance scheme designed to pay modest amounts for long-term care not requiring hospitalization will be introduced.

The home-ownership goal has become a dominant and unique feature of the CPF over the years (Asher and Phang, 1997). In effect the CPF scheme substitutes for the absence of a housing mortgage market. Members are permitted to make a down

payment on public housing constructed by the government's Housing and Development Board (HDB) from their CPF balances. They may obtain mortgage on the remaining amount from the HDB at a rate which is 0.1 percentage points higher than what the CPF pays its members. The HDB obtains two types of loans from the government budget, one as contribution to public housing, and the other for mortgage financing. It then constructs the housing, and repays the loans over time.

Unless otherwise indicated, the discussion in the remaining part of this section draws on the data provided in Table 5 (see Appendix) for the 1983–2000 period.

Contribution Rate. At the time of its introduction in 1955, the CPF contribution rates were 5.0% for the employer and 5.0% for the employee, for a total of 10.0%, with a maximum monthly contribution of S\$50 (Asher, 1994, Table 1, p. 336–37). The rate remained unchanged till September 1968, when the CPF was permitted to be used to purchase public housing.

The rate structure has become fairly complex since then. Currently the contribution rates vary according to the sector of employment, citizenship or permanent residency, age, and whether officers are pensionable or non-pensionable.

(www.CPF.gov.sg/CPF_info/online/ContriRa.asp, retrieved on January 5, 2002)

Since 1968, the CPF contribution rate for the private sector and non-pensionable public sector employees (called the reference group) increased in a series of steps to reach 50% (25% each by the employer and the employee) in July 1987, with a maximum monthly contribution of S\$2,500. The rate was reduced to 35% in April 1986 to cope with the 1985 recession; but was gradually increased to 40% in July 1992, with a maximum monthly contribution of S\$2,400. The rate was once again reduced to 30% in January 1999 to cope with the 1997 economic crisis, with a monthly maximization of S\$1,800.

The CPF contribution rate since January 2001 for the above-mentioned group has been 36% (20% by the employee and 16% from the employer), with a maximum monthly contribution of S\$2,160.

Since July 1988, for the reference group, there have been lower rates of contributions for those above 55 years of age. This is designed to partly de-link wages from seniority, and to reduce the cost of hiring elderly workers. Since January 2001, the contribution rates for those between 55 and 60 years of age have been 18.5% (12.5% by the employee and 6.0% from the employer, with a maximum monthly contribution of S\$1,110). For those between 60 and 65 years, the rate is 11.0% (7.5% for the employee and 3.5% for the employer), with a maximum monthly contribution of S\$660. The rate is 8.5% for those above 65 (5% for the employee and 3.5% for the employer), with a maximum monthly contribution of S\$510.

The CPF contributions of the reference group are channeled into three separate accounts:

Ordinary Account. For those below 55 years, between 72.2% and 61.1% of the contributions is channeled into this account depending on age, with the proportion de-

creasing with age. Balances in this account can be used for housing, pre-retirement investments and other purposes.

Special Account. For those less than 55 years old, between 11.1% and 16.7% of the contributions are channeled into this account, with the proportion increasing with age. However, none of the contributions are channeled into this account for those aged over 55 years. Although balances in this account are for retirement purposes, recent reforms have permitted them to be used for certain low-risk investments.

Medisave Account. This account can be used to pay for hospital and selected outpatient services; and for health-care insurance premiums under the Medishield (and Medishield Plus) Scheme. The Medishield insurance covers only selected major illnesses. However, those with pre-existing illnesses are not provided with this insurance cover. Unlike for the other two accounts, the self-employed must contribute to this account. The contributions are channeled into Medisave with the proportion increasing with age. For those below 55 years, between 16.7% and 22.2% are channeled into this account, but for those above 55 years the proportions vary from 43.2% to 100.0%. The amount in this account cannot be withdrawn until death, when it goes to the nominee(s) of the member. From September 2002, the Medisave Account may also be used to pay insurance premiums for long-term care (see Table 1, Appendix).

The health insurance schemes (Medishield and Medishield Plus) have several limitations. First, the coverage is inadequate. As at end September 2001, the two schemes covered 1.8 million persons, leaving 44% of the resident population uncovered. Second, its scope is narrow. Many illnesses, including pre-existing illnesses are not covered, and the insurance pays only a small proportion of the total hospital bill (typically no more than 35%). Third, rapid accumulation of Medishield balances suggests that the premiums are levied on the basis of over-conservative assumptions in relation to the benefits actually paid. Thus in 2000, the insurance premiums under the Medishield were S\$95 million while the payments were only S\$56 million; at the same time the accumulated balances in this fund amounted to S\$466 million (8.3 times the payments in 2000) as at end 2000 (CPF Board, 2000, p. 54). For the July-September 2001 period, average payment per claim under the Basic Medishield was S\$662, and under the Medishield Plus was S\$1,344. These payments are quite low for catastrophic illnesses requiring hospitalization. On the positive side, Singapore has made an attempt to integrate health-care finance with retirement finance.

While the gross contribution to the CPF has been impressive, existence of a large number of pre-retirement withdrawals, particularly for housing, has meant that net contributions have been rather low. Thus, during the 1987–2000 period, about 72% of contributions were withdrawn during the year. Such a high level of withdrawals for non-retirement purposes, particularly for housing, has adversely affected the accumulation of balances as discussed in the following. This also helps to explain as to why in spite of high contribution rates and rapid economic growth, the retirement balances are inadequate. Without tackling this, and the low returns credited to members' accounts, plans for raising the CPF contribution rate to 40%, and altering the

allocation of different accounts depending on age, will remain ineffective at providing adequate retirement balances.

Investment Policies and Performance of the CPF

The Accumulation Phase. In any defined contribution (DC) scheme, investment policies and performance of provident and pension funds are a crucial determinant of the adequacy during retirement. The efficiency of the savings-investment intermediation can potentially positively affect the trend rate of economic growth, which is the primary macroeconomic variable for economic security for both the old and the young under any pension arrangement. This is because economic growth determines the resources available to be divided between the old and the young. The efficiency with which pension savings are translated into investments is also important because these savings, particularly if they are of a contractual nature, are long-term savings. These can potentially enable financing of long-term growth enhancing investments. The shift in composition towards longer-term savings, and potential to raise the growth rate can subsequently lead to higher national savings. The international experience suggests that pension reform by itself rarely increases national savings (Orzag and Stiglitz, 2001).

There are three separate pools of investment funds under Singapore's CPF system. The first and largest pool are the accumulated balances of the members with the CPF Board. These amounted to S\$90.3 billion in 2000 (56.8% of GDP) (see Table 6, Appendix). Under the CPF Act, these must be in essence invested in floating rate bonds issued specifically to the CPF Board to meet the statutory requirements. They are therefore not traded, and have no quoted values.

Since 1986, the floating rate is a simple average of a 12-month deposit (with a weight of 80%) and the month-end savings rate (with a weight of 20%) of the four major local banks, subject to a minimum nominal rate of 2.5% as spelled out in the CPF Act. The rate is revised quarterly. As a matter of administrative discretion, a small portion of the CPF balances in the Special Account for those less than 55 years of age (currently 11.1% and 16.7% of the contributions go into this account depending on age) receive an interest rate 1.5% above the normal rate. Since October 2001, balances in the Medisave Account have also received a similar differential interest rate. This underlines the administered nature of the interest rate on the CPF balances. The interest is computed monthly and compounded and credited annually.

The compounded annual real rate of return on CPF balances (nominal rate minus GDP deflator) averaged only 1.83% during the 1983–2000 period; and only 0.82% per annum for the 1998–2000 period, the period when the floating rate was introduced. During the 1983–2000 period, there were four years when the real rate was negative (see Table 6, Appendix). The average return during the period was boosted by negative inflation rates, i.e. deflation in four years during the period (see Table 6, Appendix). The above rates are quite low, and therefore they negate the potential advantage of mandatory saving in financing retirement.

The requirement that the CPF Board must invest only in government bonds has contributed substantially to the large internal debt of S\$134.4 billion (84.5% of GDP) in 2000 (see Table 6, Appendix). The CPF Board held three-quarters of the government's medium-term debt, and a little over two-thirds of the total domestic debt in 2000 (IMF, 2001, Table 16, p. 59). The government, however, has been running persistently large budget surpluses over the years (Asher and Phang, 1997; IMF, 2001, Table 12, p. 55).

Given the large budget surpluses over a considerable period, the CPF funds have not been needed to finance infrastructure or other government expenditure. The widespread belief (encouraged by the authorities) that the CPF has financed infrastructure and actual construction of public housing (as opposed to facilitating housing mortgage for members from the demand side) is thus not supported by macroeconomic analysis.

How are the balances with the CPF Board then ultimately deployed? Essentially, the Singapore Government (through the Singapore Government Investment Corporation, SGIC, and other government-investment agencies) invests these funds. There is, however, no transparency or public accountability concerning where these funds are invested, and the investment criteria and performance. The SGIC and other relevant government investment agencies are protected by statutory provisions from making any disclosure, even to the parliament. The elected president, who is mandated to protect Singapore's reserves, also has limited access to the operations of these investment agencies. It is widely believed that the balances are predominantly invested abroad in a wide variety of physical, financial, and strategic assets.

Singapore's method of investing the balances meant for retirement financing is contrary to best international practices concerning pension fund management, and has the potential for generating extremely high political risk. Such concentration of savings in the hands of non-transparent, non-accountable agencies also distorts the savings-investment process, and could lead to inefficiencies in the structure of asset returns. The method, however, is consistent with Singapore's monocentric power structure, and strong tendency towards social engineering and control.

It is likely the government earns a higher rate of return on the CPF funds than what it pays to the members, resulting in an implicit tax on the CPF wealth. This tax is likely to be fairly large and regressive as low-income members are likely to have most of their non-housing wealth in the form of CPF balances (Asher and Newman, 2001). This vividly illustrates how political risks and non-transparency can arise in an individual account system.

The de-linking of interest paid to members on their balances from the ultimate deployment and performance of the funds, and 100% investment in government securities shown on the CPF balance sheet but not in actuality, have turned the CPF into an ersatz National Provident Fund (NPF). The CPF now contains elements of a notional defined benefit (NDB) system due to administered interest rates (though quarterly adjustment of its interest rate is much shorter than typical of the NDB systems

such as in Sweden and Italy), and of the PAYG (pay-as-you-go) system as government bonds will have to be serviced by future generations of taxpayers. As a result, Singapore's nominal defined contribution (DC) system in practice has been transferred to a system more akin to the PAYG NDB system.

This should serve as a forceful reminder that in pension economics, the formal nature of the system could in practice turn out to be quite different once the details of the design and implementation are examined. It is therefore essential to be extremely careful in drawing lessons from the experiences of other countries.

The second pool of investment funds consists of insurance funds. These amounted to \$3.2 billion as at end 2000 (CPF Board, 2001, p. 54). These are invested in fixed deposits, negotiable certificates of deposit, equities, and bonds.

A significant proportion of the insurance funds are out-sourced to investment management companies. As at end 2000, about two-thirds of the insurance funds were invested in this way, while nearly one-third were in bank deposits. The investments are listed in the Annual Report (CPF Board, 2001, p. 55) at cost, and the data provided on the investments in bonds and equity is quite aggregative. The real rate of return on insurance funds was 3.24% per annum for the 1985–2000 period, and 2.74% for the 1987–2000 period (see Table 6, Appendix). While this is higher than the rates of 1.83% and 0.82%, respectively, for the CPF balances, it is still substantially lower than the real GDP growth rate (8.26% per annum for the 1987–2000 period) or the growth of average earnings (7.49%). To the extent that the return on CPF balances is less than wage (or GDP) increases, the replacement rate will be adversely affected.

The third pool of funds for investment consists of pre-retirement withdrawals by members under the CPF Investment Scheme (CPFIS). A member may open a CPF investment account with approved agent banks, which are all locally controlled banks. Moreover, all investments must be in Singapore dollars. Their charges and fees are not regulated. Individual CPF members may invest their Ordinary Account balance as well as the Special Account balance in approved assets. Only less risky investments are permitted from the Special Account. From the Ordinary Account up to 35% of the balances can be invested in shares and corporate bonds by the members directly. There is no limit on investments in shares through the approved unit trusts.

Until September 30, 2001, 100% of the profits realized (less accrued interest which would have been payable by the CPF Board on all the amounts withdrawn under this scheme) were permitted to be withdrawn by individuals. This proportion was reduced to 50% for the period October 1, 2001 to September 30, 2002 and will be zero thereafter. Realized profits on pre-retirement withdrawals will thus augment the CPF balances instead of being used at the discretion of the members.

As at September 2001, total amounts withdrawn from the Ordinary Account were S\$21.6 billion (US\$11.7 billion), while the average amount per member was S\$34,700 (US\$18,757). Little over half the amount was used for purchasing insurance policies; about 40% for stocks and loan stocks; and only 8% or S\$1.7 billion (US\$0.9 billion) was invested in unit trusts (i.e. mutual funds). Thus, CPF members have

shown an overwhelming preference for insurance policies and investing directly in stocks. The government has been fine-tuning the rules governing the CPFIS to increase the amounts invested through unit trusts. As another S\$50.4 billion (US\$27.3 billion) is still potentially available for investments from the Ordinary Account, there is considerable room for individual members to exercise investment choice. Only 22% of the members currently participate in this scheme.

The amounts withdrawn from the Special Account were S\$3.1 billion (US\$1.7 billion) as at end September 2001, while the average amount per member withdrawn was S\$10,500 (US\$5,676). Only 10% of the members have chosen to participate in this scheme. Insurance policies again attracted the bulk of the investments (87%), while the unit trusts attracted S\$404.1 million (US\$218 million) or 13% of the total. There is still an additional S\$11.2 billion (US\$6.1 billion) available for investment under this scheme.

The CPF Board appointed William M. Mercer Company in 1988 as a consultant for the CPFIS scheme for a three-year period. The mandate included tracking the performance of CPF approved unit trusts. For a three-year period ending in December 2001, 32 approved unit trusts outperformed the returns on the Ordinary Account in the CPF, while 24 unit trusts under-performed (Cua, 2001b). If a five-year period is taken, then only four unit trusts outperformed, while 25 under-performed (Cua, 2001b). Data on the volatility of the returns of unit trusts have not been provided. The returns for unit trusts do not include transaction costs which are high, because of the 5% to 7% difference between the offer and bid (buy and sell) prices. Moreover, banks operating the CPFIS scheme also levy a variety of charges.

It is the return after the transaction costs have been deducted which is relevant. Such data however are not available, as the mandate of the CPF Board does not require it. The authorities are conscious of this issue, and efforts are being made to address it. However, the small size of the unit trusts market and low level of investments per member are considered as major constraints in addressing it. To reduce the transaction costs and enable those with low balances to participate in investment diversification, the CPF Board may consider contracting out to different fund managers in a transparent and accountable manner.

The Decumulation Phase of the CPF. The decumulation phase is important because during retirement, it is essential to provide protection against inflation, longevity risks, and to ensure benefits to the survivors. Since women have a lower exposure to the labor force than men, and they earn on average less than men, but have longer life expectancy, protection against the above risks is particularly important for them.

At the time of retirement, the following options exist in a DC scheme to convert accumulated balances into a flow of income during retirement. These include lump sum payments, periodic withdrawals and annuities, or a combination of the three. It should be recognized that as the annuities are like any other financial product, the cost of purchasing annuities and therefore the rate of return from an annuity purchase varies with the market structure and the features (individual vs. joint annuity, inflation

indexing etc.) of the annuity product. The CPF permits its members to withdraw all accumulated balances over and above the required minimum sum at age 55. Although a significant proportion of CPF members have accumulated balances which fall below the minimum sum, if a member's balance is below the required minimum sum, he does not have to make it up from other sources. Children are, however, allowed to top-up parents' CPF accounts.

As of July 2001, the required minimum sum is S\$70,000 of which S\$30,000 must be in cash and S\$40,000 can be pledged in property. The minimum sum will become S\$80,000 in July 2003 with the amount equally divided between cash and property. Currently, there are no further plans to increase the minimum sum.

The CPF Board permits three options for the cash component of the minimum sum: buy a life annuity from an approved insurance company, keep it with an approved bank, or leave it with the CPF Board. In 2000, about one-sixth of the 22,829 individuals who were covered under the minimum sum scheme purchased annuities (ROS, CPF Board, 2001, p. 18). Thus, the annuities option is not popular. Under all three options, the first payment is not available until age 62, seven years after the withdrawal age.

The above arrangements effectively increased the politically sensitive withdrawal age for this component. However, the main weaknesses of the mandatory savings scheme centering on inadequate balances for many individuals, the need for protection against inflation and longevity, and the provision of survivors' benefits are not addressed by the minimum sum scheme.

Civil Service Pension Arrangements

Singapore has succeeded in shifting most of its civil servants to the CPF scheme, and thereby reducing the number of those eligible to receive pensions. This result has been achieved over a fairly long period. Thus, until 1973, all government employees were eligible to be on the pension scheme. However, in 1973 lower division government employees, and in 1987 employees at all levels were given a choice to shift to the CPF scheme. The response was mixed, with some employees electing to stay with the pension scheme, while some shifted to the CPF scheme. The main incentives for a shift to the CPF for the individual civil servant was the availability of public housing finance under the CPF scheme, and the portability feature of the CPF. Lack of inflation protection in the pension scheme acted as a push factor.

At present, only officers in the designated pensionable services (administrative service, senior police and intelligence service), and political appointees are legally permitted to be on the pension scheme. Those on the pension scheme make reduced contributions to the CPF scheme. The pension benefits, however, do not require any contributions. This arrangement therefore is even more generous than the PAYG method employed in the Western welfare states. It would be useful for the policy-makers to explain why such an arrangement, in stark contrast to Singapore's pension philosophy, is essential.

To ensure payment of pensions, the government set up a separate Pension Fund in 1995. Table 7, see Appendix, provides the available data on the operations of the pension fund on the basis of which the following may be noted: The initial contribution to the fund (S\$11.7 billion) has been made from the accumulated budgetary surpluses; and since then annual contributions are made to the fund from budgetary resources. In March 2000, the accumulated balances in the pension fund were S\$10.5 billion, equivalent to 7.3% of GDP, more than sufficient to meet future pension liabilities.

The investment policies and performance of the pension fund is not made publicly available. Thus, pension fund operations are non-transparent. The implicit nominal rate of return based on reported data (which may be incomplete) has varied between 2.9% and 4.3% during FY 1995 to FY 1999. This implies a very low real rate of return. The expenditure on pensions is around 0.5% of GDP or about 5% of total operating expenditure.

2.1.3 Social Insurance and Savings Schemes: Workmen Compensation Scheme and Retrenchment Benefit

Singapore does not have unemployment insurance or other schemes for social risk pooling. There are, however, arrangements to compensate workers for injuries or death incurred during employment and for retrenchment benefits.

Workmen Compensation Scheme

The Workmen Compensation Act, passed in 1975, regulates financial compensation for injuries incurred during employment. The Act principally covers unskilled workers and non-manual labor with an income ceiling of S\$1,600 per month. The Act outlines a detailed schedule for compensation for temporary and permanent injuries incurred during work. Guidelines for medical benefits and provisions for dependants of the deceased are also stipulated. The financial benefits for deceased workers decline with age. All employers, unless exempted by law, are compelled to insure their workmen.

The Workmen Compensation Scheme is administered by the Work Injury Compensation Department of the Ministry of Manpower. This is to ensure effective implementation of various provisions under the Act, including financial liability for injuries sustained during employment.

Retrenchment Benefit

Retrenchment benefits under the Employment Act are as follows:

No employee who has been in continuous service with an employer for less than three years shall be entitled to any retrenchment benefit on the termination of his service by the employer on the grounds of redundancy or by reason of any reorganization of the employer's profession, business, trade or work.

(Section 45, Employment Act 1968)

However, companies are not compelled by law to give retrenchment benefits to workers. All unionized companies, however, do generally pay such benefits, about a month's pay for each year of service. But in practice there is considerable flexibility in the manner in which the benefits are usually implemented in a specific situation.

2.1.4 Social Insurance and Savings Schemes: Voluntary Schemes

Singapore citizens and permanent residents are permitted to save 15% percent of their ordinary wages, bonuses and income from self-employment, each subject to a ceiling, in a voluntary tax-advantaged account under the Supplementary Retirement Scheme (SRS) introduced in April 2001. Until the SRS, there was no specific tax-advantaged voluntary savings scheme for retirement.

Thus, the SRS forms the tax-advantaged but regulated voluntary savings third tier of the social security system in Singapore. The SRS accounts can only be opened at one of four locally owned and controlled banks. Expatriate employees are also eligible and they can contribute at a rate of 35% in recognition of the fact that they are not part of the CPF scheme. Employers are not permitted to contribute to the SRS, but the self-employed may join.

The contributions and investment income (except dividend income) can be accumulated in a tax-advantaged manner until the statutory retirement age at the time of the first contribution (currently age 62). At the time of statutory withdrawals, 50% of the amount is taxed at the then prevailing marginal income tax rate – introducing additional uncertainty. The tax benefit thus varies positively with the marginal income tax rate. Pre-mature withdrawals not only attract full tax, but also a 5% penalty. As only about a third of the labor force currently is liable for individual income tax, the SRS scheme is of relevance only to the top one-third of the labor force. Foreigners must maintain any SRS account for at least ten years even if they leave Singapore earlier.

With the exception of property, real estate, and some forms of insurance, SRS contributions may be invested in a variety of assets. Withdrawals, however, must be made in cash but can be staggered over time to minimize tax or avoid adverse market conditions.

In addition to the small proportion of the labor force that is likely to find SRS of relevance, there are also other reasons for its limited impact. First, for many Singaporeans, the high CPF rates mean that the remainder of their income is committed to basic necessities. Second, since Singapore employs a source-based income taxation system, income earned abroad but not remitted to Singapore is not subject to income tax. Hence, the benefits derived from the SRS, particularly for foreigners, are limited. Third, the transaction costs of the scheme are likely to be high given limited competition, absence of regulation on fees and charges, and the small size of the unit trust industry. In addition, taxation at the withdrawal stage will reduce returns.

Fourth, the income tax payable at the time of withdrawal is on both original investment and on capital gains. Since Singapore has no tax on capital gains, under some

circumstances, such as when a person joins the SRS at a young age and has a low marginal rate of tax, and when net returns on SRS investments are high, an individual may actually get a lower rate of after-tax return under the SRS as compared to not enjoying the tax benefit. Usually, it is the taxation of capital gains that make the SRS type schemes tax-advantaged. In Singapore, capital gains, with the exception of some property transactions, are exempt from the income tax. The investment income from the investment of SRS funds is taxable at the life insurance company level, thus discriminating against the use of life insurance products by SRS participants. The SRS balances are subject to estate duty. This may adversely impact some potential members.

Fifth, the ten-year minimum period for which an expatriate must maintain balances in the SRS account could act as a hindrance for short-term expatriates. Sixth, expatriates must take into account the exchange rate risks, as their liabilities are likely to be in non-Singapore currency as well as the risk that income tax rates (and relevant transaction costs) are not known. The exchange rate risk is non-trivial given the volatility in exchange rates, external openness of Singapore's economy, and the vulnerability of the Southeast Asian region to globalization forces and to external shocks.

The impact of the SRS on overall social security arrangements in Singapore will be marginal. This is because it is not designed to address the fundamental limitations of the current social security arrangements such as the lack of protection against inflation and longevity, and the absence of a tax-financed redistributive tier. Moreover, the SRS is only likely to be of potential advantage when the annual household income is at least S\$100,000 (Cua, 2001b). Thus, for the vast proportion of resident households, the SRS is essentially irrelevant. It is therefore not surprising that only about 11,000 individuals have joined the SRS scheme. By December 2001 only 12,000 SRS accounts were opened while the gross contributions amounted to S\$157 million.

2.1.5 Social Assistance and Services: Benefits and Transfers

The Ministry of Community Development and Sports (MCDS) forwards a list of eligible recipients for social assistance to the People's Association. The PA disseminates this information to its Constituency Secretariats in the respective electoral wards. Staff at the constituency level liaise with the grassroots leaders in the individual neighborhoods to investigate the cases. Once an accurate profile of the individual(s) seeking assistance has been determined, the information is forwarded to the Citizen's Consultative Committee (CCC).

The CCC, the key decision-making body in the constituency, will determine the type of assistance required. Usually the measures are geared towards short-term relief. The schemes range from financial assistance, bursaries and scholarships to waivers on rent, utilities and conservancy charges under the following schemes: the Public Assistance Scheme (the number of recipients were 2,409, with about 7% of per capita income in 2000); the Rent and Utilities Assistance Scheme; the Short-term (Interim)

Financial Assistance Scheme; and the Small Families Improvement Scheme. In 2000, 1,041 households received conditional housing and bursary grants of S\$1.3 million, or S\$1,260 per household.

Since the inception of the Medifund, designed to assist the poor and indigent residents of all ages, the total amount distributed has been S\$75.2 million, or S\$224 per case. Thus, the total amount of subsidies is quite small. This is supplemented by a variety of ad-hoc schemes, again not necessarily targeted at the elderly.

The above set of financial assistance schemes is enlarged by secondary measures (the Economic Downturn Relief Scheme) to assist families affected by the economic recession. Voluntary welfare organizations (VWOs), self-help groups and the National Trades Union Congress (NTUC) also provide similar short- to medium-term financial assistance to families in financial distress. These provisions are largely funded by the government.

The government-sponsored self-help groups, based on ethnic lines, and the NTUC (with whom the ruling party has a symbiotic relationship) serve the needs of a specific target group. The self-help groups provide financial and social assistance (counseling for juveniles, remedial and enrichment classes for students and retraining programs for blue-collar workers) to their own ethnic group, while the NTUC serves its union members. However, these social assistance programs are not conducted in isolation. There appears to be considerable synergy and coordination in the implementation of the programs. The grassroots organizations under the PA, the NTUC, the self-help groups, the VWOs and the Ministry of Manpower recently pooled resources to form a comprehensive network to retrain and place retrenched workers into suitable jobs. Access to financial and social assistance schemes, retraining programs and job placement schemes have enabled the ruling party to cultivate and solidify political support.

2.2 Labor Market Policy

Singapore has made extensive use of manpower planning since becoming a republic in 1965. There has been close coordination between the Economic Development Board (EDB), which is the primary agency for pro-actively promoting inward investment, the Ministry of Manpower (MOM), and educational and training institutions at all levels. Thus, there is an attempt at coordination between the anticipated demand for various types of skills and supply of these skills both from domestic manpower and foreign sources. Such coordination is usually more successful at lower levels (with foreign unskilled workers providing a buffer for resident workers), than in the professions such as doctors, architects, engineers, and lawyers.

The Employment Act of 1968 (as amended) has been the main Act governing labor relations in Singapore. This Act has set very restrictive conditions and scope for trade union activities in Singapore. All authorized trade unions are a part of the NTUC with whom the ruling party has a symbiotic relationship. There is no provision for minimum wage in the Act. It is designed to ensure low-wage share and

high-income profit share in national income. The Act has succeeded in its objectives (see Table 2, Appendix).

Since the early 1970s, there has been a tripartite body comprising the NTUC, the government, and employers, called the National Wages Council (NWC), which annually has set guidelines for wage adjustments. These guidelines are routinely implemented by the public sector, but adherence to them has varied among the private sector. The NWC guidelines in some years, particularly in the 1970s and 1980s, also included changes in the CPF contribution rates. Their mandatory nature helped to adjust the wages in the directions desired by the government.

There has been a gradual shift in the wage setting, with basic (or fixed) wage accounting for a smaller proportion of the total compensation. This is designed to make the total compensation more flexible, and to prevent a significant decline in the rate of profits. Thus, in the 2001 recession, flexible elements of the compensation such as bonuses have been reduced significantly. In some cases, salary cuts have also been introduced.

The link between profitability and employment preservation and creation has been strongly emphasized. There has also been considerable emphasis on training and re-training of the workforce at all levels. Singapore has a Skills Development Fund (SDF) levy on the wage bill of those below a certain wage level to help finance training. In addition, there are other programs and tax concessions to encourage reskilling. But the allocation from the SDF has been open to criticism that the capital grants and significant proportions of the training programs supported by it have not benefited those in the lower wage group.

Singapore's policies to increasingly rely on foreign workers have tended to increase wage inequalities. This is because of the abundant supply of low-skilled workers and the foreign workers' levy, which have depressed wages at the low end. But to attract professionals, most of whom are from high-income countries, a premium above comparable wages has usually been paid. This has had an upward impact on the wages of resident professional workers as well.

The presence of foreign workers however acts a buffer for the resident workers. This permits the government to concentrate on reskilling the resident workers. But with the increasing median age of the population, such continuous reskilling may not be as effective as earlier.

The structure of the labor market is expected to undergo significant changes in the next few decades. Singapore is currently searching for a new growth strategy to compensate for its declining competitiveness in manufacturing (particularly in semiconductors), the anticipated slower growth in Southeast Asia (particularly Malaysia and Indonesia), increasing competition, including in international trade logistics from Malaysia, and its inability to widen its economic linkages with the United States and Japan. For differing reasons, its current ability to benefit from China and India, two growing mega-economies, is also fairly limited.

As Singapore searches for new growth-inducing activities, it will need to restructure the mix of skills of its labor force. But the rising median age of the population, the rigid educational and socio-political system, and the relatively low-level education of a significant proportion of the current labor force are likely to make the transition to a new skills-mix difficult. In addition, globalization forces are likely to significantly increase volatility of aggregate output and employment. There is therefore high probability that structural unemployment will emerge. This type of unemployment is less amenable to continuous retraining and matching of vacancies with available manpower, which are the focus of labor market policy currently. In particular, more formal safety nets to cope with the unemployed may be needed.

3. Assessment of the Effectiveness and Efficiency of the Existing System

3.1 Coverage

Between 1983 and 2000, the membership in the CPF increased from 1.8 million to 2.9 million, while the number of contributors increased at a much slower rate from 0.92 million to 1.3 million (see Table 6, Appendix). Any individual who contributes to the CPF even once becomes a member. The contributors in a given year refer to those who have contributed at least once during a given year. The ratio of contributors to members has declined from 51.6% in 1983 to 44.2% in 2000. The contributors to labor force ratio has also declined from 70.9% in 1983 to 58.1% in 2000. This has not been a serious cause for concern till now as the foreign workers, who are not covered by the CPF scheme, account for nearly a quarter of the workforce; and most of the remainder that are non-covered are self-employed.

The self-employed can voluntarily contribute to the CPF up to the combined employer and employee contributions. They, however, must contribute to the Medisave component as discussed in the following. Since the coverage depends on the formal employer-employee relationship, high formal employment is essential for a satisfactory coverage rate. As flexibility of employment patterns, and open unemployment increases due to globalization and restructuring, the declining trend in CPF coverage may be more of a concern in the future.

3.2 Governance

The CPF Board is currently primarily an implementing agency, with the relevant policy decisions taken elsewhere in the government, particularly by the Ministry of Finance, and MOM. The monocentric power structure has meant that it has been difficult to get persons who are both independent and knowledgeable to serve on the CPF Board. The Board's priorities are determined by the government's socio-economic engineering goals at a given point in time. The strategic use of relevant information, and discouragement of independent research on social security issues have also been a part of the overall environment in Singapore.

The CPF Board also has no responsibility for the ultimate deployment of CPF balances entrusted to it. In pension fund governance, fiduciary responsibility to members constitutes a vital principle. Fiduciary responsibility in the CPF context would require its Board members to administer solely in the interest of the CPF members in maximizing net returns on the balances, net of all expenses.

The governance reform of the CPF Board, the Pension Fund for civil servants, and the occupational pension funds would need to concentrate on greater transparency of all operations, particularly of the investment portfolio. The end result would be an independent professional Board, which is mandated to give high priority to fiduciary responsibility towards the fund members and accountability. In addition, information disclosure requirements (such as valuing investments on mark-to-market basis) should also be consistent with international practices.

The CPF Board however has been quite effective in ensuring a low default rate by employers. The default rate has consistently been below 1%. The process for ensuring that the contributions forwarded by the employers are actually credited into the members' accounts is also well structured and effective.

3.3 Financial Sustainability

The criteria of adequacy primarily concerns adequate finances in retirement for poverty alleviation and for maintaining accustomed standards of living. It is conventional to assess adequacy with reference to the replacement rate, i.e. the proportion of pre-retirement income available as an annuity during retirement. The relevant replacement rate is not just at the time of retirement, but throughout the period of retirement. For the replacement rate to remain constant during retirement, protection against inflation and longevity risks is essential. Provisions for survivors' benefits are also needed.

The CPF Board estimated in 1987 (no updates since then) that the replacement rate would vary between 20% and 40% for the members, without protection for inflation and a very limited protection against longevity. Table 8 in the Appendix shows that the average balance per CPF member doubled between 1987–99, while the average monthly earnings in 1999 were 2.4 times the earnings in 1987. Thus, monthly earnings have risen faster than average balances per member. This implies a low replacement rate.

There are several reasons why the average balance in the CPF is low. First, the wage structure in Singapore is highly unequal, and this is reflected in the contributions made by the CPF members. Thus, in 1999, 51.4% of the contributors had monthly wages less than S\$2,000, while only 6.3% had wages higher than S\$6,000. Second, a high rate of pre-retirement withdrawals tied to the centrality of the real-estate sector reduces the amount available for retirement. Third, average balances are low as the real rate of return is low due to implicit tax on CPF wealth. Finally, high transaction costs due to restricted competition and the limited size of the unit trusts market have also contributed to low balances.

3.4 Gender Equity

The previous discussion of the CPF scheme suggests that it is regressive in nature. This is because only about a third of the labor force is subject to income tax; and the tax saving increases with wage income. Moreover, contributions withdrawn sooner for pre-retirement investments can potentially enjoy higher effective returns than those that are left with the CPF Board. Since the higher income groups have a greater ability to undertake early withdrawals (at least until recently when a minimum sum had to be accumulated before such withdrawals), this feature is also regressive.

The specific gender equity issues arise in Singapore's social protection system because the CPF system has no protection against inflation, and very limited protection against longevity. Since women earn less than men, but have longer life expectancy, they are more likely to find themselves with inadequate resources in old age. Thus, the absence of a social risk pooling first tier is particularly inequitable for women.

3.5 Costs of Administration

Administrative costs of the CPF system as a whole may be divided into various components. The first concerns the administrative costs reflected in the Annual Reports of the CPF Board. These costs were S\$125.2 million in 2000, equivalent to 0.95% of contributions; or 0.13% of total assets (ROS, CPF, 2000). These costs are borne by the CPF members.

The second component concerns various insurance funds. It is the members who pay the premiums and receive the coverage, both of which are formulated by the CPF Board. In 2000, the insurance premiums paid by the members amounted to S\$504.7 million, while claims were S\$116.9 million (ROS, CPF, 2000, p. 48). It is not clear as to who will be the ultimate beneficiaries of the accumulated surplus of the insurance funds of S\$3.2 billion as at the end of 2000.

The third component concerns the administrative and management costs associated with the CPFIS scheme. These costs are both of a fixed and variable nature. While there has been little research concerning the magnitude of these costs, they are likely to be significant. The share of these costs as a percentage of total investment is likely to vary inversely with the size of the investment. The fourth component concerns the cost of converting accumulated balances into an income stream during the decumulation phase.

The total administration costs comprise all four components. These costs need to be analyzed for a given year as well as over a time period to assess the efficiency with which the CPF scheme is administered in Singapore.

From the point of view of economic resource use, costs of compliance with the CPF system are also relevant. These costs arise both for individuals and companies. For the individuals, the costs of complying with the Medisave, CPFIS, housing and education schemes are likely to be particularly important.

The compliance costs for 88,576 active employers as at 30 September 2001 (<http://www.CPF.gov.sg>) arise due to the charges needed in their accounting systems to conform to the requirements of the CPF Board.

There has been remarkably little systematic research done in Singapore on the administration and compliance costs of the CPF system. Further elaboration of these aspects is therefore not feasible.

3.6 Efficiency

There are several important ways in which the current pension arrangements affect efficiency. The first concerns the efficiency of the savings/investment process. Under current arrangements, the government controls the bulk of the nation's flow and stock of savings. The investment of CPF savings in non-marketable government bonds does not permit these savings to be allocated according to market forces, and hampers the development of financial and capital markets. The subsequent use of these savings by government investment companies in a non-transparent and non-accountable manner is contrary to good governance practices of pension funds; and they have the potential to undermine investment discipline.

The second important way in which the efficiency is affected concerns the use of the CPF scheme as a substitute for the housing finance market. The government's control over the supply and demand for the housing market has the potential to lead to inflexibility and lead to over-consumption in housing (Asher and Phang, 1997). Given the centrality of the real-estate sector in the economy, inflexibility and over-consumption have become serious constraints in restructuring the economy. The transition to a genuine market in the housing and real-estate sector, however, will need to be undertaken carefully. This is because housing wealth is a major element of total wealth of most households in Singapore, and property values have been used as collateral in bank loans by individuals and businesses.

The need for greater efficiency in resource allocation has increased as demographic trends and more moderate growth are likely to reduce Singapore's overall savings rate considerably. Not only will rapid ageing increase the consumption share, but it will also reduce public sector saving through increased expenditure, particularly for health care (Heller, 1997). As a result, the need for greater efficiency in translating savings into growth-enhancing productive investments has become more urgent.

4. Policy Recommendations

The CPF scheme has come to occupy a pre-dominant position in the pension arrangements in Singapore. The recent parametric reforms in the CPF scheme, such as paying a higher administered rate of interest on Medisave and Special Accounts and altering the share of contributions allotted to each account, and the introduction of the SRS, do not however address the main limitations of the current arrangements. These limitations include inadequate balances at retirement, lack of inflation and longevity protection, lack of survivors' benefits, lack of transparency and account-

ability, particularly in the area of investment management, inadequate emphasis on fiduciary responsibility compared with socio-economic engineering objectives, and virtual absence of a tax-financed redistributive tier. The limited nature of health insurance, and the issue of long-term care for the aged also pose major challenges to policymakers.

It is clear from the discussion in this paper that more fundamental reforms are needed to provide economic security to the elderly in Singapore. Such reforms will require a change in the mindset, and a paradigm shift in the philosophy of social security. It will also require substantive participation of all stakeholders in the society.

To achieve the above objectives, pension reforms incorporating a redistributive first tier are needed. Other requirements include substantive reforms in the health financing and health insurance systems to systematically introduce social risk pooling and to increase the share of financing through the government budget (currently estimated to be around a quarter of the total) (Lim, 2001), and making the CPF system a genuine DC fully funded scheme.

An illustrative set of measures for reforming the CPF scheme may include the following. An initial step would be to eliminate the implicit tax on CPF balances. In the short term, this can be accomplished by crediting the weighted average of returns of government investment companies, which are actually making decisions on the deployment of the CPF funds.

In the medium term (two to three years), more secure arrangements will be needed. These include the following. First, an establishment of a Provident Funds and Pensions Authority (PFPA) with an independent Board of Directors, whose fiduciary responsibilities will be in line with best international practices in pension governance.

If de-linking the CPF scheme from housing finance is considered too risky, then the CPF scheme could be formally divided into three components: housing, health care, and retirement. The independent PFPA can be given the responsibility for retirement funds, with a similar authority set up for health care financing. The existing CPF Board may continue to be in charge of housing finance.

Second, the investment policies and performance of the PFPA should be completely transparent, and de-linked from government investment companies. The investments should be mark-to-market and publicly available.

Third, all investment returns must be made known and fully credited to the account of the members.

Fourth, individuals may be given limited options (including default options when no choices have been indicated) by the proposed PFPA's investment management committee. A member may divide the balances among the options on a periodic basis. This will minimize transaction costs and permit individuals to adapt the investment portfolio for differing risk/return profiles.

Fifth, the PFFA should encourage the development of the annuity markets; if necessary, through making such purchases mandatory. There is also a strong case for ensuring that tax treatment of benefits does not distort choices among pension products and pension providers.

It should be stressed that even if the reforms suggested are undertaken, the mandatory savings second tier by itself will not provide adequate retirement. The other two tiers will still need to be developed.

It does appear, however, that the prospects for pension reforms designed to bring about a multi-tier system in Singapore along the lines sketched above are not promising, primarily because the CPF scheme has become an integral part of the social-economic-political management in Singapore. There is therefore considerable resistance to any substantive changes in the CPF scheme. Given the above, and due to its size, the transition to any new arrangements which are substantively different will not be smooth or without generating winners and losers.

The policymakers, however, recognize that their legitimacy and authority depends to an important extent on fulfilling the material needs of the population, and that it is by now apparent that the current pension arrangements are inadequate for providing financial security in old age. Consequently, accelerated parametric reforms may well occur, such as refining allocation of CPF contributions to different accounts, raising administered interest rates credited to members accounts, liberalizing various investment and other schemes, and expanding the practice of transferring general budgetary resources to the individual members' CPF accounts. Fundamental reforms, which address the main weaknesses of the current arrangements, will however have to wait for substantive reforms in the political economy of Singapore.

Appendix

Table 1: Singapore Demographic Indicators, selected years

Indicator	Unit	1990	1995	2000
Mid-year population				
Total ¹	Thousands	3,047.1	3,525.6	4,017.7
Resident (population growth rate) ²	Thousands	2,735.9 (2.2)	3,014.6 (1.8)	3,263.2(1.3)
Non-resident as % of total	Percent	10.2	14.5	18.8
Non-resident as % of residents	Percent	11.4	17	23.1
Population density	Per square kilometer	4,814	5,445	5,885
Median age (residents)	Years	29.8	31.9	34.2
Sex ratio (residents)				
Males per 1000 females	Number	1027	1010	998
Infant mortality rate				
Per 1000 live-births	Number	6.6	3.8	2.5
Total fertility rate (TFR)				
Per 1000 female population aged 15–44 years	Number	1,827	1,670	1,586
Dependency ratio ³	Percent	40.8	41.5	40.4
% population above 60 years	Percent	9.0	9.7	10.7
% population above 65 years	Percent	6.0	6.5	7.3
% population above 75 years	Percent	2.2	2.3	2.5
Life expectancy at birth				
Males	Years	73.1	74.2	76
Females	Years	77.6	78.6	80
Total	Years	75.3	76.3	78
Literacy rate ⁴	Percent	89.1	90.8	92.5
Mean years of schooling	Years	6.6	7.7	8.6
Percent with secondary or higher qualifications ⁵	Percent	36.7	47.5	54.7

1 The total population comprises Singapore residents and foreigners staying in Singapore for at least one year.

2 Residents comprise Singapore citizens and permanent residents.

3 Residents under 15 years and those above 65 years divided by residents aged 15–64 years.

4 Residents above 15 years.

5 Refers to non-students.

Source: Calculated from Republic of Singapore, Department of Statistics, 2001. *Yearbook of Statistics Singapore 2001*, Tables 1.8, 1.9, and 1.11.

Table 2: Singapore Macroeconomic Indicators, selected years

Indicator	Unit	1990	1995	2000
Gross Domestic Product (GDP)	Million S\$	66,464.4	117,768.4	159,041.8
Per capita GDP	S\$	21,812	33,404	39,585
Gross National Product (GNP)	Million S\$	68,288.4	121,351.3	169,596.5
Per capita GNP	S\$	22,411	34,420	42,212
Share in GDP				
Manufacturing	Percent	27.0	24.8	26.5
Services	Percent	66.3	68.1	67.9
Others	Percent	6.6	7.1	5.6
Share of wages in GDP	Percent	43	42.9	42.2
Share in expenditure on GDP				
Private consumption	Percent	46.4	41.5	40.0
Government consumption	Percent	10.2	8.6	10.5
Gross fixed capital formation	Percent	32.5	33.9	29.5
Net exports of goods and services	Percent	6.9	16.0	18.5
Others	Percent	4.0	0.0	1.5
Gross Domestic Savings as % of GDP	Percent	43.6	50.7	49.8
Overall budget balance as % of GDP	Percent	10.8	13.2	3.0
Inflation indicators				
Consumer Price Index	Percent	3.4	1.7	1.3
International trade (goods and services)				
Exports as % of GDP	Percent	184.0	178.2	179.9
Imports as % of GDP	Percent	177.1	162.3	161.4
Total international trade as % of GDP	Percent	361.1	340.5	341.3
Visitor arrivals	Million	5.3	7.1	7.7
Average length of stay	Days	3.8	3.7	3.2

Source: Calculated from Republic Singapore, 2001. *Yearbook of Statistics Singapore*, 2001, various tables. Asher, 2002, Table 2.

Table 3: Singapore Labor Force Indicators, June 2000

Category	Units	
Total labor force	Thousands (percent)	2,192.3 (100.0)
Male		1,342.3 (60.4)
Female		868.0 (39.6)
Persons above 54 years		133.1 (6.1)
Labor force participation rate	Percent	68.6
Male		81.1
Female		55.5
Persons between 55–59 years		51.7
Persons between 60–64 years		31.7
Persons 65 and over		10.4
Educational attainment of labor force	Percent	100.0
Primary and below		25.1
Lower secondary		13.0
Secondary		25.3
Post secondary		15.5
Diploma		6.1
Degree		15.0
Employment share by industry and average monthly earnings	Percent (Singapore dollars)	100.0 (\$3,063)
Community, social and personal services		21.6 (\$3,336)
Manufacturing		20.8 (\$3,036)
Wholesale and retail trade		13.7 (\$2,721)
Construction		13.1 (\$2,333)
Business and real estate services		10.8 (\$3,281)
Hotels and restaurants		9.5 (\$1,332)
Transport, storage and communications		9.4 (\$3,105)
Financial services		4.6 (\$4,931)
Others		0.5 (NA)
Membership in trade unions	Thousands	314.5 (14.3)
Manufacturing sector		82.7 (26.3)

Source: Calculated from Ministry Manpower, Republic of Singapore, *Singapore Yearbook of Manpower Statistics*, 2001, Various Tables.

Table 4: Budgetary Allocation by Functional Expenditure Categories, 1997/98 and 2000/01, Amount in Million of Singapore Dollars (Percent of Total Government Expenditure and Net Lending)

	Expenditure category	1997/98	2000/01
			Revised estimates
1	Education		
	Current expenditure	3,348 (8.8)	4,289 (12.7)
	Capital expenditure	1,102 (2.9)	1,512 (4.5)
	Current plus capital expenditure	4,450 (11.7)	5,801 (17.2)
	As % of GDP	3.1	4.1
2	Health		
	Current expenditure	896 (2.4)	1,086 (3.2)
	Capital expenditure	274 (0.7)	138 (0.4)
	Current plus capital expenditure	1,170 (3.1)	1,224 (3.6)
	As % of GDP	0.8	0.9
3	Other social and community services		
	Current expenditure	1,236 (3.2)	1,329 (3.9)
	Capital expenditure	1,930 (5.1)	2,612 (7.7)
	Current plus capital expenditure	3,166 (8.3)	3,941 (11.7)
	As % of GDP	2.3	2.5
4	Total social sector		
	Current expenditure	5,480 (14.4)	6,704 (19.8)
	Capital expenditure	3,306 (8.7)	4,262 (12.6)
	Current plus capital expenditure	8,786 (23.1)	10,966 (32.4)
	As % of GDP	6.3	6.9
5	Economic services		
	Current expenditure	708 (1.9)	2,916 (8.6)
	Capital expenditure	3,565 (9.4)	3,282 (9.7)
	Current plus capital expenditure	4,273 (11.2)	6,198 (18.3)
	As % of GDP	3.0	3.9
6	Internal security and defense		
	Current expenditure	7,235 (19.0)	8,045 (23.8)
	Capital expenditure	1,325 (3.5)	1,590 (4.7)
	Current plus capital expenditure	8,560 (22.5)	9,635 (28.5)
	As % of GDP	6.1	6.1
7	General administration		
	Current expenditure	658 (1.7)	849 (2.5)
	Capital expenditure	767 (2.0)	294 (0.9)
	Current plus capital expenditure	1,425 (3.7)	1,143 (3.4)
	As % of GDP	1.0	0.7
8	Total current expenditure	15,621 (41.0)	20,932(61.9)
	As % of GDP	11.1	13.2
9	Total capital expenditure	8,963 (23.5)	9,428 (27.9)
	As % of GDP	6.4	5.9
10	Net lending	13,508 (35.5)	3,456 (10.2)
	As % of GDP	9.6	2.2
11	Total government expenditure and net lending	38,092 (100.0)	33,816 (100.0)
	As % of GDP	27.2	23.8
12	Total revenue	52218	48,490
	As % of GDP	37.2	30.5
13	Overall surplus/deficit	14,126	14,674
	As % of GDP	10.1	9.2

Sources: Calculated from IMF, 2001, Tables 13 and 15, pp. 56 and 58; and ROS, DOS, 2001.

Table 5: 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 ¹
	CPF Investment Scheme (CPFIS) – replacing AIS	1997 ²
	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 Welfarism through Employers' Contribution (COWEC) Scheme ³ (Discontinued 1.1.99)	1984
	Medisave Scheme	1984 ⁴
	Minimum Sum Scheme	1987
	Topping-up of the Minimum Sum Scheme	1987
	Financing of Tertiary Education in Singapore	1989
	CPF Top-up Scheme	1995

Note: Provisions governing most of these schemes have been revised since their introduction, in some cases substantially, such as for the CPFIS and Medisave.

- 1 From October, 1993, divided into the Basic and Enhanced Investment Schemes.
- 2 Since January 1, 1997, CPFIS has replaced the Approved Investment Scheme, thus eliminating the distinction between the Basic and Enhanced Investment Schemes. The scheme has been liberalized substantially since then in terms of types of investments permitted, and the proportion of balances with the CPF which can be used.
- 3 Since January 1, 1999, there have been no new contributions to the COWEC fund. The scheme has therefore been effectively discontinued.
- 4 From 1993, self-employed persons have been required to contribute to the Medisave scheme.

Source: *The CPF Annual Reports*, various years.

Table 6: Selected Indicators of Singapore's Central Provident Fund, 1983–2000 (All amounts in million \$S)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Coverage																		
Members (thousands)	1778.9	1852.5	1891.7	1933.8	1988.5	2063.4	2126.9	2195.2	2255.7	2322.8	2456.4	2521.8	2683	2741.8	2782	2803.4	2828.1	2880
Contributors (thousands)	917.9	943	889.6	912	935.3	963.8	988.6	1021.7	1052.4	1074	1107.1	1138.9	1174.8	1193.9	1224.2	1198.2	1224.5	1272.9
Contributors/Labour Force (%)	70.9	72.3	69.1	70.2	70.4	69.9	69.4	65.4	67.7	66.3	67.7	67.3	67.2	66.3	65.3	62.7	62	58.1
Contributors/members (%)	51.6	50.9	47	47.2	47	46.7	46.5	46.5	46.7	46.2	45.1	45.2	43.8	43.5	44	42.7	43.3	44.2
Excess of contributions over withdrawals (during period)																		
Members' Contributions	4491	5385.2	5393.4	4777.8	4446.8	4985.1	6107.5	7174.2	8101.4	9208.2	10427	11279	13536.1	14623	15873.8	15999.8	12826.6	14092.08
Gross National Savings (GNS)	16306.1	18596.4	16543.4	15588.5	16304.8	20224.0	25381.1	29930	34497.5	39370.4	42363.2	52625.5	60720.1	66455.5	80314.5	80626.9	83626.9	87352.5
Contributions as % of GNS	27.5	29	36.2	30.6	27.3	24.6	24.1	24	23.5	23.4	24.6	21.4	22.3	22	19.8	19.8	15.3	16.1
Withdrawals: Amount	1718.4	3510.7	3359.9	2824.3	4297.5	4010.5	3663.5	4003.5	4664.9	5418.3	10949.2	7292	7252.7	10529.6	11475.5	13609.8	12789	14555.9
As % of contributions	38.3	65.2	62.3	59.1	96.6	80.4	59.9	55.8	57.6	58.8	105	64.6	53.6	72	72.3	85.1	99.7	103.3
% of total withdrawals for:																		
Approved Housing Schemes ^d	65.3	76.7	76.4	69.2	61.6	69.2	65.9	56.4	64.3	66.7	32.1	48	64.1	48	50.1	57.6	74.5	59.5
Under Section 15 ^g	33.8	21.2	20.9	22.9	17.4	19.6	22.9	25.5	20.5	18.7	10.8	18.7	20	15.5	13.5	13.6	13	11.5
Medical Schemes ^h	n.a	0.5	1.3	2.7	3.3	4.2	4.9	5.9	5.7	5.1	2.7	3.8	5	3.7	3.7	2.6	2.7	2.9
Others ⁱ	0.9	1.6	1.5	5.1	17.7	7.0	6.3	12.1	9.4	9.5	54.4 ^g	30	10.9	32.8 ^e	32.4 ^e	26.3	9.8	26.1
Members Balances (End Period)	19504.7	22670.4	26834.1	29341.4	30607.8	32529.3	36051.6	40646.4	46049	51526.9	52334.3	57649	66035.4	72566.6	79657.4	85276.8	88396.9	90298.3
As % of GDP	53.1	56.6	68.9	75.9	71.7	65.5	64.1	59.9	61.1	63.6	55.5	53.3	54.7	54.7	55.7	60.4	61.4	56.8
Public Debt	25031.5	28077.3	32164.4	33793.1	38274.3	41830.7	46209.7	51425.6	59041.1	67252.5	698822	75344.4	86507.6	94474.8	102372	115183	125777	134370
As % GDP	68.1	70.1	82.6	87.4	89.7	84.2	82.2	75.8	78.4	83	74.1	69.6	71.7	71.2	71.6	81.6	87.4	84.5
Rate of return to members on CPF balances																		
Implicit interest rate ^h	6.1	6.1	6.2	5.5	3.7	3.0	3.1	3.7	4.5	3.8	2.6	2.4	3.4	3.5	3.5	3.9	3.6	2.7
GDP Deflator	3.9	0.7	-1.2	-1.4	1.2	6.2	4.8	4.9	3.7	1	5.5	3.8	2.6	1.4	1.4	-1.5	-1.3	1.8
Real Rate of Return	2.2	5.4	7.4	6.9	2.5	-3.2	-1.7	-1.2	0.8	2.8	-2.9	-1.4	0.8	2.1	2.1	5.4	4.9	0.9
Rate of return – Insurance funds																		
Implicit interest rate ^h	N.A	N.A	4.7	6.4	5.1	6.2	7.6	4.1	6.6	5.1	9.4	3.6	3.8	4.3	1.3	4.9	6.3	5.9
Real rate of return ^g	N.A	N.A	5.9	7.8	3.9	0.0	2.8	-0.8	2.9	4.1	3.9	-0.2	1.2	2.9	-0.1	6.4	7.6	4.1

Note: N.A: Not Available

- a) The housing schemes are: Approved Housing Scheme introduced in 1968, and Approved Residential Property Scheme, introduced in 1981.
- b) Under Section 15, the main withdrawals are for retirement, death, disability, and leaving Singapore and West Malaysia permanently.
- c) The Medical Schemes are: The Medisave Scheme introduced in 1984, and the Medishield Scheme introduced in 1990. However, only Medisave and Medishield withdrawals are included. Medishield Premiums are in the "other" category.
- d) The 'Others' category mainly includes various pre-retirement investment schemes, Medishield Premiums and loans for financing tertiary education in Singapore.
- e) The high proportion of withdrawals for this category was due to the partial divestment of Singapore Telecom, a government telephone monopoly.
- f) The implicit interest rate is calculated as follows: Total interest amount credited to members as shown in the CPF Board's Annual Reports, divided by the average of the beginning and the end balances of the CPF members during the year.
- g) The real rate of return is estimated as the difference between the implicit interest rate and the GDP deflator.

**Table 7: Singapore Operations of the Pension Fund¹, FY 1995–98²
(million of Singapore dollars)**

Category	FY95	FY96	FY97	FY98	FY99 (Revised)
Pension fund balances (end period)	11,462.00	11,770.30	11,654.80	10,681.8 ⁵	10,540.90
As % of GDP	9.5	9.0	8.2	7.7	7.3
Contributions from the Consolidated Revenue Account	11,699.60	567.1	172.9	141.9	523.1
Investment income ³	343.4	402.9	413.8	483.9	308.8
Implicit nominal rate of return ⁴	2.9	3.5	3.5	4.3	2.9
Gratuities and pensions ⁵	542.4	613	647.8	730.6	763.0
As % of operating expenditure	4.7	4.3	4.6	5.0	5.5
As % of GDP	0.45	0.47	0.45	0.53	0.53
Allowances, subsidies and compensation	41.6	48.8	53.9	58.4	65.4

1 The pension fund was set up in 1995.

2 Singapore's Financial Year (FY) is April-March. Thus FY 1995 refers to April 1, 1995 to March 31, 1996.

3 As the accounting for the pension fund is on a cash basis, it may be assumed that only realized income is included in investment income. The implicit nominal rate of return thus is not an appropriate measure of investment performance.

4 Calculated as investment income divided by average balances (beginning period plus end period balance, divided by two).

5 It should be noted that since 1995, each pensioner has an option to receive the pension as a lump sum, or a monthly payment, or a combination of the two. The details of each option chosen by the pensioners are not available.

6 In 1998, \$ 806.6 million was transferred from the pension fund to the SAVER Fund.

Source: Calculated from the Republic of Singapore, The Budget, various years, and Republic of Singapore, Yearbook of Statistics, various years.

Table 8: Singapore Average Balances Per Member and Average Monthly Earnings, 1987–2000¹

(1)	(2)	(3)	(4)	(5) = (4) / (2)	(6) = (4) / (3)
Year	Average monthly earnings (excluding employer's CPF contributions) ² (\$)	Average monthly earnings (including employer's CPF contribution) ³ (\$)	Average balance per member (\$)	Average balance per member/average monthly earnings (excluding employer's contribution)	Average balance per member/average monthly earnings (including employer's contribution)
1987	1,176	1,335	15,458	13.1	11.6
1988	1,273	1,426	15,790	12.4	11.1
1989	1,398	1,608	16,313	11.7	10.1
1990	1,528	1,773	18,504	12.1	10.4
1991	1,669	1,969	20,421	12.2	10.3
1992	1,804	2,129	22,191	12.3	10.4
1993	1,918	2,282	21,361	11.1	9.4
1994	2,086	2,503	23,059	11.1	9.2
1995	2,219	2,663	24,640	11.1	9.3
1996	2,347	2,816	29,503	12.6	10.5
1997	2,480	2,976	28,633	11.5	9.6
1998	2,740	3,014	30,419 ⁴	11.1	10.1
1999	2,813	3,151	31,257	11.1	9.9
2000	3,063	3,415	31,354	10.2	7.8
AACGR ⁵	7.642	7.492	5.591	NA	NA

1 Note that anyone who contributed to CPF at one time or the other is a member. Hence, the number of members in any given year does not refer strictly to all those stationed in Singapore. Some who are not citizens and permanent residents may not come back to Singapore to spend their retirement. Those who are permanent residents may be working abroad and hence are not active contributors. In general, the 'members' are a fluid pool and strict comparability of the annual data on members is not expected.

2 Inclusive of all remuneration received before deduction of the employee's CPF contributions and individual income tax. They include basic wage, overtime payments, commissions, allowances and other monetary payments, annual wage supplement, and variable bonuses.

3 This is calculated as the amount in column (2) + employer's CPF contribution (amount in column 2). This is only an approximation and is biased upwards due to the wage ceiling for the employer's contribution.

4 For males, the average balance in 1998 was \$33,765, for females, \$26,846.

5 AACGR: Average Annual Compound Growth Rate.

Source: Average Monthly Earnings From Republic of Singapore, Ministry of Manpower, *Singapore Year Book of Manpower Statistics*, 2001, Table 2.2, p. 21. and *Year Book of Statistics*, 2001.

Acronyms

AIS	–	Approved Investment Scheme
ANRPS	–	Approved Non-Residential Property Scheme
CCC	–	Citizen's Consultative Committee
CDC	–	Community Development Council
COWEC	–	Company Welfarism through Employers' Contribution
CPF	–	Central Provident Fund
CPFIS	–	Central Provident Fund Insurance Scheme
DB	–	Defined Benefit
DC	–	Defined Contribution

EDB	–	Economic Development Board
GDFC	–	Gross Domestic Fixed Capital
GDP	–	Gross Domestic Product
GDS	–	Gross Domestic Savings
GNP	–	Gross National Product
HDB	–	Housing and Development Board
MCDS	–	Ministry of Community Development and Sports
MNC	–	Multi-National Corporation
MOM	–	Ministry of Manpower
NDB	–	Notional Defined Benefit
NPF	–	National Provident Fund
NTUC	–	National Trades Union Congress
NWC	–	National Wages Council
ODR	–	Old Dependency Ratio
PA	–	People's Association
PAP	–	People's Action Party
PAYG	–	Pay-As-You-Go
PFPA	–	Provident Funds and Pensions Authority
SDF	–	Skills Development Fund
SGIC	–	Singapore Government Investment Corporation
SOTUS	–	Share Ownership Top-Up Scheme
SRS	–	Supplementary Retirement Scheme
TFR	–	Total Fertility Rate
VWO	–	Voluntary Welfare Organization

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