

# **The Role of Global Economy in Financing Old Age: The Case of Singapore**

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**April 2002**

**All dollars, unless otherwise stated, are in Singapore dollars. On March 1, 2002, the exchange rate was US\$1=S\$1.84**

Revised version of the paper prepared for the international symposium on Pension Reforms in Asian countries, organized by the Hitotsubashi University and the Asian Development Bank Institute, Tokyo, March 14, 2002.

I would like to thank Masaru Yoshitomi, Takayama Noriyuki, Takatoshi Ito, Ramkishan Rajan, Shandre Thangavelu and David Cook for useful comments and suggestion on the earlier draft of the paper. Thanks are also due to Revathi Rajan for excellent research assistance. I alone, however, am responsible for contents of this paper, including any remaining errors.

Filename: adbihito\_03/02

Word Count: 7,512

## I. INTRODUCTION

As Singapore becomes accustomed to being an affluent and rapidly ageing society, the issue of financing the aged has become more pressing requiring reassessment of the existing arrangements. This paper examines the use of the global economy in financing the aged in Singapore, and suggests possible reforms.

There are two broad avenues through which the global economy could assist in financing old age. This follows from the well-known proposition that the economy's growth rate is the most important variable in providing economic security to both the young and the old (Barr, 2000; Orszag and Stiglitz, 2001). To enhance growth rate, appropriate level and type of integration with the world economy is needed. As Rodrik (2001) has argued, globalization should not be regarded as a short-cut to development; and that there is no alternative to a home grown business plan which takes advantage of the opportunities in international trade and investment, but also mobilizes the capabilities of domestic institutions and investors.

The second broad avenue concerns international diversification of the pension fund assets, targeted to obtain higher risk-adjusted returns. In 2000, total world-wide pension assets, both private and public, amounted to US \$12.2 trillion, and are projected to increase US \$18.2 trillion by 2005 (InterSec Research Corp., Table 12, p.8). According to the study, the non-domestic investment as a proportion of the total was 11 percent for North America, 32 percent for Europe, 21 percent for Japan, 70 percent for Hong Kong, and only 3 percent each for Latin America, and for Africa,

Middle East and non-Pacific Asia<sup>1</sup> (Table 13, p.9). In US dollar terms, 97.5 percent of non-domestic investment was by North America, Europe and Japan (Table 14, p.10). The study does not provide the destination of non-domestic funds, but it would be reasonable to assume that these three entities invest primarily among themselves. This is not surprising as ageing trends tend to differ considerably among these countries (Dang, et.al, 2001, Table A1, p.44), providing opportunities for higher rates of return and/or risk diversification (Reisen, 2000). While the share of emerging markets in cross-border pension investments is growing, it is likely to remain relatively minor. Because of this, and because of the various politically and economically challenging requirements, investments in emerging markets could only be a minor factor at best in addressing the financing of the aged in the affluent countries (Holzmann, 2000).

The above discussion suggests that using the global economy to finance the aged is a major challenge. There is a need to carefully design and implement measures to help achieve this objective. For a small open economy, such as Singapore, it may be useful to systematically monitor the difference between Gross Domestic Product (GDP) and Gross National Product (GNP) as a possible indicator of the extent to which the above objective is being achieved. This is because it is the GNP that is potentially available for the consumption of the citizens, and therefore it should exceed the GDP by an adequate margin to help finance the aged. The word “potentially” in the above sentence is particularly relevant for Singapore because currently there is no mechanism to channel income from investment of national provident fund savings abroad to benefit members (Section III).

The paper is organized as follows. A brief overview of economic, demographic and labor force characteristics of Singapore is provided in Section II. This is followed by an analysis of Singapore's current pension system in Section III. The next section summarizes the manner and the extent to which the current arrangements are able to benefit from the global economy. The final section (Section V) provides suggestions for reforms.

## **II. ECONOMIC, DEMOGRAPHIC AND LABOR FORCE CHARACTERISTICS**

A brief overview of economic, demographic, and labor force characteristics provided in this section is designed to indicate the extent of the ageing problem, and the extent of the internationalization of Singapore's economy.

**Economic Characteristics:** Main economic characteristics of Singapore are presented in Table 1, on the basis of which the following observations may be made. In 2000, Singapore had a per capita GDP of \$39,585, and a per capita GNP of \$42,212, placing it firmly in the affluent group of countries. The higher value for per capita GNP reflects the fact that as a net lender, Singapore 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 percent in 2000 however remains low. This suggests that while Singapore has the resources to meet the challenges of financing old age, whether the political system enables greater

proportion of elderly (those above 65 years are expected to be a quarter of the electorate by the year 2030) and the near elderly to express their preferences for meeting these challenges however remains very much an open question. Much will depend on the extent to which current mono-centric power structure evolves to accommodate greater political and social contestability.

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 (for example about 85 percent of Singapore's land area is owned by the State and there is no constitutional or common law right to land ownership in Singapore), and significant monopoly power.

Globalization (including infrastructure plans of Malaysia and to a lesser extent Thailand which directly compete with Singapore's role as Southeast Asian hub) and restructuring are reducing the monopoly pricing power of the state controlled firms to a significant 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.

Attracting investments from the MNCs, when Southeast Asia as a region has become relatively less attractive, and when Singapore's economic strategy is undergoing a major official re-think, will be a major challenge.

Extremely high degree of dependence on international trade implied by trade to GDP ratio of 3.4 suggests that Singapore is both an export and import dependent economy, as well as a major entrepot centre. Since most of the consumption items are also imported, the trade weighted exchange rate has a significant impact on real income and consumption. The currency depreciation (appreciation) will thus affect the real value of accumulated pension wealth, and therefore welfare of the elderly as well. The exchange rate trends and volatility therefore must be considered in assessing the Singapore's pension system. The exchange rate risk 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.

The Monetary Authority of Singapore, country's central bank, appears to be aware of the importance of the exchange rate in keeping the inflation rate, as measured by the consumer price index (CPI), low. But as an open economy, Singapore is impacted by external macroeconomic shocks, and by the perceptions of the Southeast Asian region among the international investments (IMF,2001)

In 2000, services accounted for 68 percent and manufacturing for 26 percent of GDP. The share of manufacturing in total employment is around one-fifth. Thus, it is the services sector that provides the bulk of GDP and employment in Singapore. It is in this 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. Singapore will also find it difficult to maintain current share of manufacturing in GDP without creating large distortions elsewhere in the economy. The above in turn will have an impact on the formal pension systems based on relatively stable wage employment.

Singapore is a high savings economy, with its gross domestic savings (GDS) to GDP ratio being 49.8 percent in 2000, while gross domestic fixed capital formation (GDFC) to GDP ratio was 29.5 percent, the difference being potentially available for net lending abroad. Most of the saving is generated by the public sector through large structural budget surpluses (IMF, 2001, p.54), and through the accounting profits of state controlled firms. The government thus controls most of the flow and stocks of savings, including mandatory savings schemes for retirement (as discussed elsewhere in the paper). The efficiency with which these savings are translated into productive investments is therefore an important issue.

**Demographic and Labor Force Characteristics:** 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 for more than one year (ROS, DOS, 2001, Table 1.8, p.8). The non-residents constitute about one quarter of the resident population and of the labor force of 2.2 million, one of the highest such proportions in the world. A significant implication for pension arrangements is that Singapore has a larger labor force to generate output, and an enhanced tax base to finance the retirement needs of its residents.

Singapore's resident population growth rate has varied between 1.3 and 2.2 percent during the 1991-2000 period (ROS, DOS, 2001, Table 3.1, p.22). As Singapore's Total Fertility Rate (TFR), which reflects the average number of births per woman, has been below the replacement rate of 2.1 since 1975 (the TFR was 1.42 in 2001), the population of Singapore will begin to decline absolutely in the next decade or so, unless the rate of new permanent residents is maintained or increased. But the inflow of the 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 the 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 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 experiences of affluent and ageing societies elsewhere, the average annual economic growth is likely to decelerate considerably from around 9.0 percent experienced during the last three decades of the twentieth 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 percent in the year 1997 to 18.9 percent 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 (ROS, DOS, 2001, Table 1.11, p.10). As a comparison, the corresponding figures for the OECD countries as a group are 74.1 and 80.6 respectively (Dang et al 2001, Table 1, p.22).

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, 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<sup>2</sup>. The females are expected to live longer than the males, and, thus require greater resources to finance old age. Females will also constitute disproportionate number of the old-old, i.e. those over 75 years, a period when health care requirements and expenses rise sharply. The females in Singapore thus will have on average greater needs for old age financing than males. Their labor force participation rate in 2000 at 55.5 percent was lower than the rate for males (81.1 percent), while the average monthly earnings at \$2,530 were only 72 percent of the earnings of the males (ROS, MOM 2001, Tables 1.6, 2.3 and 2.4).

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 and flexibly rise to 67 years over time. The current retirement age of 62 is however applied quite flexibly across sectors, activities, and organizations; and the raising of the retirement age since 1993 has been accompanied by lower wages and

statutory benefits, including mandatory retirement savings. As a result, the positive impact on the reduction in the duration of retirement financing needs has been diluted.

### **III. THE CURRENT PENSION ARRANGEMENTS IN SINGAPORE**

Using a multi-tier framework of the World Bank (1994), as modified by Fox and Palmer (2001), the most striking characteristic of Singapore's pension system is the near exclusive reliance on mandatory, publicly managed, portable, defined contribution (DC) tier. The main vehicle for this tier is the Central Provident Fund (CPF). Only Singapore citizens and permanent residents are eligible for membership of the CPF. The members are entitled to withdraw all of their balances if they leave Singapore and West Malaysia permanently.

There is virtual absence of mandatory tax financed, defined benefit (DB), social risk pooling and redistributive first tier<sup>3</sup> Singapore however does administer a Public Assistance Scheme. It is stringently means-tested, provides extremely low benefits (about 7 percent of per capita income in 2000), and has negligible coverage. A health care scheme started in 1993 which is targeted at the elderly is called the Medifund Scheme. It is a health endowment fund to assist those elderly who pass stringent means test to pay for inpatient as well as outpatient care. Since its inception

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total amount distributed has been \$75.2 million, or \$224 per case. Thus the amount of subsidy is quite small. This is supplemented by a variety of ad-hoc schemes, not necessarily targeted at the elderly.

In April 2001, Singapore introduced 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 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 was established in 1955, before independence, and falls under the purview of the Ministry of Manpower. Its board members are appointed by the Minister, and comprise representatives of government, employer, employees, and professionals. While the CPF and its board have the responsibility for routine administrative matters, they do not have policymaking and investment responsibilities. The CPF Act guarantees a nominal interest of 2.5 percent per annum<sup>4</sup>.

The CPF balances are invested primarily by the Government of Singapore Investment Corporation (SGIC), whose legal status is that of a private limited company – removing it from parliamentary or public scrutiny (Asher and Newman,

2001). This arrangement has not provided the members with high enough real returns to capture the power of compound interest. This is shown in figure 1.

(FIGURE 1 SOMEWHERE HERE)

There are two pools of funds that are invested by the CPF board. The first, which is by far the largest, are the balances left with the CPF board that are not in the insurance pool. These balances amounted to \$90.3 billion at the end of 2000. On the CPF balance sheet, 100% is shown as invested in non-marketable government securities. The interest paid on these securities is exactly identical to the interest rate paid by the CPF board on members' balances. This rate is a weighted average of the one year fixed deposit rate (80%) and the savings rate (20%) paid by four (now three as a result of a merger) domestic banks calculated quarterly. Thus, short-term interest is being paid on long term CPF savings. This shows the administered nature of the interest rate paid on CPF balances.

While CPF members know their account balances, they do not know the basis or performance of investment decisions and there is no correspondence between investment returns and member returns. This, in conjunction with 100% of the funds being invested (nominally in Singapore's case) in government securities has transformed the nominal DC-FF (defined contribution – fully funded) nature of the CPF scheme into a notional defined benefit (NDB) scheme financed on a *pay as you go* (PAYG) basis (Asher 2002). The PAYG basis arises because the government debt arising from investing CPF balances in government securities will eventually be serviced by the future taxpayers. This is similar to the PAYG arrangement in which

today's young finance today's aged in the expectation that when they become old, the future young will finance them<sup>5</sup>.

Singapore is thus in an unusual position of having a persistent budget surplus and a high level of internal debt (S\$134,370 million in 2000, 84.5% of GDP). The debt to GDP ratio is considerably higher Singapore as compared to the unweighted OECD average of 55 percent in 2000 (Dang, et.al, 2001, p.18).

The second pool consists of insurance funds for health care, mortgage, and basic life insurance, which amounted to S\$3.2 billion at the end of 2000. These funds are contracted out to investment managers, and broad asset allocation of this pool is published in the CPF Board's annual report.

For the 1983-2000 period, the annual real rate of return was 1.83% for the first pool of funds, and 3.24% for the insurance funds (figure 1). The returns were substantially lower than the rate of growth in GDP and of nominal earnings. This relationship is important because if the return on balances is lower than the growth of income and wages, then the replacement rate that can be obtained from the accumulated balances of the members is likely to be low. Another indication of the inadequate replacement rate in retirement is the ratio of the average balance per member to average monthly earnings. This ratio already low at 11.6 in 1987 has fallen further to 7.8 in 2000 even as life expectancy has risen (Asher 2002).

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, all of which are locally controlled banks and 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 relatively low-risk investments are permitted for the Special Account and from the Ordinary Account up to 35% can be invested in shares and corporate bonds by the members directly. There is no limit on investments in shares through approved unit trusts.

Before 1 October 2001, individuals could withdraw 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). This proportion was reduced to 50% from October 2001 and from September 30, 2002 will be zero percent. This is designed to close a loophole under which potential profits on pre-retirement savings can be made from tax-advantaged savings but these do not contribute to the objective of mandatory accumulation of savings for retirement. As of September 2001, under the CPFIS scheme, S\$21.6 billion (US\$11.7 billion) has been withdrawn by more than 600,000 members (22% of total members). The average investment per member thus was S\$34,700 (US\$18,757). As of March 2001, investments totaled S\$20.192 billion (US\$11.218 billion) and were allocated as follows: stocks and loan stocks: S\$9,550 million (47.3 percent); insurance policies: S\$9,063 million (44.9 percent); unit trusts; 1,285 million (6.4 percent); and other: S\$294 million (1.5 percent). Between the 3rd and 4th quarters of 2000, investment in insurance policies grew the most (7%) followed by unit trusts (3.6%) (Business Times (Singapore) February 27, 2001).

Transaction costs for unit trusts are high with 5 to 7 percent spread between the offer and bid (buy and sell) prices. Although there has been an effort to address this issue, the low average investment and small size of the unit trusts market are considered

constraints. In addition, there is an annual investment management fee of between 1-2 percent of total investments of members. As a comparison, an average diversified stock fund charges 1.41% a year (Asian Wall Street Journal, February 5, 2002, M5). Additional data is needed from the CPF Board to assess the CPFIS scheme.

The decumulation phase is important because during retirement, it is essential to provide protection against inflation, longevity risks, and to ensure benefits to survivors. Since women have a lower exposure to 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, four options exist in a DC scheme to convert accumulated balances into a flow of income during retirement: lump sum payment, periodic withdrawals, annuities, or a combination of the three. It should be recognized that annuities are like any other financial product, so cost of purchasing an annuity and therefore rate of return from an annuity purchase varies with the market structure and the features of the annuity product (individual vs. joint annuity, inflation indexing, etc.).<sup>6</sup> The CPF permits its members to withdraw all accumulated balances over and above the required minimum sum at age 55. Although the significant proportion of the CPF members' have accumulated balances that fall below the minimum sum, if a member's balances are below the required minimum sum, it does not have to make it up from other sources. Children are however allowed to top-up parents' CPF accounts.

As of July 2002, the required minimum sum is \$75,000 of which \$35,000 must be in cash and \$40,000 can be pledged in property. The minimum sum will become \$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. Thus, the annuities option is not popular<sup>7</sup>. Under all three options, the first payment is not available until age 62, seven years after the withdrawal age.

The above arrangements effectively increase the politically sensitive withdrawal age for this component. However, the main weaknesses of the mandatory savings scheme centering on inadequate balances for many individuals, and the need for protection against inflation and longevity, and the provision of survivors' benefits are not addressed by the minimum sum scheme. There is also an absence of social risk pooling in Singapore's CPF scheme.

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 savings – investment process, and could lead to inefficiencies in the structure of asset returns. The method however is consistent with Singapore's mono-centric power structure, and strong tendency towards social engineering and control.



To the extent the government earns a higher rate of return on the CPF funds than what it pays to the members; there is an implicit tax on the CPF wealth. This tax is likely to be fairly large<sup>8</sup> and regressive as low- income members are likely to have most of their non- housing wealth in the form of the CPF balances. This vividly illustrates how political risks and non-transparency can arise in an individual account system.

IMF has however suggested that the implicit tax argument needs to be qualified for the risk-free nature of the CPF returns; and for the possibility of using CPF funds to repay housing mortgages at a fixed, low rate (0.1 percent above the CPF interest). (2000, p.57).

**The SRS Scheme:** Another scheme is the supplementary retirement scheme (SRS), which is a tax-advantaged voluntary scheme effective from April 2001. The SRS permits Singapore citizens and permanent residents to save in a special individual account 15% of their total labor compensation, subject to a ceiling. Expatriate employees are permitted to contribute at a rate of 35% in recognition of the fact that they are not a part of 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 statutory withdrawal age at the time of first contribution. At the time of statutory withdrawals, 50% of the amount is taxed at then prevailing marginal income tax rate. The tax benefit thus varies positively with the marginal income tax rate. The benefit is thus reduced when income tax rates are lowered.

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 third of the labor force. Pre-mature withdrawals not only attract full tax, but also a 5% penalty. Foreigners must maintain SRS account for at least 10 years even if they leave Singapore earlier.

The contributions to the SRS may be invested in a wide variety of assets permitting substantial international diversification. However, property and real estate investments and certain types of insurance products are not permitted. The withdrawal from the SRS however must be made in cash. Withdrawals, however, may be staggered over a period to minimize tax and avoid adverse market conditions.

Four locally (now three after a merger) owned and controlled banks have been designated as SRS providers. They are free to set their own charges for the services provided and to determine interest paid on SRS savings. This limits competition and could substantially reduce the benefits from the scheme.

In addition to the small proportion of the labor force that is likely to find SRS of relevance, there are also other reasons it is likely to have limited impact. First, the high target for the mandatory CPF contribution rate at 40% limits the ability of the potential participants to the SRS scheme. Secondly, the source based income taxation in Singapore under which income earned abroad but not remitted to Singapore is not subject to income tax, also limits the benefits to be derived from the SRS, particularly for foreigners. Third, the transaction costs of the scheme are likely to be high given limited competition, absence of regulation on fees and charges, and 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 the SRS participants.

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; and the risk that income tax rates (and relevant transaction costs) are not known.

The impact of the SRS on overall social security arrangements in Singapore will be marginal as it is not designed to address the fundamental limitations of the current social security arrangements such as lack of protection against inflation and longevity, and absence of tax financed redistributive tier.

#### **IV. SINGAPORE'S PENSION SYSTEM AND THE GLOBAL ECONOMY**

This section focuses on how specifically Singapore's pension system has utilized the global economy, and is organized around the two broad avenues indicated in Section I

### **Impact on the Trend Rate of Growth:**

As a highly internationalized economy, Singapore has been quite dependent on the external demand, manpower, capital, technology for domestic economic growth; while also acting as a net lender abroad to generate national income. In recent years, it has had a large positive current account balance (\$32.0 billion in 2001), a large negative Capital and Financial Account Balance (\$33.9 billion in 2001) suggesting significant net lending abroad; while by end 2001, Singapore's official reserves were \$139.9 billion (ROS, MTI, 2002,p.1).

In 1991 and in 2000, about four-fifths of the growth in total demand was external, while only one-fifth was final domestic demand (ROS, MTI, 2002, Table 2.3, p.17). The past quarter of a century, about three-fourths to four-fifths of investment commitments in manufacturing have been foreign (ROS, MTI, 2002, Table A9.6, p.186).

A recent study by the Ministry of Trade and Industry (MTI) estimated the contribution of foreign labor to Singapore's economic growth using growth accounting methodology based on solow –type growth model (Tan et al,2001). The study found that during the 1991-2000 period, 36.9 percent of the growth was accounted by foreign workers in the professional and technical category, and an additional 3.8 percent was contributed by other foreign workers (Tan et al, 2001, Table 2). In contrast, capital input contributed 26.5 percent, local labor 14.1 percent, and total factor productivity (TFP) 18.8 percent to total growth. All types of labor combined contributed 54.8 percent to the growth of output during the 1991-2000 period.

The study did not distinguish between local capital and foreign capital. If it had, the contribution of the global economy to economic growth would have been even higher.

The studies by university economists have however found that the contribution of labor was substantially lower during this period. Thus, Owyong (2001) estimated the share of all types of labor to be 21.0 percent, capital to be 44.1 percent, and TFP to be 35.1 percent. Thangavelu (2002) estimated the share of labor, capital and TFP to be 56.6 percent, 19.9 percent, and 23.4 percent respectively. Neither study disaggregated total labor into foreign and domestic components.

There are at least four serious limitations of the MTI study<sup>9</sup>. First, there is a possibility that the estimation of capital stock may be biased upwards, thereby resulting in lower contribution of capital to growth.

Second, the MTI study defines technology variable as a function of existing capital-labor ratio and the share of professional and technical foreign workers. This assumes that technology is embodied in capital and foreign labor. This is unusual and the study does not justify this assumption adequately. Such a formulation also increases the multicollinearity problem, and result in higher value of the coefficients.

Third, the study has not addressed the problems of simultaneity. If capital and labor, particularly immigrant labor are major contributors to output growth, than this in turn will lead to greater flow of foreign labor and capital into Singapore. Finally, there is little justification for using the fourth – lagged specification for capital-labor ratio and for the share of professional and technical foreign workers.

While there are significant differences among the studies concerning contribution of various factors to growth, there is little doubt that Singapore has participated in the

global economy quite effectively to enhance its trend rate of growth, and to expand its economic space.

The policies designed to attract foreign manpower at both the high and the low-end of the human capital spectrum have been an important element in this participation. However, even as the policymakers continue to pursue policies to attract foreign manpower to Singapore, they will need to ensure that emigration from Singapore, particularly of professionals, does not accelerate.

There are no official data which are published (though they must be available to the policymakers) on emigration from Singapore. Table 2 provides data for the 1990-2000 period for those who emigrated from Singapore (and West Malaysia), and have withdrawn their CPF balances.

The following observations may be made from the data in Table 2. The number of CPF members who have emigrated (and withdrawn their balances) has fluctuated during the 1990s, ranging from 3096 in 1992 to 6640 in 1996. The average amount withdrawn has been higher than average balances of members as a whole. Thus, in 2000, the average amount withdrawn of those emigrating at \$57,200 was 1.8 times the average balance for all members. The payments to emigrants have however been relatively small when measured against CPF's total withdrawals and contributions.

The above figures are somewhat understated as some CPF members may emigrate but not withdraw their balances. Provisions of adequate financial security in old age; and greater personal and political space are likely to be necessary if the requisite human resources are to be available to sustain Singapore's growth. This will require substantive

changes in the political and social environment in Singapore, and will therefore be a major challenge.

Singapore's inward manufacturing investments have traditionally been in the manufacturing and financial business services. By end 1998, stock of direct foreign equity investment in Singapore was \$125.6 billion, while the stock of Portfolio Investment was \$32.2 billion (ROS, DOS, 2001, Table 5.11, p.70). The combined stock of foreign investment amounted to nearly 100 percent of Singapore's 2001 GDP, and to \$50,000 on per capita basis, among the highest in the world.

There are however concerns that one of the key areas of manufacturing investments, electronics, may not attract significant investment in the future due to declining competitiveness (ROS, MTI, 2002, p.121-128). Singapore has embarked on a drive to attract investments in life sciences and bio-technology and pharmaceuticals sectors to sustain the momentum of inflow of investments. But these areas require quite large resources and the pay-off is considerably more uncertain.

Singapore is also a large investor abroad. By end 2000, Singapore based (not necessarily owned) companies had set up 7929 companies abroad, with a stock of direct equity of \$63.9 billion (ROS, MTI, 2002, p.19)<sup>10</sup>. In 2000, external economy contributed 15 percent of GNP, nearly double the share in the early 1980s (ROS, MTI, 2002, Chart 2.5, p.19).

**Investment of Pension Assets Abroad:** The second broad avenue through which the global economy can contribute to financing pensions is through higher returns potentially made possible by international diversification. Provident and pension fund

investments do permit such diversification. Therefore, in principle, this avenue is also feasible in Singapore.

Analysis of the investment policies and practices of the CPF system in the previous section suggests that the potential benefits of international diversification are not being fully realized by the members.

The member funds with the CPF Board (\$90.3 billion by end 2000) are, as noted previously, ultimately invested in a non-transparent and non-accountable manner<sup>11</sup>. To the extent SGIC's return on investments have been higher than the return actually credited to CPF members, a recurrent, highly regressive, large implicit tax on the CPF wealth has been borne by the CPF members.

In a mono-centric power structure of Singapore, the requirement of provident and pension fund trustees who are simultaneously independent-minded and competent has posed severe challenges. Absence of any provident and pension regulatory agency has made it difficult to take a system-wide perspective from the viewpoints of fiduciary responsibility to the members and international benchmarking in governance.

Thus, the members are not able to benefit from the presumed international diversification undertaken by the government investment management companies. The present arrangement is also risky for the members because as taxpayers they will need to contribute if the international diversification is not successful, over whose management they have no control or oversight.

The CPF and the SRS rules do permit individuals to invest through unit trusts and to undertake international diversification. The main issues here are the transaction costs, including investment management costs; and the relative lack of financial sophistication



of the members. Both have contributed to keeping actual share of international diversification quite small. The current method and degree of individual choice may therefore need to be reviewed.

#### **IV. SUGGESTIONS FOR REFORM**

Before examining reforms needed to take more effective advantage of the global economy to finance old age, it may be useful to re-state the limitations of the current pension arrangements in Singapore.

The CPF scheme has come to occupy a pre-dominant position in the pension arrangements in Singapore. The recent parametric reforms of the CPF scheme and the introduction of the SRS do not however address the main limitations of the current arrangements. These limitations include inadequate balances at retirement due to extensive pre-retirement withdrawals, particularly for housing and property, and due to low returns credited to members; lack of inflation and longevity protection; lack of survivors' benefits; lack of transparency and accountability, particularly in investment management; inadequate weight to fiduciary responsibility as compared to socio-economic engineering objectives; inadequate social risk pooling in health care financing (only about a quarter of the total national health budget is from the government, while the rest is from individuals and businesses, reverse of the respective shares in high income countries of the OECD); and the virtual absence of tax-financed redistributive tier. The limited nature of health insurance and the issue of long-term care of the aged also pose major challenges to the policymakers.

The above suggests that fundamental reforms are needed to provide economic security to the elderly in Singapore. Such reforms will require a change in the mind-

set, a paradigm shift in the philosophy of social security, and will also require substantive participation of all stakeholders in the society. It should be stressed that the needed reforms will increase government's budgetary allocations as well as total national expenditure devoted to social security and health care.

It is in the above context that specific measures to make continued and more effective use of the global economy to finance old age in Singapore need to be discussed. The government set up an Economic Review Committee (ERC) in late 2001 to suggest how Singapore can sustain growth as an affluent and rapidly ageing society in the context of globalization and associated changes (for details of the terms of reference and composition of the ERC, see [www.mti.gov.sg](http://www.mti.gov.sg)). One of the seven sub-committees is on Taxation, the CPF system, Wages and Land.

As of mid-April 2002, only recommendations concerning the tax system have been announced. These proposals include significant reductions in individual and company tax rates to 20.0 percent over the next three years; and significant reductions in the income tax base, particularly for capital income. The expected revenue loss is to be partly made up by increasing the Goods and the Services Tax (GST) by 2 percentage points.

As far as pensions are concerned, it is proposed that the employers of foreign workers be permitted to deduct as business expense pension contributions made on behalf of the foreign workers in any country. This is designed to retain and attract foreign professionals to locate in Singapore.

The above proposals are likely to accentuate already high income inequalities even further<sup>12</sup>. They are also likely to reduce the real value of CPF wealth if, consistent with the international experience, the 2 percentage point increase in the GST leads to a one-time increase in the cost of living by the same percentage. There is a strong case for off-setting this reduction through the fiscal system, particularly for those nearing the CPF withdrawal age of 55.

There are several reforms which may be considered to enable provident (and pension) fund members to benefit from international investment diversification<sup>13</sup>. First, urgent consideration should be given to eliminating the implicit tax on CPF wealth.

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. Similarly, full returns must be credited to the Government Pension Fund, and other provident and pension funds.

In the medium term (two to three years), more secure arrangements should be instituted. The responsibility for the retirement balances (including balances currently managed by the Government investment companies) could be transferred to a newly constituted Provident and Pension Funds Authority (PPFA). In its mandate fiduciary responsibility, transparency, and accountability should have the highest priority. The trustees of the PPFA should be selected accordingly. The governance and practices of the PPFA should be internationally benchmarked.

Following international experience, the contribution rate for retirement purposes could be between 10 and 15 percent with no wage ceiling, provided protecting the

income tax revenue base is not a concern. The transition to higher retirement contributions from the current level of 4 to 6 percent depending on age and with wage ceiling of \$6,000 per month, the household wealth, fiscal health (due to revenue from leasing of land), and health of the banking system (due to high proportion of bank loans directly or indirectly to the property sector); is dependent on the property values.

The second set of measures would be designed to minimize transaction costs, including investment management cost. This could be accomplished by the PPFA providing more limited options (including default options when no choices have been indicated) to the provident and pension fund members. Under such an arrangement, a member may divide his or her balance among the limited number of options chosen by the PPFA on a periodic basis. This could help minimize transaction costs as such pooling will provide countervailing power to the PPFA; as well as permit individuals to adept the investment portfolio for differing risk return profile.

Third, the PPFA could encourage the development of the annuity markets to provide greater degree of protection against the longevity risk. If necessary, purchasing of an annuity could be made mandatory, at least for a certain minimum sum. Issuance of indexed bonds by the Singapore government could make it possible for the insurers to offer annuities without bearing the inflation risk (IMF, 2000, p.65). The PPFA could also help ensure that the tax treatment of annuity (and pension benefits) does not distort choices among pension products and pension providers<sup>14</sup>.

The second avenue of international diversification of provident and pension fund savings to finance old age thus appears to be more amenable to reform from the technical point of view. But it will require considerable change in mind-set of the policymakers,

and addressing entrenched institutionalized non-transparency of investments of CPF balances, and eschewing or at least severely restricting socio-economic engineering.

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

Singapore policymakers face a stark choice. Either they can continue to use the CPF for socio-political control and engineering, or they can bring the CPF's objectives and governance in line with international best practices, to improve the return accruing to the members, and to make a greater proportion of the CPF contributions available for retirement needs.

In conclusion, using the global economy to finance pensions for the rapidly ageing populations in Singapore will be quite challenging, and will require concomitant reforms in many other areas, including in the basic philosophy of pensions and pensions management. Singapore will also need to find new growth strategy to remain competitive in the twenty-first century (DSG Asia, 2002).

## Endnotes

1. It is interesting to note that the study reports that Singapore's provident and pension funds had no investments abroad. Reasons for such understandable error will become clear in Section II.
2. Figures provided by K.C. Tan of the Nanyang Technological University in a personal communication with the author.
3. It is ironic that a society, whose elites extol the virtues of communitarian principles, have by choice not developed the first tier which usually forms the basic tier in affluent and many middle income countries. The individuals are thus left to cope on their own with the risks, particularly inflation and longevity risks, of old age. Inflation risk concerns the risk that price increases will erode the purchasing power of the monthly pension income or benefits. Longevity risk arises because a retiree may live longer than expected (or has unexpectedly large need for health care expenditure) which may exhaust accumulated savings.
4. Explicit permission of the Finance Minister is needed under the CPF Act to pay interest of more than 2.5 percent.
5. Another channel through which intergenerational impacts can occur is through the asset values. If there is an increasing proportion of the aged in the society, they may sell their assets in old age to finance retirement. This may impact asset values. It is important to recognize that pensions may be regarded as a 75 year financial contract, and in a contract of such a long period, intergeneration transfers can not be avoided regardless of the method of financing (Vittas, 2002). In the case of Singapore, this second channel is also likely to occur as the rapid pace of ageing and absence of social risk-pooling may necessitate selling assets to finance retirement, thus depressing their price.
6. In Singapore expenses are estimated to be about 4% of the premium (which in the case of an annuity equals the principal amount which is invested to give a stream of income), including a 1% sales commission, plus a large management fee (James and Vittas 1999)

7. In 2000, there were 22,864 annuity policies, and 4 million life insurance policies in force in Singapore (Asher and Newman, 2001). As a result, there may be an over consumption of survivor benefits at the expense of an annuitized stream of income in one's later life.
8. IMF has estimated the returns of the SGIC for the decade of the 1990s to be 10 percent (2000, p.57,fn 7), substantially lower than the average return of 3.4 percent paid by the CPF. Multiplying the difference ( $10.0-3.4=6.6$ ) to the member balances as at end 2000 of \$90,298.3 million would lead to implicit tax of 5.96 billion, equivalent to 42 percent of contributions or 3.75 percent of GDP. It should be emphasized that this is a recurrent tax whose burden is felt yearly.
9. I am indebted to Shandre Thangavelu for generously sharing his insights into the technical aspects of growth accounting in general; and for discussing implications of the key assumption of the MTI study.
10. It should be stressed that the basis of valuation of the above stock of equity has not been explained by the authorities. The importance of foreign companies based in Singapore to what the authorities curiously include as Singapore investments is also high. Thus, as at end 1999, foreign companies accounted for 44.4 percent of the reported total Singapore equity investments in India of \$349.5 million (ROS, MTI, 2001,p.64). The details of the Special Provident Fund for the armed forces are also not publicly available. The published data on Singapore investments abroad should therefore be treated with abundant caution.
11. Similar non-transparency and non-accountability prevails for the Pension Fund designed to pay DB pensions of selected officials and politicians. Since the 1999-2000 budget (when the assets of this fund amounted to \$10.5 billion), even the total assets have not been revealed in the Government budgets let alone investment policies and performance.
12. Gini coefficient of personal income has been around 0.47 during the 1980s and the 1990s, which is on the high side (Mukhopadhaya, 2002).

13. IMF has stressed the importance of limiting pre-retirement withdrawals to help increase the replacement rate. The reform proposals made in this paper are however consistent with the proposals of the IMF (2000, p.57-65).
14. Currently, employers in Singapore can set up voluntary private pension plans under Section 5 (6) of the Income Tax Act, but only about 30 to 40 companies have set up “approved plans” (The Business Times, Singapore, April 13-14, 2002, p.2). The employees receiving pensions under the company plans are taxed in full at the individual level, if an employee switches from a job and transfers the money to the CPF account, full tax is applicable, adversely impacting job mobility. The Act also does not permit variation in pension treatment for different employees.



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