Brunei Pension Report

by

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for

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Sypnosis

The study on Social Security was undertaken by the Centre for Strategic and Policy Studies (CSPS) with the collaboration of Ministry of Finance, and support from His Majesty's Government of Brunei, corporate bodies, professional organisations and other relevant stakeholders as a means of addressing the need to provide a comprehensive social security net to ensure that post-retirement standards of living are sustainable to all retired workforce in the Sultanate. CSPS would like to thank The World Bank in partnership with the Ministry of Finance and Universiti Brunei Darussalam with their team of professional researchers in completing 'The Brunei Pension Report'.

The consultants undertook its consultation task by:

- Publishing the Brunei Darussalam Pension Report in 2007 with the objectives and principles of assessing whether the current pension system would enable retirees to maintain their quality of life.
- Holding public seminars at The Empire Hotel & Country Club, in The Form of a Round-Table Session in collaboration with Ministry of Finance in April 2007.

A landmark of this study is the introduction of the Supplementary Contributory Pension (SCP) Scheme as of January 2010 as an addition to the Employee Provident Fund (TAP) for all private and public sector employees in Brunei. CSPS wishes to thank the many individuals and organisations who made submissions and participated in consultations and meetings in completing this consultancy report. The comments and suggestions made in submissions and meetings have been a valuable input into the consultants' deliberations while preparing this report.

Acknowledgements

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Main Indicators

Gross Domestic Product	11.6 billion (2006)
Exchange Rate (Brunei $ per USD)	1.4486 (October 2007)
Total Population (million)	383,000 (2006)
Total Labor Force	167,029 (2006)

Acronyms

GDP	Gross Domestic Product
GPS	Government Pension Scheme
ILO	International Labor Office
IMF	International Monetary Fund
IPD	Implicit Pension Debt
LIFT	Brunei Life Insurance Fund
OAP	Old Age Pension
PAYG	Pay-As-You-Go
PROST	Pension Reform Options Simulation Toolkit
SCP	Supplemental Contributory Pension Scheme
TAP	The Employee Trust Fund

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Executive Summary

This report has been prepared by the World Bank at the request of the Government of Brunei to evaluate policy options for the establishment of a Supplementary Contributory Pension Scheme (SCP) and related life insurance policy in order to supplement the minimum amount currently provided under the Old Age Pension (OAP) to those citizens and permanent residents at age 60 who have contributed to the proposed scheme. The Government has sought guidance from the Bank on other measures which could best align the benefit structure and operational characteristics of the proposed SCP with the existing institutions, namely the Government Pension Scheme (GPS) and the Employees Trust Fund (TAP). The report has been prepared by a World Bank team consisting of staff from its Treasury Group and Pensions team.

This report begins by examining the provision of mandatory pension and survivorship benefits by mandatory pension schemes in Brunei. It has examined the benefit entitlements provided to retirees at different income levels and identified weaknesses in the current policy framework. In an effort to remedy some of these weaknesses, the Government has proposed the introduction of a Supplementary Contributory Pension Scheme (SCP) and a National Life Insurance Policy (LIFT). We have examined the design features and operational requirements of each as well as the anticipated benefit for beneficiaries of both. We have also examined the composite benefit that TAP/SCP contributors can anticipate in retirement based using both metrics of their benefit relative to pre-retirement income as well as relative to average economy wages. Finally we have suggested additional reform measures to consider for the TAP and GPS and thoughts for medium-term policy directions.

Overall framework description. Brunei's mandatory public pension system currently offers arrangements which provide for a smoothing of income from work life into retirement as well as a universal demogrant that ensures that all citizens and permanent residents have a minimum level of support during retirement to ensure against poverty in old age. The Government Pension Scheme (GPS) is a non-contributory scheme offering old-age pension, disability and survivorship benefits to civil servants hired prior to 1993 and all members of the uniformed forces including the military, police and prison guards. The Employee Trust Fund (TAP) is a contributory provident fund providing pension and social security benefits for all public and private sector workers in Brunei and those civil servants who began work beginning in 1993. The TAP provides early withdrawals for housing and preparation for retirement as well as for death and disability. The Old Age Pension (OAP) is a universal demogrant provided to all Brunei citizens aged 60 and above. In addition, a Supplementary Complementary Pension (SCP) has been proposed which would provide an additional annuitized benefit.

Replacement of pre-retirement income. By having a flat demogrant (the OAP) as well as a proposed SCP that provides contribution subsidies to low income contributors, Brunei's combined benefit offers a substantially higher replacement of pre-retirement income for lower-income workers than for upper income workers. Projected combined benefits for an average wage of a 60 year old man who contributes 30 years to the TAP and SCP would be about 48 percent of his pre-retirement income; with a replacement rate of 78 percent for a worker earning 50% of the average wage.

Adequacy in ensuring a minimum standard of living during retirement. The composite support provided by the OAP, TAP and proposed SCP provide for a modest minimum subsistence level or standard of living regardless of lifetime income. A key measure of these pension entitlements is the individual pension divided by average covered earnings for all contributors. The composite flat OAP benefit, the proposed SCP which has a minimum benefit and a cap on covered wages, and the TAP, is a relatively flat redistributive benefit. A man earning an average wage and contributing to the TAP and SCP for 30 years would receive a net benefit equal to 48.1 percent of average earnings of TAP contributors; while a worker earning 50 percent of the average TAP earnings would receive a net benefit equal to 39.0 percent of average earnings. In this way, the combined benefit provides disproportionately higher absolute benefits for lower-income workers at retirement.

Employee Trust Fund (TAP). The TAP is a provident fund providing pension and social security benefits for all private sector workers in Brunei and civil servants who began working beginning in 1993. The TAP has a mandatory contribution rate of 5% of wages for employers and 5% for employees; with 63,718 active contributors of which 35,693 were public servants. The TAP pays out a "dividend rate" based on the rate of return on its investments in a given year which has been positive in real terms each year since 1996. There are six types of withdrawals permitted under the TAP: (i) normal retirement withdrawal; (ii) pre-retirement withdrawal; (iii) survivors' withdrawal; (iv) emigration withdrawal; (v) housing withdrawal; and (vii) incapacitation withdrawal.

TAP policy reform issues. The core weaknesses of the TAP in its current form are:

i. the accumulation at retirement is too low to support a meaningful replacement of pre-retirement income and therefore the scheme on its own does not provide for an effective smoothing of consumption;

ii. the absence of some form of annuitization or phased withdrawal subjects the retiree to investment, inflation and longevity risks during retirement;

iii. there are no special incentives for low-income workers and the so-called unorganized sector to contribute;

iv. the absence of a cap on covered wages subject to mandatory contributions creates incentives for high-income workers to underreport income;

v. the framework for disability and survivorship benefits is withdrawal of accumulated savings which fails to take advantage of the substantial benefits of co-insurance which could be provided by pooling the risks of disability and death;

vi. smoothing of the returns on accumulated assets leads to uncertainty by contributors.

Some of these issues are addressed through the proposed SCP below.

The Old Age Pension. The universal Old Age Pension (OAP) is a demogrant established to provide a minimum living subsistence to all citizens and permanent residents aged 60 and above. The benefit was B$250 per month in 2007 or about 17.8 percent of the estimated average individual covered wage for members of the TAP. The benefit is neither contributory nor means tested.

Supplementary Contributory Pension (SCP). The primary objective of the proposed SCP is to supplement the current benefit provided under the OAP by a minimum of B$150 per month for those individuals that contribute to the scheme. Such a benefit would have the effect of (a) increasing the benefit levels provided through a combination of TAP, OAP and now the SCP, particularly for those TAP contributors with insufficient accumulations at retirement to support a basic annuitized benefit; and (b) the Government matching contribution proposed would create an additional incentive for contribution compliance by low-income workers. Key design features of the proposed scheme would be:

- The annual benefit would be determined based on the account accumulation at retirement at age 60 converted to an annuitized inflation-indexed benefit based on the life expectancy at retirement and projected inflation and real interest rates;
- The benefit would be no less than B$150/month and would be provided at age 60, indexed in the future to the consumer price index;
- Coverage would be limited to current contributors to the TAP who would also be required to contribute to the SCP;
- Contribution requirements of 3 percent of covered wages for employers and employees, respectively of which 2.5 percent would go into an individual account for the supplementary pension and 0.5 percent would be paid as a premium towards a a minimum survivors' benefit;
- The Government would make matching contributions to support lower income workers and provide an incentive for such individuals to contribute. The Government contribution would be B$42.50/month in 2008 for workers with reported incomes of B$500 and under and the matching contribution would be reduced according to a

sliding scale until B$2000 when it would be eliminated. The Government's matching contribution would increase each year in line with the growth in covered wages; and

- Covered wages subject to SCP contributions would be limited to 200 percent of average TAP covered wages for existing active members.

Transition options. Generating sufficient accumulations to support an SCP pension of B$150 per month requires members to contribute for enough time to support such an annuitized or phased withdrawal benefit. The amount of time required to accumulate contributions depends upon the income level of the member. This suggests four potential transition options:

i. The objective of a minimum SCP benefit of B$150/month could be realized only gradually so that much smaller annuitized benefit levels would be provided for those with small account accumulations;

ii. The minimum benefit of B$150/month could be provided immediately with the Government subsidizing those older cohorts that will have insufficient contributions to support such a benefit. In principle, the Government could borrow from the SCP contributors by issuing bonds and, in turn, utilizing some of the proceeds to make the necessary payments to recent SCP retirees;

iii. The minimum benefit could be provided after a vesting period of perhaps 15 years with a Government subsidy to top-up those individuals not meeting the vesting requirements; and

iv. The B$150/month minimum benefit could be provided only on a means-tested basis, applying not only income testing but other means testing variables.

Financing the minimum SCP pension guarantee. Apart from the transition issue is the matter of the financing mechanism which needs to be determined for those individuals whose incomes and/or lifetime contribution density together are insufficient to support the minimum annuitized benefit of B$150 needs to be determined. As currently formulated, the maximum Government contribution of $42.50/month for each SCP contributor would, on its own, be insufficient to support an annuity of B$150/month even in the long run. Moreover, even assuming that a minimum wage worker making B$559/month also contributes 5 percent of his or her income, it will require about 26 years of accumulations in order to support a lifetime indexed annuity of at least B$150/month at age 60. This suggests that a minimum vesting period to receive the minimum benefit guarantee will not only be an issue of transition as the scheme becomes operable but will have to be considered over the long run as well. As with the transition arrangements, setting a minimum benefit creates incentives to underreport income or otherwise to avoid contributions to the SCP.

Annuitization Options. There are three broad options for the annuitization of pension benefits under the scheme: (i) calculate an indexed annuity at retirement and recalculate the benefit each year and have the Government bear the longevity risks, investment and inflation risks; (ii) adopt a phased withdrawal approach where the benefit would be calculated at retirement based on life expectancy and anticipated inflation and investment return assumption then recalculated each year based on the same assumptions plus longevity assumptions; or (iii) a combination of the two, whereby only those meeting minimum balance criteria are afforded one option or the other.

Survivors' benefits – Mandatory life insurance scheme. The core objective of the life insurance scheme is to provide minimum income of B$400/month collectively for the survivors of each SCP contributor during their lifetime and B$150/month after age 60. Benefits would be provided on an annuitized basis through the survivors' lifetime including through retirement. Key design features of the proposed scheme would be:

- Annuitized benefits would be provided based on the accumulation in the SCP account upon the death of the contributor, taking into account the life expectancy of the survivors and projected interest and inflation rates. The insurance fund would then provide any top-up necessary to ensure that a minimum benefit of B$400 is realized for the beneficiaries prior to age 60 and B$150/month after that.
- Premia would be of 0.5% of covered wages for employers and employees, respectively, based on covered wages up to a cap of 200% of the TAP average.
- Eligible survivors would collectively receive the minimum survivorship benefit with the division between survivors according to rules to be determined.
- The benefit would be fully indexed to the consumer price index.
- No retroactive benefits for existing survivors are proposed.
- The difference between the premia revenue and policy payment to top-up survivors' benefits would be held in a reserve fund. Such a reserve fund would accommodate changes in the population structure, mortality incidence, and economic volatility, including inflation and interest rate adjustments and fluctuations in contribution and premia revenues.
- The insurance fund would be subject to an annual actuarial valuation at which time a contracted external actuary would make both a projection of premia income and benefit payments as well as make a recommendation for the minimum level of actuarial reserves to be held to manage both projected costs and anticipated risks. To the extent to which the actuarial reserves exceed those which are determined by the actuary as needed, the Board of Directors of the SCP will have the authority to make an annual distribution from the insurance fund to the SCP individual accounts.

Income testing and dependency criteria. One means of substantially increasing the benefit provided to survivors would be to establish dependency criteria whereby the survivor must meet a number of qualifying criteria for receipt of the benefit.

Additional Pension Policy Issues - Retirement Age. In Brunei, we suggest policymakers focus on a gradual phased increase in the TAP retirement age from 55 to 60 and a similar phased increase for those civil servants remaining in the GPS.

Remaining weaknesses in the TAP. Although the proposed design of the SCP and LIFT go a long way towards remedying many of the weaknesses identified in the TAP, additional reforms are needed to the TAP design in order to strengthen the adequacy and predictability of benefits. These include:

i. Segregation of savings for housing and retirement;
ii. Increasing the retirement age;
iii. Eliminating early retirement ("pre-retirement") withdrawals.
iv. Establishing benefit annuitization;
v. Limiting covered wages subject to contributions; and
vi. Earmarking voluntary supplemental contributions to old-age retirement.

Chapter 1.

Introduction

Background and Objective. This report has been prepared by the World Bank at the request of the Government of Brunei to evaluate policy options for the establishment of a Supplementary Contributory Pension Scheme (SCP) that would have as its core objective to supplement the minimum amount currently provided under the Old Age Pension (OAP) to those citizens and permanent residents at age 60 who have contributed to the proposed scheme and provide a minimum benefit to survivors of those contributors who die during their work life. The Government has sought guidance from the Bank on other measures which could best align the benefit structure and operational characteristics of the proposed SCP with the existing institutions, namely the Government Pension Scheme (GPS) and the Employees Trust Fund (TAP). This report has been prepared by a World Bank team consisting of staff from the Social Protection Pensions team and from the Bank's Treasury Unit.

Brunei's Economy and Population. Brunei is a small upper income oil producing country with a population of 381,000 and GDP per capita estimated at US$25,754 in 2005. The oil and gas sector accounts for about 50 percent of real GDP and generates more than 90 percent of total export earnings and government revenues. Brunei has enjoyed modest recent growth, in large part from international energy prices. Inflation has been subdued, supported by the currency board arrangement fixing the exchange rate at par with the Singapore dollar. Although labor force estimates are about 167,000 workers, it is estimated that about 67,000 workers are non-residents. Of the citizen and permanent resident population, about 91 percent contribute to a mandatory pension scheme and about two thirds work for the public sector.

Report Organization. This report is structured as follows: Chapter 2 describes current pension institutions, contribution, and qualification and benefit provisions, evaluates benefit entitlements and compares them with comparable country examples. Chapter 3 briefly reviews demographic conditions including population aging and labor force composition. Chapter 4 reviews the proposed Supplementary Contributory Pension. Chapter 5 reviews proposed survivorship benefits in the Proposed Mandatory Life Insurance scheme. Chapter 6 examines medium-term reform issues including the importance of reforms to the retirement age and additional reforms needed in the TAP. Chapter 7 concludes.

Chapter 2.

Description of Current Pension Provisions

2.1 Overall Architecture

Brunei's mandatory public pension system currently offers two institutional arrangements which provide for a smoothing of income from work life into retirement. In addition, a universal demogrant ensures that all citizens and permanent residents have a minimum level of support during retirement to ensure against poverty in old age. The Government Pension Scheme (GPS) is a non-contributory scheme offering old-age pension, disability and survivorship benefits to civil servants hired prior to 1993 and all members of the uniformed forces including the military, police and prison guards. The Employee Trust Fund (TAP) is a contributory provident fund providing pension and social security benefits for all public and private sector workers in Brunei and those civil servants who began work beginning in 1993. The Old Age Pension (OAP) is a universal demogrant provided to all Brunei citizens aged 60 and above. In addition, a Supplementary Complementary Pension (SCP) has been proposed which would provide an additional annuitized benefit to old-age retirees and survivors.

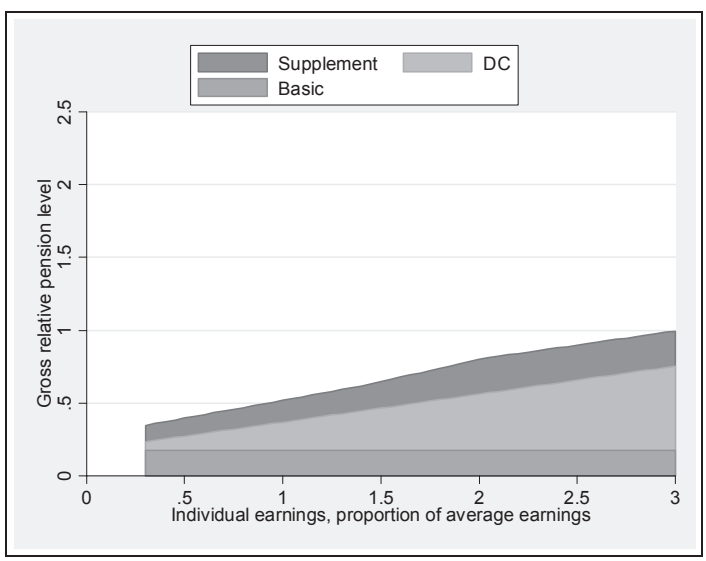
2.2 Income Replacements and Insurance Objectives

Pension System Objectives. Pension systems typically seek to achieve two objectives: (i) "adequacy" or ensuring that all older people meet a minimum standard of living, generally one that is considered above a minimum subsistence level; and (ii) consumption smoothing

– ensuring a certain standard of living in retirement relative to that when working. Different countries' pension systems strike very different balances between these goals.[1]

Ensuring a minimum subsistence during retirement. The composite support provided by the OAP, TAP and proposed SCP provide for a modest minimum subsistence level or standard of living regardless of lifetime income. A key measure of these pension entitlements is the gross individual pension divided by average earnings. It is best seen as an indicator of pension adequacy, since it shows the benefit level that a pensioner will receive in relation to average earnings in the respective country. The composite effect of the flat OAP benefit, the proposed SCP which has a minimum benefit and a cap on covered wages, and the TAP, is a relatively flat redistributive benefit. The combination of these benefits would provide a man earning an average wage and contributing to the TAP and SCP for 30 years a net benefit equal to 48.1 percent of average earnings of TAP contributors; a worker earning 50 percent of the average TAP earnings would receive a net benefit equal to 39.0 percent of average earnings; and a worker earning 200 percent of average earnings would receive a benefit equal to 70.5 percent of the average (See Figure 2.1 and Table 2.1).[2] In this way, the combined benefit provides disproportionately higher benefits for lower-income workers at retirement.

Figure 2.1
Composite Benefit Effects of Proposed SCP, OAP and TAP
(% of all TAP contributors average earnings)



Source: Staff estimates using the APEX model.

[1] See Edward Whitehouse, Pensions Panorama, 2006.

[2] Net benefits are higher than gross benefits because a retiree is not subject to pension contributions.

Table 2.1

Composite Pension Benefits

Total TAP/OAP/SCP Benefits	**(% of Average Covered Wage)**					
Individual earnings (% of Average Covered Wage)	**50%**	**75%**	**100%**	**150%**	**200%**	**250%**
Gross replacement rate (Benefit/Individual Avg. worklife earnings after taxes)	71.8%	53.5%	44.3%	35.4%	32.4%	28.2%
Net replacement rate (Benefit/Individual Average Worklife Earnings)	78.1%	58.1%	48.1%	38.5%	35.2%	30.7%
Gross Pension Level (Benefit/Average Covered Wages for all Contributors)	35.9%	40.1%	44.3%	53.1%	64.8%	70.5%
Net Pension Level (Benefit/Avg Covered Wages for all Contributors after taxes/contr.)	39.0%	43.6%	48.1%	57.7%	70.5%	76.7%
Gross pension wealth (Present Value of Exp. Benefits/Individual Avg. worklife earnings)	630%	700%	780%	950%	1160%	1280%
Net pension wealth (PV of Expected Benefits/Ind. Lifetime Earnings after taxes/cont.)	680%	770%	850%	1030%	1260%	1390%

Source: Staff estimates using the APEX model.

Regional and international comparisons. We have illustrated the benefit entitlement profiles of various countries which provide comparable levels of a minimal standard of living at various income levels as suggested in Figure 2 below.[3] The strongest comparators are those with relatively flat benefit levels relative to average covered wages by income level, which were France, Germany, the United Kingdom, and the United States. In East Asia, the closest comparators using this metric are China, Malaysia, Singapore, Japan and Australia. An advantage of such a relatively flat old age retirement benefit is that all covered workers are ensured a minimal standard of living regardless of income.

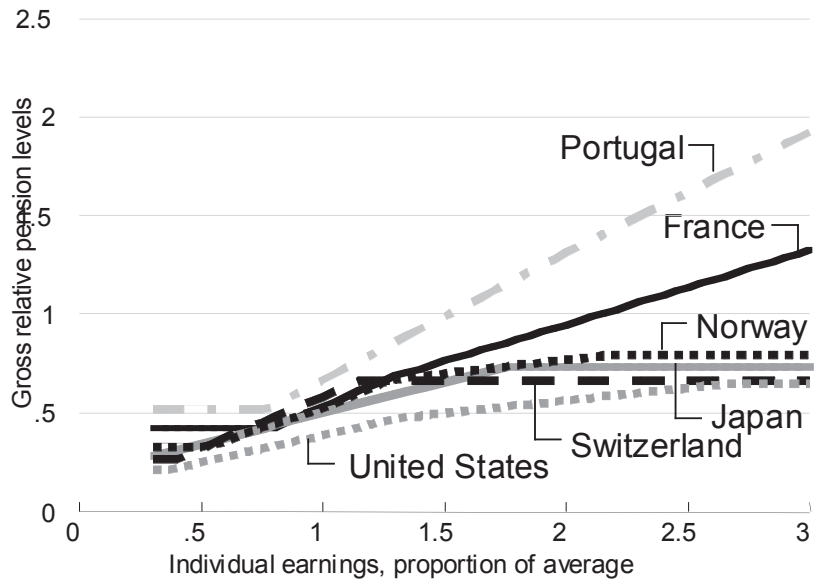
Consumption smoothing - targeting replacement of pre-retirement income. The target income replacement rate for different income groups is a key design feature to consider in setting out the structure of pension systems. Strong linkages between pre-retirement wages and post-retirement benefits have the advantages of ensuring a smoothing of consumption as well as creating strong incentives for compliance in contributory schemes. As suggested below, the average wage male worker in Brunei is projected to receive a net replacement of pre-retirement income of 48.1 percent at age 60 after 30 years of contributions.[4] The impact of the flat OAP and progressive SCP would be that the worker earning 50 percent of the total average covered wage prior to retirement would receive a net replacement rate of 78.1 percent while a worker earning 200 percent of the average wage would receive a net replacement of about 35.2 percent of income.

[3] See Edward Whitehouse, Pensions Panorama, 2006, ibid, and Edward Whitehouse, Asia Pensions at a Glance (Initial Draft Mimeo), forthcoming.

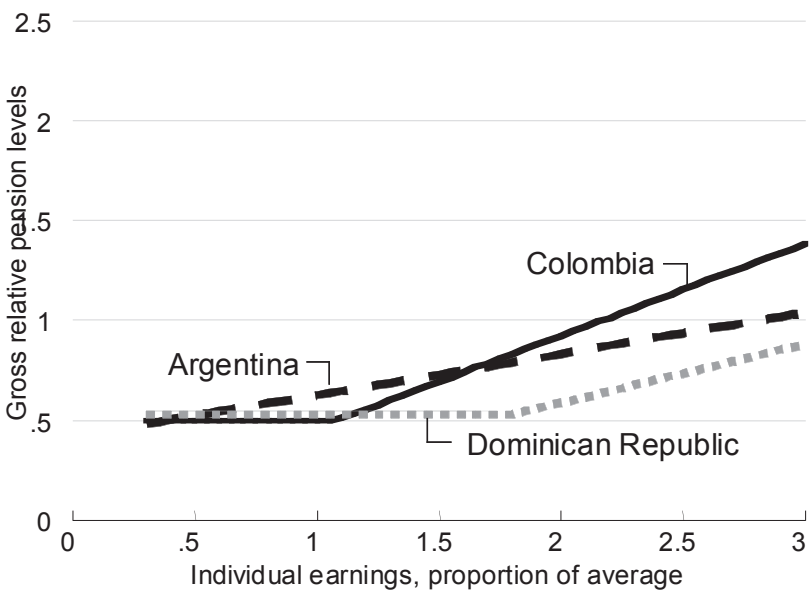
[4] Although workers and retirees are not subject to personal income tax in Brunei, retirees do not have to pay TAP or SCP contributions on their retiree benefits (15% of the total annuitized benefit) so the effective net replacement of pre-retirement income is higher than the gross replacement. This is based on an assumption that TAP contributors contribute continuously from age 25 to 55 and withdraw 45% of their account accumulations at age 40 and 25% of the remaining account accumulation at age 50.

Figure 2.2
Comparisons of Gross Pension Entitlements with Similar Countries

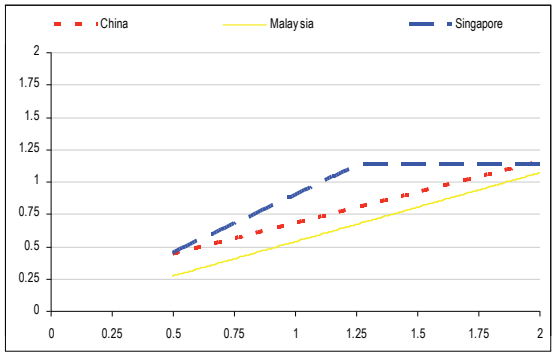
USA, Switzerland, Japan, Norway, France, Portugal.



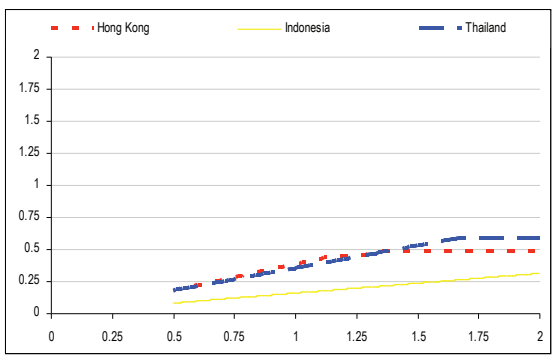
Argentina, Colombia, Dominican Republic.



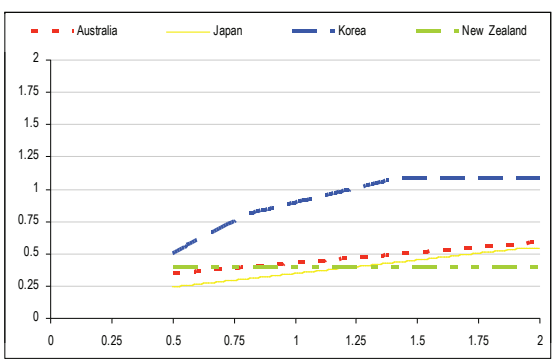
China, Malaysia and Singapore.



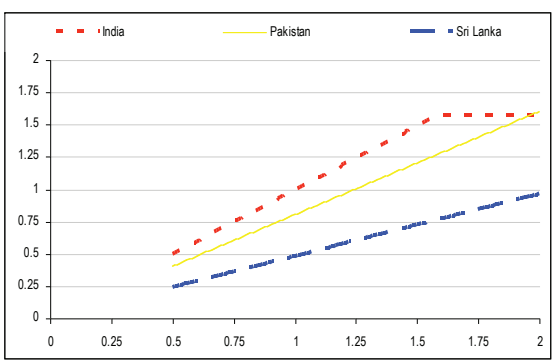
Hong Kong, Indonesia and Thailand



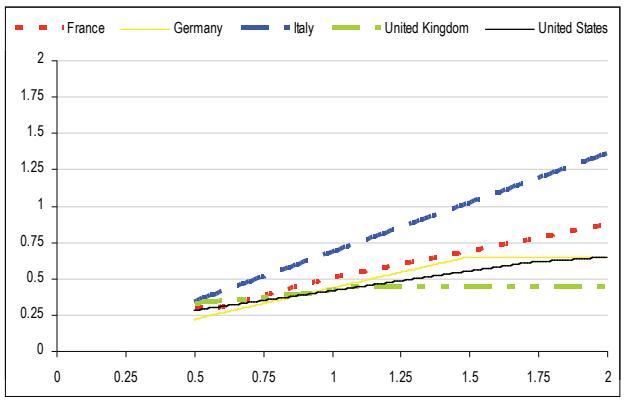
Australia, Japan, Korea and New Zealand.



India, Pakistan and Sri Lanka

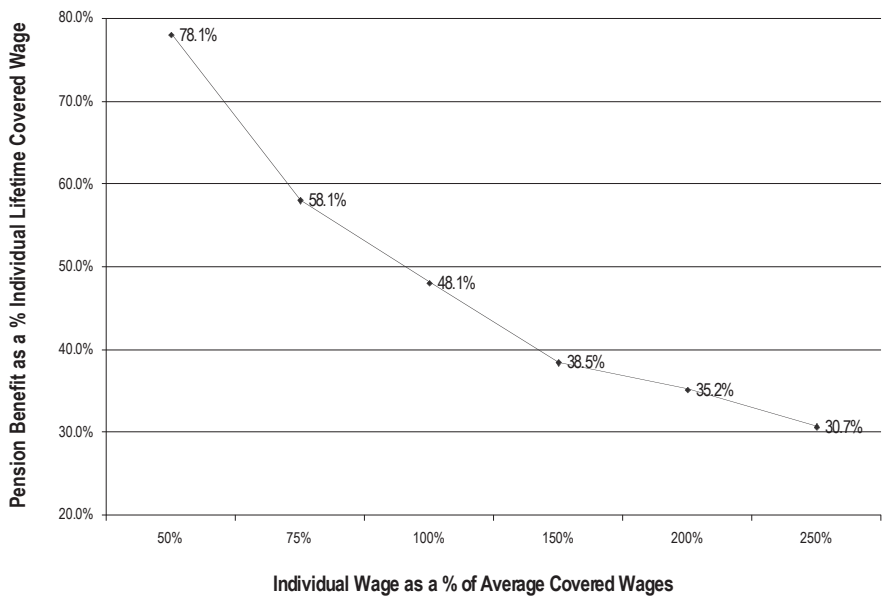


France, Germany, Italy, the United Kingdom and the United States



Sources: Edward Whitehouse: Pensions Panorama, 2006; Pensions At a Glance Asia (Preliminary Draft Mimeo), forthcoming.

Figure 2.3
Composite Benefit Effects of OAP, TAP and Proposed SCP
(Net Benefit as a Percent of Individual Lifetime Covered Wage)



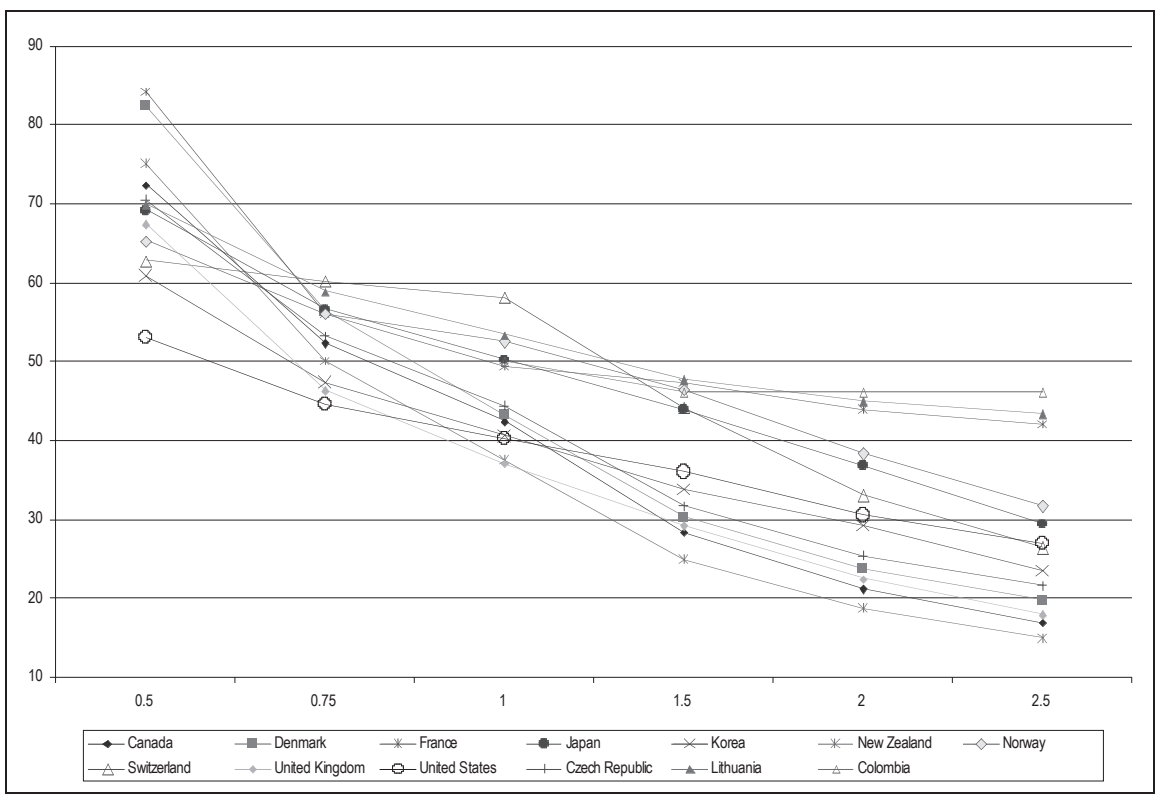
Source: Staff estimates utilizing the APEX model.

Regional and International Comparisons.

Figure 2.4 illustrates the benefit entitlement profiles of various countries which provide comparable levels of consumption smoothing at various income levels. From this figure, Norway, Japan, Switzerland and Korea have the most comparable profiles (Figure 2.4)

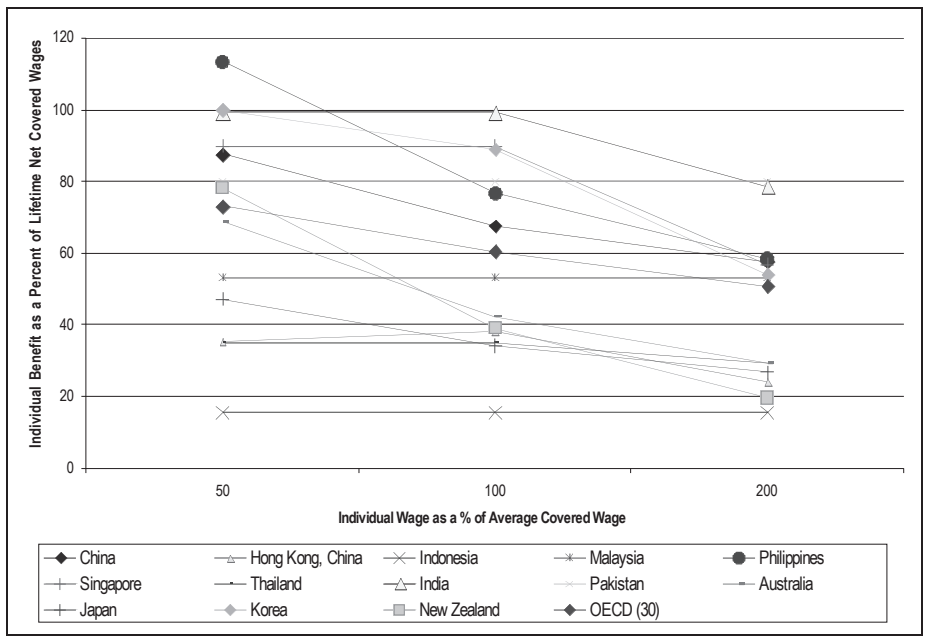
Figure 2.5 provides additional East Asian comparisons. This figure not only identifies comparable benefit entitlement profiles; it also illustrates the contrasts between the income replacement of the system in Brunei with those for example, of Singapore and Malaysia. When compared with other East Asian countries, the benefit entitlement profile is most comparable to those systems in Australia, New Zealand and, to a lesser degree, Japan, where the benefit is more linked to lifetime income. Table I in Appendix 2 provides a more comprehensive list.

Figure 2.4
Composite Benefits of Select Countries
(Individual Net Benefit as a Percent of Individual Lifetime Covered Wage)



Source: Edward Whitehouse: Pensions Panorama, 2006.

Figure 2.5
Composite Benefits of Select East Asian Countries
(Individual Net Benefit as a Percent of Individual Lifetime Covered Wage)



Source: Edward Whitehouse: Pensions At a Glance Asia (Preliminary Draft Mimeo).

2.3 Coverage

Coverage levels. There were about 84,000 active members of the GPS and TAP in 2005, or coverage of about 91 percent of the estimated citizen or permanent resident labor force.[5] In 2005, non-residents comprised approximately 33 percent of the population and an estimated 41 percent of the labor force. The composition of active members in 2005 was about 49 percent from the civil service, 18 percent from the uniformed forces, and 33 percent from the private sector (See Table 2.2). Temporary workers and the self-employed are exempt from making contributions to the TAP. Brunei therefore has quite high levels of coverage when compared with other countries of similar income levels and when measuring the covered population as a proportion of the labor force that are citizens or permanent residents. As suggested in Figure 2.6 below, internationally, coverage or the ratio of contributors to the labor force, is strongly correlated with income per capita. Those countries with higher per capita income tend to have relatively larger formal sector labor forces and tend to have the institutions which support and sanction compliance.

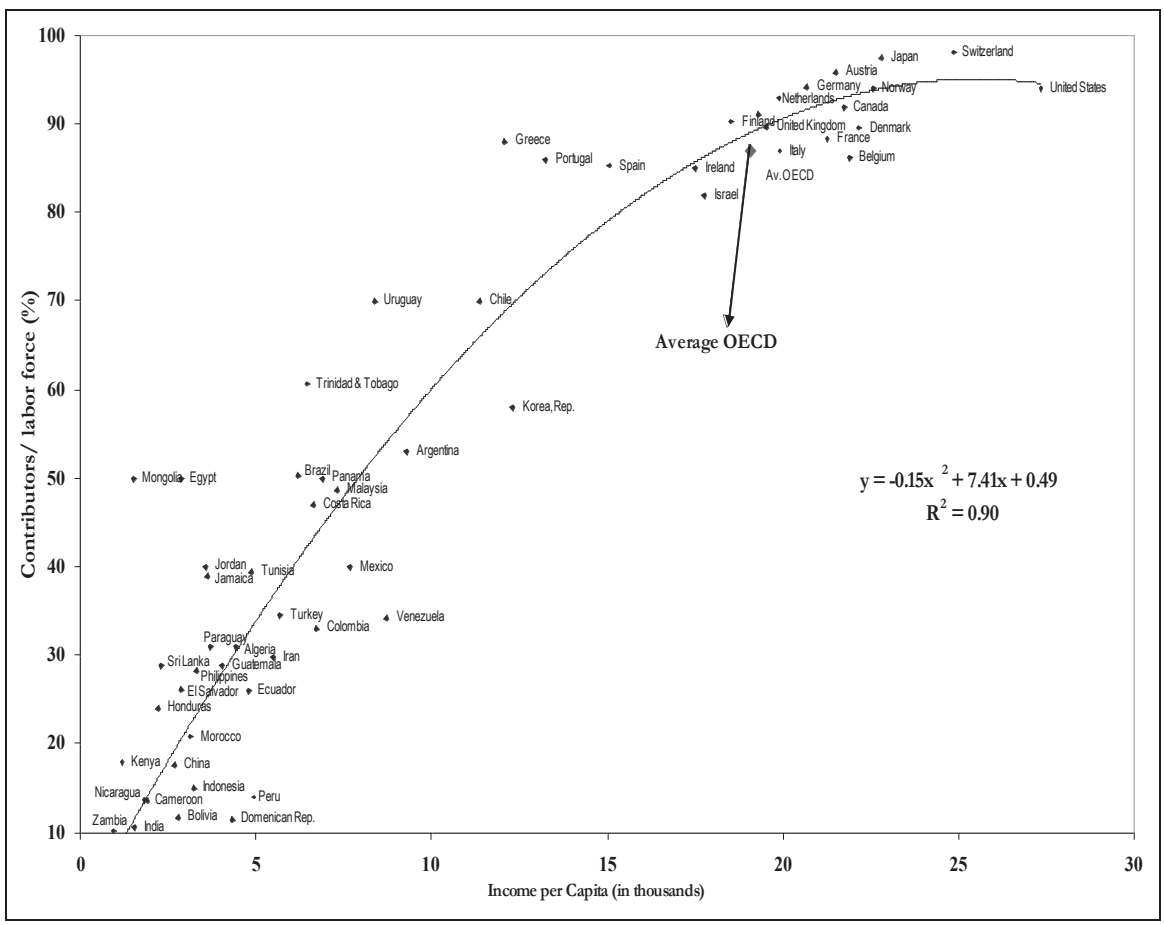
[5] Although labor force estimates are about 164,000 workers, it is estimated that about 67,000 workers are non-residents that are not members of the GPS or TAP so that the effective coverage is made up of members divided by the labor force minus non-residents. The effective coverage is therefore about 87% while, if non-residents are included in the labor force estimates would be about 51%.

Table 2.2
Pension System Membership[6]

	Army/Police	Civil Serv	Private Sector	Total	% of Total
GPS	12,000	8,400		20,400	24.2%
TAP	2,900	30,000	28,025	60,925	72.2%
Unemployed	100	3,000		3,100	3.7%
Total	15,000	41,400	28,025	84,425	100.0%
%	17.8%	49.0%	33.2%	100.0%	

Sources: Data provided to Bank Missions, 2007.

Figure 2.6
International Coverage of Mandatory Pension Schemes



Source: Staff estimates.

[6] These figures were received by missions visiting Brunei in 2007 and are not fully consistent with the 2006 figures provided in the Statistical Digest.

Reasons for coverage levels. There are a number of reasons for the high coverage rates in Brunei: (i) a large proportion of the labor force is in the civil service, military or police which are all covered by mandatory schemes; (ii) the formal sector forms a large proportion of Brunei's economy and a particularly large proportion of the employment of the citizen and permanent resident labor force; and (iii) economic concentration in a few core sectors and industries enables the TAP to ensure high levels of contribution compliance. In spite of high coverage levels however, additional measures which could be taken to extend TAP coverage even further are discussed in the sections on the SCP and TAP below (Table 2.3).

Table 2.3

Summary Characteristics of Pension Arrangements

	Old Age Pension (Current)	Supplementary Contributory Plan (SCP) – (proposed)	Government Pension Scheme (GPS) - Civil Servants (closed), army and police	Employees Trust Fund (TAP)
Key Parameters				
Contributions	None - Government Financed	3% employer / 3% employee (up to 2 x average covered wages) Government subsidy	Non-contributory	5% employer 5% employee
Benefits	Demogrant – B250/month (2007)	Potentially a minimum of B150/ month	2.87% accrual rate; ¼ can be commuted with commutation factor of 15	Lump sum; early withdrawals (5) including for housing (up to 45% of accumulated balance; early withdrawal facility at age 50 (25% of balance).
Required Contributors	None	All workers enrolled in the TAP	Pre-1993 civil servants; all army, police and uniformed forces.	All new working citizens and permanent residents as of January 1, 1993 except those in the SCP.
Active Members	Non-contributory	Same as TAP	20,300	63,718 (2005) of which 35,693 public servants (2005)
Retirees	N.A.		8,305	N.A.
Qualifying Conditions				
Minimum Vesting	None	TBD	10 years	
Retirement Age	60	60	55/45 male/female (45 for policemen, age 50 with special approval; no age restriction in case of disability or redundancy)	55 for Government workers; for private sector according to organizations' retirement policies.
Coverage	Citizens with 10 years residence prior to retire-ment and permanent residents w/30 years of residence.	All workers enrolled in the TAP	Pre-1993 civil servants; all army, police and uniformed forces.	All new working citizens and permanent residents as of January 1, 1993.
Mode of Payment	Monthly payments	Monthly payments	Annuity, with up to ¼ commuted at retirement with the full benefit restored at age 70.	Lump sum and early withdrawals.

2.4 The Old Age Pension (OAP)

Objective and Description. The universal Old Age Pension (OAP) is a demogrant established in Brunei in 1984 with the objective of providing a minimum living subsistence to all citizens having resided in the country for 10 years prior to retirement and permanent residents of Brunei having resided in the country for more than 30 years. The benefit was B$250 per month in 2007 for all residents aged 60 and above, or about 17.8 percent of the estimated average individual covered wage in Brunei for members of the TAP.[7] There is no means testing applied to receive the benefits and the benefit is financed entirely by the Government. The benefit has been periodically adjusted on a discretionary basis to reflect inflation but is not indexed.

OAP benefits. At current levels of B$250 per month, the flat OAP benefit represents about 17.9 percent of average covered wages for all workers, regardless of individual income. As such, "adequacy" in the sense of providing a minimum standard of living is provided at a level of 18 percent of the average wage for contributors to the TAP (See Table 2.4).

The benefit represents about 42 percent of the minimum wage.[8] A worker earning 50 percent of the average covered wage would receive a net benefit equal to double this or 38.8 percent of his or her average wage, while a worker earning twice the average covered wage would receive a net replacement rate of 9.7 percent. One criticism sometimes levied at the OAP benefit is that in the absence of any income or other means testing, the benefit subsidizes not just the poor elderly but the wealthy as well.

Table 2.4

OAP Pension Benefit Entitlements

Individual earnings (% of Average Covered Wage)	50%	75%	100%	150%	200%	250%
Gross replacement rate (Benefit/Individual Avg. worklife earnings after taxes)	35.7%	23.8%	17.9%	11.9%	8.9%	7.1%
Net replacement rate (Benefit/Individual Average Worklife Earnings)	38.8%	25.9%	19.4%	12.9%	9.7%	7.8%
Gross Pension Level (Benefit/Average Covered Wages for all Contributors)	17.9%	17.9%	17.9%	17.9%	17.9%	17.9%
Net Pension Level (Benefit/Avg Covered Wages for all Contributors after taxes/contr.)	19.4%	19.4%	19.4%	19.4%	19.4%	19.4%
Gross pension wealth (Present Value of Exp. Benefits/Individual Avg. worklife earnings)	300%	300%	300%	300%	300%	300%
Net pension wealth (PV of Expected Benefits/Ind. Lifetime Earnings after taxes/cont.)	330%	330%	330%	330%	330%	330%

Source: Staff calculations using Apex Model.

[7] The benefit is provided under the Old Age Pension and Disability Act. The rate took effect in October, 2006. Pensions for the blind and allowances for lepers or sufferers of Hansen Disease and the unsound or insane are B$250 per month. The allowance for their dependents who are below age 15 is B$100 per month and aged 15 and above is B$180 per month. Disabled persons receive B$250 per month.

[8] We were not able to identify a poverty line or indicator of the cost of a minimum subsistence in Brunei, so therefore could not measure the benefit relative to a minimum subsistence level.

2.5 The Government Pension Scheme (GPS)

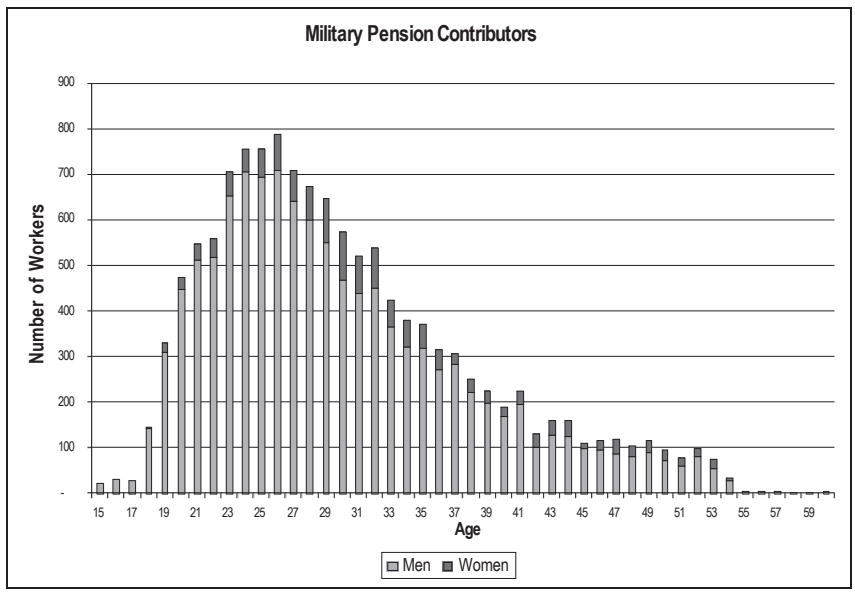
Description. The Government Pension Scheme (GPS) is a non-contributory scheme established in 1959 offering old-age pension, disability and survivorship benefits to civil servants hired prior to January 1, 1993, and all members of the uniformed forces including the military, police and prison guards. Civil servants hired since 1993 have been members of the Employee Trust Fund (TAP) discussed below. Old-age retirement benefits are payable at age 55 for men and 45 for women; 45 for policemen; age 50 for men with special approval, and no age restriction in case of disability or redundancy. The minimum vesting period is 10 years of service.

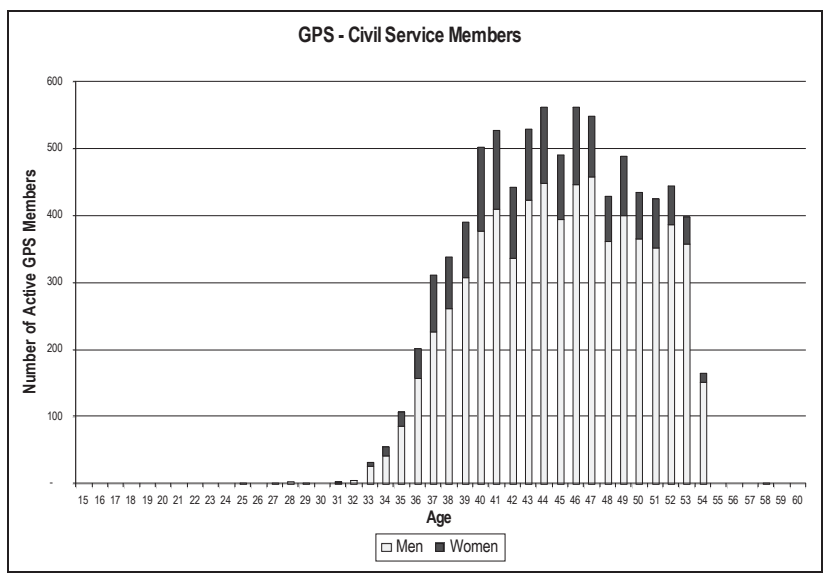
Membership. Active membership in the Government Pension Scheme is estimated at 20,300 members (2006) of which 12,000 were army and police and 8,400 civil servants. Retirees were estimated at 8,300, of which 3,000 were army and police retirees and 5,400 civil servants. Having been closed to new civil servants in 1993, the number of active civil servants will gradually decline over time until about 2033, when the active membership will be comprised entirely uniformed service employees. Over the long-term, the cost of benefit provision for the military will depend upon a number of factors including net adjustments in the military payroll, the age of retirement, and the effective indexation of benefits.

Benefits. Although the benefit accrual rate is 2.87 percent per each year of service resulting in a final income replacement rate of 86 percent for individuals who work for 30 years, the final replacement rate is limited to 75 percent, thereby creating a very strong incentive for early retirement. Up to 25 percent of the annuitized benefit can be commuted at retirement by applying a commutation factor of 15. A service gratuity benefit is also payable for those who don't meet the 10 years vesting or age requirements. A service gratuity benefit is payable in a lump sum and is equal to five annual pensions or one annual wage in the case of a female employee leaving service for marriage. The GPS also provides benefits to dependents of Government service employees in the event of death in service or after retirement as well as compensation to employees suffering from permanent disability while in the course of performing official duties. A survivorship benefit or derivative pension is granted to survivors of officers who die in service. A survivorship or derivative gratuity is payable to survivors in cases where the officer does not otherwise meet the vesting requirements for a full benefit.

Age Distribution. As suggested in Figure 2.7, active civil servant members are only those who joined the government payroll and are therefore concentrated over age 40. The average age of military and police members in the GPS is 30.5. The average length of service at retirement is 23 years for military/police and 33 years for civil servants. The age distribution of retirees is indicated in Figure 2.8 below. The average retirement age for military and police is relatively low at 44, with the average age of all such retirees of 51.4. The average retirement age for civil servants is 55 and the average age of retirees is 59.5.

Figure 2.7
Age Distribution of GPS Members

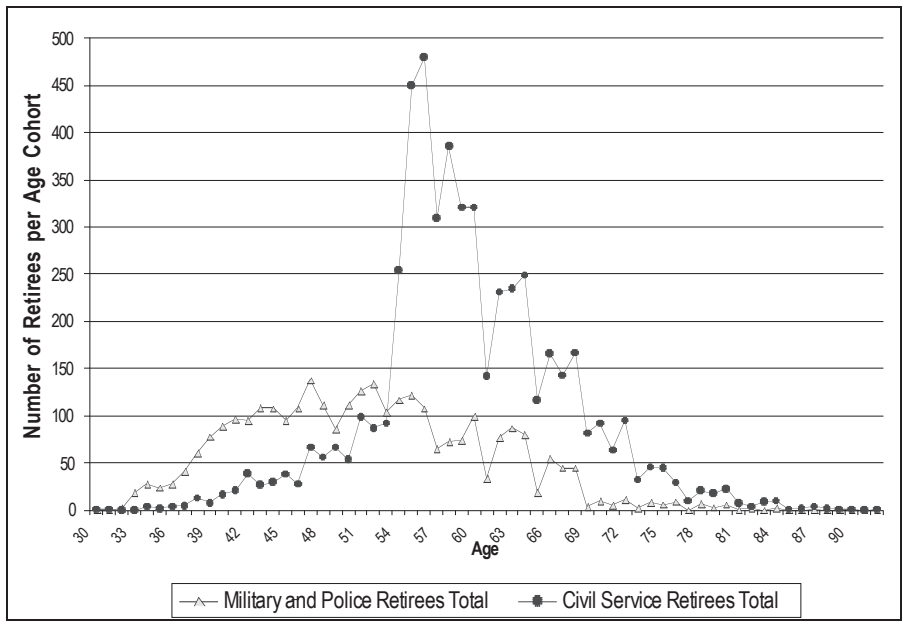




Source: GPS.

Implications. The implication of the young age profile for the military and police pension funds is a substantial growth in costs as the working population gets older and retires, particularly in light of the relatively low retirement ages for these workers. The aging process for remaining civil servants in the GPS can also be anticipated, although this is a finite group so the costs will also be finite.

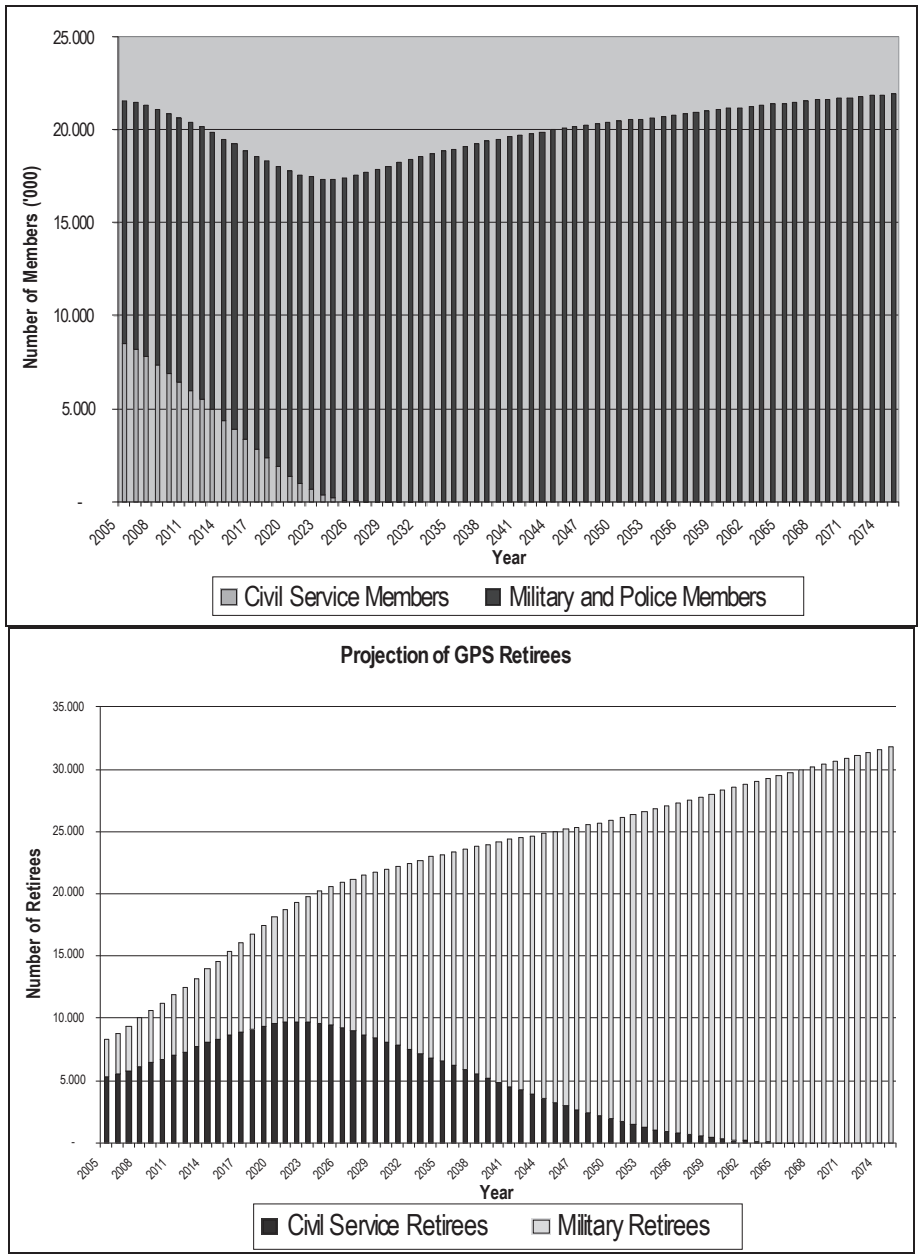
Figure 2.8
Age Distribution of GPS Retirees



Source: GPS.

Projected membership and retirees. Projecting into the future, the number of civil service workers enrolled in the GPS members will decline through about 2025 as new workers move to the TAP and this will reduce the total membership in the GPS (See Figure 2.9). However, over the long-term projected growth in military and police members will eventually more than compensate for this reduction. With respect to the projected number of GPS retirees, the number of civil service retirees as older workers eventually retire and as the life expectancy in retirement also grows. The more profound growth however is projected for military and police retirees in the long-run.

Figure 2.9
Projected GPS Members and Retirees



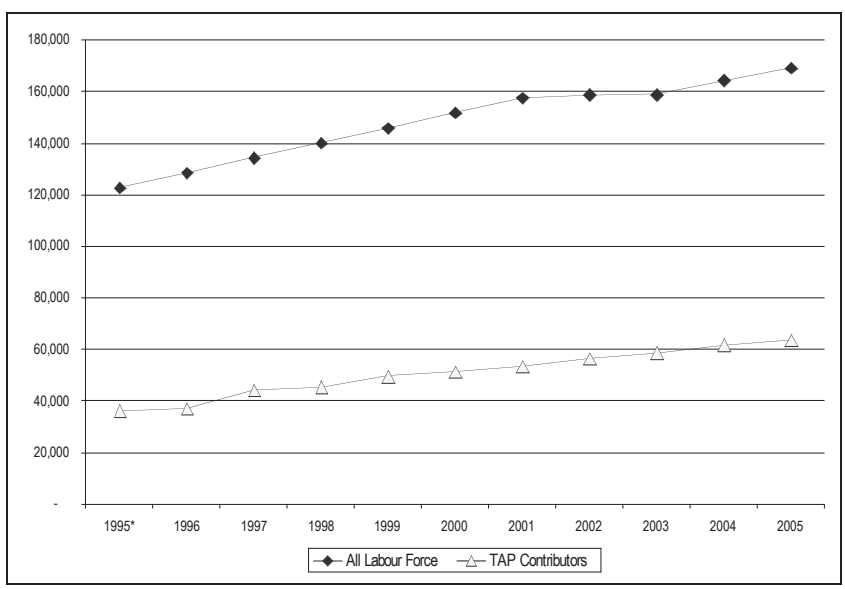
Source: Staff estimates.

Policy Issues. The 1993 reform which placed new civil servants into the TAP will, over time, create a unified framework for civil servants and the private sector. The military and police however, will remain outside of that framework and therefore not able to fully benefit from potential labor mobility which a unified framework could provide. In addition, as suggested, projected costs of military pensions are expected to escalate in the years to come.

2.6 The Employee Trust Fund (TAP)

Description and Membership. The Employee Trust Fund (TAP) is a provident fund providing pension and social security benefits for all private sector workers in Brunei and those civil servants who began working beginning in 1993. The TAP has been in existence since 1993 and has a mandatory contribution rate of 5 percent of wages for employers and 5 percent of wages for employees. Employees of all registered companies are required to contribute to the TAP. Voluntary contributions were introduced in 2006. There were 63,718 active contributors to the TAP in 2005 of which 35,693 were public servants (Universiti Brunei Darussalam, 2005). There is a natural growth process for the number of TAP members as new civil servants enter the public service, replacing civil servants who retire under the GPS (Figure 2.10). In addition, having been relatively recently established, the TAP is also in a maturation phase with respect to covering retirees.

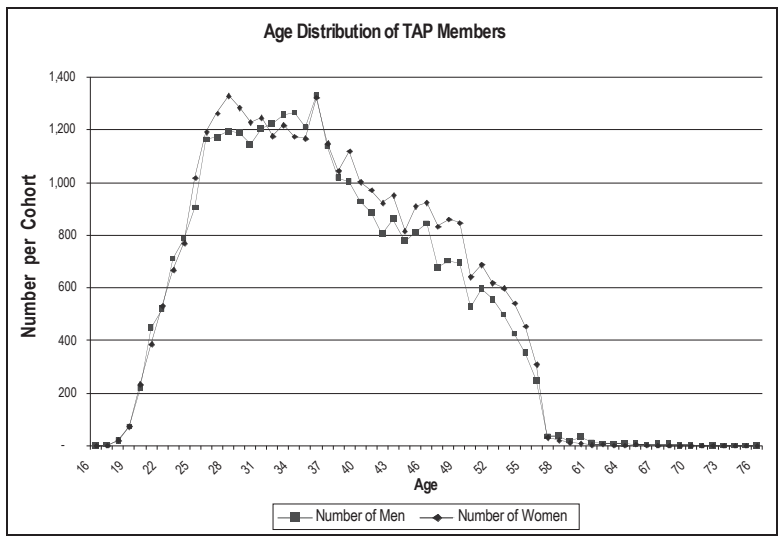
Figure 2.10
TAP Contributors



Source: Statistical Digest; Universiti Brunei Darussalam.
Note : Labor force data for 1996-2000 was interpolated from the census data for 2001 and 1995.

The age distribution of TAP members is indicated in Figure 2.11 below. The average age of TAP contributors is about 37 years and the distribution is similar for men and women. The relatively low retirement age of 55, early withdrawal at age 50 and relatively weak incentives to continue contributing to the TAP after age 55, together result in most old age retirements at age 55 or earlier.

Figure 2.11
Age Distribution of TAP Members



Source: TAP.

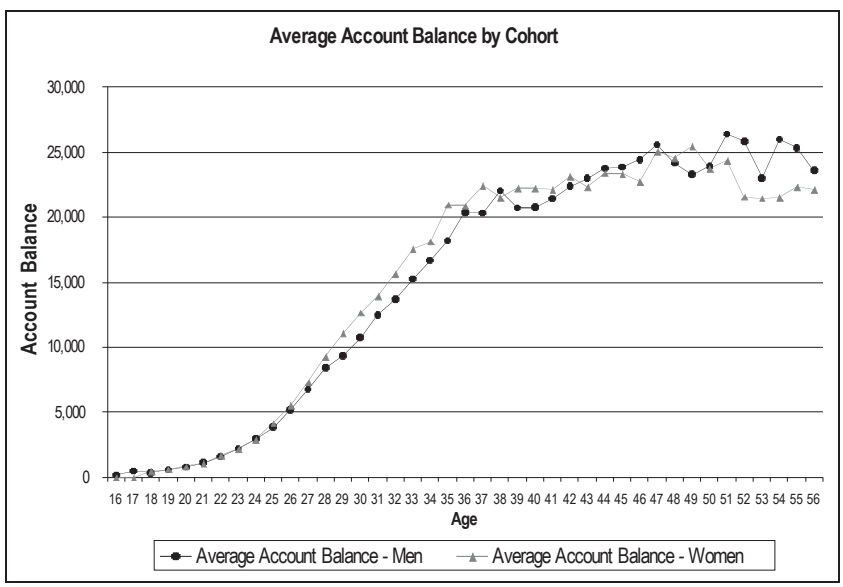
Benefits and Qualifying Conditions. Pensions and gratuity benefits are provided for members working in the Government who reach the retirement age of 55, and the retirement age for private sector workers varies according to each firm's retirement policies (Universiti Brunei Darussalam, 2005). The TAP pays out a "dividend rate" based on the rate of return on its investments in a given year. There are six types of withdrawals permitted under the TAP:

- **Normal Retirement Withdrawal**. Full withdrawal of an accumulated balance is provided at age 55.
- **Pre-retirement withdrawal**. Members can withdraw one quarter of accumulated savings in the TAP at age 50 to accommodate preparation for retirement.
- **Survivors' withdrawal**. Authorized relatives (next-of-kin) of deceased TAP member's may claim the full amount of a member's savings under Section 11 of the Probate and Administration Act.
- **Emigration withdrawal**. The entire savings accumulation can be withdrawn upon the decision to emigrate provided that the individual has no intention of returning to work in Brunei.
- **Housing withdrawal**. Withdrawals are permitted from TAP savings to settle the construction or purchasing cost, or financial cost for building or purchasing one's own house provided that there is B$40,000 in the member's account or the member has been saving with TAP for at least 10 years; and only one such withdrawal is permitted.
- **Incapacitation withdrawal**. Withdrawals are permitted if the worker becomes physically or mentally incapacitated to work.

Account Balances and Supported Benefits. As suggested in Figure 2.12 below, average balances in the TAP for men and women level out with the withdrawals for housing in middle age as well as the withdrawal to prepare for retirement at age 50. At age 55, balances have been between B$22,000 and B$26,000, although there is certainly substantial variation in the individual balances within this cohort. With life expectancy at age 55, about 23.4 years for men and about 27.3 years for women, this suggests that these balances can only generate modest replacement of pre-retirement income on an annuitized basis. In absolute terms, a B$26,000 balance can generate an inflation indexed annuity of about B$130 per month for the 23.4 years of life expectancy at retirement. As discussed below, if individuals worked longer and retired later, the larger balances and shorter retirement period would support a larger benefit.

Figure 2.12

Average Account Balance of TAP Members



Source: TAP.

Dividend Payouts. TAP's dividend payout is determined annually and aims to smooth the year-to-year volatility in portfolio returns. The actual relationship between portfolio returns and dividend payouts is not known because portfolio returns are not made public. TAP has distributed a dividend rate that has exceeded inflation since 1997 (See Table 2.5 and Figure 2.13). According to the TAP project team, the appointment of external advisors has enabled TAP since 1997 to diversify its investment portfolio from only fixed deposits to other bond and equity securities (See Universiti Darussalam, p. 29). Quality standards are established for fixed income securities (Moody's rating A2 or above or S&P rating of A or above or, for Singapore and Brunei Bonds, bonds deemed as equivalent rating by the manager subject to TAP approval). Investments in countries outside of Brunei and Singapore cannot exceed 20 percent of the net asset value of the fund.

Table 2.5

TAP Dividend Rates and Inflation

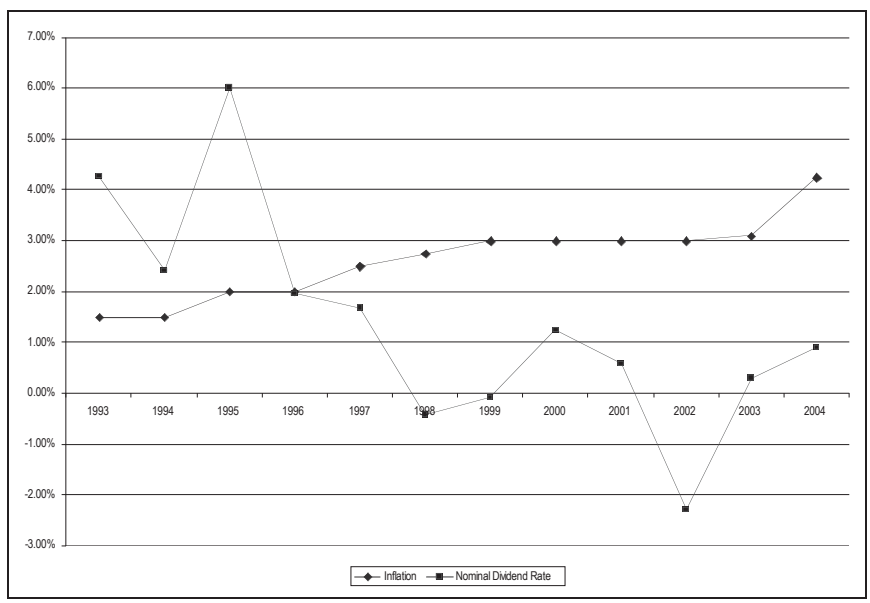
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Nominal Dividend Rate	1.50%	1.50%	2.00%	2.00%	2.50%	2.75%	3.00%	3.00%	3.00%	3.00%	3.10%	4.25%
Inflation Rate	4.28%	2.42%	6.01%	1.97%	1.68%	-0.41%	-0.08%	1.25%	0.58%	-2.29%	0.30%	0.90%
Real Dividend Rate	-2.67%	-0.90%	-3.78%	0.03%	0.81%	3.17%	3.08%	1.73%	2.41%	5.41%	2.79%	3.32%

Source: Universiti Brunei Darussalam, 2006.

Benchmarks of portfolio performance and dividend payouts. Key metrics for evaluation of performance should be: (i) market comparators for long-term securities of comparable risk; and (ii) TAP covered wage growth. Market comparators provide essential information on how equivalent portfolios have performed thereby establishing a market basis for comparison. Covered wage growth is the essential metric which determines if the contributions are resulting in a growth in the effective replacement of what will be pre-retirement income. We have also not been provided with the historic covered wage growth data, so cannot judge if the portfolio performance or dividend payout has exceeded wage growth.

Figure 2.13

Nominal TAP Dividend Payouts and Inflation Rates



Source: Universiti Brunei Darussalam, 2006.

Policy reform issues. We believe that the core weaknesses of the TAP in its current form are:

i. the accumulation at retirement is too low to support a meaningful replacement of pre-retirement income and therefore the scheme on its own does not provide for effective smoothing of consumption. The reasons for this are: (a) the contribution rate is too low to provide sufficient savings for retirement; (b) the balance at retirement is sufficiently depleted due to housing and pre-retirement withdrawals; and (c) the retirement age is sufficiently low that workers don't contribute long enough to accumulate a sufficient balance;

ii. the absence of some form of annuitization or phased withdrawal subjects the retiree to investment, inflation and longevity risks during retirement;

iii. there are no special incentives for low-income workers and the so-called 'unorganized sector' to contribute;

iv. the absence of a cap on covered wages subject to mandatory contributions creates incentives for high-income workers to underreport income;

v. the framework for disability and survivorship benefits is the withdrawal of accumulated savings. This approach fails to take advantage of the substantial benefits of co-insurance which could be provided by pooling the risks of disability and death through a premium taken from the contribution and providing a specified benefit consistent with such a premium; and

vi. smoothing of the returns on accumulated assets leads to uncertainty by contributors.

Policy options for addressing these weaknesses are presented through the design of the Supplementary Contributory Pension (SCP), the Life Insurance Scheme (LIFT) and additional suggested measures indicated in Chapter 5 below.

Chapter 3.

Demographic Conditions

Population Aging. Brunei does have some aging of its population, with the population 65 and above as a proportion of the population aged 15 to 64 (old age dependency ratio) having increased from 4.3 percent in 1997 to 4.7 percent in 2006 (See Table 3.1). This ratio is projected to further increase in the future, particularly with growth in life expectancy. As suggested by Table 3.2, when compared with other countries in the East Asia and Pacific region, Brunei in 2005 has one of the lowest proportions of its population over age 65 but this is projected to very rapidly accelerate the aging process, going from 3.2 percent of the population over age 65 in 2005 to 15.4 percent in 2030 and 22 percent in 2060. This projected rapid aging process would thereby result in Brunei accelerating from one of the countries with the smallest old-age populations to one of the countries with the largest.

Table 3.1

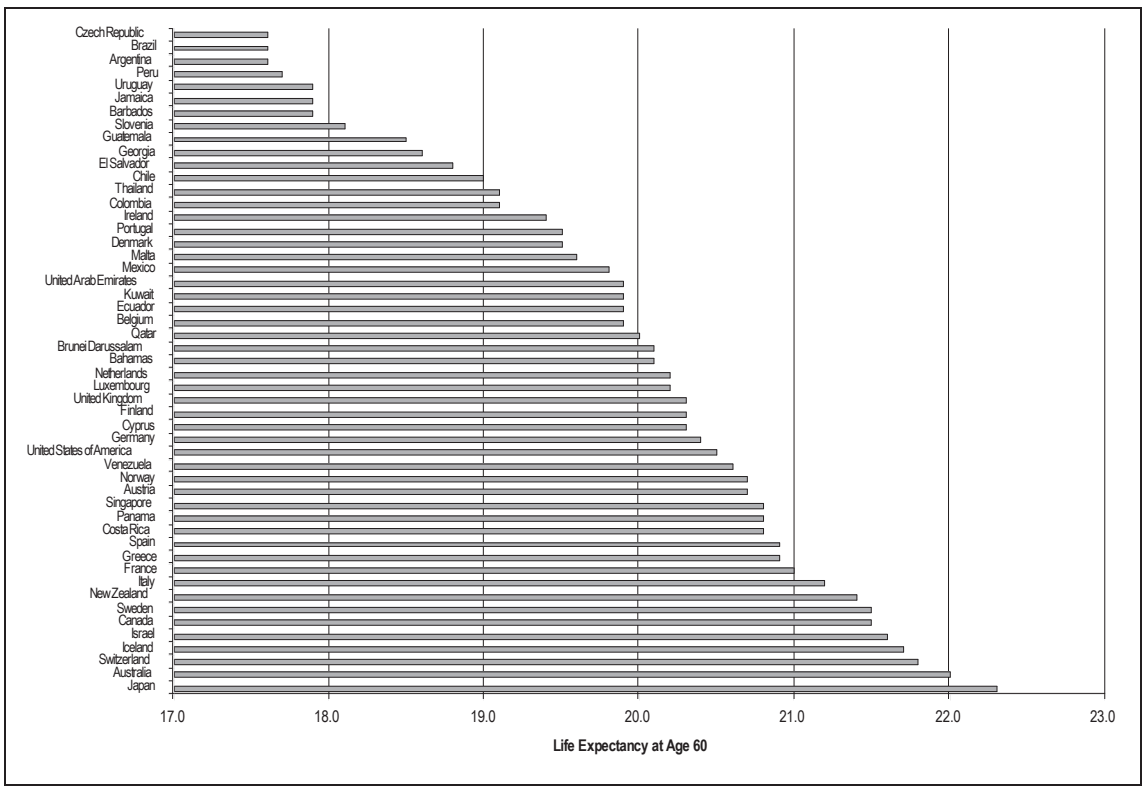
Demographic and Labor Force Indicators

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Labor force, total	135,687	139,539	143,219	147,161	150,203	152,996	155,777	160,350	163,786	167,029
Population ages 0-14 (% of total)	32.3	32.0	31.6	31.3	30.9	30.6	30.3	30.0	29.6	29.2
Population ages 15-64 (% of total)	64.9	65.2	65.5	65.8	66.1	66.4	66.6	66.9	67.3	67.6
Population ages 65 and above (% of total)	2.8	2.8	2.9	2.9	3.0	3.0	3.1	3.1	3.2	3.2
Population ages 65 and above, total	8,573	8,975	9,389	9,794	10,196	10,602	11,007	11,401	11,791	12,133
Population, total	310,271	317,918	325,635	333,463	341,409	349,447	357,553	365,687	373,819	381,161
Old Age Dependency Ratio	4.3%	4.3%	4.4%	4.5%	4.5%	4.6%	4.6%	4.7%	4.7%	4.7%
International migration stock (% of pop.)				31.2%					33.2%	

Source: Global Development Indicators, 2007, World Bank HNP Statistics, 2007.

Life Expectancy at Retirement. The average life expectancy at age 60 in Brunei is 20.1 years for men and 21.8 years for women which is relatively high when compared with other countries as suggested in Figure 3.1. As discussed in the section below on retirement age, life expectancy at the retirement age has a profound impact on the benefit provided as well as on pension system financial sustainability.

Figure 3.1
Ranking of Life Expectancy at Age 60 between Brunei and Other Countries
(Life Expectancy at age 60 for men in years)



Source: World Health Organization, online database.

Migration and Labor Force Growth. Migrant workers form an essential part of both Brunei's labor force. The total labor force grew by an average of 2.3 percent each year from 1997 through 2006 and migrants played an important part of this growth.

Table 3.2

Projected Growth in the Proportions of the Population over Age 65 in East Asia

(% of the Population over age 65)

	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070	2075	2080	2085	2090
Papua New Guinea	2.3	2.4	2.7	3.1	3.5	4.1	5.0	5.9	6.9	7.6	8.6	9.8	11.6	13.4	15.1	16.4	17.4	18.2	18.7
Brunei Darussalam	2.9	3.2	4.6	6.7	9.5	12.8	15.4	17.0	16.8	17.4	18.3	19.9	21.9	22.8	23.2	23.0	22.7	23.0	23.7
Cambodia	3.2	3.4	3.1	3.2	3.5	3.9	4.5	5.3	5.6	6.0	7.8	9.7	11.4	12.7	13.3	14.1	15.2	16.2	16.9
Lao People's Dem. Reput	3.5	3.7	3.2	3.2	3.3	3.7	4.1	4.7	5.3	6.0	6.9	8.2	9.5	10.9	12.3	13.6	14.9	16.9	18.1
Philippines	3.5	3.9	4.4	5.1	6.0	7.1	8.4	9.6	10.7	12.1	13.7	15.4	17.3	19.0	20.3	21.0	21.1	21.2	21.5
Malaysia	4.1	4.6	5.0	6.0	7.2	8.7	10.2	11.3	12.5	13.8	15.5	16.9	18.9	20.5	21.8	22.6	22.8	23.0	23.4
Indonesia	4.9	5.5	5.6	5.9	6.9	8.1	9.5	10.6	12.1	13.8	15.6	16.4	17.1	18.1	19.0	19.6	19.9	20.3	20.7
Viet Nam	5.4	5.4	5.0	4.9	5.8	7.3	9.3	11.5	13.3	15.1	17.1	19.0	20.8	21.7	21.4	21.3	21.4	21.7	22.1
Thailand	6.0	7.1	7.6	8.8	10.7	13.2	15.8	17.9	19.2	19.9	20.8	21.5	22.0	21.9	22.0	22.1	22.0	21.9	22.0
China	6.8	7.6	8.0	9.0	11.1	12.6	14.8	17.7	19.8	20.0	19.6	20.7	21.2	21.7	21.4	21.2	21.2	21.5	21.7
Singapore	7.2	8.5	8.9	11.6	15.0	19.1	22.8	25.4	26.7	27.1	27.2	27.2	28.2	28.6	27.6	26.3	24.8	24.3	24.6
New Zealand	11.9	12.3	12.1	13.8	15.4	17.5	19.2	20.3	21.2	21.8	22.2	22.9	23.3	23.7	23.9	24.0	24.1	24.2	24.3
Australia	12.1	12.7	13.6	15.4	17.4	19.5	21.4	22.7	24.1	24.8	25.4	25.7	25.9	25.8	25.6	25.3	24.9	24.6	24.5
Japan	17.2	19.7	22.0	25.4	27.4	28.1	28.5	29.5	31.7	33.0	33.1	32.3	30.9	29.8	28.9	28.0	26.8	25.8	25.2

Source: UN.

Chapter 4.

Proposed Supplemental Contributory Pension (SCP)

4.1 Objectives

The primary objective of the proposed Supplemental Contributory Pension (SCP) is to supplement the current benefit provided under the OAP by a minimum of B$150 per month for those individuals that contribute to the scheme. Such a benefit would have the effect of (a) increasing the benefit levels provided through a combination of TAP, OAP and now the SCP, particularly for those TAP contributors with insufficient accumulations at retirement to support a basic annuitized benefit; and (b) the Government matching contribution proposed would create an additional incentive for contribution compliance by low-income workers.

4.2 Design Characteristics and Rationale

Key design features of the proposed scheme are:

- The annual benefit would be determined based on the account accumulation at retirement age 60 converted to an annuitized inflation-indexed benefit based on the life expectancy at retirement and projected inflation and real interest rates. Indexation would be based on the consumer price index;

- The benefit would be no less than B$150/month and would be provided at age 60, indexed in the future to the consumer price index;

- Coverage would be limited to current contributors to the TAP who would also be required to contribute to the SCP;

- Contribution requirements of 3 percent of covered wages for employers and employees, respectively of which 2.75 percent would go into an individual account for the supplementary pension and 0.25 percent would be paid as a premium towards a life insurance policy;

- The Government would also make a matching contribution to support lower income workers and provide an incentive for such individuals to contribute. The Government contribution would be B$42.50/month in 2008 for workers with reported incomes of B$500 and under; the matching contribution would be reduced according to a sliding scale until B$2000 when the matching contribution would be eliminated. The Government's matching contribution would increase each year in line with the growth in covered wages; and

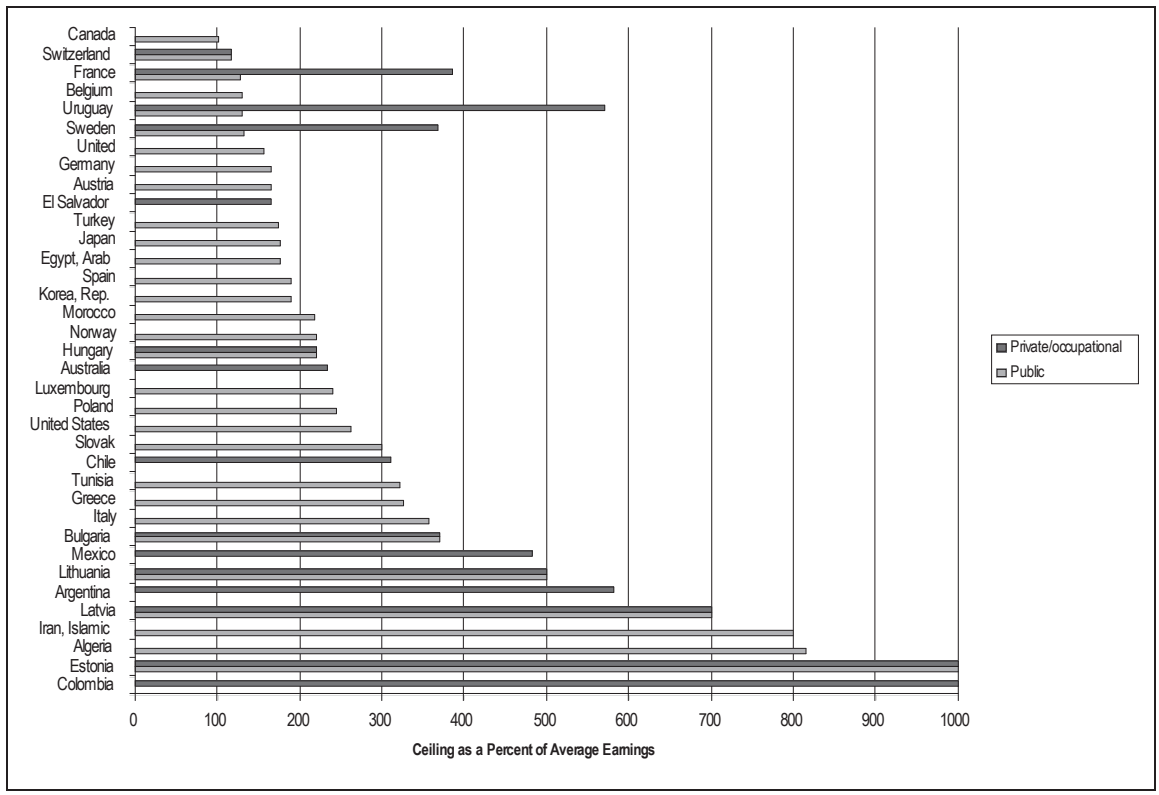
- Covered wages subject to SCP contributions would be limited to 200 percent of average TAP covered wages for existing active members.

The rationale behind most of these parameters is suggested in Table 4.1 below.

Table 4.1
Proposed SCP Parameters and Rationale

Proposed SCP Parameter	Rationale
Minimum annuitized benefits of B$150/month would be provided at age 60, indexed in the future to the consumer price index.	The minimum benefit aims to raise the basic benefit level from the current OAP of B$250/month so as to provide greater support for low-income retirees.
The overall benefit would be calculated based on the SCP accumulation at retirement, the life expectancy at retirement age, and prevailing and projected interest rates.	The benefit will be indexed to ensure that retirees have a secure source of old income support in the face of potential inflation. Age 60 is meant to conform to the OAP parameter.
Coverage would be limited to current contributors to the TAP who would also be required to contribute to the SCP.	SCP has a secondary objective to provide an incentive for participation in the TAP. The contributory nature of the SCP is meant to make it self-financing.
Contribution requirements of 3 percent of covered wages for employers and employees, respectively of which 2.5 percent would go into an individual account for the supplementary pension and 0.5 percent would be paid as a premium towards a life insurance policy.	The contribution rate was chosen to be as low as possible, though consistent with the long-term projection of the benefit level.
Government matching contribution of B$42.50/ month in 2008 for workers with reported incomes of B$500 and under reduced according to a sliding scale until B$2000 when eliminated. The Government's matching contribution would increase each year in line with the growth in covered wages.	The Government matching contribution is meant as an incentive for low-income and low-density workers to contribute to the SCP and TAP schemes and increases the level of Government support for the low-income elderly.
Covered wages subject to SCP contributions limited to 200 percent of average TAP covered wages	The core objective of the SCP is minimal income support and not income smoothing. Upper income workers have alternative vehicles for long-term savings for retirement including the TAP. By limiting wages subject to contributions, this also limits incentives to underreport wages. A comparison of the ceilings on covered wages of public and private schemes is indicated in Figure 4.1.

Figure 4.1
Ceilings on Mandatory Covered Wages of Public and Private/Occupational Schemes in Select Countries
(% of Average Covered Wages for each Country)



Source: Edward Whitehouse: Pensions Panorama, 2006.

4.3 Effects on Benefits and Pension Wealth for Individual Workers

SCP Benefits – Income Replacement. After 30 years of contributions into the SCP, the scheme would provide an average salaried male retiree with a net replacement of lifetime pre-retirement income of about 16 percent or about B$209/month in 2007 terms (See Table 4.2 and Figure 4.2). The replacement by the SCP would be greater for lower income workers since the Government's matching contribution would be scaled towards low-income workers and since there would be a cap on covered earnings of 200 percent of the average. A worker with a lifetime average wage of 50 percent of the 2007 average or about B$700/month would receive a net replacement of pre-retirement income of about 27 percent or B$172 per month. Since the contribution rate for the SCP is capped at twice average earnings and no Government matching contribution is provided for incomes over B$2,000/month, the SCP benefit for higher income workers is also effectively capped at B$336/month or about 13.1 percent of pre-retirement earnings for an individual whose salary is twice the average.

Adequacy. The net pension level after 30 years of contributions into the SCP would represent about 20 percent of the average covered wages for all contributors for an average income worker, 13.4 percent of the average covered wages for all contributors for a worker earning 50 percent of the average wage, and 26 percent of the average covered wages for all contributors for a worker earning twice the average covered wage.

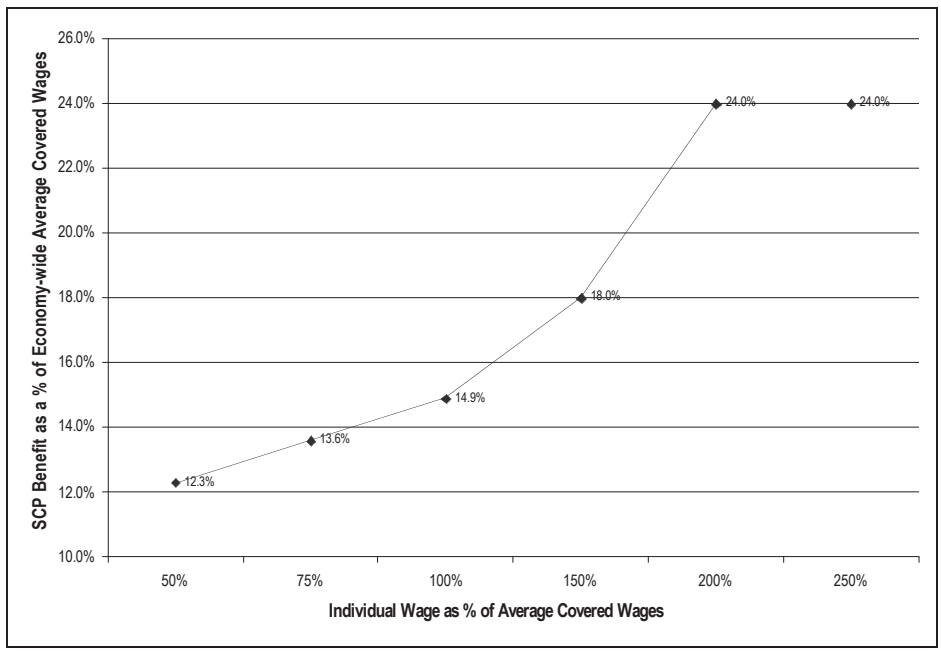
Table 4.2

Projected SCP and TAP/OAP/SCP Benefits

SCP Benefits						
Individual earnings (% of Average Covered Wage)	**50%**	**75%**	**100%**	**150%**	**200%**	**250%**
			(% of Average Covered Wage			
Gross replacement rate (Benefit/Individual Avg. worklife earnings after taxes)	24.7%	18.2%	14.9%	12.0%	12.0%	9.6%
Net replacement rate (Benefit/Individual Average Worklife Earnings)	26.8%	19.8%	16.2%	13.1%	13.1%	10.5%
Gross Pension Level (Benefit/Average Covered Wages for all Contributors)	12.3%	13.6%	14.9%	18.0%	24.0%	24.0%
Net Pension Level (Benefit/Avg Covered Wages for all Contributors after taxes/contr.)	13.4%	14.8%	16.2%	19.6%	26.1%	26.1%
Gross pension wealth (Present Value of Exp. Benefits/Individual Avg. worklife earnings)	210%	230%	250%	310%	410%	410%
Net pension wealth (PV of Expected Benefits/Ind. Lifetime Earnings after taxes/cont.)	230%	250%	280%	330%	440%	440%
			(B$ per Month - 2007)			
Individual earnings prior to retirement	700	1,050	1,400	2,100	2,800	3,500
Gross Benefit	172	190	209	252	336	336
OAP						
Individual earnings (% of Average Covered Wage)	**50%**	**75%**	**100%**	**150%**	**200%**	**250%**
Gross replacement rate (Benefit/Individual Avg. worklife earnings after taxes)	35.7%	23.8%	17.9%	11.9%	8.9%	7.1%
Net replacement rate (Benefit/Individual Average Worklife Earnings)	38.8%	25.9%	19.4%	12.9%	9.7%	7.8%
Gross Pension Level (Benefit/Average Covered Wages for all Contributors)	17.9%	17.9%	17.9%	17.9%	17.9%	17.9%
Net Pension Level (Benefit/Avg Covered Wages for all Contributors after taxes/contr.)	19.4%	19.4%	19.4%	19.4%	19.4%	19.4%
Gross pension wealth (Present Value of Exp. Benefits/Individual Avg. worklife earnings)	300%	300%	300%	300%	300%	300%
Net pension wealth (PV of Expected Benefits/Ind. Lifetime Earnings after taxes/cont.)	330%	330%	330%	330%	330%	330%
			(B$ per Month - 2007)			
Individual earnings prior to retirement	700	1,050	1,400	2,100	2,800	3,500
Gross Benefit	250	250	250	250	250	250
Total TAP/OAP/SCP Benefits						
Individual earnings (% of Average Covered Wage)	**50%**	**75%**	**100%**	**150%**	**200%**	**250%**
			(% of Average Covered Wage)			
Gross replacement rate (Benefit/Individual Avg. worklife earnings after taxes)	71.8%	53.5%	44.3%	35.4%	32.4%	28.2%
Net replacement rate (Benefit/Individual Average Worklife Earnings)	78.1%	58.1%	48.1%	38.5%	35.2%	30.7%
Gross Pension Level (Benefit/Average Covered Wages for all Contributors)	35.9%	40.1%	44.3%	53.1%	64.8%	70.5%
Net Pension Level (Benefit/Avg Covered Wages for all Contributors after taxes/contr.)	39.0%	43.6%	48.1%	57.7%	70.5%	76.7%
Gross pension wealth (Present Value of Exp. Benefits/Individual Avg. worklife earnings)	630%	700%	780%	950%	1160%	1280%
Net pension wealth (PV of Expected Benefits/Ind. Lifetime Earnings after taxes/cont.)	680%	770%	850%	1030%	1260%	1390%

Source: Bank staff estimates.

Figure 4.2
SCP Benefit as a Percent of Individual Covered Wage



Source: Staff estimates using the APEX model.

The matching contribution, while intended to be progressive (i.e., inversely related to wage level) will, in practice, be less progressive than what may be desired since some workers may have relatively steep age-earnings profiles or may belong to high income households but work part time. This could result in 'leakages' to the extent that the objective was to raise retirement incomes only for lifetime low wage workers. In the case of workers with partial careers, the contribution density will be lower than what is assumed. When further details of the plan are designed, some features could be included to reduce the contribution gaps. For example, a contribution could be deducted from the unemployment benefit or simply be paid by the government on behalf of the unemployed. Women outside of the workforce and self-employed persons not otherwise covered might be allowed to make minimum contributions and take advantage of the matching contribution.

4.4 Policy Options for Design Choices

Transition Options. Generating sufficient accumulations to support an SCP pension of B$150 per month requires members to contribute for enough time to support such an annuitized or phased withdrawal benefit. As suggested in Table 4.3, the amount of time required to accumulate contributions depends upon the income level of the member. This suggests three potential transition options:

- The objective of a minimum SCP benefit of B$150/month could be realized only gradually so that much smaller annuitized benefit levels would be provided for those with small account accumulations;

- The minimum benefit of B$150/month could be provided immediately with the Government subsidizing those older cohorts that will have insufficient contributions to support such a benefit. In principle, the Government could borrow from the SCP contributors by issuing bonds and, in turn, utilizing some of the proceeds to make the necessary payments to recent SCP retirees;

- The minimum benefit could be provided after a vesting period of perhaps 15 years with a Government subsidy to top-up those individuals not meeting the vesting requirements; and The B$150/month minimum benefit could be provided only on a means-tested basis applying not only income testing but other means testing variables.

Table 4.3
Estimated Number of Years of SCP Contributions Required to Support a B$150 Monthly Benefit (by income group)

Individual Wage as a % of Average Covered Wage	Est. Years Required to Accumulate an SCP Balance to Fund an SCP Pension of B$150/month
0.03327 (Minimum Wage)	26
0.5	22
0.75	17
1	13
1.5	10
2	7.5

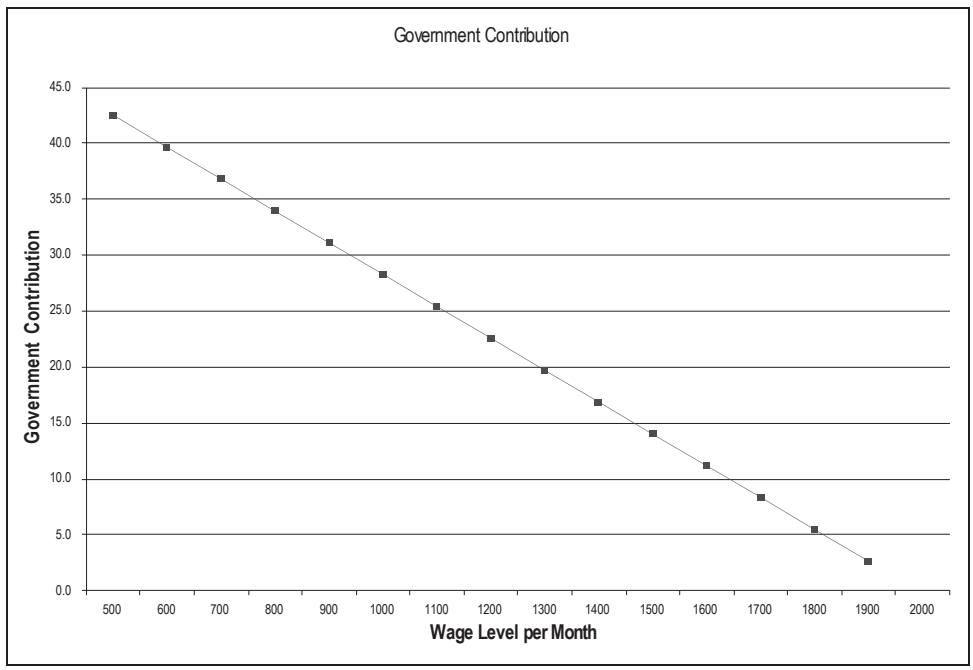
Source: Staff estimates. The annuity assumes a real rate of return on account balances of 2.5%, real wage growth of 2.0%, and a discount rate of 2.0%.

The disadvantages of 'ii' are the arbitrary and abrupt minimum benefit provided between one cohort and another. An individual in one year would receive only the OAP of B$250/month while another who retires in the subsequent year would receive a minimum benefit of B$400/month. These types of abrupt transitions create public perceptions of weakness in equity and fairness. The disadvantages of "iii" are the arbitrary nature of the eligibility requirements (e.g., a 20 year vesting) and the adverse incentives created such as to choose the riskiest portfolio because the downside is limited. The longer the vesting period, the cheaper the cost of the minimum guarantee, but the longer it takes to reach the minimum. The shorter the vesting period, the more arbitrary the treatment of pre- and post- SCP cohorts. For example, a low-income worker retiring the year

before the SCP is introduced gets only the B$250 while someone with say, 5 years (if that were the vesting period) would get B$400.

Figure 4.3

Proposed Scale of Government Matching Contribution for Low Income Workers



Financing the Minimum SCP Pension Guarantee. Apart from the transition issue is the matter of the financing mechanism for those individuals whose incomes and/or lifetime contribution density together are insufficient to support the minimum annuitized benefit of B$150 needs to be determined.[9] As currently formulated, the maximum Government contribution of $42.50/month for each SCP contributor would, on its own, be insufficient to support an annuity of B$150/month even over the long run.[10] Moreover, even assuming that a minimum wage worker making B$559/month also contributes 5 percent of his or her income, it will require about 26 years of accumulations in order to support a lifetime indexed annuity of at least B$150/month at age 60 (See Table 4.3). This suggests that a minimum vesting period will not only be an issue of transition as the scheme becomes operable, but will have to be considered over the long run as well. As with the transition arrangements, setting a minimum benefit creates incentives to underreport income or otherwise to avoid contributions to the SCP.

[9] The Bank has been provided detailed age and wage distribution data for TAP contributors but does not have data on the service histories of such contributors. As a result, it is difficult to simulate the potential incidence of individuals that would have insufficient contribution histories and insufficient contributions in order to accumulate a sufficient balance to support an annuitized benefit of B$150 at age 60.

[10] The male life expectancy at age 60 in Brunei is 20.1 years. The assumed annual real discount rate for the calculation was 2.5%.

SCP contributions for those not covered by the TAP, including retirees aged 55-59. Consideration is needed of the nature of treatment of workers that retire from the TAP and therefore do not contribute from age 55 to 59 as well as those workers, such as self-employed and contract workers, that are exempt from contributing to the TAP. One option is to establish a minimum contribution requirement necessary in order to receive the Government matching contribution.

Annuitization Options. There are three broad options for the annuitization of pension benefits under the scheme: (i) calculate an indexed annuity at retirement and recalculate the benefit each year and have the Government bear the longevity risks, investment and inflation risks; (ii) adopt a phased withdrawal approach where the benefit would be calculated at retirement based on life expectancy and anticipated inflation and investment return assumption, then recalculated each year based on the same assumptions plus longevity assumptions; or (iii) a combination of the two whereby only those meeting minimum balance criteria are afforded one option or the other. The advantage to the retiree of the phased withdrawal is that the remaining balance of the phased withdrawal can be bequeathed to inheritors. However, the disadvantages to the retiree are that he or she bears a much greater proportion of the longevity, investment and inflation risks, particularly facing very low benefit levels if the initial balance is relatively low and the individual lives for a long time. The advantages of an inflation-indexed annuity are that the individual bears less risk but the disadvantages can be that no balance can be bequeathed and the cost of having the annuity provider bear the risks will be a lower monthly benefit.

4.5 Proposed Governance Framework and Operational Arrangements

With the strong linkages between the proposed SCP and the existing TAP, it is essential that the SCP be seen as an additional instrument that is offered by the Government that is integral to the TAP. It is therefore important to try as much as possible to integrate the operational arrangements with those which already exist at the TAP, both to ensure public support as well as to minimize the administrative burden to employers for facilitating the record-keeping and withdrawal process.

Governance structure. We understand that the Government's aim is to establish a separate governance structure for the SCP because of the nature of the substantial Government subsidy element. We have no reason to oppose such a separate governance structure. We would suggest that the Governance framework for the SCP accommodate the characteristics of the SCP including a separate investment policy, investment strategy and investment management procedures and a specialized governance structure for the survivor's insurance fund.

Operational arrangements. The proposed institutional arrangements are that the TAP organization would be responsible for all of the administrative and investment management functions and would be compensated for the provision of such services by two fees to be determined: (i) a percent of contributions; and (ii) a percent of assets under management. The TAP organization would be responsible for collection, account management, record-keeping, account disclosure, investment management and disbursement. As a practical matter, the TAP organization would need to seek to enter into a contract with one or more insurance companies in order to properly manage the life insurance instrument which it would have responsibility for. Separate accounts would be maintained for the SCP as well as separate recording of accordance for the SCP Life Insurance Facility (LIFT).

Chapter 5.

Proposed Mandatory Life Insurance Facility (LIFT)

5.1 Objectives

The core objective of the life insurance scheme is to provide minimum income of B$400/ month collectively for the survivors of each SCP contributor during their lifetime and B$150/ month after age 60. Benefits would be provided on an annuitized basis through the survivors' lifetime including through retirement.

5.2 Design Characteristics and Operational Arrangements

Design Characteristics. Key design features of the proposed scheme would be:

- Annuitized benefits at levels to be determined would be provided for all survivors of policyholders (contributors) who pass away prior to retirement.
- Benefits would include flat and income-sensitive components: the flat minimum benefit would be B$400/month collectively for survivors prior to age 60 and B$150/month after age 60.
- Premia would be 0.5% of covered wages for employers and employees, respectively based on covered wages up to a cap of 200% of the TAP average.

- Eligible survivors would collectively receive the minimum survivorship benefit with the division between survivors according to rules to be determined.
- The benefit would be fully indexed to the consumer price index.
- No retro-active benefits for existing survivors are proposed.
- The benefit level for survivors would be determined based on the accumulation in the SCP account upon the death of the contributor, taking into account the life expectancy of the survivors and projected interest and inflation rates. The insurance fund would then provide any top-up necessary to ensure that a minimum benefit of B$400 is realized for the beneficiaries prior to age 60 and B$150/month after that.
- The difference between the premia revenue and policy payment to top-up survivors' benefits would be held in a reserve fund. Such a reserve fund would accommodate changes in the population structure, mortality incidence, and economic volatility, including inflation and interest rate adjustments and fluctuations in contribution and premia revenues.
- The insurance fund would be subject to an annual actuarial valuation at which time a contracted external actuary would make both a projection of premia income and benefit payments as well as make a recommendation for the minimum level of actuarial reserves to be held to manage both projected costs and anticipated risks. To the extent to which the actuarial reserves exceed those which are determined by the actuary as needed, the Board of Directors of the SCP will have the authority to make an annual distribution from the insurance fund to the SCP individual accounts.[11]

Governance structure and operational arrangements. It is proposed that the Mandatory Life Insurance Facility be established as a group term life insurance scheme to be operated and managed under the proposed SCP governance structure discussed above. It is proposed that accounting, administration and record-keeping, premia processing and disbursement be managed under a separate administrative agreement with the TAP. It is proposed that investment management of both short-term liquidity and long-term reserves also be managed under a separate agreement with the TAP with clear specification of risk guidelines in accordance with the investment policy to be drawn up for the fund. Finally, the entire process of benefit determination, benefit adjustments and determination of appropriate actuarial reserves would be undertaken under the authority of the SCP Board of Directors based on the guidance of consulting actuaries and under the supervision of the Brunei Supervisor of Insurance.

[11] We have projected the revenues and expenditures for the SCP retirement fund and the insurance fund and have determined that, according to prevailing mortality rates and economic conditions in 2007, the long-term contribution rate needed to achieve solvency of the insurance fund would be 0.75%. This would leave 0.25% to either be invested in the reserve fund, or, as suggested, distributed to contributors' individual SCP accounts proportionate to their contributions made.

5.3 Policy Options for Design Choices

Income testing and dependency criteria. One means of substantially increasing the benefit provided to survivors would be to establish dependency criteria whereby the survivor must meet a number of qualifying criteria for receipt of the benefit. These criteria could be: (i) that the survivor has a registered income below a specified threshold; (ii) that the survivor is under age 18, is in university or pursuing graduate studies; and (iii) that the survivor is not reported as a dependent of another person such as through remarriage.

Participation incentives. Providing a largely flat survivors' benefit with an income-dependent premium creates incentives to underreport income much in the same way as the establishment of a minimum SCP pension guarantee also creates skewed incentives for many workers. There is a tension between, on the one hand, the level of the flat benefit which aims to create minimum income support, and, on the other hand, the income sensitive portion which aims to create a link between the income and contribution of the worker on the one hand, and the size of the benefit to the survivor on the other.

Chapter 6.

Medium-Term Reform Issues

Having outlined detailed proposals and policy options for the SCP and LIFT, this section examines further parametric and institutional reforms to the GPS and TAP as well as additional measures to strengthen the overall pension provision in Brunei.

6.1 Retirement Age

Historically, the age at which contributors or members of a public pension scheme could receive benefits was made based on a rough approximation of when workers will lose their ability to continue working and thus would need some form of income support. With substantial medical advances which have increased life expectancy at retirement age in many countries, the public policy choice of retirement age has centered around a number of issues including the fiscal costs of one retirement age or another, the disincentives to work created by retirement benefits and the effect of retirement age on the benefits which can be provided to the retiree. Examining the retirement ages in Table II, one finds most statutory retirement ages are concentrated between ages 60 and 65, even though the life expectancy at each of these ages varies substantially across countries.

In Brunei, we suggest policymakers focus on the following issues in reviewing the retirement age, including for the GPS and TAP:

- For the TAP, the retirement age will have a substantial impact on the benefit levels and old age income security which contributors derive from the scheme;

- For the GPS, the retirement age will have a substantial impact on fiscal costs of benefit provision as well as some impact on benefit levels;

- Retirement ages will have an important impact on the incentive to work; and

- If Brunei is to ultimately achieve labor mobility then there must be a convergence in basic parameters between the different pension schemes including with respect to the retirement age.

One means of achieving such a convergence is to consider a gradual phased increase in the TAP retirement age from 55 to 60 and a similar phased increase for those civil servants remaining in the GPS.

6.2 Modifications to the TAP Complementing the Establishment of the SCP

Current Weaknesses. In the discussion of the TAP above, we pointed out the core weaknesses of the TAP in its current form to be: (i) the accumulation at retirement is too low to support a meaningful replacement of pre-retirement income to provide effective smoothing of consumption in retirement; (ii) the absence of benefit annuitization subjects retirees to investment, inflation and longevity risks; (iii) there are no special incentives for low-income workers and the so-called 'unorganized sector' to contribute; (iv) covered wages subject to contributions should be capped; and (v) the TAP framework for disability and survivorship benefits fails to take advantage of the substantial benefits of co-insurance.

Addressing these weaknesses through the SCP and LIFT. The proposed design of the SCP and LIFT go a long way towards remedying many of these weaknesses identified. Specifically, the proposed SCP: (i) increases the annuitized minimum benefit received by retirees; (ii) reduces retirees' inflation risk and longevity risk through the design of the SCP benefit; (iii) the Government matching contribution for low-income workers creates a strong incentive for contribution compliance; and (iv) the cap on covered earnings, subject to contributions in the SCP, limit the costs to employers and employees. Moreover, the LIFT provides a pooled and indexed life insurance benefit for survivors.

Additional Reforms Needed to the TAP. While the proposed design of the SCP and LIFT remedy some of the weaknesses identified, additional reforms are needed to the TAP design in order to strengthen the adequacy and predictability of benefits:

i. **Segregation of savings for housing and retirement**. The current integration of savings for home ownership and renovation on the one hand, and retirement savings on the other, create unclear incentives. One alternative is to separate the allocation of mandatory contributions into two separate pools each earmarked for a specific purpose, whether, for example, housing on the one hand, or pensions on the other. Remaining funds in the housing savings fund can be added to the balance in the retirement fund;

ii. **Retirement age**. The retirement age at which benefits can be received should be gradually increased to age 60 for men and women, and gradually increased further in a way consistent with increases in life expectancy at retirement age. This will align with the OAP and SCP and will increase the incentives for working and saving and creating a larger benefit accumulation for retirement;

iii. **Pre-retirement withdrawals**. The 25% pre-retirement withdrawal should be eliminated;

iv. **Annuitization**. The current lump-sum distribution should be replaced by a combination of phased-withdrawals and indexed annuities depending upon the accumulated balance at retirement;

v. **Limiting contributions**. A ceiling on covered wages should be introduced to reduce employer costs and improve incentives for country comparators); and

vi. **Voluntary contributions**. Voluntary supplemental contributions should be earmarked entirely for retirement.

Chapter 7.

Conclusion

This report has examined the provision of mandatory pension and survivorship benefits by mandatory pension schemes in Brunei. It has examined the adequacy and predictability of benefits provided to retirees at different income levels and identified weaknesses in the current policy framework. In an effort to remedy some of these weaknesses, the Government has proposed the introduction of a Supplementary Contributory Pension Scheme (SCP) and a National Life Insurance Policy (LIFT). We have examined the design features and operational requirements of each as well as the anticipated benefit for beneficiaries of both. We have also examined the composite benefit that TAP/SCP contributors can anticipate in retirement based upon using both metrics of their benefit relative to pre-retirement income, as well as relative to average economy wages. Finally, we have suggested additional reform measures to consider for the TAP and GPS and thoughts for medium-term policy directions.

Overall, we believe the proposed SCP and LIFT can remedy some of the weaknesses identified in the current retirement system and have recommended measures to strengthen their design. We also suggest additional measures to further strengthen the mandatory pension system in Brunei.

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Appendices

Appendix 1. Glossary

Accrual rate. The rate at which pension entitlement is built up relative to earnings per year of service in earnings-related schemes—for example, one-sixtieth of final salary.

Accrued pension. The value of the pension to a member at any point prior to retirement, which can be calculated on the basis of current earnings, or also include projections of future increases in earnings.

Actuarial fairness. A method of setting insurance premiums according to the true risks involved.

Annuity. A stream of payments at a specified rate, which may have some provision for inflation proofing, payable until some contingency occurs, usually the death of the beneficiary or a surviving dependent.

Annuity factor. The net present value of a stream of pension or annuity benefits.

Annuity rate. The value of the annuity payment relative to its lump-sum cost.

Average effective retirement age. The actual average retirement age, taking into account early retirement and special regimes.

Benefit rate. The ratio of the average pension to the average wage, which could be expressed as relative to the economy wide average wage or to the individual's specific average or final wage.

Ceiling. A limit on the amount of earnings subject to contributions.

Commutation. Exchange of part of the annuity component of a pension for an immediate lump sum.

Comprehensive income tax. A tax on all incomes, whether from earnings or investments and whether used for savings or consumption. A pure comprehensive income tax allows the component of investment returns compensating for inflation and so only taxes real returns.

Contracting out. The right of employers or employees to use private pension fund managers instead of participating in the publicly managed scheme.

Contracting-out rebate. The amount by which employers' and employees' national insurance contributions are reduced for contracting out of the state earnings-related pension scheme and the minimum contribution to a personal pension plan.

Deferred annuity. A stream of benefits commencing at some future date.

Defined benefit. A pension plan with a guarantee by the insurer or pension agency that a benefit based on a prescribed formula will be paid. Can be fully funded or unfunded and notional.

Defined contribution. A pension plan in which the periodic contribution is prescribed and the benefit depends on the contribution plus the investment return. Can be fully funded or notional and nonfinancial.

Demogrant. Same as a universal flat benefit, where individuals receive an amount of money based solely on age and residency.

Demographic transition. The historical process of changing demographic structure that takes place as fertility and mortality rates decline, resulting in an increasing ratio of older to younger persons.

Disclosure. Statutory regulations requiring the communication of information regarding pension schemes, funds, and benefits to pensioners and employees.

Discretionary increase. An increase in a pension payment not specified by the pension scheme rules.

Early leaver. A person who leaves an occupational pension scheme without receiving an immediate benefit.

Early retirement. Retirement before reaching an occupational scheme's normal retirement age or, in the state scheme, before reaching the state's pensionable age.

Earnings cap (ceiling). A limit on the amount of earnings subject to contributions.

Full funding. The accumulation of pension reserves that total 100 percent of the present value of all pension liabilities owed to current members.

Funding. Accumulation of assets in advance to meet future pension liabilities.

Implicit pension debt (net). The value of outstanding pension claims on the public sector minus accumulated pension reserves.

Indexation (uprating). Increases in benefits by reference to an index, usually of prices, although in some cases of average earnings.

Intergenerational distribution. Income transfers between different age cohorts of persons.

Intragenerational distribution. Income transfers within a certain age cohort of persons.

Legal retirement age. The normal retirement age written into pension statutes.

Marginal pension. The change in the accrued pension between two periods.

Means-tested benefit. A benefit that is paid only if the recipient's income falls below a certain level.

Minimum pension guarantee. A guarantee provided by the government to bring pensions to some minimum level, possibly by "topping up" the capital accumulation needed to fund the pensions.

Moral hazard. A situation in which insured people do not protect themselves from risk as much as they would have if they were not insured. For example, in the case of old-age risk, people might not save sufficiently for themselves if they expect the public system to come to their aid.

Nonfinancial (or notional) defined-benefit (plan). A defined-benefit pension plan that is unfunded (except for a potential reserve fund).

Nonfinancial (or notional) defined-contribution (plan). A defined-benefit pension plan that mimics the structure of (funded) defined-contribution plans but remains unfunded (except for a potential reserve fund).

Normal retirement age. The usual age at which employees become eligible for occupational pension benefits, excluding early-retirement provisions.

Notional (or nonfinancial) accounts. Individual accounts where the notional contributions plus interest rates accrued are credited and determine the notional capital (that is, the liability to society).

Notional (or nonfinancial) capital. The value of an individual account at a given moment that determines the value of annuity at retirement or the transfer value in case of mobility to another scheme or country.

Notional or nonfinancial interest rate. The rate at which the notional accounts of notional defined-contribution plans are annually credited. It should be consistent with the financial sustainability of the unfunded scheme (potentially the growth rate of the contribution base).

Occupational pension scheme. An arrangement by which an employer provides retirement benefits to employees.

Old-age dependency ratio. The ratio of older persons to working-age individuals. The old-age dependency ratio may refer to the number of persons over 60 divided by, for example, the number of persons ages 15–59, the number of persons over 60 divided by the number of persons ages 20–59, and so forth.

Over-annuitization. A situation in which a compulsory pension forces an individual to save more in pension than he or she would in the absence of the compulsory provision.

Pay-as-you-go. In its strictest sense, a method of financing whereby current outlays on pension benefits are paid out of current revenues from an earmarked tax, often a payroll tax.

Pension coverage rate. The number of workers actively contributing to a publicly mandated contributory or retirement scheme, divided by the estimated labor force or by the working-age population.

Pension lump sum. A cash withdrawal from a pension plan, which in the case of some occupational pension schemes is provided in addition to an annuity. Also available from personal pension plans.

Pension spending. Usually defined as old-age retirement, survivor, death, and invalidity-disability payments based on past contribution records plus noncontributory, flat universal, or means-tested programs specifically targeting the old.

Pensionable earnings. The portion of remuneration on which pension benefits and contributions are calculated.

Portability. The ability to transfer accrued pension rights between plans.

Provident fund. A fully funded, defined-contribution scheme in which funds are managed by the public sector.

Replacement rate. The value of a pension as a proportion of a worker's wage during a base period, such as the last year or two before retirement or the entire lifetime average wage. Also denotes the average pension of a group of pensioners as a proportion of the average wage of the group.

Supplementary pensions. Pension provision beyond the basic state pension on a voluntary basis.

Support ratio. The opposite of the system dependency ratio: the number of workers required to support each pensioner.

System dependency ratio. The ratio of persons receiving pensions from a certain pension scheme divided by the number of workers contributing to the same scheme in the same period.

System maturation. The process by which a pension system moves from being immature, with young workers contributing to the system, but with few benefits being paid out since the initial elderly have not contributed and thus are not eligible for benefits, to being mature, with the proportion of elderly receiving pensions relatively equivalent to their proportion of the population.

Universal flat benefit. Pensions paid solely on the basis of age and citizenship, without regard to work or contribution records.

Valorization of earnings. A method of revaluing earnings by predetermined factors such as total or average wage growth to adjust for changes in prices, wage levels, or economic growth. In pay-as-you-go systems, pensions are usually based on some percentage of average wage. This average wage is calculated over some period of time, ranging from full-career average to last salary. If the period for which earnings history enters into the benefit formula is longer than the last salary, the actual wages earned are usually revalued to adjust for these types of changes.

Vesting period. The minimum amount of time required to qualify for full and irrevocable ownership of pension benefits.

Appendix 2. Statistical Tables

Table I

Gross Rep. Rates by Earnings Level of Mandatory Pension Programs
(Percent of individual pre-retirement gross earnings)

Country	Individual earnings, multiple of average					
	0.5	0.75	1	1.5	2	2.5
Algeria	80	80	80	80	80	80
Argentina	104.6	77	63	49	42	37
Australia	65.1	48	40	32	26	22
Austria	78.3	78	78	78	64	52
Bahrain	84	79	79	79	79	79
Belgium	61.6	41	37	32	24	19
Bulgaria	49.7	49.7	49.7	49.7	40	33.5
Canada	72.4	52	43	28	21	17
Chile	45	44	44	44	44	44
Colombia	100	67	50	46	46	46
Costa Rica	89	89	89	89	89	89
Croatia	47.3	41	38	35	34	33
Czech Republic	70.5	53	44	32	25	22
Denmark	82.4	56	43	30	24	20
Djibouti	42.5	38	38	38	38	38
Dominican Republic	105.3	70	53	35	29	29
Egypt, Arab Rep.	90.5	87	85	75	64	51
El Salvador	64.1	43	39	39	39	39
Estonia	58.4	54	52	49	48	48
Finland	80	72	72	72	72	72
France	84.2	56	49	47	44	42
Germany	47.3	46	46	46	38	30
Greece	84	84	84	84	84	84
Hungary	75.4	75	75	75	75	66
Iceland	85.5	64	53	43	41	40
Iran, Islamic Rep.	132	116	116	116	116	116
Ireland	61.3	41	31	20	15	12
Italy	78.8	78.8	78.8	78.8	78.8	78.8
Japan	69.2	57	50	44	37	30
Jordan	69.6	68	68	68	68	68
Korea, Rep.	60.9	47	41	34	29	24
Latvia	63.6	58	58	58	58	58
Libya	80	80	80	80	80	80
Lithuania	69.9	59	53	48	45	43
Luxembourg	115.5	107	102	97	95	90
Mexico	39.1	37	36	35	34	34
Morocco	70	70	70	70	70	61
Netherlands	68.7	68	68	68	68	68
New Zealand	75.1	50	38	25	19	15
Norway	65.3	56	53	47	38	32
Peru	49.4	39	39	39	39	39
Poland	56.9	57	57	57	57	56
Portugal	103.1	69	67	66	66	65
Slovak Republic	48.6	49	49	49	49	49
Spain	80.1	80.1	80.1	80.1	76	61
Sweden	87.8	73	65	65	66	67
Switzerland	62.8	60	58	44	33	27
Tunisia	64	64	64	64	64	64
Turkey	96.2	90	87	84	72	58
United Kingdom	67.4	46	37	29	23	18
United States	53.1	45	40	36	31	27
Uruguay	102.6	103	103	91	73	58
Yemen, Rep.	100	100	100	100	100	100

Source: Pensions Panorama, E. Whitehouse, WB.

Table II

International Retirement Ages

	Statutory pensionable age		Early pensionable age	
Côte d'Ivoire	55	55		
Croatia	64	59	59	54
Cuba	60	55		
Cyprus	65	65	63	63
Czech Republic	61.5	55.6	58.5	52.66
Denmark	65	65	60	60
Dominica	60	60		
Ecuador	55	55		
Egypt	60	60		
El Salvador	60	55		
Equatorial Guinea	60	60		
Estonia	63	59.5	60	56.5
Ethiopia	60	60	55	55
Fiji	55	55		
Finland	65	65	62	62
France	60	60		
Gabon	55	55		
Gambia	55	55	45	45
Georgia	65	60		
Germany	65	65	63	63
Ghana	60	60	55	55
Greece	65	60	60	55
Grenada	60	60		
Guatemala	60	60		
Guinea	55	55	50	50
Guyana	60	60		
Haiti	55	55		
Honduras	65	60		
Hong Kong	65	65		
Hungary	62	60		
Iceland	67	67		
India	55	55		
Indonesia	55	55		
Iran (Islamic Republic of)	65	60	60	55
Iraq	60	55		

Ireland	65	65		
Israel	65	60		
Italy	65	60		
Jamaica	65	60		
Japan	65	65	60	60
Jordan	60	55	45	45
Kazakhstan	63	58	55	55
Kenya	55	55		
Kiribati	50	50	45	45
Korea, south	60	60	55	55
Kuwait	50	50	46	46
Kyrgyzstan	62	57		
Lao People's Dem. Republic	60	60	55	55
Latvia	62	60.5	60	58
Lebanon	64	64	60	60
Liberia	60	60		
Libyan Arab Jamahiriya	65	60		
Lithuania	62.5	60	57.5	55
Luxembourg	65	65	60	60
Madagascar	60	55		
Malaysia	55	55		
Mali	58	58	53	53
Malta	61	60		
Mauritania	60	55		
Mauritius	60	60		
Mexico	65	65	60	60
Micronesia	60	60		
Moldova	62	57		
Morocco	60	60	55	55
Nepal	55	55		
Netherlands	65	65		
New Zealand	65	65		
Nicaragua	60	60		
Niger	60	60		
Nigeria	50	50		
Norway	67	67		
Oman	60	55		
Pakistan	60	55		

Panama	62	57		
Papua New Guinea	55	55		
Paraguay	60	60	55	55
Peru	65	65	55	50
Philippines	60	60		
Poland	65	60		
Portugal	65	65	55	55
Romania	63	57.7	58	52.75
Russian Federation	60	55		
Rwanda	55	55		
Saint Kitts and Nevis	62	62		
Saint Lucia	62	62	60	60
Saint Vincent & the Grenadines	60	60		
Sao Tome & Principe	62	57		
Saudi Arabia	60	55		
Senegal	55	55	53	53
Serbia	63	58		
Sierra Leone	60	60	55	55
Singapore	55	55		
Slovak Republic	62	62		
Slovenia	61.5	55.33		
Solomon Islands	50	50	40	40
Somalia	-	-		
South Africa	65	60		
Spain	65	65		
Sri Lanka	55	50		
Sudan	60	60	50	50
Swaziland	50	50	45	45
Sweden	65	65	61	61
Switzerland	65	64		
Syrian Arab Republic	60	55		
Tanzania	60	60	55	55
Thailand	55	55		
Togo	55	55		
Trinidad and Tobago	60	60		
Tunisia	60	60	50	50
Turkey	60	58		
Turkmenistan	62	57		
Uganda	55	55	50	50

Ukraine	60	55		
United Kingdom	65	60		
United States of America	65.5	65.5	62	62
Uruguay	60	60		
Uzbekistan	60	55		
Vanuatu	55	55		
Venezuela	60	55		
Viet Nam	60	55		
Yemen	60	55	50	46
Yugoslavia	63	58		
Zambia	55	55	50	50

Source: for Statutory pensionable age is from "Social Security Programs Throughout the World.., 2005 and 2006 .."

Table III

International Contribution Rates

(ranked by total social security contribution rates)

	Old age, disability, survivors: Old or Current First Pillar			All social security programs:		
	Insured person	Employer	Total	Insured person	Employer	Total
Armenia	3.0	-	3.0	3.0	-	3.0
Jamaica	2.5	2.5	5.0	2.5	2.5	5.0
Saint Vincent & the Grenadines	2.5	3.5	6.0	2.5	4.0	6.5
Liberia	3.0	3.0	6.0	3.0	4.8	7.8
Rwanda	3.0	3.0	6.0	3.0	5.0	8.0
Antigua & Barbuda	3.0	5.0	8.0	3.0	5.0	8.0
Mexico	1.1	5.2	6.3	1.4	6.9	8.2
Bahamas	1.7	7.1	8.8	1.7	7.1	8.8
Indonesia	2.0	4.0	6.0	2.0	7.0	9.0
Australia	0.0	9.0	9.0	0.0	9.0	9.0
Grenada	4.0	5.0	9.0	4.0	5.0	9.0
Mauritius	3.0	6.0	9.0	3.0	6.0	9.0
Burundi	2.6	3.9	6.5	2.6	6.9	9.5
Lao People's Dem. Republic	4.5	5.0	9.5	4.5	5.0	9.5
Dominica	3.0	6.8	9.8	3.0	6.8	9.8
Trinidad and Tobago	2.8	5.6	8.4	3.3	6.6	9.9
Brunei Darussalam	5.0	5.0	10.0	5.0	5.0	10.0
Ethiopia	4.0	6.0	10.0	4.0	6.0	10.0
Hong Kong	5.0	5.0	10.0	5.0	5.0	10.0

Kazakhstan	10.0	0.0	10.0	10.0	0.0	10.0
Kenya	5.0	5.0	10.0	5.0	5.0	10.0
Sao Tome & Principe	4.0	6.0	10.0	4.0	6.0	10.0
Swaziland	5.0	5.0	10.0	5.0	5.0	10.0
Vanuatu	4.0	6.0	10.0	4.0	6.0	10.0
Zambia	5.0	5.0	10.0	5.0	5.0	10.0
Thailand	3.0	3.0	6.0	5.0	5.2	10.2
Honduras	1.0	2.0	3.0	3.5	7.0	10.5
Israel	1.2	2.8	3.9	4.6	5.9	10.5
Saint Kitts and Nevis	5.0	5.0	10.0	5.0	6.0	11.0
Pakistan	-	5.0	5.0	-	12.0	12.0
Haiti	6.0	6.0	12.0	6.0	6.0	12.0
Papua New Guinea	5.0	7.0	12.0	5.0	7.0	12.0
Belarus	1.0	10.0	11.0	1.0	11.2	12.2
Congo (Kinshasa)	3.5	3.5	7.0	3.5	9.0	12.5
Ireland	4.0	8.5	12.5	4.0	8.5	12.5
Solomon Islands	5.0	7.5	12.5	5.0	7.5	12.5
Cyprus	6.3	6.3	12.6	6.3	6.3	12.6
Philippines	3.3	6.1	9.4	4.6	8.3	12.9
Guyana	5.2	7.8	13.0	5.2	7.8	13.0
Oman	5.0	8.0	13.0	5.0	9.0	14.0
Cuba	0.0	14.0	14.0	0.0	14.0	14.0
Venezuela	1.9	4.8	6.8	4.2	10.0	14.2
Chad	2.0	4.0	6.0	2.0	12.5	14.5
Bahrain	5.0	7.0	12.0	5.0	10.0	15.0
Nigeria	7.5	7.5	15.0	7.5	7.5	15.0
Sierra Leone	5.0	10.0	15.0	5.0	10.0	15.0
Uganda	5.0	10.0	15.0	5.0	10.0	15.0
Iceland	4.0	11.8	15.8	4.0	11.8	15.8
Korea, south	4.5	4.5	9.0	7.1	8.8	15.8
Mauritania	1.0	2.0	3.0	1.0	15.0	16.0
Gambia	5.0	10.0	15.0	5.0	11.0	16.0
United States of America	6.2	6.2	12.4	7.7	8.5	16.1
Barbados	7.4	7.4	14.9	8.2	8.2	16.4
Jordan	5.5	9.0	14.5	5.5	11.0	16.5
Niger	1.6	2.4	4.0	1.6	15.4	17.0
Dominican Republic	2.6	6.4	9.0	5.0	12.0	17.0
Peru	-	-	13.0	8.0	9.0	17.0
Kuwait	6.0	11.0	17.0	6.0	11.0	17.0

Ghana	5.0	12.5	17.5	5.0	12.5	17.5
Panama	6.8	2.8	9.5	7.3	10.8	18.0
Libyan Arab Jamahiriya	3.8	10.5	14.3	5.3	13.0	18.2
Central African Republic	2.0	3.0	5.0	2.0	18.0	20.0
Benin	3.6	6.4	10.0	3.6	16.4	20.0
Chile	-	-	18.8	17.6	2.4	20.0
Malta	10.0	10.0	20.0	10.0	10.0	20.0
Nepal	10.0	10.0	20.0	10.0	10.0	20.0
Sri Lanka	8.0	12.0	20.0	8.0	12.0	20.0
Tanzania	10.0	10.0	20.0	10.0	10.0	20.0
Morocco	4.0	7.9	11.9	4.3	16.1	20.4
Togo	4.0	8.0	12.0	4.0	16.5	20.5
El Salvador	7.0	7.0	14.0	6.3	14.3	20.5
Saudi Arabia	9.0	9.0	18.0	9.0	12.0	21.0
Ecuador	9.2	9.2	18.3	11.2	10.2	21.3
Burkina Faso	5.5	5.5	10.0	5.5	16.0	21.5
Bolivia	-	-	-	10.0	11.7	21.7
Norway	7.8	14.1	21.9	7.8	14.1	21.9
Gabon	2.5	5.0	7.5	2.5	20.1	22.6
Guinea	2.5	4.0	6.5	5.0	18.0	23.0
Cape Verde	3.0	7.0	10.0	7.0	16.0	23.0
China	8.0	3.0	11.0	11.0	12.0	23.0
Viet Nam	5.0	10.0	15.0	6.0	17.0	23.0
Yemen	6.0	13.0	19.0	6.0	17.0	23.0
Paraguay	9.0	14.0	23.0	9.0	14.0	23.0
Lebanon	0.0	8.5	8.5	2.0	21.5	23.5
United Kingdom	11.0	12.8	23.8	11.0	12.8	23.8
Syrian Arab Republic	7.0	14.0	21.0	7.0	17.0	24.0
Japan	6.8	6.8	13.6	11.6	12.6	24.2
Congo (Brazzaville)	4.0	8.0	12.0	4.0	20.5	24.5
Sudan	8.0	15.0	23.0	8.0	17.0	25.0
Tunisia	7.7	7.8	15.5	10.4	14.9	25.3
Malaysia	11.5	12.5	24.0	11.5	13.8	25.3
Equatorial Guinea	4.5	21.5	26.0	4.5	21.5	26.0
Russian Federation	0.0	20.0	20.0	0.0	26.2	26.2
Moldova	3.0	26.0	29.0	3.0	26.0	29.0
Costa Rica	2.5	4.7	7.5	9.0	20.5	29.5
Senegal	5.6	8.4	14.0	8.6	20.9	29.5
Iran (Islamic Republic of)	7.0	20.0	27.0	7.0	23.0	30.0

Sweden	7.0	11.9	18.9	7.0	23.4	30.4
Turkey	9.0	11.0	20.0	15.0	16.5	31.5
Finland	4.6	22.5	27.1	6.7	26.3	33.0
Turkmenistan	1.0	30.0	31.0	1.0	32.0	33.0
Singapore	20.0	13.0	33.0	20.0	13.0	33.0
Latvia	9.0	24.1	33.1	9.0	24.1	33.1
Greece	6.7	13.3	20.0	11.6	22.1	33.7
Lithuania	2.5	23.6	26.1	3.0	31.0	34.0
Algeria	7.0	10.0	17.0	9.0	25.0	34.0
Georgia	2.0	31.0	33.0	2.0	32.0	34.0
Nicaragua	4.0	6.0	10.0	10.3	24.0	34.3
Kyrgyzstan	8.0	25.0	33.0	8.0	26.5	34.5
Portugal	11.0	23.8	34.8	11.0	23.8	34.8
Uruguay	15.0	12.5	27.5	18.0	17.5	35.5
Argentina	11.0	16.0	27.0	13.0	22.7	35.7
Serbia	11.0	11.0	22.0	17.9	17.9	35.8
Bulgaria	8.1	15.0	23.0	12.4	23.5	35.9
India	12.0	17.6	29.6	13.8	22.4	36.1
Estonia	2.0	20.0	22.0	3.0	33.5	36.5
Croatia	20.0	0.0	20.0	20.0	17.2	37.2
Spain	4.7	23.6	28.3	6.3	31.6	37.8
Belgium	7.5	8.9	16.4	13.1	24.8	37.8
Slovenia	15.5	8.9	24.4	22.1	16.1	38.2
Uzbekistan	2.5	33.0	35.5	2.5	36.0	38.5
Albania	8.0	19.1	27.1	9.5	30.2	39.7
Egypt	13.0	17.0	30.0	14.0	26.0	40.0
Ukraine	3.0	32.3	35.3	3.8	36.7	40.5
Italy	8.9	23.8	32.7	8.9	32.0	40.9
Germany	9.8	9.8	19.5	20.6	21.0	41.5
Austria	10.3	12.6	22.8	17.2	25.0	42.2
Slovak Republic	7.0	17.0	24.0	13.4	30.2	43.6
France	6.8	9.9	16.7	9.9	35.1	45.0
Hungary	8.5	18.0	26.5	13.5	32.0	45.5
Poland	16.2	16.2	32.5	27.2	19.7	46.9
Czech Republic	6.5	21.5	28.0	12.5	37.0	47.5
Romania	9.5	20.5	30.0	17.5	33.3	50.8
Netherlands	19.2	6.4	25.5	37.5	16.3	53.8
Colombia	3.9	11.6	15.5			

Source for Statutory pensionable age is from " Social Security Programs Th. the World.., 2005 and 2006 .."

FIAP, and other national sources.

Appendix 3. APEX Projection Methodology and Key Assumptions

This report utilizes the APEX microeconomic modeling approach to determine individual pension entitlements for different income groups. This modeling technique was also used to compare prospective individual entitlements under 53 countries' pension regimes (see Whitehouse, 2006). The modeling technique not only is a systematic means of evaluating Brunei's pension schemes; it also provides a rigorous basis for comparing pension entitlements in Brunei with other countries.

Parameters in 2007. Pension-system parameters reflect, where possible, the situation in the year 2007. Changes in rules that are under consideration, namely the establishment of a Supplementary Contributory Pension, were assumed to be fully in place from the start. It is assumed that the pension rules remain unchanged. This steady-state assumption is also applied to value parameters, such as the level of ceilings or basic pensions.

Full-Career, Single Workers. The calculations show the pension entitlements of a worker who enters the system today and retires after a full career. A full career is defined as entering at age 25 and working until age 55. The TAP benefit is calculated for withdrawal age of 55. The SCP and OAP benefits however are calculated based on the individual having reached age 60.

Coverage. The pension models presented here include all mandatory pension schemes for private-sector workers, including the TAP, OAP and proposed SCP. Pension entitlements are compared for workers with earnings between 0.3 times and 3.0 times the economy-wide average. This large range permits the pensions of both the poorer and richer workers to be examined, and it is sufficiently broad to include people who are employed part-time.

Economic Variables. The baseline assumptions are the following:

- Total contributions are assumed at 10% of gross earnings in the TAP scheme and at 5% of gross earnings in the SCP scheme. The government contribution to the SCP scheme is declining from B$42.5 per month for earnings less then B$500 a month to zero for earnings of B$2000 and more. The ceiling at twice the average earnings (i.e. 2xB$16,800 per year) is imposed but only for the SCP contribution calculations. In addition, 1% of gross earnings is contributed to the life insurance scheme, which is not included in the APEX simulation, but has to be accounted in the model as an additional social security tax.

- Individual earnings are assumed to grow in line with the economy-wide average. Thus, in the baseline case, the individual is assumed to remain at the same point in the earnings distribution, earning the same percentage of average earnings in every year of the working life.

- Pension benefits are assumed to be indexed to inflation.

- The difference between real rate of return on defined-contribution accounts and real wage growth is assumed at 1.5 percent per year. This rate of return is assumed to be net of administrative charges. Real earnings growth is 2.0 percent per year.

- Discount rate (for actuarial calculations) is 2 percent per year.

- Mortality rates are calculated with baseline modeling, which uses country specific projections (made in 2002) from the United Nations and the World Bank population database and projected for the year 2007.

- OAP entitlement is set at B$250 per month.

- The additional simulation of two scheduled withdrawals from the TAP account assumes a withdrawal of 45% of the TAP account balance at age 40 and 25% of the balance at age 50.

- Changes in these baseline assumptions will obviously affect the resulting pension entitlements.

Annuity factors. Calculations assume that when DC benefits are received in retirement, they are paid in the form of a price-indexed life annuity at an actuarially fair price. The actuarially fair annuity rate is calculated from mortality data. Because of improvements in life expectancy, someone retiring at a given age after having contributed a given amount to a DC scheme will, in the future, receive a lower pension than a person retiring today would receive.

Taxes. No personal income taxes were assumed either on wages or on benefits. However, contributors were assumed to pay 50% of social security taxes (another half is due from employer) contributing in total 8% of earnings (5% to the TAP, 2.5% to the SCP and 0.5% to the life insurance scheme). Therefore, the benefit as a proportion of net earnings is higher than the benefit as a proportion of gross earnings. The modeling assumes that tax systems and

social security contributions remain unchanged in the future. This implicitly means that value parameters, such as tax allowances or contribution ceilings, are adjusted annually in line with average earnings; while rate parameters, such as the personal income-tax schedule and social-security-contribution rates, remain unchanged.

Indicators and Results

The basic indicators used in this paper are as follows:

- Replacement rate, pension entitlements as a share of individual lifetime-average earnings;
- Relative pension level, pension entitlements as a share of average economy-wide earnings; and
- Pension wealth, the discounted stream of future pension payments.

The *replacement rate* is best interpreted as an indicator of the insurance role of the pension system. It shows to what extent pension systems aim to preserve the previous, personal standard of living of a worker moving from employment into retirement. The indicator used here shows the pension benefit as a share of individual-lifetime-average earnings (revalued (or valorized) in line with economy-wide earnings' growth). Under the baseline assumptions, workers earn the same percentage of economy-wide average earnings throughout their career, meaning that their individual earnings track the assumed growth in economy-wide earnings. In this case, lifetime-average-revalued earnings and individual final earnings are identical.

If people move up the earnings' distribution as they get older, then their earnings just before retirement would be higher than they were on average over their lifetimes. In that case, replacement rates calculated on individual final earnings would be lower than those calculated on individual lifetime-average-revalued earnings.

The *relative pension* level is best seen as an indicator of pension adequacy since it shows what benefit level a pensioner will receive in relation to the average wage earner in the respective country. Individual replacement rates may be quite high, but the pensioner may still receive only a small fraction of economy-wide average earnings. If, for example, a low-income worker — who earned only 30 percent of economy-wide average earnings — has a

replacement rate of 100 percent, the benefit will only amount to 30 percent of economy-wide average earnings. For an average wage earner, the replacement rate and the relative pension level will be the same.

Pension wealth is an indicator that takes into account all future pension payments to a retiree. It therefore depends not only on the level of pensions paid, but also on how long they are paid. The number of years that someone can expect to receive a pension will depend both on the age of retirement and life expectancy at that age. The way that benefits are adjusted to price or wage growth during the period of payment will also influence pension wealth.

Appendix 4. World Bank Pension Primer: Civil Servants' Pensions

Pension plans for public-sector workers: options and arguments

Civil servants' pension plans around the world 1

Pension plans for civil servants and other public-sector employees—in the military, education, publicly owned enterprises etc.—were often established before national retirement-income schemes. When pension coverage was expanded to the private sector, there often seemed little point in including civil servants who already had their own arrangements. Furthermore, these often offered better terms than the new national scheme. Thus, special schemes for the public sector often persisted.

Many of the issues in reforming public sector pension schemes are the same as those for national systems. However, some of the issues remain different.

There are a number of motivations for reforming public-sector pension schemes.

One motivation for reforming civil-service pension schemes is their cost.

In 18 higher-income countries spending on civil servants' pensions averages 1½ per cent of

gross domestic product (GDP), according to the Organization for Economic Co-operation and Development. Data for less-developed economies are less readily available. Nevertheless, the average proportion of GDP devoted to public-sector pensions is three-quarters of one percentage point in 15 countries.

This is equivalent to nearly four per cent of total public spending.

Many of the policy issues raised in this briefing note are common to civil service and national pension programs; for example:

- Financing: should civil service pensions be pre-funded or provided on a pay-as-you-go basis?
- Transition: if the funded route is chosen, how should the cost of the transition from pay-as-you-go finance be met?
- Benefits: should the scheme be based on defined contributions or a defined benefit formula?

This briefing note assesses the arguments for retaining separate schemes for civil servants against integrating them into general, national programs.

Global patterns

Integrated pension schemes are the norm in Eastern Europe and the former Soviet Union. However, special privileges—such as early retirement—are offered to particular groups of workers within the universal program.

In other parts of Asia, in the Middle East and Africa, only one in ten countries integrates civil servants into national schemes. Seven countries do not have programs for private sector workers, but in most cases, it is because there are separate schemes.

In other regions, the picture is more mixed. Around 30 per cent of countries in Latin America and 35 per cent of higher-income OECD countries have integrated retirement systems. The rest have special schemes for civil servants and often for other public-sector workers (in local government, public industry, the military etc.).

Number of countries	Integrated	Separate	CS only
Higher-income OECD	8	15	—
Eastern Europe/Central Asia	21	—	—
Latin America/Caribbean	6	14	—
Africa	3	25	4
East Asia/Pacific	1	12	—
Middle East/North Africa	2	10	—
South Asia	2	3	3

Source: OECD, World Bank

Occupations such as military personnel or banking sector workers were often introduced prior to national schemes. When coverage was expanded to other formal sector workers, many of the special schemes remained separate. The special schemes were sometimes justified on historical grounds or because of the special characteristics of their members (e.g., soldiers or coal miners). Since many of these schemes predate the schemes covering the private sector, the current fiscal costs of the special schemes are often higher than the broader system. This is the case, for example, in Korea, where the civil servants' scheme was introduced more than fifteen years before the recent National Pension Scheme.

Why reform?

- avoid dualism
- fiscal transparency
- fiscal consolidation
- preserve future fiscal flexibility
- labour market flexibility

Plus

- Shift to funding: increase savings, increase contractual long-term savings
- develop capital markets

But:

- requires careful design and implementation
- will typically need to take place as part of a fundamental reform of civil service terms and conditions

Gradual versus fundamental reform

- starting point: contributory, not or partly
- issue of transition costs means fiscal position important
- existing benefit must be honoured

But: some scope for cost reductions through commutation options, early retirement provisions, indexation of post-retirement benefits

- needs good lifecycle earnings record-keeping
- minimise government guarantees
- avoid service promises: health care etc.

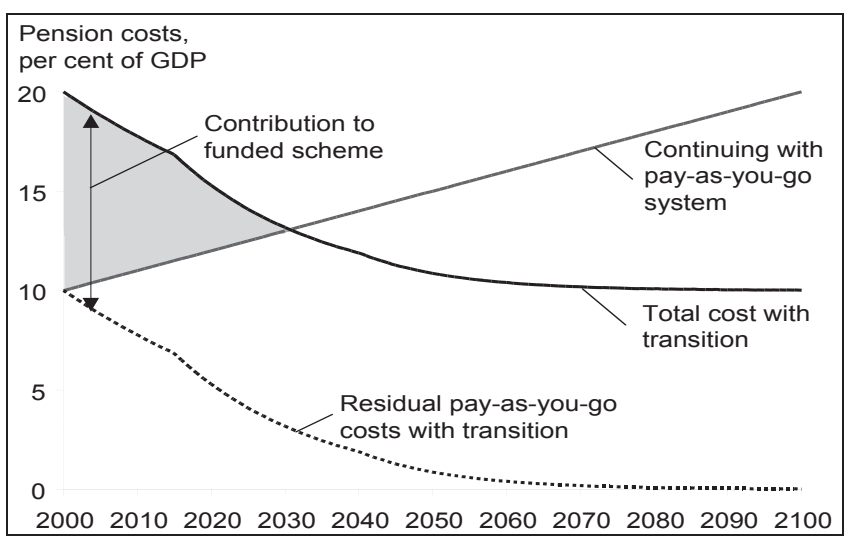
Dualism:

- mobility is key problem
- Switching
- Unifying benefit structures for central government

But:

- CS pensions obviously an important part of conditions of employment: result of agreement between government and employee representatives.
- Difficult to make direct cross-country comparisons: wage adjustments etc.

Pension costs



Problems of part-time employees, flexibility and final-salary DB schemes:

This is obviously a highly stylized example. Economists dispute the size of the potential long term gains from a shift to funding. And the size of the transition will depend on the starting point:

How generous is the current pay-as-you-go pension promise?

How mature is the pay-as-you-go pension system?

What is the age structure of the population?

Nonetheless, the pattern of the figure will generally hold. The transition from pay-as-you-go to funding involves a short-term cost.

Valuing pension promises

Like government bonds, pay-as-you-go pensions are a promise to pay certain amounts at certain times in the future. But, unlike government bonds, they are not measured in conventional public-sector accounts. Numerous studies have estimated the scale of these future pension liabilities. While precise results differ, the implicit pension debt generally dwarfs conventional debt. Some experts have argued changes to the treatment of pension promises in public accounts.

Shifting to funding ends the process of rolling over the implicit pension debt to each upcoming generation. Some of the implicit pension debt therefore becomes explicit. The short-term transition cost adds to the government's deficit (or reduces the surplus). With many (or even most) governments battling hard to maintain fiscal prudence, the transition burden looks difficult to surmount.

Yet, it is not necessary to believe in the changes to public-sector financial statistics outlined above to realize that the short-term transition cost could bring with it a long-term reduction in pension liabilities. This would improve the public sector's balance sheet. Indeed, the main companies that rate sovereign debt are beginning to take pension policies into account.

Further reading

SIGMA 1997, 'Civil service pension schemes', Paper no. 10, Support for Improvement in Government and Management in Central and Eastern Europe, OECD, Paris.

Appendix 5. Annuities

The precise balance between debt and budgetary finance (spending cuts or tax increases) should be chosen in the general context of a country's fiscal policy.

Regulating withdrawals from individual pension accounts

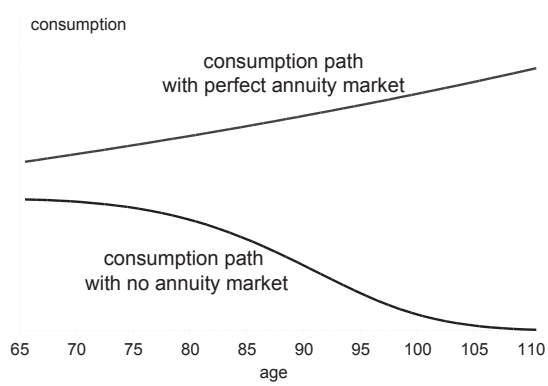
'Pension', to most people, implies a regular payment from a specific age—such as retirement—until death. Individual retirement accounts are a vehicle for retirement savings but they do not become a pension in the conventional sense of the word until they are converted to an 'annuity'. How much and what type of annuitization should be mandated are key policy questions facing reformers.

The value of annuities

Economists believe that annuities can make people better off. The intuition is straightforward. Life expectancy is normally uncertain. So people would have to spend accumulated wealth slowly after retirement to ensure an adequate income should they live a long time. This kind of self-insurance is costly because it increases the chances that people will consume less than they could have if they knew when they were going to die. This cost can be reduced with annuities, which pool risks across individuals.

An annuity is a kind of insurance against the risk of exhausting savings in old age. The benefit of this 'longevity insurance' depends on how conservative people are. More cautious individuals would spend less of their savings in the early years of retirement if there were no annuities as they sought to avoid any chance of running out of money toward the end of their lives. The benefit also depends on interest rates, life expectancy and how much people plan for the long term. Under reasonable assumptions about each of these variables, an annuity has been estimated to be worth 50-100 per cent of wealth at age 65.

Figure 1
Annuities can raise welfare



Demand for annuities

Given these impressive magnitudes, it would seem safe to expect that there would be significant demand for annuities. But in fact, actual demand is quite limited. This is because the decision whether to buy an annuity is affected by transaction costs, market imperfections and other factors, which were not considered above. Understanding these reasons is important when thinking about how governments should intervene in the benefit withdrawal stage of an individual accounts system.

Adverse selection

One possible explanation for low annuity demand is a market failure known as 'adverse selection'. The potential for adverse selection is often used to justify government intervention in annuities markets.

Adverse selection can occur when people know something about their mortality risk that annuity providers find costly or impossible to find out. This information asymmetry means that people with higher mortality could expect to lose out from buying an annuity. The average life expectancy of annuitants increases, so providers must raise the price. This drives still more people out of the market. The market fails, because some people are unable to buy a fairly priced annuity.

A number of studies have documented annuity prices significantly higher than those that would be charged if insurance companies were to base their calculations on the relevant interest rates and projected population mortality. In other words, annuity prices were not 'actuarially fair'. Depending on the discount rate applied, the premium paid by annuitants in the United Kingdom and the United States was typically between 7 and 15 per cent. This evidence, combined with the observation that annuitants live longer than the general population, provides support for the market failure explanation.

Other factors reducing demand

However, there are many other potential explanations for underdeveloped annuity markets. These fall into two categories: factors reducing the desirability of longevity insurance, or means of providing a viable alternative to annuity products offered in the market.

We begin with bequests. Standard life annuities are, by definition, exhausted when people die. Yet people often want to leave some of their wealth to their family or even to charity. As well as concern for their family's well-being, bequests can be used to encourage relatives to look after

them in their old age in exchange for the promise of the inheritance. Bequests, whether 'strategic' or 'altruistic', can reduce the usefulness of annuities to individuals.

Precautionary savings can also reduce the demand for annuities. A sudden medical emergency requires liquidity and flexibility that is impossible if wealth is fully annuitized. In the absence of health insurance, this motive can be a serious disincentive to purchasing an annuity.

There are at least two important substitutes for annuities purchased from private insurers. The first is a public pension. In the United Kingdom and the United States, more than half of the average household's wealth is held in the form of a public pension. This proportion is even higher in countries with more generous benefits, such as France, Germany and Italy.

The second substitute—the family—can be described as an 'incomplete' annuities market. In theory, even a small family unit can make informal arrangements providing much of the benefit of buying an annuity. The advantages of keeping it in the family include low monitoring and transaction costs. And, depending on the social sanctions that are possible, enforcement mechanisms in this informal market may be very effective. Simulations have shown that intra-family arrangements could generate as much as three-quarters of the welfare gains from an actuarially fair annuity market.

Empirical studies have not found much evidence of transfers within families that fit this model. But this is hardly surprising: the studies have focused on industrialized countries with broad public and private annuity provision. In contrast, within-family provision may well be important in traditional societies and rural communities. Here, the transaction costs of buying annuities are highest while informal contracts are common practice.

The desire for liquid assets or bequeathable wealth and the availability of substitutes for private annuities must be taken into account when designing benefit rules in a defined contribution pension system. Also, transaction costs and the state of the insurance sector (including regulatory capacity) should be borne in mind.

Why limit withdrawals?

The fact that few people buy annuities voluntarily poses a challenge for reforms relying on defined contribution schemes. To reduce old age poverty and provide a reasonable degree of earnings replacement in retirement, government intervention may be warranted.

Mandatory provision for income in old age is usually justified on two grounds. Firstly, there is paternalism. People are myopic, and left to their own devices will not save enough. Others may be forward-looking, but may lack the information needed to make sensible savings choices. Secondly, there is the phenomenon economists call 'moral hazard'. People will not save enough if they expect government to rescue them in their old age. And governments in many countries cannot credibly commit to leave pensioners destitute.

These same arguments apply to withdrawals in retirement savings systems. Myopic people might spend their savings early in retirement. And public safety nets encourage even the forward-looking to spend, to use up their wealth and then rely on government support. Lack of information—on inflation or life expectancy, for example—can also mean that people make choices they later regret.

Mandating annuities

Forcing people to convert the whole of their retirement savings into an annuity is an obvious solution to the problems of myopia, lack of information and moral hazard. It also seems a sensible response to the possibility of 'adverse selection' mentioned earlier.

But we have already noted several reasons why people can find annuities unattractive, even when they have perfect foresight. Mandating annuities could reduce the welfare of these people, for example, by preventing them from leaving money to their children. Moreover, public policy objectives can be achieved without requiring full annuitization of wealth.

Minimum annuity levels

The tensions between individual preferences and public policy objectives point to the need to strike a careful balance—as opposed to a blanket mandate to annuitize. This balance will be different in each country. But a sensible starting point is to require people to take out an annuity of a minimum level. No one will be left destitute because of their myopia. And, if the minimum is set higher than the safety net income, it alleviates the moral hazard problem.

A gap between the social safety net income and the minimum annuity is advisable for two reasons. First, the social safety net might be up-rated more rapidly (by earnings, for example) than the annuity. So, after a long period of retirement, the annuity might actually fall below the safety net.

Secondly, the safety net income is often set at a lower level than a reasonable replacement rate for a worker on average pay. People with a reasonable level of accumulated retirement savings

should not be permitted, through myopia, to dissipate this wealth and then fall to the safety-net level. Another way to avoid this situation is to mandate not only the minimum annuity level but also a minimum replacement rate target based on the worker's own pre-retirement earnings. Naturally, the higher this mandated replacement rate, the greater the likelihood that the certain individuals will, in their view, hold too much of their wealth in the form of an annuity.

Finally, in mandating the minimum annuity, policymakers must take the interests of scheme members' dependants into account. Widows tend to be poorer than the rest of the elderly and women tend to live longer than men. If people can tie their annuity to their own life alone, then the government might have to support many surviving spouses. Problems of myopia and moral hazard suggest that at least the minimum annuity should be required to provide for survivors. Of course, the stream of income required to maintain living standards need not be as high as when both spouses were alive.

Indexation

The purpose of mandating annuities will be undermined if the purchasing power of the payment declines over time. Even low levels of inflation can dramatically affect living standards. For example, 2½ per cent inflation over 25 years would nearly halve the value of a level (unindexed) annuity.

Inflation-indexed annuities are not common. Even when they are widely available, as in the United Kingdom, take up is very low. This suggests another kind of myopia: people are unaware of the longer-term effects of inflation on their benefits. In economic terms, 'money illusion' is at work. Inflation protection should therefore be required for at least the minimum mandatory annuity and perhaps for all annuity products.

So that private insurers can offer inflation protection, the government will probably need to issue indexed public bonds. These allow annuity providers to insure their liabilities. But finance ministries have often opposed indexed bonds because they legitimize inflation and inflationary expectations. If people are protected from inflation's adverse effects, the argument goes, they will be reluctant to support painful macroeconomic stabilization programs.

Broader macroeconomic concerns must of course take precedence over the narrower interests of the retirement-income system. But, once expectations of permanently high inflation are eliminated, there are more effective means of ensuring stability and credibility, such as an independent central bank.

Draw-downs and annuity options

A draw-down is an alternative way of spreading accumulated retirement savings over time. Rather than purchasing an annuity, an individual withdraws his balance according to a preset formula that takes into account average life expectancy and the interest rate. The main problem with draw-down is the risk that people might outlive their resources. A draw-down option could also exacerbate adverse selection: people with shorter life expectancy are able to opt out of the annuity market.

Scheduled withdrawals are useful for people who want to share in the investment returns (and risks) of the provider. In contrast, a standard life annuity contract is based implicitly on a fixed rate of return. Since insurance companies assume all the risk, the implicit interest rate is usually closer to the yield on government bonds with a similar duration.

An alternative product is a variable annuity. This is again an irrevocable contract, but the buyer shares in the risk and the return of investing the fund. If returns are low, future payments can be reduced (and vice versa). In Argentina, for example, annuities must generate at least a 4 per cent nominal rate of return. Above that level, annuity buyers and sellers can agree to split the returns in any way they agree.

Many other variants that customize the level and duration of the annuity income stream and associated risks can be offered. Some contracts allow for a fixed period of payments, say 20 years, even if the annuitant dies before the period is up. Some annuities allow for deferral of payments for several years. Limited inflation protection can be purchased at lower cost than a fully indexed annuity. An infinite number of combinations can be devised.

Timing of withdrawal

The value of accumulated retirement savings can, depending on how funds are invested, be volatile. Annuity rates also vary over time with long-term interest rates. In the United Kingdom, for example, an annuity for a 65 year old man fell from over 15 per cent of the fund in 1990 to around 10 per cent in 1998.

Variations in the fund value and annuity rates mean the time at which retirement savings are converted to an annuity can have enormous effects on pension income. So, for example, if people are forced to convert to an annuity at a set pensionable age, they will lose out if that coincides with, say, a stock-market crash. This ‘timing risk’ can be mitigated by allowing people to choose when they annuitize, drawing down retirement savings in the meantime. But even professionals fail to predict stock-market and interest rate trends.

There is a better solution to the problem of timing risk. Annuitization can be thought of as a one-time portfolio shift, from a broad range of investments to a narrow portfolio: the investments of the insurer backing the annuity, predominantly in bonds. Variable annuities are based on a broader portfolio. The insurer invests in a range of assets, and the annuity pay-out adjusts to reflect their value. This obviates the need for the one-time portfolio shift associated with timing risk. Variable annuities are also a better way of delivering the flexibility of investments achieved by draw-down.

Early international experience

Only two of the countries with mandatory, individual accounts—Australia and Hong Kong—allow members access to the whole fund balance when they retire. Australians generally take a lump-sum pay-out at retirement. (What happens thereafter is complicated by the presence of an income- and asset-tested public pension program.) Hong Kong will only begin collecting mandatory contributions in late 2000, so there is no experience of withdrawals yet.

Another dozen countries with individual account schemes restrict withdrawals in one way or another. In the United Kingdom, for example, people can take out a lump sum of up to a quarter of their accumulated pension fund. They can draw down the rest of the fund gradually after retirement. But they must buy an annuity with the remainder by age 75 at the latest. Sweden will force people to buy annuities with their mandatory pension funds. Sweden is the only country where the government provides all annuities. The new schemes in Hungary and Poland also require annuitization but with private insurers.

Latin American schemes strongly encourage annuities but most allow for scheduled withdrawals. In Chile, about half of the quarter million pensioners in the new private scheme have opted for some form of annuity.

Regulations

Once the decision is made to restrict withdrawals, a series of difficult regulatory choices arise. Several have already been mentioned. For example, what are the specific types of annuities allowed and who can offer them? What is the minimum annuity that the retiring worker must purchase? The rules governing pricing and the way these complex products are sold lead to additional regulations. Finally, there may be implicit or explicit guarantees which may necessitate further rules and a process for monitoring them.

The most basic decision is the benefit level below which restrictions will be applied. In Latin America, the minimum annuity level is usually set both in terms of the worker's own pre-retirement earnings and some absolute minimum specified by the government. For example, workers in Argentina, Peru and Chile have the option of taking a lump sum if the remainder of the balance would allow them to purchase an annuity that provides a replacement rate of 70 percent.

In Chile, the minimum is determined according to a formula which states that if the individual can purchase an annuity of value equal to or greater than the higher of 1.2 times the minimum pension or a 70 percent replacement rate of the previous five years' average real earnings, the rest of the balance can be taken in the form of a lump sum. Since the ceiling on taxable earnings is twice the average wage, this means that highest mandated annuity is 140 percent of the average wage. This type of rule also provides flexibility with regard to the retirement age.

Annuity providers

During the accumulation stage, some countries with individual accounts have relied on specialized institutions. This is true for all of the Latin American reforms and this is also the case in Hungary and Poland. In contrast, with the exception of Argentina and perhaps Poland, most of these systems allow annuities to be purchased from regular life insurance companies and not only specialized firms.

The problem with requiring specialized institutions is that separate capital requirements, staff and other costs of doing business are increased. This may limit competition and is likely to result in higher transaction costs for annuitants. On the other hand, weaker providers could lead to default and trigger expensive guarantees. A compromise is to allow life insurance companies to participate but to require stricter standards for acquiring a licence to sell annuities in the mandatory system.

Regulating annuity prices

Annuity providers might offer different annuity prices according to individual characteristics that are related to life expectancy. Sex, marital status, income and parents' longevity are all (easily measurable) attributes that affect people's mortality risk. If insurers do not take account of available information, they might be undercut by competitors offering better terms to better risks. They would face their own individual adverse selection effects.

However, differential annuity pricing raises some important public policy issues. For example, lower annuity payments to a woman than to a man with the same accumulated retirement fund is actuarially accurate. Although people are aware that women live longer on average,

governments often require insurers to offer unisex annuity rates. The redistribution from men to women that this implies is justified as a way of avoiding the perception of discrimination when women receive lower annuity rates. Some other issues may become even more important in the future. For example, the use of private medical information and the potential for genetic testing are key sources of longevity information that will become easier to obtain in the next decades.

In practice, most of the countries with individual account schemes impose strict regulations on the way annuities are calculated and sold. Governments specify age-specific survival expectations used in the calculations. These may differ from national mortality data as is the case in Argentina, Chile, Colombia and Peru where special tables were sanctioned. All of these tables have significantly lower mortality rates than those found in population-based tables. The difference persists even compared with projected mortality, ranging from around 3 per cent in Argentina to almost 14 per cent in Peru. The lack of reliable mortality data on potential annuitants poses a major challenge to annuity providers and supervisory authorities.

The interest rates used in annuity calculations are also regulated in Latin America. In Argentina, insurance companies are required to use a 4 per cent nominal rate for both reserves and pricing. In Chile, reserves had to be discounted at a rate of 3 per cent a year until 1988. Since then, reserves are discounted at the long-term rate on the underlying assets. The situations in Peru and Colombia are similar, with a 4 per cent fixed interest rate for reserves in Colombia and 3 per cent in Peru. The rate used to calculate the annuity is not stipulated. It is typically around 4 per cent in Colombia and almost 6 per cent in Peru.

Figure 2 compares the monthly payment that could be purchased with $100,000 in Australia, Canada, the United Kingdom and the United States with quotes from four Latin American countries. The data are drawn from several sources, but they refer to the same kind of individual and the same type of annuity. In the four cases at the bottom of the chart, the annuity is price indexed. The five bars at the top refer to nominal annuities. Note that the Argentine annuity allows the holder to share in returns in excess of four percent.

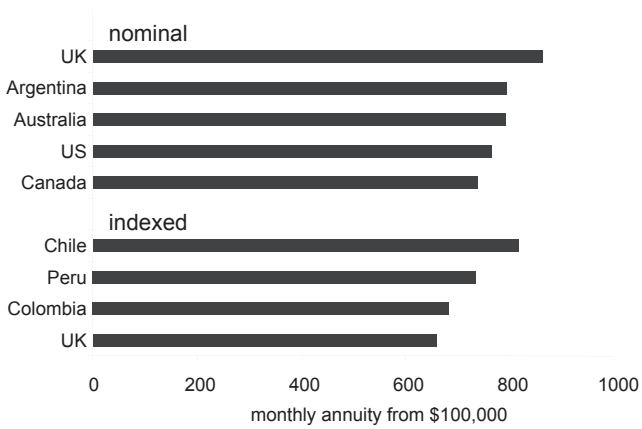
The pay-out from a nominal annuity lies between $700 and $880 a month. Inflation-indexed annuities range from around $620 in the UK to almost $820 in Chile. Interestingly, the indexed annuity in the United Kingdom pays a much lower amount than the indexed Latin American products: 60 per cent less than in Chile. Part of the explanation is the fact that Chilean annuitants have life expectancies that are 5 per cent lower than their (voluntary) counterparts in the United Kingdom. Real interest rates are also higher in Chile. Unfortunately, because life expectancy of annuitants, interest rates and even the competitiveness of the insurance

industry vary, these figures do not tell us how close these amounts come to providing a fair annuity.

This requires an estimate of the 'money's worth' of annuities sold. A widely used measure of this is the ratio of the fair annuity price to the market price. Several studies have measured the money's-worth ratio in the United Kingdom and the United States. Typical results are in the 85-90 per cent range. But this does not measure the fairness of annuity prices to people buying them. Using annuitants' life expectancies, the ratio tends to be closer to 100 per cent.

Figure 2

Annuity rates around the world



But this calculation is problematic, especially in developing countries. First, many countries do not have annuitant mortality tables or even projected life tables for the population. So, these have to be assumed. Secondly, few countries have long-term bond markets or, if they do, they are illiquid. It is difficult then to discount future annuity payments. Money's-worth ratios also ignore the risk that an insurer will default, which will affect cross-country comparisons significantly. Finally, money's-worth calculations implicitly assume that projected mortality is certain. In fact, demographers have often made serious errors in forecasting mortality. If this risk is taken into account, a significant part of the difference between 'fair' and observed annuity prices can be explained.

Mortality and wealth

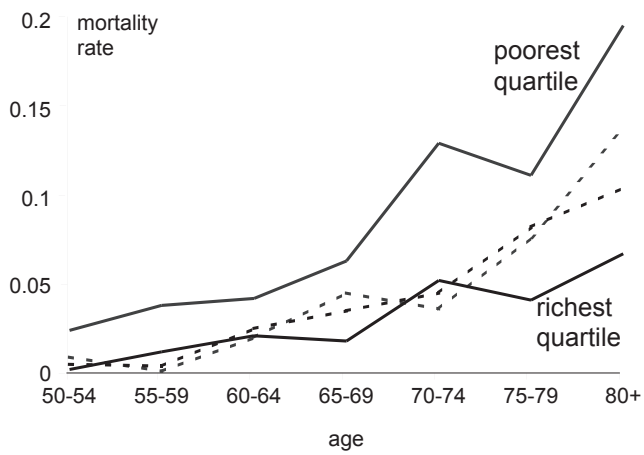
Perhaps the most difficult issue in annuity pricing is the potential for redistribution from those with lower lifetime income and wealth to higher income annuitants. This occurs when there is a positive relationship between longevity and wealth. Indeed, this is simply the corollary of the redistribution to groups that are systematically longer lived in public pension schemes. Studies

have found such unintended redistribution in the Netherlands, Sweden, the United Kingdom, and the United States.

Figure 3 shows the wealth-mortality relationship for older households in the United States based on the Health and Retirement Study. People in the poorest quarter of the population are on average four times as likely to die in any period than the richest quarter.

Figure 3

Wealth and mortality in the US



This relationship has several important policy implications. First, it suggests that at least some of the observed differences between population and annuitant mortality rates can be explained by greater demand for annuities among people in the higher wealth quartiles. This casts some doubt on the evidence of adverse selection and supports a simpler explanation.

Another implication is that national mortality tables understate longevity in countries with partial pension system coverage, because people in the informal sector tend to be poorer than average. So, their mortality rates are likely to be higher than those of members of the pension system.

Most important however, is the possibility that mandatory annuitization will lead to unintended redistribution away from workers with lower lifetime incomes. Jeffrey Brown of Harvard University finds that that these transfers could amount to as much as 20 per cent of pension assets for low-income workers in an individual accounts scheme. But he also suggests that these transfers can be reduced by allowing for guaranteed payment periods, bequest options and joint-life annuities. Of

course, these options lead to lower benefits for annuitants themselves since these options are more expensive than a standard life annuity.

Transparency and supervision

Efforts to improve consumer financial literacy and to regulate and supervise new pension systems have naturally, tended to focus on the accumulation stage, as contributions and investment returns build up in retirement savings accounts. In contrast, there has been relatively little consideration of the conditions in the insurance sector and the supervisory apparatus required for the benefit stage of the system. Early experiences, especially in Latin America, highlight the need for better information and transparency in the new annuities markets. Parallel reforms in the insurance sector may be necessary to ensure the success of the reform.

Conclusions and Recommendations

- Regulation of withdrawals in pension systems based on individual accounts needs to balance public policy objectives and individual circumstances;

- Family arrangements can provide a large portion of the welfare gains of annuities; preferences vary including the desire to bequeath wealth and take precautions for medical expenses;

- At the same time, mandatory annuitization protects pensioners against longevity risk and reduces government's social safety net liabilities, by ensuring people do not spend all their savings early;

- Balancing these different objectives means that mandatory annuitization of the whole of retirement savings is unlikely to be optimal;

- The best strategy is to set a minimum, indexed annuity with adequate survivor's provision, with flexibility for any remaining retirement savings.

Further reading

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