Report No. 47673-LAC

Strengthening Caribbean Pensions

Improving Equity and Sustainability

March 3, 2010

Human Development Sector Management Unit
Caribbean Country Management Unit
Latin America and the Caribbean Region

Document of the World Bank

ABBREVIATIONS AND ACRONYMS

CARICOM	Caribbean Community
CASS	Caribbean Agreement on Social Security
CSME	Common Single Market Economy
EU	European Union
ECLAC	Economic Commission for Latin America and the Caribbean
FSC	Financial Services Commission (Jamaica)
GDP	Gross Domestic Product
GNI	Gross National Income
IRR	Implicit Rate of Return
NIS	National Insurance Schemes
OCI	Office of the Commissioner of Insurance (Guyana)
OECD	Organization for Economic Co-operation and Development
OECS	Organization of Eastern Caribbean States
PPG	Public and Publicly Guaranteed Debt

Vice President	Pamela Cox
Chief Economist	Augusto de la Torre
Sector Manager	Helena Ribe
Sector Director	Evangeline Javier
Sector Leader	David Warren
Task Team Leader	Mark Dorfman

STRENGTHENING CARIBBEAN PENSIONS
IMPROVING EQUITY AND SUSTAINABILITY

TABLE OF CONTENTS

TABLES

FIGURES

ACKNOWLEDGEMENTS

This report was prepared by Mark Dorfman (Task Manager and Senior Economist, HDNSP) and Alvaro Forteza (Consultant, LCSHS) under the direction of Helena Ribe (Sector Manager, LCSHS). Peer reviewers for the report were David Robalino (Senior Economist, HDNSP), Rafael Rofman (Lead Economist, LCSHS) and Derek Osborne (Actuarial Consultant). Overall guidance was provided by Chingboon Lee (Acting Sector Leader, LCC3C), David Warren (Sector Leader, LCC3C), and Yvonne Tsikata (Country Director, LCC3C).

We are grateful for the comments received from Social Security representatives at annual meetings of the National Heads of Social Security in St. Vincent and the Grenadines and Hamilton, Bermuda in June 2007 and May 2008, respectively. We also appreciate the comments received from bilateral discussions with representatives of the Government of Jamaica and the Eastern Caribbean Central Bank. We would like to thank Steven Mac Andrew of the CSME Secretariat who provided valuable guidance to the team, comments on earlier drafts of the report and assistance in facilitating the discussion and distribution of the draft report. A draft of this report was presented at the May 2008 meeting of the National Heads of Social Security and distributed to the governing authorities of CARICOM member states.

Executive Summary

I. Introduction

This report has been prepared by the staff of the World Bank to review the characteristics of pension systems in the Caribbean region and identify common reform needs. Drawing upon the Bank's international experience, the report aims to provide additional insights for regional policymakers and development partners on reform needs and potential policy options. The many common characteristics of the social security schemes in the Caricom member states suggest that some reform options are amenable to a regional approach. However, because country objectives and circumstances vary, most changes to country system parameters will need to be at a country level.

Concern over the weaknesses of pension provisions in the Caribbean is growing among a number of country authorities and their development partners. This results from several factors including: (i) the effects of different social security regimes and weak pension portability, which limit labor mobility and international economic competitiveness; (ii) the sustainability of pension schemes given current parameters and governance; (iii) rising costs of civil service pension benefits and pressure for better benefit indexation; and (iv) weaknesses in the predictability of benefits and other incentives in mandatory pension schemes.

This report aims to provide additional insights to existing analyses of public pension and social security schemes in the Caribbean. Such analyses have been undertaken with the support of the Inter-American Development Bank, the Caribbean Development Bank, the Canadian International Development Agency, the Economic Commission for Latin America, and the Caribbean and the International Social Security Association. By making cross-country comparisons within the region and across the world, this report will review fiscal vulnerability, sustainability, labor market efficiency, migration, financial market development and other pension-related areas.

II. Socio-Economic Characteristics

Common socio-economic characteristics that frame the pension policy needs, challenges and options in the Caribbean include: (i) an ongoing population aging process that varies substantially between countries; (ii) high levels of emigration and immigration both within the Caribbean and from the Caribbean to countries outside the region; (iii) the prevalence of small island economies, labor mobility and the need for portability of pension rights; (iv) substantial volatility arising from economic concentration and climatic conditions, including hurricanes; and (v) limited evidence on elderly poverty levels in the Caribbean suggesting that although the incidence of poverty among the elderly is in some cases smaller than among the younger population, the elderly are still likely to be more vulnerable than those of working age.

III. Pension System Design

English-speaking Caricom member states, with the exception of Jamaica, share the same kind of defined-benefit design structure for their social security schemes. The Dominican Republic has introduced a competitively managed defined contribution scheme. A number of design parameters are common to most Caricom member state schemes, including higher accrual rates for the initial 10–15 years, generally similar vesting periods and caps on covered wages, and benefit adjustments subject to parliamentary approval. Replacement rates and levels of explicit income redistribution were also similar across social security schemes.

IV. Pension System Challenges

The report reviewed the following variables and identified key challenges in each:

(i) *Adequacy of benefits*—this includes sufficiency of public schemes to provide for "consumption smoothing," absolute benefits relative to prevailing wages and coverage of the working and retired populations.

(ii) *Predictability of contribution and benefit levels*—we found substantial worker and retiree uncertainty and risk stemming from the absence of formalized benefit indexation in the region as well as the absence of valorization of the wage base for determining benefits.

(iii) *Equity and incentives*, including income redistribution through the public pension systems and implicit redistributions between cohorts and income groups—we found that all schemes in the region explicitly redistributed income through the pension system but that the accelerated or frontloaded accrual rates in the Caricom member states leads to weak incentives.

(iv) *Public pension financial sustainability*—found to be weak in several of the countries in the region although remediable in the short term through parametric adjustments.

(v) *Portability of pension rights*—the Caricom regional social security agreement provides a framework for the portability of public pension rights. However, when combined with accelerated accrual rates, it results in significant portability gains and losses. Moreover, there are few bilateral social security agreements with countries outside of the region, including those countries that are the most significant recipients of Caribbean emigration. Additional measures are also needed in order to facilitate labor mobility within the region and provide for the portability of pension rights under occupational schemes.

(vi) *Governance environment and framework*—we found that a number of measures should be taken to improve the governance framework for public pension funds and, in particular, to reduce the level of risk in investment management.

(vii) *Administration and efficiency*—we found highly variable levels of efficiency in public pension schemes in the region, with administrative costs generally higher the smaller the country.

V. Reform Directions

Although reform needs and priorities vary between countries, we found the following three priorities: (i) increasing the predictability of contributions and benefits, (ii) improving public pension sustainability, and (iii) strengthening pension governance, particularly in risk management of public pension reserves.

Adoption of a framework in which benefits and the cap on covered wages are automatically indexed would strengthen the predictability of contributions and benefits.

Improving public pension sustainability will require a number of parametric changes that vary according to country circumstances but could include: (i) the adoption prospectively of a linear accrual rate, (ii) in some cases an increase in the retirement age, and (iii) in some cases an adjustment of the contribution rate.

Finally, governance and investment management should be strengthened by: (i) strengthening the governance structure, including authority and accountability of Board members, (ii) improving governance mechanisms with the assistance of external oversight and improved information disclosure, (iii) introducing codes of conduct for the governing body and management, and (iv) introducing a number of measures to strengthen the investment policies, investment strategy, asset allocation, and performance evaluation.

VI. Conclusions

As countries in the Caribbean region seek to enhance their international competitiveness, it becomes increasingly important to strengthen their public social security and private pension schemes. Provisions for inter-island labor mobility in the Common Single Market Economy (CSME) agreement should be reinforced by the strengthening of agreements on the portability of social security benefits and implementation of these agreements. Additional measures are needed to provide for similar portability between private occupational schemes.

Social security provision has an important macroeconomic dimension as well; many schemes in the region will face sustainability challenges in the medium term unless proactive parametric measures are taken in the short-term.

We have suggested that parametric adjustments are needed for most schemes in the region in order to improve the predictability of contributions and benefits. Such predictability is essential to achieving the core mandate of public social security schemes to “smooth” consumption and reduce poverty in retirement.

Finally, we believe that good governance and accountability in public pension schemes are vital to public credibility, trust and compliance. We have therefore proposed a number of measures to improve the governance of public pension schemes and to maintain and reinforce member credibility and trust.

FORWARD

This report was prepared in late 2007 and presented to social security heads in the region in May of 2008. In the months following the presentation of the report, additional bilateral discussions were held and written comments received. With the onset of the global financial and economic crisis in September of 2008, public and private pension and social security schemes in the Caribbean faced substantially increasing challenges as did much of the rest of the world. Pension reserves felt the impact of declines in equity and other asset prices. The economic slowdown in many of the countries in the region has also put some pressure on contribution revenues and benefit payments.

The financial crisis has had a number of effects on pension systems in the Caribbean: (i) some stocks of pension reserves have been adversely affected by declines in value; (ii) contribution and benefit flows have been affected by unemployment; and (iii) distress in the financial sector has affected fund managers in select cases. Shortfalls in contribution revenues result from reductions in real wage growth, growth in unemployment, and exits from the formal labor force to the informal economy. Increases in expenditures could result as more individuals retire from the labor force and seek pension benefits in the face of an economic downturn. Invalidity and short-term disability claims can also increase in response to higher unemployment. The region has been affected by distress in the financial sector, most notably by the collapse of the Trinidad-based conglomerate CL Financial as well as the downfall of the Stanford Financial Group. These have affected pension investments and the fiscal position of some governments in the region. Possible declines in remittances and tourism arrivals, two important sources of revenue in the region could also have important fiscal effects. Declines in offshore finance and commodity exports can also affect growth, employment and the fiscal position. The World Bank's Global Economic Prospects suggests some declines in rates of growth between 2007 and 2009 with some recovery in 2010 as suggested in the table below.[1] The effects of reduction in asset values, decreases in contributions and increases in disbursements of course will depend upon the duration of the crisis and the trajectory of eventual recovery.

Table 1: Projected GDP Growth in Selected Caribbean Countries

	2007	2008	2009	2010
Belize	3.0	2.8	2.1	2.9
Dominica	3.2	3.1	(1.5)	3.3
Dominican Republic	8.5	5.2	2.6	4.5
Guyana	5.5	4.8	4.0	3.1
Haiti	3.5	3.0	3.8	3.9
Jamaica	1.2	0.9	0.8	2.3
St. Lucia	4.0	4.4	4.8	5.0
St. Vincent and the Grenadines	5.5	6.3	(0.6)	5.6

Source: Global Economic Prospects 2009, November, 2008.

[1] Updates to the Global Economic Prospects published on March 30, 2009 indicated a lowering of 2009 global estimates and a weaker recovery in 2010. The update, however, does not include revisions to country-specific projections for the Caribbean.

The extent of the financial impact on defined-benefit social security schemes depends significantly on the maturity of these schemes. In the Caribbean, most social security schemes are still relatively young both in a chronological and actuarial sense so are relatively well-positioned to withstand a decline in asset values, reductions in contribution revenues and increases in benefit disbursements. How a particular scheme can weather the crisis depends upon the magnitude of the contribution revenue shortfalls, the increases in benefit flows and the size and liquidity of the reserves to draw upon for such needs.

The effects on members' benefits of public social security schemes will depend on how governments deal with any shortfall in revenues and increases in expenditures. Emerging pension system deficits could be financed through the liquidation of reserves although such liquidation could impact markets for public debt. Most schemes in the Caribbean have indexation subject to Ministerial and/or parliamentary approval so that adjustments in the indexation of benefits impact pension expenditures. Reductions in benefit indexation would decrease elderly consumption.

Occupational schemes, which are prominent in the region, have also been adversely affected. Defined-contribution schemes have been impacted by declines in asset values, some financial distress by pension fund managers and financial weaknesses by the corporate sponsors of these schemes. Defined-benefit schemes have, in addition, been impacted by changes in interest rates which affect funding requirements.

About half of Caricom member states have non-contributory targeted assistance pensions for the elderly that can militate against those elderly without other sources of income from falling into poverty in the face of the crisis. Benefits under such schemes vary substantially as do the means-testing criteria applied. The capacity to effectively administer such schemes will be essential to ensuring that the affected elderly are shielded from severe poverty.

The adverse effects of the financial crisis provide a strong impetus for countries in the region to review the design and implementation of policies to best achieve the core objectives of retirement systems. It particularly highlights the importance of: (i) improved governance of public pensions and social security schemes as well as substantially strengthened harmonization of regulations and supervision of occupational schemes; (ii) diversification of pension risks through different sources of retirement income and diversification of investment risks; (iii) parametric reforms to national insurance or social security schemes to improve the equity and sustainability of such schemes; and (iv) where affordable, strengthening the framework for minimum income support for the elderly poor.

Improved governance of public pensions and social security schemes and strengthened harmonization of regulations and supervision of occupational schemes are essential to the long-term viability and credibility of public and private pension schemes. Strengthened risk management and governance standards are needed for occupational pension schemes, including strengthened supervision and harmonization of regulatory standards. Regulatory harmonization and supervisory coordination are essential not just for labor mobility as suggested in this report; they are also essential in an effort to manage regional risks both in these turbulent times and in an effort to create a stronger foundation for the future.

The financial crisis has reinforced the case for a multi-pillar approach to pension provision in order to increase resilience in the face of even severe financial and economic turbulence. A multi-pillar system shields beneficiaries of the risks of concentration of sources of income during retirement and a well-targeted social pension or minimum guaranteed benefit ensures broad protection against elderly poverty. The crisis also points out the importance of investment risk diversification.

The effects of the crisis reinforce the importance of making social security schemes more sustainable and equitable, at a minimum through the adoption of parametric reforms. As suggested in this report, such reforms can be adopted gradually so as not to adversely affect cohorts close to retirement. At a minimum, countries should: (i) adopt a uniform accrual rate; (ii) gradually increase the duration of the reference wage period for benefit determination and index such past salaries by the growth rate of the average covered wage; (iii) link the calculation of the accrual rate to the retirement age and contribution rate; and (iv) provide a framework for the indexation of benefits and the ceiling on covered wages.

Although about half of Caricom member states have targeted assistance for the elderly, additional schemes are needed and the targeting and the effectiveness of some of the schemes can be improved. A well-designed scheme can mitigate the effects of future economic volatility on the vulnerable elderly and lifetime poor. These systems need to be carefully designed to ensure their affordability and that they do not have negative incentive effects.

In the short-term, governments are advised to carefully analyze the full consequences of policy responses in the context of the long-term planning horizon relevant for pensions. First, governments should avoid short-term reform reversals that have not been properly assessed and that may come at a high price for future retirees. For example, reducing the retirement age in an effort to compensate unemployed close to retirement should be avoided; rather, special support for the unemployed and special loan facilities would have lesser adverse long-term consequences. Secondly, governments are advised that any compensation arrangements that may be considered need to be carefully designed. Once established these could be very difficult to eliminate even when conditions no longer warrant them.

Measures to improve public information and disclosure to reassure social security system scheme members that their entitlements are secure can assuage public insecurity about receipt of benefits. Public information can also describe measures such as minimum and/or non-contributory pensions to protect the poorest and most vulnerable. Such an effort would ideally be undertaken in any event in order to improve the understanding and financial capability of workers that will have beneficial long term effects beyond the pension system. The current crisis can provide the impetus for such an effort and creates an ideal opportunity for it to be effective as workers are more attentive to financial issues.

In some cases, national insurance or social security schemes may need fiscal support to protect the benefits of low-income workers. Governments may need to provide additional financing for public pension schemes to replace a decline in the collection of workers contributions. Such support should bear in mind, however, that many national insurance schemes cover primarily the wealthiest members of the labor force and that such support could come at the expense of other more vulnerable groups not covered by the formal pension system.

I. BACKGROUND AND OBJECTIVES

1. **Objectives**. This report has been prepared by the staff of the World Bank to review the characteristics of pension systems in the Caribbean region and to identify common reform needs. Drawing upon regional and international experience, it provides insights for regional policymakers and development partners on reform needs and potential policy options. The many common characteristics of social security schemes in the Caricom member states suggest that some reform options are amenable to a regional approach. However, because country objectives and circumstances vary considerably, most changes to country system parameters will need to be at a country level.

2. **Background.** Concern over the weaknesses of pension provisions in the Caribbean has been growing among a number of country authorities and development partners. This is a result of factors, including: (i) differential pension treatment between countries and weak pension portability that limit labor mobility and international economic competitiveness, (ii) the sustainability of pension schemes given current parameters and governance, (iii) the impact on fiscal sustainability of rising costs of pension benefits, pressure for better benefit indexation and public concerns over the governance of investment management, (iv) weaknesses in the predictability of benefits and other incentives in mandatory pension schemes, (v) the need for stronger and more coordinated regulation supervision and economic regulations applied to private occupational schemes as a means of promoting business competitiveness, and (vi) the need for improved mandatory and voluntary old-age income protection, which in turn can improve the macroeconomic environment and financial and labor markets.

3. **Value added to recent analysis**. This report aims to provide additional insights to the abundant existing analyses of public pension and social security schemes in the Caribbean.[2] To date, such analyses have been undertaken with the support of the Inter-American Development Bank, the Caribbean Development Bank, the Canadian International Development Agency, the Economic Commission for Latin America and the Caribbean and the International Social Security Association. Several country-level assessments have also been undertaken. By making cross-country comparisons within the region and across the world, this report will assess fiscal vulnerability sustainability, labor market efficiency, migration and financial markets development.

4. **Framework**. The report draws upon the Bank's thinking on these matters in recent years, which has focused on the two key objectives of pension systems: ***protection against the risk of poverty in old age*** and ***consumption smoothing.***[3] The primary criteria for evaluation of pension systems and reforms employed by the Bank, which we have applied here, are: ***adequacy, affordability, sustainability and robustness.***[4] To these, we have added two others: ***equity and***

[2] See for example, Derek Osborne, *Social Security in the CARICOM Single Market & Economy*, CARICOM: 178; P. D. Brunton and P. Masci, *Workable Pension Systems: Reforms in the Caribbean*. IADB-CDB: 323-52; ECLAC, *Social Security in the English-Speaking Caribbean*, December 9, 2005; and ECLAC, *Social Security Reforms and Their Implications for the Caribbean*, December 15, 2005.
[3] See Robert Holzmann and Richard Hinz, *Old Age Income Support in the 21st Century*, The World Bank, 2006.
[4] See Holzmann and Hinz, ibid.

predictability. A secondary criterion for evaluation is contribution to output and growth, including the capacity to lower labor market distortions or contribute to saving and financial markets development. The Bank applies a "five-pillar" framework for examining pension systems and reform options: (i) *a non-contributory "zero pillar"* that extends some level of security to all of the elderly where fiscal conditions can support such a system and social conditions warrant, (ii) *an appropriately sized mandatory "first pillar"* with contributions linked to earnings aimed at replacing some portion of lifetime pre-retirement income that is either partially funded or financed on a pay-as-you-go basis, (iii) *a funded mandatory defined-contribution "second pillar"* that typically provides individual savings accounts with clear linkages between contributions, investment performance and benefits, (iv) *a funded voluntary "third pillar"* that can take many forms, and (v) *a non-financial "fourth pillar"* that includes access to informal support, such as from families, other formal social programs and use of private financial assets.

5. **Methodology.** The methodology has involved a review of: (i) secondary sources or regional and country-specific policy and institutional reform issues; (ii) empirical data from the World Bank where available; (iii) international experience and databases to draw upon available and relevant benchmarks, where appropriate; (iv) information solicited by missions to the region about selected country schemes; and (v) feedback provided by selected country counterparts.[5] We have focused the report on the mandatory schemes for public and private sector workers (national insurance schemes) in Caricom member countries[6] and on civil service, occupational and elderly social assistance schemes. The areas where we have the least information and therefore have had to focus the least attention have been the prevalence of elderly poverty and existence and effectiveness of basic income support mechanisms for the elderly poor; the adequacy and affordability of public service pension schemes (primarily civil service schemes) and the prevalence of occupational schemes and their regulatory framework. We have employed the Axia Apex model to make projections of benefit entitlements for 10 countries for which we have data and have compared such entitlements with countries internationally. We have also undertaken an assessment of implicit rates of return in order to assess pension system sustainability and differences in rates of return for workers of different income groups, different work histories and different retirement ages.

6. **This report is organized as follows.** We begin with a brief description of the economic and social conditions in the Caribbean and the contributions, qualifying conditions and benefits of public pension schemes. We then move to the analysis of the key challenges of pension schemes in the Caribbean. Finally, we discuss options for reform.

[5] We also designed and administered a survey of key data and parameters sent to the social security schemes in Caricom member countries but received very limited responses to our data request.
[6] We have focused on those 12 members of Caricom that are independent countries.

II. SOCIO-ECONOMIC CHARACTERISTICS

A. POPULATION CHARACTERISTICS AND AGING

7. **With a total population of about 25 million, the 14 countries in the Caribbean are heterogeneous in size and economic characteristics.** They range in size from the Dominican Republic and Haiti (with populations of about 9.5 million and 9.3 million, respectively) to Trinidad and Tobago and Guyana (1.3 million and 740,000) to all of the remaining countries (each with populations of under 350,000) (Table 2).[7] The smallest of the countries—Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, and St. Vincent and the Grenadines—each have about 110,000 inhabitants or less.

Table 2: Demographic and Economic Indicators

Country	Total Population (millions)	GDP per Capita (US$)	Percent age Age 65 or older	Dependency ratio [a]	Life Expectancy at Birth (years)	
					Men	Women
Antigua and Barbuda	0.069	12,500	3.7	44.9	70	74.9
Bahamas	0.323	18,380	6.2	50.8	70.6	76.3
Barbados	0.292	17,297	9.2	38.9	74.4	79.8
Belize	0.276	7,109	4.2	72.1	73.3	79.2
Dominica	0.072	6,393	10.2	55.7	72.1	78.1
Dominican Republic	9.47	8,217	5.6	64.2	69.3	75.5
Grenada	0.105	7,843	6.8	69.2	67	70.4
Guyana	0.739	4,508	5.7	58.2	64.2	69.9
Haiti	9.3	1,663	4.1	72.4	59.1	62.8
Jamaica	2.7	4,291	7.5	64.4	70	75.2
Saint Kitts and Nevis	0.039	8,200	7.9	54	69.8	75.6
Saint Lucia	0.161	6,707	7.2	54	71.9	75.6
Saint Vincent and the Grenadines	0.119	6,568	6.5	55.7	69.5	73.8
Trinidad and Tobago	1.3	14,603	6.5	40.2	67.8	71.8

a. Population aged 14 or younger plus population aged 65 or older, divided by population aged 15–64.

Sources: Social Security Programs Throughout the World, The Americas 2007, Table 4, World Health Organization - Life Tables for WHO Member States (2005), World Economic Indicators (2007 with 2005 Data).

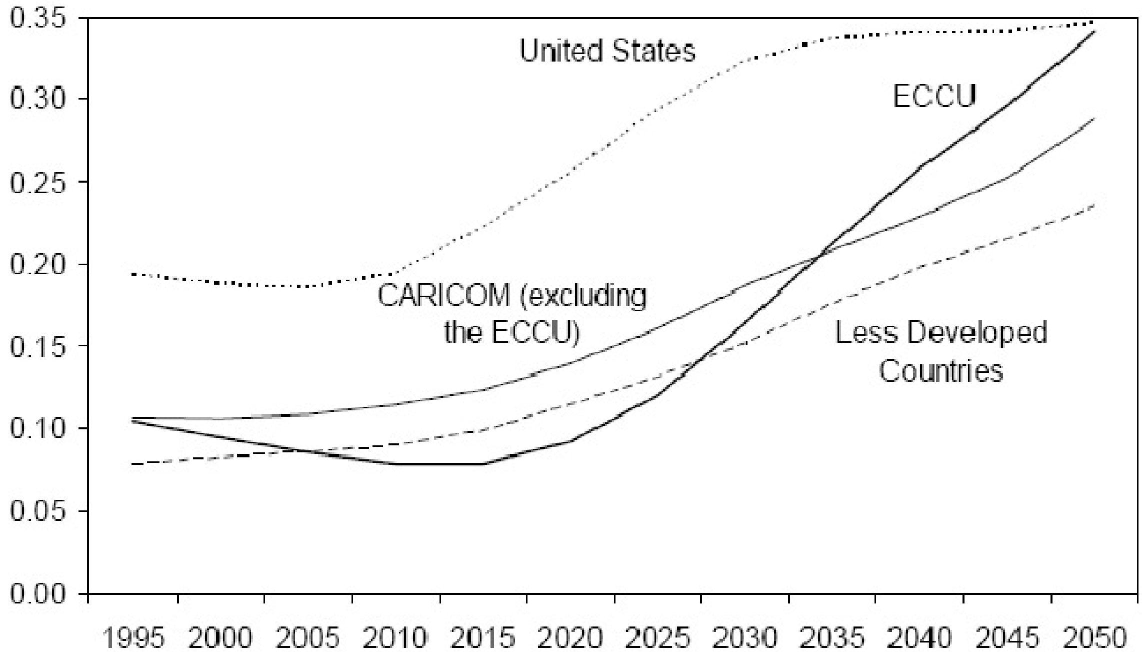
8. **Populations in the region are relatively young,** with 4.8 percent over the age of 65 (compared with 5.9 percent for Latin America). However, the population is aging as a result of decreases in fertility rates and increases in life expectancy. Such demographic change is

[7] The 14 countries referred to only include independent countries, and not autonomous territories. Although many of the tables include the Dominican Republic and Haiti, much of the discussion in the report is focused on CARICOM member states that are independent countries.

expected to take place at a higher rate in the Caribbean—and particularly in the Eastern Caribbean Currency Union (ECCU) countries—than, for example, in the United States (Figure 1). The aging of the population has a profound impact on defined-benefit pension schemes because it increases the proportion of retirees relative to workers. Moreover, increasing longevity generally results in the payment of benefits to retirees for longer periods of time.

Figure 1: Projected Old Age Dependency Ratios

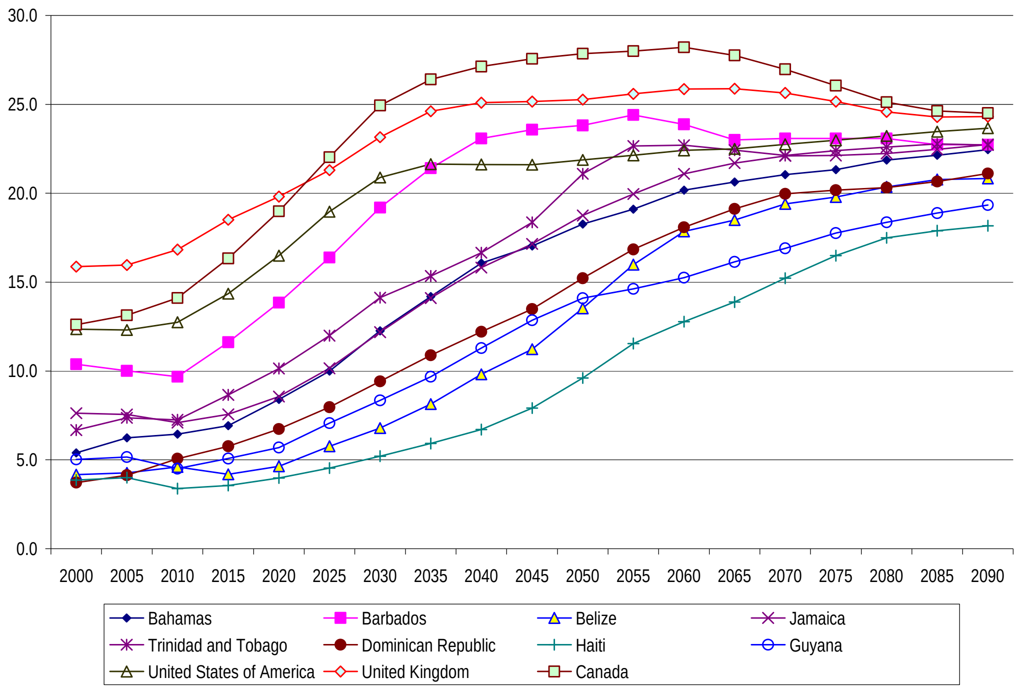
(Population aged 65 and above as a proportion of the population aged 15–64)



Source: International Monetary Fund (2007, p 80).

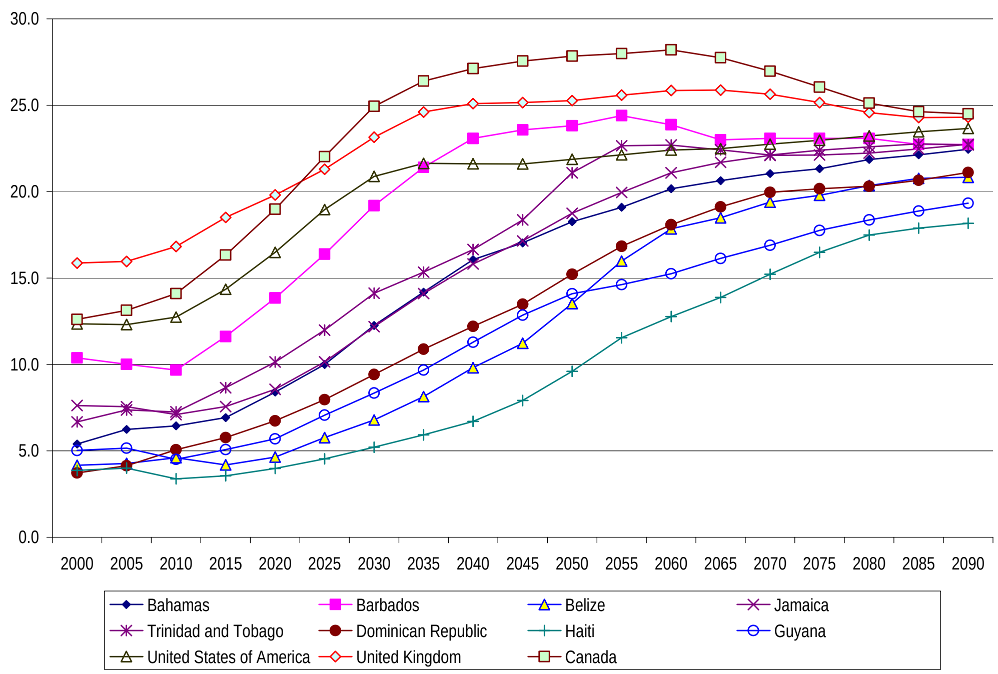
9. **The population aging process is anticipated to accelerate over the coming generations, albeit at varying rates in the countries of the region** (see Figure 2 and Figure 3). The comparators in Figure 3 suggest that the populations of OECD countries such as the United States, the United Kingdom and Canada will also undergo such an aging process. In addition, in the long run there is a noted convergence of old-age dependency rates under the assumption that in the long run there is also a convergence of fertility rates.

Figure 2: Projected Proportion of the Population over Age 65
(percent)



Source: World Bank population projections based on data from the UN Population Division, 2006.

Figure 3: Projected Old Age Dependency Ratios in the Caribbean and Selected Countries
(population aged 65 and above as a multiple of the population aged 15 to 64)



Source: World Bank population projections based on data from the UN Population Division, 2006.

10. **Life expectancy at retirement age is already relatively high in the Caribbean region,** although it varies substantially between countries (Table 3). As discussed further below, life expectancy at retirement has a particularly strong impact on long-term sustainability when the period of contributions or contribution density is relatively short while the period of retirement is comparatively long.

Table 3: Life Expectancy at Retirement Ages

(years at a specified age)

	Life Expectancy at 60		Life Expectancy at 65	
	Male	Female	Male	Female
1 Haiti	14.5	16.4	11.7	13.1
2 Dominican Republic	15.0	18.0	12.0	14.5
3 Guyana	15.9	17.6	12.8	14.1
4 Trinidad and Tobago	16.2	19.5	13.4	16.1
5 Belize	16.7	19.4	13.3	15.5
6 Barbados	17.9	23.2	14.5	19.6
7 Jamaica	17.9	20.0	14.3	16.1
8 Bahamas	20.1	22.3	16.8	18.4

Source: Life Tables for WHO Member States
http://www3.who.int/whosis/life/life_tables/life_tables.cfm?path=life_tables

B. MIGRATION

11. **High levels of labor mobility throughout and beyond the region make the cross-national portability of pension rights an important consideration.** In 2000, about 19 percent of the Caribbean population lived outside its country of origin, most outside of the Caribbean region (Table 4). Almost 11 percent was living in the United States. Antigua and Barbuda and Saint Kitts and Nevis had the highest proportion of their populations living abroad (at 86 percent and 85 percent, respectively) and Haiti (at 9 percent) the lowest.

12. **The Caribbean has substantially more emigrants out of the region than migrants into the region**. While the region represents a relatively minor *destiny* for Caribbean migrants (Table 4), it is a significant source of *origin* in most Caribbean countries (Table 5). On average, more than half of total immigrants to Caribbean countries come from within the region. Given the lack of information about the age composition of emigrants and immigrants, it is difficult to discern the net effect on the dependency ratios of public pension schemes. To the extent that people emigrate during their working lives, this reduces the number of contributors to the pension systems. If elderly emigrants with vested pension rights return to their countries of origin, then such elderly potentially benefit from public pension systems and affect system dependency.

Table 4: Migration from the Caribbean Countries as a Percentage of the Population, 2000

Country of origin	Caribbean	United States	United Kingdom	Rest of the World	Total
	Country or Region of Destiny				
Antigua & Barbuda	1.3	24.9	5.1	54.8	86.0
Bahamas	0.1	10.1	0.6	1.8	12.5
Barbados	1.4	20.3	8.1	10.2	40.1
Belize	0.1	16.8	0.5	3.5	20.9
Dominica	5.2	22.8	9.5	21.4	59.0
Dominican Republic	0.1	8.5	-	2.4	11.0
Grenada	12.7	29.6	9.7	15.8	68.0
Guyana	1.9	28.9	2.8	17.7	51.3
Haiti	1.4	5.4	-	2.7	9.0
Jamaica	0.3	22.0	5.7	8.7	36.6
Saint Kitts and Nevis	1.7	25.9	14.8	42.4	84.8
Saint Lucia	4.1	9.0	5.3	14.4	32.7
Saint Vincent & the Grenadines	11.9	17.7	6.1	13.2	49.0
Trinidad & Tobago	0.5	15.9	1.7	7.8	25.8
Caribbean	0.9	10.7	1.2	5.9	19.0

Source: Bank estimates based on data from the World Bank and the Development Research Centre on Migration, Globalization and Poverty (http://www.migrationdrc.org/research/typesofmigration/global_migrant_origin_database.html).

Table 5: Migration to the Caribbean Countries as a Percentage of the Population, 2000

	Caribbean Origin	All Origins
Antigua and Barbuda	15.7	20.6
Bahamas	7.1	9.9
Barbados	6.2	9.2
Belize	0.2	13.7
Dominica	2.3	5.2
Dominican Republic	1.1	1.6
Grenada	2.4	7.8
Guyana	0.1	0.2
Haiti	0.1	0.3
Jamaica	0.0	0.5
Saint Kitts and Nevis	3.0	9.7
Saint Lucia	1.5	5.2
Saint Vincent and the Grenadines	4.3	6.5
Trinidad and Tobago	2.1	3.2
Caribbean	0.9	1.6

Source: Band estimates based on data from the World Bank and the Development Research Centre on Migration, Globalization and Poverty (http://www.migrationdrc.org/research/typesofmigration/global_migrant_origin_database.html).

C. Economic Characteristics

13. **Both GDP per capita and long-term growth rates have a substantial impact on pension provision and vary substantially between countries in the Caribbean.** Per capita GDP ranges from a minimum of over US$1,600 in Haiti to a maximum of more than US$18,000 in the Bahamas. Antigua and Barbuda and Barbados had per capita GDPs of more than US$12,000, as did Trinidad and Tobago with GDP per capita of about US$14,600, in part from revenues derived from oil exports (Table 2). GDP growth has varied substantially among countries in the region, in part due to differences in country economic circumstances (Table 6).

14. **The region is characterized by substantial economic volatility,** as indicated by the year-to-year GDP growth variation in Table 6. Key reasons for such volatility have been: (i) climatic events and conditions, including the effects of hurricanes and droughts; (ii) over-concentration in many economies, such as in a small number of agricultural products; and (iii) unpredictability in the tourism sector.

Table 6: GDP Growth
(percent, annual)

	2003	2004	2005	2006
Antigua and Barbuda	5.2	7.2	4.2	11.5
Bahamas, The	n.a.	n.a.	n.a.	n.a.
Barbados	n.a.	n.a.	n.a.	n.a.
Belize	9.3	4.6	3.1	5.6
Dominica	2.2	25.5	3.1	4.0
Dominican Republic	(1.9)	2.0	9.3	10.7
Grenada	8.0	(6.9)	12.3	0.7
Guyana	(1.0)	3.3	(2.2)	4.8
Jamaica	2.7	1.1	1.8	2.5
St. Kitts and Nevis	0.5	9.6	4.7	5.8
St. Lucia	3.0	6.7	7.3	4.5
St. Vincent and the Grenadines	3.2	6.2	1.5	n.a.
Trinidad and Tobago	14.4	8.8	8.0	12.0
Latin America & Caribbean	2.1	6.2	4.6	5.5
Low & middle income	5.4	7.4	6.7	7.3

Source: World Development Indicators, 2007.

15. **Most countries in the Caribbean have very high public debt levels**. These debt levels frame the debate surrounding pension reform options, particularly because pension liabilities represent an additional contingent liability to already elevated debt burden indicators. Although implicit pension liabilities are generally obligations that are much more long term in nature than public debt, the combined implicit and explicit debt burdens restrict the flexibility of governments to take remedial measures. As indicated in Table 7, the present value of public and publicly guaranteed debt (PPG) was 132 percent of Gross National Income (GNI) in 2006 in Guyana, 118 percent in Grenada, 103 percent in Belize and 99 percent in Jamaica.

Table 7: Present Value of Public and Publicly Guaranteed Debt (PPG)
(percent of gross national income, 2006)

Antigua and Barbuda	n.a.
Bahamas, The	n.a.
Barbados	n.a.
Dominica	84.4
Dominican Republic	34.6
Belize	103.7
Grenada	118.0
Guyana	131.5
Haiti	24.4
Jamaica	99.4
St. Kitts and Nevis	67.2
St. Lucia	42.8
St. Vincent and the Grenadines	67.5
Trinidad and Tobago	n.a.

Source: World Development Indicators, 2007.

D. POVERTY PREVALENCE

16. **Most mandatory pension systems typically seek to achieve two objectives, namely consumption smoothing and poverty alleviation.** Pension systems help workers to even out levels of consumption along their lifecycle by providing some level of income replacement during retirement years. Pension systems also seek to establish guaranteed minimum levels of income support to ensure basic standards of living for the elderly. Such poverty alleviation can be achieved through a number of instruments such as: a minimum pension after reaching a vesting period; minimum indexation provisions; and tax-financed non-contributory means-tested social pensions. Because mandatory pension systems are a relatively new development in the Caribbean, many of the current elderly have insufficient accrued rights to be fully covered by existing schemes.

17. **A better understanding of elderly poverty and poverty vulnerability is an essential baseline for assessing the performance of existing systems and the need for reform.** In the Caribbean as elsewhere, there are two groups of elderly poor. The first is the so-called lifetime poor who generally have insufficient rights under existing schemes to be kept out of poverty, either because their contributions to the scheme have been insufficient and/or because their reference income is too low to support a basic income. The second group may have sufficient retirement benefits to support a basic standard of living but nonetheless are vulnerable to poverty arising from volatility and shocks such as hurricanes, drought, flooding or loss of income transfers and remittances from family members. Countering such poverty and vulnerability to poverty requires the implementation of measures that: (i) enable workers who are not currently in poverty to better manage such risks; (ii) improve elderly social assistance; and (iii) modify

existing schemes to improve adequacy, affordability, sustainability and robustness, as discussed below.

18. **Limited information exists about elderly poverty prevalence or vulnerability and sources of old-age income, including family transfers and remittances.** The prevalence of elderly poverty is very likely correlated with per capita income and coverage of the elderly in formal pension arrangements. This, combined with data provided in Table 8, suggests that Haiti and Guyana have the highest elderly poverty prevalence, although in Guyana it is likely mitigated by the very high elderly coverage of its social pension. Although Belize has a high Human Poverty Index value, we believe that its per capita income and coverage of its formal scheme mitigate the level of elderly poverty. In the same way, we anticipate that the universal pension provision in Trinidad and Tobago and Barbados substantially mitigate poverty vulnerability in these two countries.

19. **Data from those countries for which it is available suggest that poverty prevalence among the elderly is less than or about the same as poverty prevalence for the broader population.** In Jamaica the incidence of poverty among the elderly was larger than among the total population in 1998 but was smaller in 2004 (World Bank, 2006b). The incidence of elderly poverty in the Dominican Republic in 1998 was similar to that of the total population (World Bank, 2001b, Table 6). Kairi Consultants (2006) report that the elderly were underrepresented among the poor in St. Lucia (the elderly represented 9.8 percent of total population and 6.5 percent of the poor population). Halcrow Group Limited (2003, Table 3.8) found that the proportion of elderly was the same among poor and non-poor households in Dominica. The World Bank reports that the elderly accounted for 8 percent of the poor and indigent in Dominica and 11 percent of the total population (2003b, Table 2.3).

Table 8: Poverty Indicators

	Human Poverty Index		Human Development Index		% of Population Below the Poverty Line	
	Index - Rank 2005	Index Value 2005	Index - Rank 2005	Index Value 2005	Percent	Year of Survey
Antigua and Barbuda	57	..	57	0.815		
Bahamas	49	..	49	0.845		
Barbados	31	1	31	0.892		
Belize	80	43	80	0.778	33.4%	2004
Dominica	71	..	71	0.798	33.0%	2000
Dominican Republic	79	26	79	0.779	42.0%	2004
Grenada	82	..	82	0.777		
Guyana	97	33	97	0.75	32.0%	2004
Haiti	146	74	146	0.529	78.0%	2004
Jamaica	101	34	101	0.736	27.5%	1995
St. Kitts and Nevis	54	..	54	0.821	31.0%	2000
St. Lucia	72	8	72	0.795	25.4%	1995 (1$ a day PPP)
St. Vincent and Grenadines	93	..	93	0.761		
Trinidad and Tobago	59	12	59	0.814	21.0%	1992

Sources: 2006 World Development Indicators, World Bank Country Data Sheets, UNDP Human Development Report, http://hdrstats.undp.org/indicators/1.html

20. **Although no less poor than the rest of the population, the elderly are a highly vulnerable group, a growing consensus of analysts concludes.** According to The World Bank (2001b), households in the Dominican Republic with old-age members (over 65) were more likely to be poor than the rest of the population. The presence of elderly in a particular household not only increased its number of dependents in the household but also affected other family members' ability to work outside the home. "In the absence of adequate programs to protect the elderly, having to care for older household members may prevent others from participating in the labor force" (World Bank, 2001a, p. 24). In interviews conducted by Kairi Consultants (2006) in St Lucia, community residents remarked on the plight of the elderly poor and their dependency on assistance. Similarly, Halcrow (2003) found that poverty was particularly severe among the elderly poor in Dominica.

21. **Public spending on social protection varies considerably across Caribbean countries.** It is low in Grenada and St. Vincent and the Grenadines compared with other countries in the region and the Latin American and the Caribbean average (Table 9). Although figures might not be strictly comparable, social protection expenditures in the Dominican Republic appear low—and volatile—by regional standards. Expenditure on social protection grew significantly from the mid-nineties to the early 2000s in Dominica, Grenada, St. Kitts and Nevis and St. Vincent and the Grenadines. Low social protection spending in several Caribbean countries has been compounded by poorly defined social protection strategies that led to lack of coordination, duplication and fragmentation of programs (World Bank, 2003a, 2004a, 2005a). Social security spending was notably low in 2003 in Jamaica and Trinidad and Tobago. In all countries, the cap on the wage base used to determine benefits as well as the indexation applied had a substantial impact on the total social security expenditures.

Table 9: Government Expenditure in Social Protection and Social Security

Country	1996-2002 Government expenditure for social protection (% of GDP)	Social Security expenditures (% of GDP - 2003)
Antigua-Barbuda	n.a.	1.7
Bahamas	n.a.	2.0
Barbados	n.a.	5.0
Belize	n.a.	1.7
Dominica	5.0	4.3
Grenada	2.8	1.6
Guyana	n.a.	3.3
Jamaica	n.a.	0.4
St. Kitts and Nevis	3.5	2.5
St. Lucia	4.2	1.5
St. Vincent and the Grenadines	2.7	1.6
Trinidad and Tobago	n.a.	0.6
Latin America and the Caribbean Average	4.7	

Source: based on World Bank (2003a, 2004a, 2005a); Osborn: 2004, Figure 1.2, p. 6.

III. PENSION SYSTEM DESIGN

A. HISTORICAL CONTEXT

22. **Caribbean countries established defined-benefit public social security schemes and provident funds and, in a few countries, significant private pension funds organized along occupational lines**. Civil service pension schemes established prior to independence were constituted in new local legislation. Generally, coverage under mandatory and occupational schemes has been limited to the formal sector labor force, with the rest of the population relying on its own resources and informal old-age support. Conversions of provident funds to mandatory defined-benefit pension schemes in Dominica, St. Kitts-Nevis, St. Lucia and St. Vincent and the Grenadines took place in the 1970s-1980s in many cases with the support of the International Labor Organization.[8] Today virtually all mandatory schemes provide defined benefits upon reaching retirement age, with the exception of Jamaica and the Dominican Republic.

23. **Since 2000, several countries have enacted structural or parametric reforms.** Only the Dominican Republic initiated major structural reform in 2003 by replacing its existing defined-benefit scheme with a defined-contribution scheme that featured competitively managed individual accounts. In an effort to improve sustainability and address other weaknesses, Barbados, Belize, Dominica, Saint Lucia, St. Vincent and the Grenadines and Trinidad and Tobago have instituted parametric reforms to their defined-benefit schemes. Table 10 summarizes parametric reforms enacted in several Caribbean countries in recent years.

[8] See Osborn (2004), Table 1.1, p. 3.

Table 10: Recent Parametric Reforms in Select Countries

Barbados	▪ Increasing contributions from 14 percent to 18 percent of insurable earnings over four years. ▪ Raising retirement age by six months every four years beginning in 2006, up to the revised retirement age of 67 years by the year 2018. ▪ Subjecting early retirement to an actuarial reduction of ½ percent per month early. ▪ Voluntary deferral in NIS pensions until age 70 with increases of ½ percent for each month after the standard pensionable age. ▪ Target reserve to expenditure ratio of five.
Belize	As of 1 July 2003: ▪ Contributions increased from 7 percent to 8 percent; employers 6½ percent and employees 1½ percent up to B$130 of weekly insurable earnings. ▪ Vesting - minimum of 50 contributions to qualify for retirement grant, up from 26 contributions. ▪ Insurable earnings ceiling rose from B$320 per week to B$640. ▪ Retirement pension earmarked for a 100 percent increase to B$384 per week. ▪ New basis for calculating pensions will be 2 percent of final average earnings for the first 20 years, thereafter, 1.25 percent up to a maximum of 60 percent of final average earnings. ▪ Final average earnings (the basis for calculating pensions) raised from the average the best three years to the best five years earnings to provide a more representative pension. ▪ Voluntary retirement age to be raised from 60 to 63 years. ▪ Mandatory retirement to move up from 65 to 67 years. ▪ Institutional reforms: prudential regulation and streamlining of its operations; system is being put in place to monitor financial and actuarial developments so that timely parametric adjustments can be made where needed. The Scheme is set to design key performance indicators to benchmark performance. ▪ Plans are afoot to revise the government pension scheme and the self-employed scheme to capture a wider pool of households.
Dominica	The government approved a reform plan in 2006. The main changes were: • The total contribution rates will eventually be increased from the current 10.75 percent (2008) to 15 percent. • The contribution ceiling will be increased from EC$ 1,000 to EC$ 6,000 per month, starting in 2008. • The annual accrual rate for the contribution period between 10 and 20 years will be reduced from 2 to 1 percent and the maximum replacement rate will be reduced from 70 to 60 percent, starting in 2008. • The pensionable wages will be increased from 3 to 10 years, starting in 2008. • The minimum pension age will by increased by 1 year every 3 years up to 65, starting in 2009.
Jamaica	From April 2006: ▪ Weekly rate for full rate for Old Age, Invalidity and Widow's and Widower's Pension has been raised from J$900 to J$1,500. Dependent Spouse's Allowance raised from J$300 to J$500. ▪ Insurable wage ceiling doubled from J$250,000 to J$500,000, from October 2003. ▪ Contribution rate unchanged at 2.5 percent each by employer and employee. ▪ 20 percent of the contributions are transferred to the National Health Fund and a National Health Plan for pensioners is being implemented since October 2003.
St. Lucia	▪ The normal retirement pensionable age is gradually being increased from 60 to 65 ▪ Years of contribution required to access the pension are being increased from 10 to 15. Process began in 2000 and will be completed by 2012. ▪ The required age for a survivor spouse to get a permanent pension was raised from 55 to the normal pension age.
St. Vincent and the Grenadines	▪ The contribution rate was increased as of January 1, 2008 to 8 percent of covered wages, 4.5 percent employer and 3.5 percent employee.
Trinidad and Tobago	▪ 16 classes of contributions (Jan 2008). From 5 January 2004, earnings limits of each class of contributors will be indexed to earnings inflation to retain their real value. To capture a wider contribution pool, the effective income ceiling raised to TT$8,300 per month (Jan. 2008) and the minimum contributory earnings will rise to TT$433 per month (2004). ▪ Contribution will increase from 10.5 to 11.4 percent phased in from 2008 to 2012. ▪ Basic pensions will be indexed to earnings inflation to maintain their real values. This will be achieved by increasing basic pension rates by 24 percent. Increment rates will also be increased to lead to roughly a halving of the difference in accrual rates between basic and increment pensions. This would result in a further increase in increments of 71.6 percent and an overall increase of 112.8 percent when indexation is included. ▪ Introduction of a minimum pension of TT$2000 per month (Jan. 2008). ▪ Pensions payable for persons who retire at age 60. Pensioners who return to work will still be entitled to their pension and will be eligible for employment injury coverage by paying class Z contributions.

Source: ECLAC 2005; Osborne (2004); Government of St. Lucia (www.stlucianis.org); IMF (2007), Trinidad and Tobago National Insurance Board website.

B. ARCHITECTURAL DESIGN

24. **All of the 14 Caribbean countries reviewed have contributory social security programs covering old age, disability and survivorship** (Table 11). In Caricom member countries, these are often referred to as National Insurance Schemes (NIS). Mandatory contributory social security schemes exist for almost all employed workers in the Caribbean. Self-employed workers are legally required to contribute in most countries, although the enforcement of contribution provisions is believed to be generally looser among the self-employed than among salaried workers.

25. **National insurance schemes generally include short-term benefits** (sickness benefit, maternity allowance, maternity grant, funeral grant), **long-term benefits** (old-age/retirement pension and grant, invalidity pension and grant, survivors' pension and grant) **and work injury benefits** (injury benefit, medical care and travel expenses, disability pension, survivorship pension and grant).[9] In addition, all countries except Antigua and Barbuda have separate provision of work injury benefits. Some provide family allowances. Only Barbados has unemployment insurance.

Table 11: Types of Social Security Programs

Country	Old age, disability, and survivors	Sickness and maternity: Cash benefits for both	Sickness and maternity: Cash benefits plus medical care a/	Work injury	Unemployment	Family allowances
Antigua and Barbuda	X	X	b	b	b	b
Bahamas	X	X	b	X	b	b
Barbados	X	X	b	X	X	b
Belize	X	X	b	X	b	b
Dominica	X	X	X	X	b	b
Dominican Republic	X	X	X	X	b	X
Grenada	X	X	b	X	b	b
Guyana	X	X	b	X	b	b
Haiti	X	b	b	X	b	b
Jamaica	X	c	X	X	b	X
Saint Kitts and Nevis	X	X	b	X	b	b
Saint Lucia	X	X	b	X	b	b
Saint Vincent and the Grenadines	X	X	b	X	b	b
Trinidad and Tobago	X	X	X	X	b	X

Source: Social Security Programs throughout the World, The Americas, 2007 (SSA, 2008).
a. Coverage is provided for medical care, hospitalization, or both.
b. Has no program or information is not available.
c. Maternity benefits only.

26. **Most schemes are earnings-related defined-benefit programs**. Jamaica operates a contributory program with mostly flat-rate benefits, i.e., benefits that do not depend on earnings despite being financed by payroll contributions made by employees and employers. The

[9] See Osborne (2004) for a detailed description of the benefits provided by the different national insurance schemes in the Caribbean.

Dominican Republic is the only country in the region with mandatory defined-contribution individual retirement accounts.

27. **Public Service Pension Schemes**. Most Caribbean countries have pension schemes for national and municipal government employees, the military and the police. Employees of state-owned enterprises may or may not be covered by these schemes. For the most part they predate independence and tend to be unfunded defined-benefit schemes, and they can be either non-contributory or require worker contributions. The Dominican Republic is the only Caribbean country with a defined-contribution program that covers civil servants.

28. **Occupational Schemes**. Voluntary occupational schemes are prevalent in many Caribbean countries, particularly those offered by larger enterprises (including multinational companies) and parastatal authorities. Occupational schemes are both defined-benefit and defined-contribution. Only Bermuda has a law that mandates employers to provide occupational schemes.

29. **Non-contributory pensions.** About half of the countries in the region have non-contributory programs that provide means-tested pensions to retirees and in some cases the disabled and survivors. Osborn (2004: 23) points out that the actual application of means or income testing varies substantially between countries. Data from the Social Security Administration (2008) suggest that the monthly benefit ranges from US$8 in Jamaica to US$263 in Trinidad and Tobago. These schemes generally have an important impact in mitigating elderly poverty. Non-contributory universal schemes, financed by general revenues that reach most of the elderly, including the poor, are found only in Barbados.

C. System Parameters

30. **Most mandatory schemes are financed by payroll tax contributions from employees, employers or both** (Table 12). In the Caribbean old-age, disability and survivors programs involve total payroll contribution rates ranging from 5 percent in Jamaica to about 15 percent in Barbados.

Table 12: Contribution Rates for Social Security Programs

(percent of covered wage)

Country	Old age, disability and survivors			All social security programs [a]		
	Insured person	Employer	Total	Insured person	Employer	Total
Antigua and Barbuda	3 [b]	5 [b]	8 [b]	3	5	8 [c]
Bahamas	1.7 [b]	7.1 [b]	8.8 [b]	1.7	7.1 [e]	8.8 [c]
Barbados	7.43	7.43	14.86	8.18	8.18	16.36 [c]
Belize	e	e	e	e	e	e
Dominica	4 [b]	6.75 [b]	10.75 [b]	4	6.75 [d]	10.75 [c]
Dominican Republic	2.28	5.72	8	4.98	12.02 [d]	17 [c]
Grenada	4 [b]	5 [b]	9 [b]	4	5	9 [c]
Guyana	5.2 [b]	7.8 [b]	13 [b]	5.2	7.8	13 [c]
Haiti	6	6	12	6	6 [d]	12
Jamaica	2.5 [b]	2.5 [b]	5 [b]	2.5	2.5	5 [c]
Saint Kitts and Nevis	5 [b]	5 [b]	10 [b]	5	6	11 [c]
Saint Lucia	5 [b]	5 [b]	10 [b]	5	5	10 [c]
Saint Vincent and the Grenadines	3.5 [g]	4.5 [g]	8 [g]	3.5	4.5	8 [g]
Trinidad and Tobago	3.5	7.0	10.5	3.5	7.0	7.0 [c,f]

a. Includes old age, disability, and survivors; sickness and maternity; work injury; unemployment; and family allowances. In some countries, the rate may not cover all of these programs. In some cases, only certain groups, such as wage earners, are represented. When the contribution rate varies, or the country has a dual system with different contribution rates, either the average or the lowest rate in the range is used.
b. Also includes the contribution rates for other programs.
c. Contributions are subject to an upper earnings limit for some benefits.
d. Employers pay the total cost of Work Injury.
e. A flat-rate weekly contribution to finance all benefits is paid according to eight earnings classes.
f. Government pays the cost of Family Allowances.
g. 2008
Source: Social Security Programs Throughout the World, The Americas, 2007, Table 4, St. Vincent and the Grenadines National Insurance Services website; National Insurance Board of Trinidad and Tobago website.

31. **The affordability of such contributions, for employers and employees alike, depends most fundamentally on the relationship between, on the one hand, the cap on wages subject to pension contributions and, on the other, total compensation.** In all cases, the covered wage subject to social security contributions is also subject to a cap and this cap varies substantially between countries. Without data on the total earnings distribution for covered employees, including those portions both subject to contributions and not subject to contributions, it is not possible to estimate how low or high the cap is in each country nor, for that matter, the affordability for employees and employers of such contributions.[10]

32. **In most Caribbean countries the government contributes to pension programs only through its employer contributions on behalf of its employees** (see Table 12). This is the case in Antigua and Barbuda, Bahamas, Barbados, Dominica, Grenada, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines and Trinidad and Tobago. In Belize and

[10] Osborne (2004) calculated the ratio between the ceiling on insurable earnings and the average in 2003. Although this does provide a sense of the distribution of the covered portion of earnings, it is insufficient to determine the relationship between the cap on covered earnings on the one hand, and the average compensation, on the other. Figure 4 later in this report compares the cap on covered wages with per capita GDP.

Haiti governments provide funds—and in the case of Guyana, loans—to cover any deficits. A special case is the Dominican Republic, where the government subsidizes the mandatory individual account and guarantees the minimum pension.

33. **Qualifying conditions for benefits include vesting periods that are generally between 10 and 15 years for mandatory defined-benefit schemes and a regular or minimum retirement age.**[11] As indicated in Table 13 below, the retirement age for receiving full benefits is around 60–65 years for men and women, with Haiti providing benefits at age 55. Reduced early retirement benefits are available at ages ranging from 57 to 62 in Barbados, Belize, Bahamas, the Dominican Republic (its defined-benefit scheme) and St. Vincent and the Grenadines.

Table 13: Age for Receipt of Pension Benefits

Country	Statutory Pensionable Age		Early Pensionable Age	
	Men	**Women**	**Men**	**Women**
Antigua and Barbuda	60	60	a	a
Bahamas	65	65	60	60
Barbados	65.5	65.5	62	62
Belize	65	65	60	60
Dominica	60	60	a	a
Dominican Republic	60	60	57	57
Grenada	60	60	a	a
Guyana	60	60	a	a
Haiti	55	55	a	a
Jamaica	65	60	a	a
Saint Kitts and Nevis	62	62	a	a
Saint Lucia	62	62	60	60
St. Vincent and the Grenadines	60	60	a	a
Trinidad and Tobago	60	60	a	a
Unweighted Caribbean average	61.4	61.0		
LAC average	63.5	60.4		

Source: Based on Social Security Administration (2006). Social Security Programs throughout the World: The Americas, 2007.

a. The country has no early pensionable age, has one only for specific groups or information is not available.

[11] Haiti has a 20 year vesting period and the Dominican Republic 30 years.

34. **The amount of pension benefits varies across the region and depends on wages and years of contribution and other qualifying conditions.** The replacement rate offered after 30 years of contributions is more than 50 percent for all countries with the exception of Antigua and Barbuda, Jamaica and Trinidad and Tobago (see Table 14). It is important to bear in mind that the caps on covered wages used in the calculation of benefits can mean that the replacement of total compensation in retirement is substantially lower than the replacement of pensionable earnings for higher income individuals.[12] In addition, the fact that most social security schemes lack formal rules for indexing pensions can render the income replacement and the lifetime benefit much lower than suggested by the formulas for the benefit at retirement. Average earnings are generally based on the best or final 3 to 5 years of wages subject to contributions.

35. **Most countries in the region have non-linear accrual rates in which the benefit accrued during the first 10 years of service is substantially higher than after the first 10 years** (Table 14). This evidently originates from an effort to increase the benefits that accrued to some of the earliest retirees under these schemes. However, such non-linear accrual rates create strong incentives to underreport income after the initial and higher accrual period. They also create complications in the totalization formulas for the portability of pension rights.

Table 14: Pension Benefits—Accrual and Replacement Rates

	Contribution Rate	Repl. Rate after 10 years	30 years	Accrual Rate for 10 years	30 years
Antigua and Barbuda	8.0%	25%	45%	2.5%	1.50%
Bahamas	8.8%	30%	55%	3.0%	1.83%
Barbados	14.86%	40%	60%	4.0%	2.00%
Belize	acc to 8 wage classes	31%	51%	3.1%	1.71%
Dominica	10.75%	30%	55%	3.0%	1.83%
Dominican Republic	8.0%	Defined contribution	Defined contribution	Defined contribution	Defined contribution
Grenada	9.0%	30%	50%	3.0%	1.67%
Guyana	13.0%	40%	55%	4.0%	1.83%
Jamaica	5.0%	Flat pension +1.5% of avg. career earnings			
St. Kitts and Nevis	11.0%	30%	55%	3.0%	1.83%
St. Lucia	10.0%	b/	60.4%	3.08%	2.01%
St. Vincent and the Grenadines	8.0% (2008)	30.4%	51.2%	3.04%	1.71%
Trinidad and Tobago	10.5% (2008)		42–60%		a/

a/ 30% to 48% of average weekly earnings (TT$50 to TT$243 a week), according to 12 wage classes, plus 0.4% of average weekly earnings for each 25-week period of contributions over 750 weeks. This amounts to an annual accrual rate of 0.8% after 15 years and from 2.0% to 3.2% per year for service up to 15 years.
b/ 156 months of service required for full old-age benefit.
Source: ECLAC 2008; Social Security Administration, Social Security Programs throughout the World, The Americas, 2007, St. Vincent National Insurance Services website, St. Lucia

[12] Benefit entitlements are analyzed more thoroughly in the next section of the report.

IV. PUBLIC PENSION SYSTEM CHALLENGES

A. PUBLIC PENSION SYSTEM ADEQUACY

36. **Pension system *adequacy* is determined by the sufficiency of benefits to prevent old-age poverty on a country-specific level in addition to providing a reliable means to smooth lifetime consumption**—and by whether such benefits are provided for the majority of the population.[13] However, each society has its own objectives for income smoothing and elderly poverty protection and for the role of the mandatory pension system in achieving these objectives.

1. Adequacy of Benefits

37. **The composite support provided by the mandatory social security system in the Caribbean provides a modest minimum subsistence level or standard of living regardless of lifetime income.** A key measure of these pension entitlements is the pension level—the gross individual pension divided by average earnings for active contributors. It is best seen as an indicator of pension adequacy because it shows the benefit level that a pensioner will receive in relation to average covered earnings for all contributors in the respective country at a particular point in time.

38. **By international standards, Caribbean public pension schemes provide high accrual rates during the initial years of contributions after which the accrual rate is reduced** (Table 14)**.** Mitchell and Osborne (2005, p. 367) compare these schemes with those of the United States and Canada and conclude that the Caribbean schemes are more generous "in an earnings replacement sense." Because of a higher accrual rate during the initial years, a 30–40 percent replacement rate is achieved after 10 years of contributions. By contrast, in the United States the average replacement rate is 38.6 percent after 35 years (Whitehouse, 2007, p. 123). This also has the effect of providing a relatively high replacement rate for those workers with small contribution densities prior to retirement. Of course, the replacement rate represents only a partial picture of the benefits received throughout retirement and is not indicative of other benefits such as disability and survivorship, which vary within the region.

39. **Measurement of social security benefit levels for a full-term worker as a proportion of the economy-wide average wage provides an idea of the benefit relative to average earnings in the economy.** It also provides a uniform basis for comparison between countries within and outside of the region**.**[14] As indicated in Figure 4 and

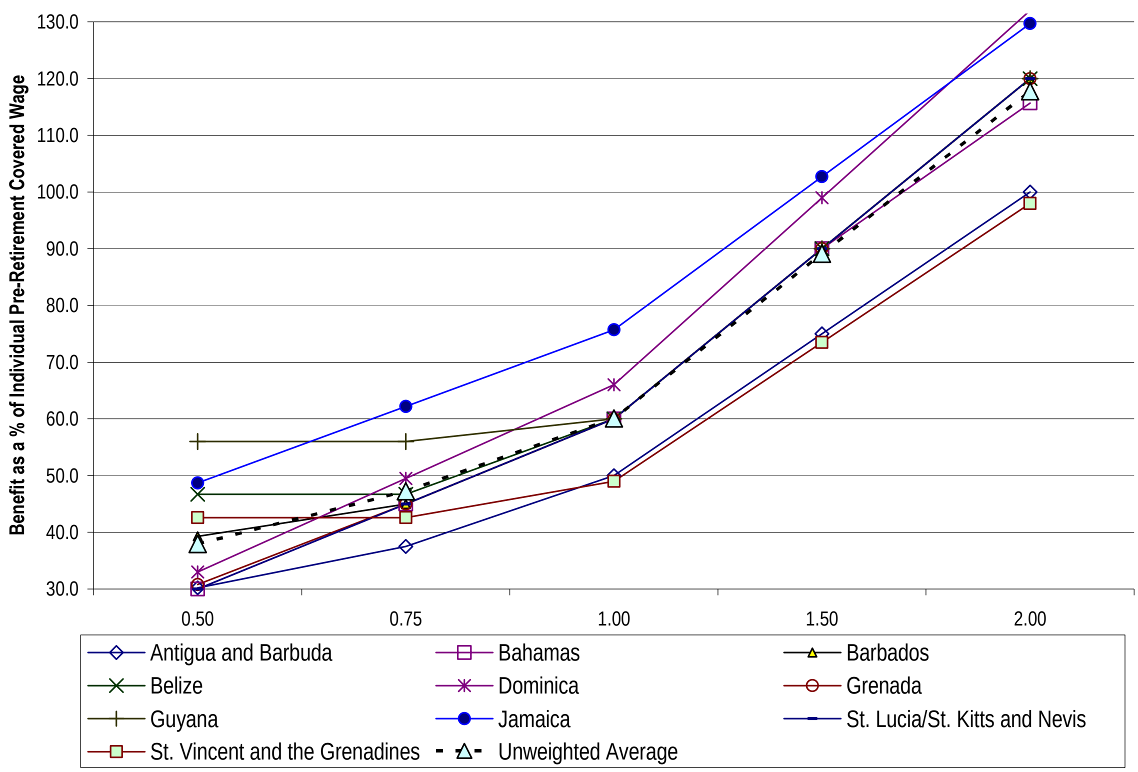
[13] Holzmann and Hinz specify that "an adequate system is one that provides benefits to the full breadth of the population that are sufficient to prevent old-age poverty on a country-specific absolute level in addition to providing a reliable means to smooth lifetime consumption for the vast majority of the population." See Robert Holzmann and Richard Hinz, *Old Age Income Support in the 21st Century*, The World Bank, 2006.

[14] We applied the Axia Apex Model to 10 countries in the Caribbean for which we had data. For information about the methodology, see Edward Whitehouse, *Pensions Panorama: Retirement Income in 53 Countries*, The World Bank, 2007.

Table 15 below, a full-career worker earning the economy average covered wage would receive an average benefit of about 60 percent of the average wage of contributors in the 10 countries for which we have data.[15] A worker earning half of the average covered wage would receive a benefit equal to about 38 percent of the economy-wide average wage. And a worker earning twice the average wage would receive a benefit equal to about 118 percent of the average wage. All of the 10 schemes evaluated had some level of redistribution in the benefit resulting from the cap on covered wages and, to a more limited degree, from minimum pension provisions. A worker earning half of the average wage prior to retirement received a benefit greater than 30 percent of average covered wages in each economy in all of the 10 countries analyzed.

Figure 4: Gross Pension Levels as a Proportion of Economy-Wide Average Covered Earnings

(pension entitlements as a share of average economy-wide earnings)



Source: Bank estimates using the Axia Economics Apex Model.

[15] For Caricom, we were not able to project the benefit entitlement for Trinidad and Tobago because the benefit parameters vary according to income levels and such levels have been changed periodically over time.

Table 15: Gross Pension Levels as a Proportion of Economy-Wide Average Covered Earnings

(percent of the average economy-wide covered earnings)

Gross Pension Level	0.50	0.75	1.00	1.50	2.00
Antigua and Barbuda	30.2	37.5	50.0	75.0	100.0
Bahamas	30.0	45.0	60.0	90.0	115.7
Barbados	39.3	45.0	60.0	90.0	120.0
Belize	46.7	46.7	60.0	90.0	120.0
Dominica	33.0	49.5	66.0	99.0	132.0
Grenada	30.8	45.0	60.0	90.0	120.0
Guyana	56.0	56.0	60.0	90.0	120.0
Jamaica	48.7	62.2	75.7	102.7	129.7
St. Kitts and Nevis	30.0	45.0	60.0	90.0	120.0
St. Lucia	30.0	45.0	60.0	90.0	120.0
St. Vincent and the Grenadines	42.6	42.6	49.0	73.5	98.0
Unweighted Average	***37.9***	***47.2***	***60.1***	***89.1***	***117.8***

Source: Bank estimates using the Axia Economics Apex Model.

40. **The benefit profile of the Caribbean compares most closely to Korea, the United States and Australia** (Figure 5).[16] Interpretation of these figures is as follows. The slope of the graph explains the relationship between the benefit levels and the average covered wage in the economy, with a flat line signifying that the same benefit is provided to everyone. The level of the line determines the benefit for different income groups as a proportion of the economy-wide covered wage. The figure identifies comparable benefit entitlement profiles while also illustrating the contrasts between the income replacement of the systems in the Caribbean and those observed internationally. Country comparators are consistent with those for *pension levels.*

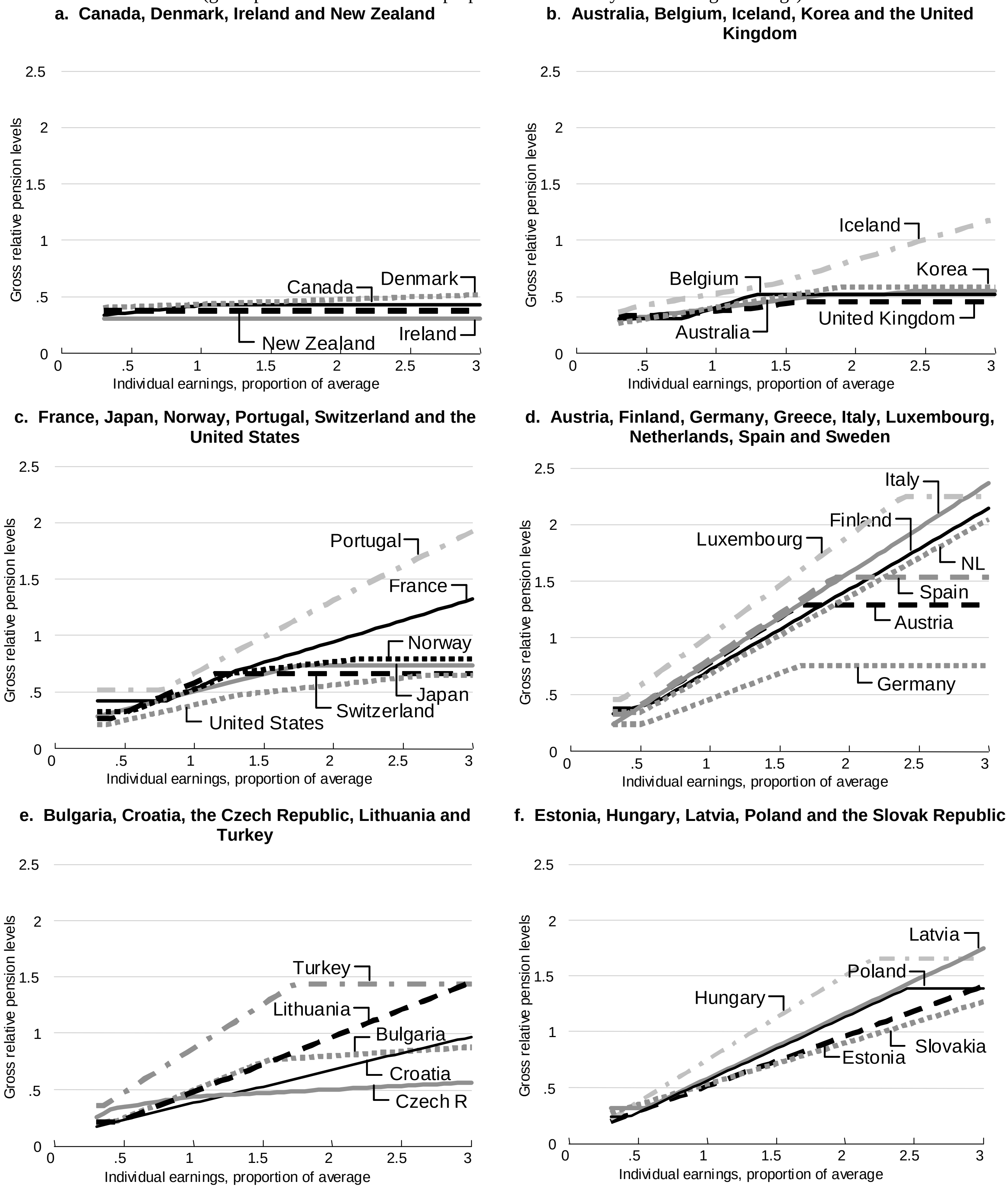
41. **Our second indicator of benefit adequacy is the gross replacement of pre-retirement income for a full-term worker at different income levels.** The target income replacement rate for different income groups is a key design feature of public pension systems, determining the consumption smoothing of such systems.[17] Strong linkages between pre-retirement wages and post-retirement benefits have the advantage of ensuring a smoothing of consumption and of creating strong incentives for compliance in contributory schemes. As indicated in Figure 6 and Table 16 below, the average-wage worker in the 10 sample Caricom countries would receive a gross replacement of pre-retirement income of about 60 percent in 2007. Although the average worker earning half of the regional average wage would receive a benefit equal to about 76 percent of his or her pre-retirement wages, there is considerable variation between countries in the level of progressivity of benefits at retirement. For example, full-career workers earning half of the average wage at retirement would receive a benefit equal to 112 percent, 97 percent and 93 percent of their pre-retirement wages in Guyana, Jamaica and Belize, respectively. For workers earning at or above the economy average wage, all countries sampled except Antigua and Barbuda and St. Vincent and the Grenadines provide a benefit at or above 60 percent of average wages for a full-term worker.

[16] The Asian data is from Edward Whitehouse, *OECD, Pensions at a Glance, Asia*, forthcoming. The Caribbean data are based on 2006 parameter values.

[17] The target *income replacement rate* is the post-retirement annuitized benefit divided by the individual lifetime pre-retirement earnings which is indexed or "valorized" according to average wage growth over the contribution period. *This calculation assumes that the Old Age Pension benefit is wage-indexed so therefore likely overstates the actual replacement rate*.

Figure 5: International Gross Pension Levels

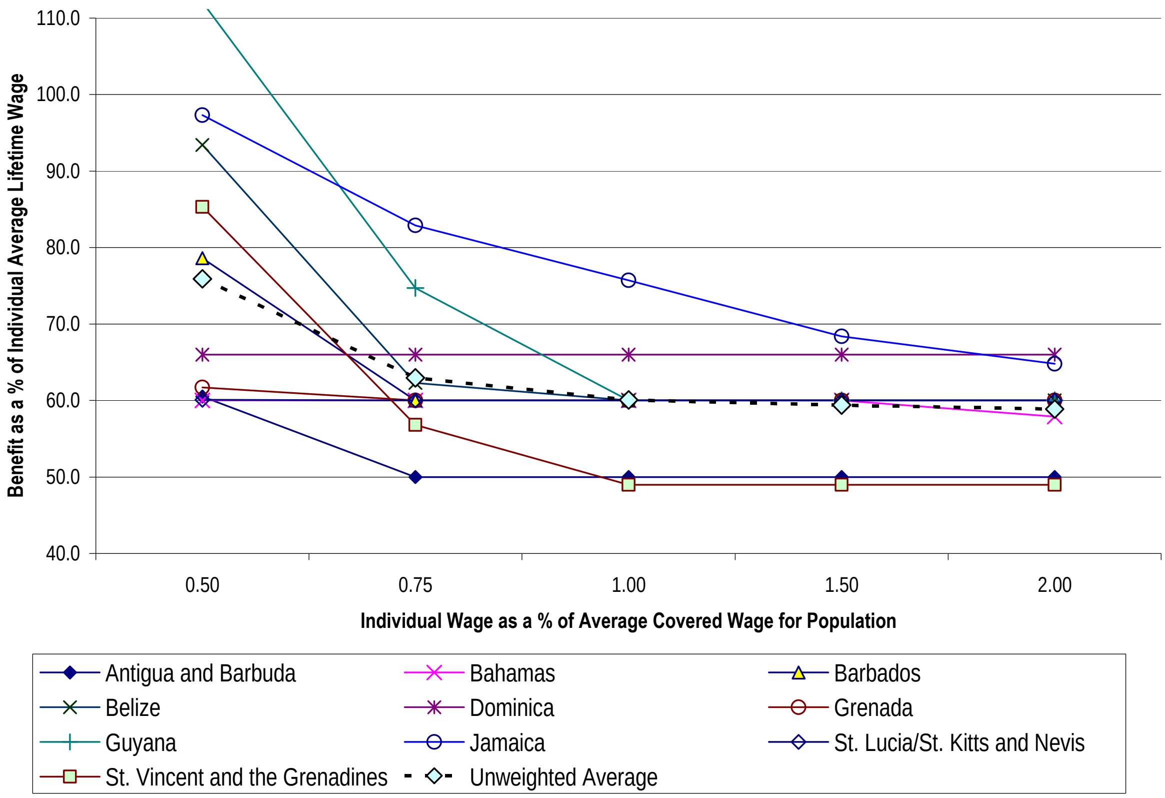
(gross pension entitlement as a proportion of economy-wide average earnings)



Source: Edward Whitehouse: Pensions Panorama, 2007.

Figure 6: Gross Replacement Rates

(average pension benefit as a percent of the individual pre-retirement covered wage)



Source: Bank estimates using the Axia Economics Apex Model.

Table 16: Gross Replacement Rates

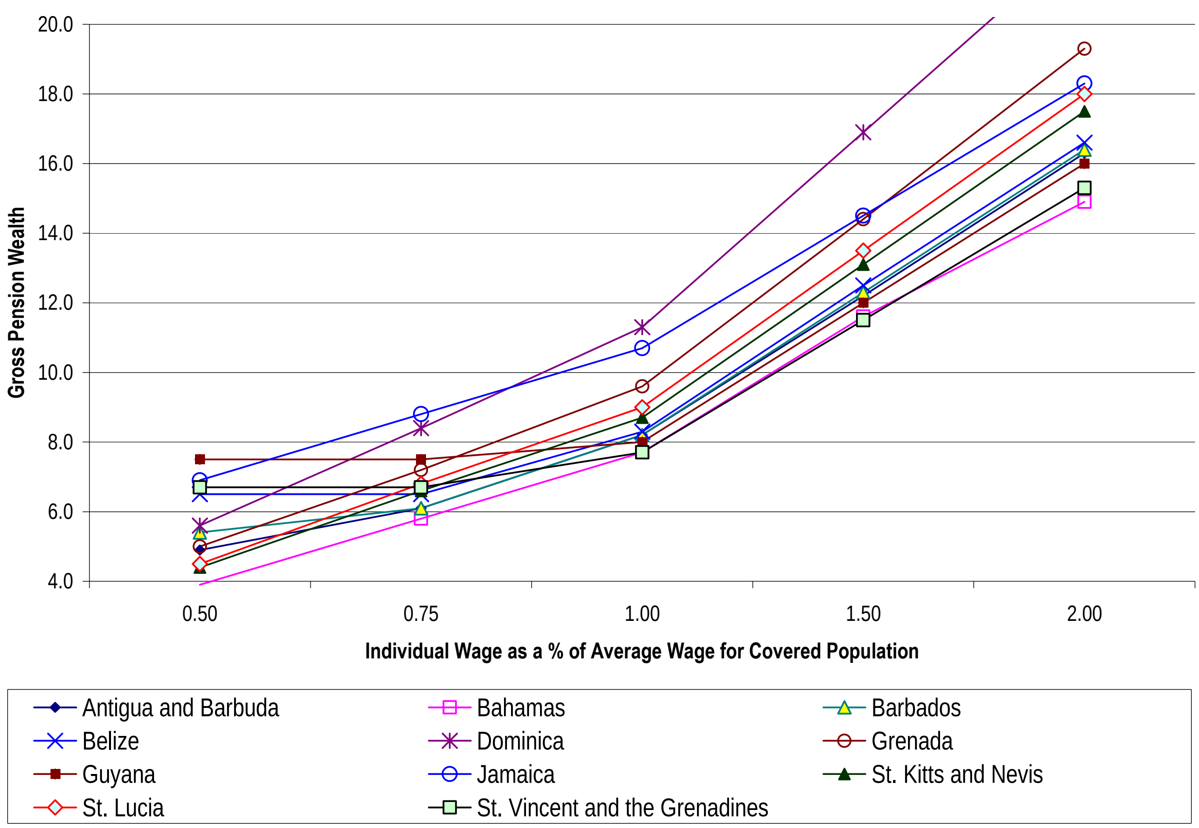
(average pension benefit as a percent of the individual pre-retirement covered wage)

Gross Replacement Rate	**0.50**	**0.75**	**1.00**	**1.50**	**2.00**
Antigua and Barbuda	60.5	50.0	50.0	50.0	50.0
Bahamas	60.0	60.0	60.0	60.0	57.9
Barbados	78.6	60.0	60.0	60.0	60.0
Belize	93.4	62.3	60.0	60.0	60.0
Dominica	66.0	66.0	66.0	66.0	66.0
Grenada	61.7	60.0	60.0	60.0	60.0
Guyana	112.1	74.7	60.0	60.0	60.0
Jamaica	97.3	82.9	75.7	68.4	64.8
St. Kitts and Nevis	60.1	60.0	60.0	60.0	60.0
St. Lucia	60.0	60.0	60.0	60.0	60.0
St. Vincent and the Grenadines	85.3	56.8	49.0	49.0	49.0
Unweighted Average	**75.9**	**63.0**	**60.1**	**59.4**	**58.9**

Source: Bank estimates using the Axia Economics Apex Model.

42. **A third indicator of benefit adequacy, *Gross Pension Wealth*, captures the total anticipated stream of retirement benefits for a full-term worker who retires at the normal retirement age and has a normal life expectancy.**[18] Pension wealth is generally expressed as a percentage of the average covered earnings in the economy. It has the advantage of indicating the total benefits received during the entire period of retirement rather than just the flow of benefits in a particular year and therefore can suggest how the age of retirement, life expectancy and indexation affect the total benefit entitlements. Figure 7 and Table 17 show modest variation in benefit entitlements across countries in the Caribbean from the point of view of pension wealth. The average-wage full-term worker for the 10 countries reviewed would receive about 8.9 times the average economy-wide covered wage at retirement; a worker earning half the average wage would receive a benefit equal to about 5.6 times the average wage; and a worker earning twice the average economy-wide covered wage would receive a benefit of 17.4 times the average wage. For lower income workers, Guyana offers the greatest pension wealth during retirement, while Dominica and Grenada offer the greatest pension wealth for individuals earning twice the average wage.

Figure 7: Gross Pension Wealth
(as a multiple of Covered Wages)



Source: Bank estimates using the Axia Economics Apex Model.

[18] The calculation of gross pension wealth is the net present value of projected benefit entitlements during the average individual's life expectancy at retirement.

Table 17: Gross Pension Wealth
(multiple of covered wages)

Gross Pension Wealth	0.50	0.75	1.00	1.50	2.00
Antigua and Barbuda	4.9	6.1	8.2	12.2	16.3
Bahamas	3.9	5.8	7.7	11.6	14.9
Barbados	5.4	6.1	8.2	12.3	16.4
Belize	6.5	6.5	8.3	12.5	16.6
Dominica	5.6	8.4	11.3	16.9	22.5
Grenada	5.0	7.2	9.6	14.4	19.3
Guyana	7.5	7.5	8.0	12.0	16.0
Jamaica	6.9	8.8	10.7	14.5	18.3
St. Kitts and Nevis	4.4	6.6	8.7	13.1	17.5
St. Lucia	4.5	6.8	9.0	13.5	18.0
St. Vincent and the Grenadines	6.7	6.7	7.7	11.5	15.3
Unweighted Average	***5.6***	***7.0***	***8.9***	***13.1***	***17.4***

Source: Bank estimates using the Axia Economics Apex Model.

2. Coverage

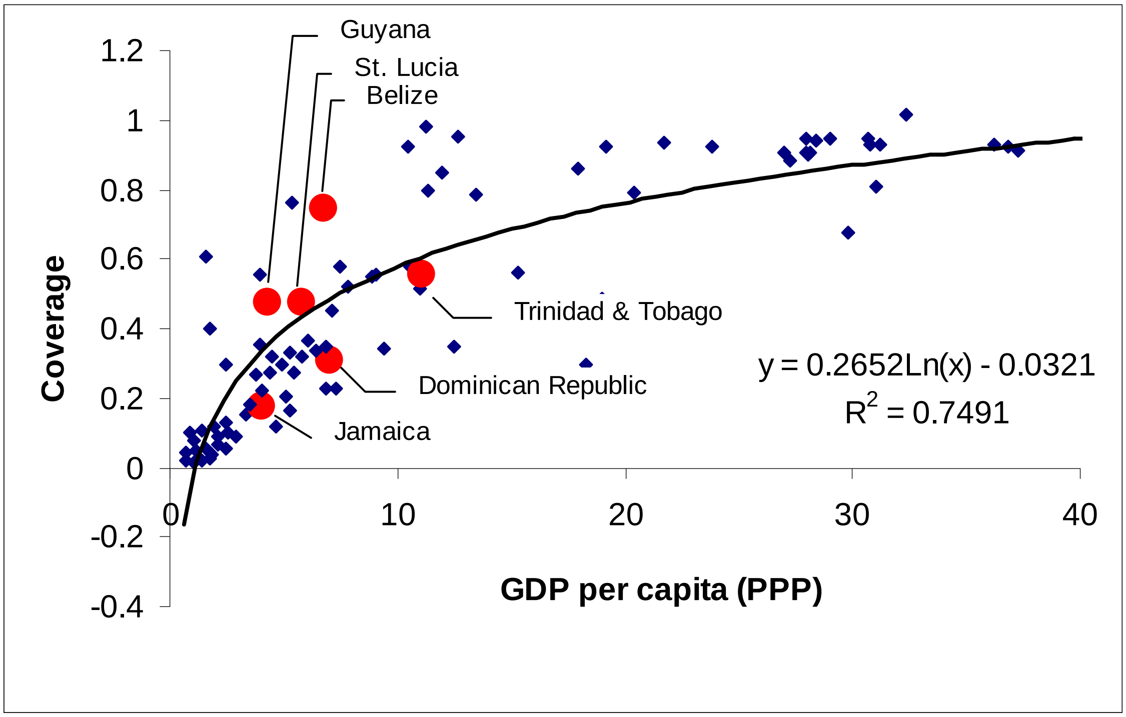
43. **Coverage of workers and retirees is an essential indicator of the adequacy of mandatory pension schemes because it suggests what proportion of the labor force will be entitled to receive benefits and what proportion of the elderly are receiving benefits.** Coverage of mandatory public schemes varies considerably in the region, although such coverage is closely correlated with per capita income. Participation in national insurance schemes is mandatory for all salaried workers and self-employed in almost all Caribbean countries, but actual coverage seems to be partial due to non-compliance and varying levels of informality (Pettinato and Diaz, 2005). Although we could not get official data about coverage of the pension schemes in most of the Caribbean countries, information presented in Table 18 suggests that coverage in the region ranges from 20 to 25 percent of the employed population in the Dominican Republic and Jamaica, with other NIS schemes having coverage rates above 50 percent and up to 100 percent in St. Kitts and Nevis.

44. **Coverage of the labor force by mandatory public social security schemes, both in the Caribbean and internationally, is correlated with per capita income** (Figure 8). As Palacios and Pallares-Miralles (2000) show, income per capita alone explains more than 70 percent of the variation in coverage throughout the world. A fitted line like the one presented in Figure 8 provides a benchmark to compare coverage in different regions. Caribbean countries are not far from the fitted line, with half of those that could be included in the sample below the line (less than the anticipated level of coverage based on income per capita) and the other half above the line.[19]

[19] Due to lack of data, only six Caribbean countries could be included in this comparative exercise.

Figure 8: Global and Regional Relationship between Coverage (contributors/labor force) and Income Per Capita

(early 2000s)



Source: Bank estimates.

45. **As is true in other regions, coverage and compliance in the Caribbean seems to be particularly low among self-employed workers** (see Mitchell and Osborne, 2005, p. 366).[20] Participation is mandatory for self-employed workers in most countries in the region. The self-employed are excluded only in the Dominican Republic and Trinidad and Tobago (provided, in the latter case, they work less than a certain number of hours per week and earn less than an income threshold). Often the contribution requirements for the self-employed are different than for those employed by enterprises. Despite being mandatory in most cases, actual participation of the self-employed appears to be low which evidently is a major factor contributing to the modest coverage rates suggested by the data available.

46. **Elderly coverage is heavily dependent upon the number of years the public pension scheme has been operating and upon the vesting period for benefit entitlement.** The relatively recent establishment of the schemes in the Caribbean therefore has a negative impact on elderly coverage. Data from the mid-nineties suggests that the proportion of the elderly that was receiving a pension was comparatively low, with about 23 percent of the population aged 60 and above receiving a pension in five sample Caribbean countries (Table 18). By comparison, about 37 percent of the Latin American population aged 65 and above received a pension at that time.[21] Even though these figures reflect only five countries in the Caribbean and are not

[20] Osborn (2004) estimated the compliance rates for self-employed to be 25 percent in Barbados, 15 percent in The Bahamas and St. Kitts-Nevis, and under 10 percent for most of the other schemes the cover the self-employed.

[21] Computed as a simple average of the coverage reported by Rofman and Lucchetti (2006).

directly comparable because of different ages, they do suggest that coverage of the elderly in the Caribbean was low in the mid-nineties, even by the relatively low comparison of Latin American standards. Unfortunately, we do not have information for recent years, except for the Dominican Republic, where the situation did not change significantly in this period.

Table 18: Coverage Indicators for Selected Countries
(percent)

	Contributors/Employed (2003)	Pensioners/Population 60+ (Mid-1990s)	Participation of Self-Employed Workers
Antigua and Barbuda	90 to 95		Mandatory
Bahamas	80 to 85		Mandatory
Barbados	95		Mandatory
Belize	80 to 85		Mandatory
Dominica	75 to 80	31.9	Mandatory
Dominican Republic	20 to 25	11.0[a]	Excluded
Grenada	80 to 85		Mandatory
Guyana	50 to 55	55.9[b]	Mandatory
Jamaica	20 to 25	18.8	Mandatory
St. Kitts and Nevis	100		Mandatory
St. Lucia	65 to 70		Mandatory
St. Vincent and the Grenadines	90 to 95		Mandatory
Trinidad and Tobago	60 to 65	17.0[b]	Excluded/Voluntary[c]

a. Pensioners/population 65 +, Rofman and Lucchetti (2006).
b. Guyana and Trinidad and Tobago do not include disability pensioners.
c. The self-employed persons who work less than 10 hours a week and earn less than TT$100 per week or TT$433 per month are excluded.
Source: Osborne (2004, Table A.9), Palacios and Pallares-Miralles (2000, Table 4.10) and Social Security Programs Throughout the World, The Americas, 2005 (2006).

47. **Coverage of NIS schemes reflects a number of variables, including income per capita, labor participation requirements (such as coverage of the self-employed) and broader incentives for compliance (such as institutional capacity).** Improving the coverage of NIS schemes requires strengthening much broader incentives to encourage participation in the tax system and other elements of the formal economy. However, in some cases more focused interventions can result in improvement in coverage. These interventions include: (i) consolidating collections and compliance between the NIS and the tax authority, or at a minimum, information sharing between such agencies; (ii) enacting flat contribution requirements or other special provisions for the self-employed to reflect the volatility of their income; (iii) improving scheme design, governance and transparency in an effort to create stronger incentives for participation; and (iv) adopting subsidy mechanisms, such as through government matching contributions or stronger minimum benefit provisions for lower income contributors.

48. **Institutional capacity can also substantially affect coverage in addition to policy design**. Those NIS schemes responsible for their own collections and compliance vary substantially in their capacity. Furthermore, the challenges of the collections and compliance process are not uniform across Caricom member states. Improving institutional capacity for

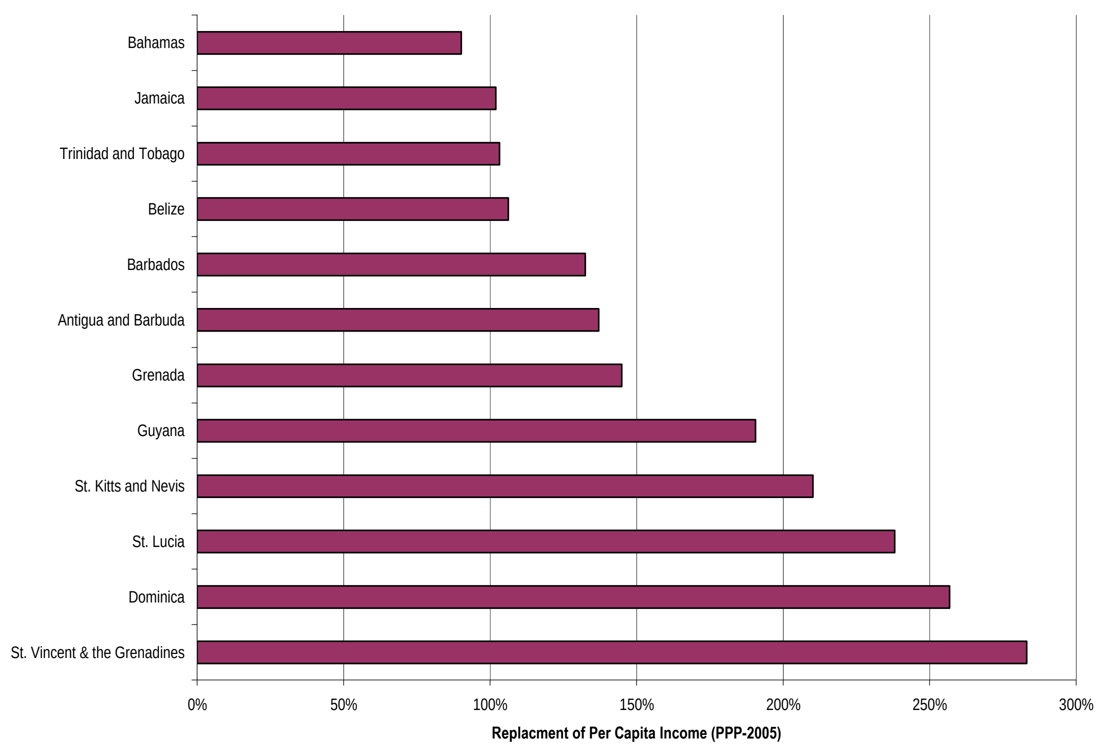
collections and compliance involves a number of issues of governance and management, as discussed below.

B. PREDICTABILITY OF CONTRIBUTIONS AND BENEFITS

49. **Several parameters of social security schemes in many Caribbean countries create substantial unpredictability, risk and uncertainty for members:** (i) most of the schemes require parliamentary approval for benefits to be adjusted so that, in the absence of automatic indexation, provisions benefits can be materially reduced in the face of inflation and compromise consumption smoothing; (ii) the covered wage threshold under which pension contributions are calculated are also subject to parliamentary approval, or in some cases are tied to the minimum wage, which is also subject to uncertainty. Adjustments to the covered wage threshold can materially affect the contribution burden as well as income replacement; (iii) the minimum pension is another key parameter requiring parliamentary approval; and (iv) in no case in the region are wages that are used for determining pension benefits "valorized" or adjusted by wage or price growth using a long-term income averaging period and adjusting each year's wages in accordance with the inflation or wage growth during the income averaging period. These weaknesses, which have been noted to exist throughout the region, weaken the predictability of benefits, the credibility of the provision of social security and incentives for compliance.

Figure 9: Insurable Wage Ceilings as a Proportion of GDP Per Capita

(insurable wage ceiling 2007 as a proportion of 2005 PPP-GDP per Capita)[22]



Source: Bank estimates based on SSA (2008) and World Economic Indicators 2008.

[22] Use of the 2005 GDP per capita likely overstates the ratios but this was the most recent data available.

50. **The level of the ceiling on covered wages depends fundamentally on what level of wages the society seeks to "smooth" into retirement**. Although the observed average cap on covered wages in OECD countries is roughly 250 percent of average wages in the economy, the appropriate level in Caribbean countries would depend upon societal choices. As seen in Figure 9 above, the wage ceiling varies between countries when compared to GDP per capita.[23]

51. **In addition to establishing a level for the cap on covered wages, it is important to establish a framework for the automatic adjustment to the cap in line with inflation or wage growth or some other indicator.**[24] In no case has the ceiling been adjusted automatically and in Belize the ceiling was adjusted only once in 22 years, twice in the Bahamas in 30 years and three times in Trinidad and Tobago in 34 years (Osborne: 2004, p. 13). We suggest that such an adjustment be automatic rather than being subject to parliamentary amendment. Of course, because the covered wage base substantially affects total wage taxes borne by employers and employees, many governments seek to retain a device to affect the tax bill.

52. **The level of the minimum pension depends fundamentally on what level of basic income the society seeks to guarantee during retirement and has a substantial impact on the implicit pension debt and system sustainability.** Table 19 below summarizes the maximum covered wage, minimum pension and maximum pension as proportion of GDP per capita. With the exception of Dominica, the minimum pension is between about 9 percent and 25 percent of GDP per capita. Given that determination of minimum wages is also subject to its own economic implications and political dynamics, we believe that a framework for a minimum pension that is not tied to the minimum wage is generally preferable. The desired level depends upon societal choices. It also depends, among other things, upon the actual and projected wage distribution of vested NIS members, the projected system finances that are needed to support the minimum pension and, most importantly, the minimum pension level needed in order to assist retirees from living in poverty. Although we don't have specific views as to the appropriate level of the minimum pension, we do believe that it should be grounded in a framework of automatic adjustments in line with inflation that ensures elderly poverty alleviation over time and is not subject to discretionary decision-making and/or legislative approval, thereby potentially politicizing the benefit provision process.

---

[23] Osborn (2004, p. 12) also compares the ratio of the earnings ceiling to average insurable wages in 2003. However, the insurable wages themselves are biased because of the caps imposed. As a result, we opted to calculate the cap as a proportion of per capita GDP.

[24] Guyana makes such an adjustment in line with minimum civil servant wages and in 2005 Barbados began annual adjustments in line with changes in average national wages. See Osborn (2004, p. 13).

Table 19: Maximum Covered Wage, Minimum and Maximum Pensions
(percentage of 2005 GDP Per Capita - PPP)

	Maximum Covered Wage	Minimum Pension	Maximum Pension
Antigua and Barbuda	137%	10.7%	68.5%
Bahamas	90%	11.9%	n.a.
Barbados	132%	19.7%	60% of Avg Cov Earnings
Belize	106%	16.5%	67.4%
Dominica	257%	1.8%	60% of the Insured Avg Cov Earnings
Dominican Republic	20 times the minimum wage	n.a.	none
Grenada	145%	9.6%	64.7%
Guyana	191%	23.8%	60% of the Insured Avg Cov Earnings
Haiti	n.a.	n.a.	n.a.
Jamaica	102%	n.a.	n.a.
St. Kitts and Nevis	210%	9.7%	126.1%
St. Lucia	238%	9.5%	n.a.
St. Vincent & the Grenadines	283%	11.2%	60% of the Insured Avg Cov Earnings
Trinidad and Tobago	103%	24.9%	n.a.

Source: Bank estimates based on Social Security Administration, Social Security Programs throughout the World, The Americas, 2007; GDP data from World Economic Indicators, 2008.

53. **Extending the income averaging period from the current final salary or final multi-year average formulas, combined with the "valorization" of wages, can make pension benefits more equitable between cohorts and between individuals with different levels of income growth.** Valorization is the indexation of wages for the purposes of determining the income average for benefit calculation. Without such an adjustment, wages paid in the past tend to be lower in nominal terms than current wages and reduce the basis for the calculation of the pension. Its effect is stronger the higher the inflation and the longer the period over which the average wage that is incorporated in the benefit formula is computed. This phenomenon seems to have played a significant role in the low value of NIS pensions in Jamaica. The combination of high inflation in the nineties and the use of *unadjusted* contributions to compute the pension contributed to reduce its real value. As a result, the earnings-related component of the average pension in the Jamaican NIS was only about 6.5 percent of total pensions in 2005. Because inflation has been lower in recent years, this figure could rise significantly in the future, pushing up the real value of pensions paid by the NIS.

54. **Extending the income averaging period can have three effects:** (i) it equalizes the replacement of pre-retirement income, all else being equal, between individuals with different growth trajectories in their income. Final salary schemes as found in the Caribbean tend to yield higher replacement of lifetime average incomes for high-income workers than they do for low-income workers. This is because high-income workers tend to have steeper age-earnings profiles than low-income workers; (ii) it shields workers from the risk of negative real wage growth prior to or during the short income averaging period, materially reducing the replacement of pre-retirement income provided by the pension benefit; and (iii) it removes the incentives for wage

adjustments prior to the income averaging period in order to maximize the pension benefit. This improves equity between workers and reduces the incentives for gaming behavior to maximize pension benefits by increasing wages during the final years of service. In this way, by isolating wage histories from inflation and an individual's trajectory of wage growth, extending the income averaging period and introducing valorization has the effect of improving the equity of pension benefits between individuals, improving the predictability of benefits and improving the incentives for honest wage reporting.

55. **Extending the income averaging period and introducing valorization, however, poses challenges not only for policy design but also for institutional capacity**. The institutional challenge is to record, validate and ensure safe-keeping of wage records for the entire income averaging period. This generally means assuming a minimum level of automation as well as the administrative systems to ensure data accuracy. Countries that increase the income averaging period often do it gradually and prospectively, provided that the institutional systems are in place to support it.

C. Redistribution, Equity and Incentives

56. **Public pension schemes redistribute income in five ways:** (i) they often explicitly redistribute income from higher lifetime income workers to lower lifetime income workers through a flat, non-income determined benefit and/or through different accrual rates for workers of different incomes; (ii) they explicitly redistribute income to those workers with low lifetime incomes, or who were negatively affected by shocks, through a minimum benefit provision; (iii) they implicitly redistribute income between generations due to a variety of reasons; (iv) they implicitly redistribute income from some covered groups to others, such as from those with flatter age/wage profiles to steeper age/wage profiles; and (v) for schemes that require public subsidies, they redistribute income from the broader public (the taxpayers) to the pension system members.

57. **All pension and social security schemes impact *incentives***. For the worker, contributions to pensions reduce the relative benefits from work, at least in the formal sector. Mandatory contributory schemes also reduce the relative incentive to voluntarily save for retirement. On the other hand, pension schemes (particularly occupational pensions) add to the total package of incentives for workers to remain with a particular employer. For the employer, contributory pensions add to labor costs thereby reducing the incentive to hire workers. On the other hand, occupational pensions add to the total package of incentives so that employers can attract and retain qualified workers. For retirees, receipt of pension income reduces the relative incentive to work, particularly if it is exempt from personal income tax.

58. **Public pension schemes around the world have had significant intergenerational redistribution favoring the initial generations of participants in public pension schemes.** This appears to be true in the Caribbean as well, and as a result, schemes have begun to adjust their parameters to offer less generous formulas than they once did. This process is likely to continue as existing actuarial projections indicate that the schemes tend to be unsustainable with the original parameters. Special characteristics in the design of several Caribbean public pension schemes are particularly prone to intergenerational redistribution. Jamaica's NIS, for example, has an ingenious formula by which generations born before 1948 are treated more favorably than

later generations. While generations born in 1948 and later have to contribute at least 36 years to access the maximum basic benefit, the generation born in 1918 had to contribute only 13 years to qualify for the same benefit.

59. **The higher accrual rates during the initial years of contributions that are characteristic of public pension schemes in the region also contribute to the redistribution of benefits in favor of participants who joined schemes soon after their establishment**.[25] This design was apparently motivated by the desire to include in the recently created schemes several generations that had not had time to accumulate long enough contribution histories to have a meaningful replacement rate. With lower accrual rates, those generations would have received unacceptably low replacement rates, and hence they were granted higher accrual rates. By entitling these workers to relatively high pension benefit levels relative to their contributions, Caribbean pension schemes granted a gift to these generations that will have to be paid by subsequent generations.

60. **Frontloaded accrual rates in public pension schemes in the Caribbean create an incentive for workers to shorten their formal work histories so as only to contribute for the period with the higher accrual rate.** As illustrated in Table 20, we undertook simulations of different work histories in order to determine the observed implicit rate of return (IRR) on contributions provided by benefit payouts. The shorter the contribution period the larger the observed IRR. The impact of years of contribution on the IRR can be substantial.[26] As a result, short careers are rewarded with higher IRRs, the highest IRRs being obtained with the minimum years of contribution (typically 10–15 years). We do not have information about the normal work histories in the Caribbean or the proportion of workers with longer or shorter contribution periods than those simulated here.[27] However, this distortion in the incentives to contribute is likely to be particularly severe in countries with extended informal sectors that allow workers to stay out of the pension system while working. Unfortunately, the countries that most desperately need protection against short and interrupted working careers are also the ones that tend to have lower capacity to enforce contributions and hence face higher risks of extensive abuse.

61. **There are two rationales evident for accelerated accrual rates**: (i) to provide special benefits to those who did not have the opportunity to contribute for long periods when the schemes began; and (ii) to provide disproportionate benefits at retirement for those workers unable to maintain formal employment over their work lives. A worker who has a low number of years of contributions will receive a comparatively small pension, but not as small as it would

[25] This "frontloading" of benefits is just the opposite of the "backloading" of benefits that is most frequent in pension schemes around the world. Robalino (2005, p 75) reports similar frontloading in Morocco and Tunisia.

[26] We kept the retirement age constant in these computations and we assumed that there are no interruptions in contributions, so the variation of the length of the contributing period is due to the different moment in which these individuals are assumed to have begun to contribute.

[27] Although not presented here, similar results were found for variations in the length of the periods of contribution derived from interruptions of the series of contributions. Postponing retirement has the double effect of expanding the number of periods of contribution and reducing the number of periods individuals receive pension benefits. In most cases, it also raises the replacement rates and hence the value of pensions (Table 24). While contributing over more periods and receiving the benefit for a shorter period reduces the IRR, the rise in pensions that is associated with later retirement raises the IRR. The first two effects dominate the third in all the simulations done, and so the retirement age had a negative impact on the IRR.

be if the scheme were designed to actuarially balance the shorter period of contributions with the present value of pensions. This insurance is likely to be particularly beneficial to low-income workers, as they tend to enroll later and have more interruptions in their working careers than high-income workers (Bertranou and Sánchez, 2003; Bucheli, Ferreira-Coimbra, Forteza and Rossi, 2005). The first rationale, to effectively grandfather new entrants into the schemes at their inception, is less compelling now as new generations have had the opportunity to contribute for longer periods.

Table 20: Implicit Rates of Return for Different Contribution Periods

	Number of years contributing				
	30	**25**	**20**	**15**	**10**
Antigua and Barbuda	6.0%	6.9%	8.0%	10.1%	16.6%
Bahamas	5.2%	6.2%	7.6%	10.2%	14.1%
Barbados	2.8%	3.5%	4.5%	6.4%	10.6%
Belize	6.0%	7.1%	8.9%	12.6%	21.5%
Dominica	5.3%	6.2%	7.6%	10.1%	13.6%
Grenada	6.0%	6.9%	8.2%	10.6%	15.4%
Guyana	2.5%	3.1%	4.4%	7.8%	a/
Jamaica	6.0%	7.3%	8.3%	11.1%	a/
St. Kitts and Nevis	5.4%	6.3%	7.7%	10.2%	13.6%
St. Lucia	5.7%	6.7%	8.1%	10.5%	a/
St. Vin. and Gren.	7.8%	9.1%	11.0%	14.5%	23.2%

a/ The minimum number of years of contribution to qualify for a pension is higher than 10.
Assumptions: Average wage in the simulations equal to the average insurable wage of the NIS, real wages growing at 2% per year, retirement at normal age as defined in each country national insurance scheme, age of death is 20 plus life expectancy at 20, single male.
Source: Bank estimates based on Social Security Administration (2006) and Osborne (2004).

Table 21: Replacement Rates for Different Contribution Periods

	Number of years contributing				
	30	**25**	**20**	**15**	**10**
Antigua and Barbuda	44%	40%	34%	29%	30%
Bahamas	57%	52%	46%	41%	31%
Barbados	64%	59%	53%	48%	42%
Belize	57%	52%	46%	45%	46%
Dominica	58%	53%	46%	41%	31%
Grenada	52%	47%	41%	36%	31%
Guyana	60%	55%	51%	54%	a/
Jamaica	33%	31%	25%	23%	a/
St. Kitts and Nevis	58%	53%	47%	41%	31%
St. Lucia	59%	54%	48%	42%	a/
St. Vin. and Gren.	53%	48%	43%	40%	42%

a/ The minimum number of years of contribution to qualify for a pension is higher than 10.

Assumptions: Average wage in the simulations equal to the average insurable wage of the NIS, real wages growing at 2% per year, retirement at normal age as defined in each country national insurance scheme, age of death is 20 plus life expectancy at 20, single male.

Source: Bank estimates based on Social Security Administration (2006) and Osborne (2004).

62. **The IRR can be used as an indicator to suggest which income groups and cohorts are net recipients of redistribution through the public pension system.** Workers who benefit more will have higher IRRs than those who benefit less. Those pension schemes that explicitly provide for income redistribution are supposed to be progressive in the sense that workers with lower than average lifetime incomes should receive higher returns on their savings (IRRs) than those with higher than average lifetime incomes. But workers with steeper age-earnings profiles often receive higher rates of return as well, and these workers tend to have higher incomes on average. Also, workers with higher than average life expectancy tend to benefit from the system by receiving pensions for longer periods of time than workers with low life expectancy (who are usually poorer workers). There are winners and losers between generations as well. In general the initial generations benefit disproportionately from the pension system relative to later generations. The intergenerational redistribution that pension schemes normally perform is the counterpart of the unsustainability that most schemes tend to show as they mature.

63. **All the public pension schemes in the Caribbean analyzed in this report in principle provide higher IRRs to lower lifetime income workers than to higher lifetime income workers.** We compared the various IRRs projected to be provided by the pension schemes to workers whose lifetime average income lies between a quarter and four times the average insurable wage recorded by the social security scheme or NIS (Table 22). In all the simulations in this series, higher lifetime income workers were projected to receive lower IRRs than lower income workers. Guyana's NIS was found to be the most redistributive in this group, basically because of the comparatively low return it pays to the well off. Dominica had the least redistributive scheme, with projected IRRs that were similar across income levels. Equalizing redistribution is generally performed through minimum and maximum pensions and replacement rates. Jamaica is an exception to this, as redistribution there is mostly due to an idiosyncratic

benefit formula with a highly redistributive flat basic benefit and a relatively small earnings-related benefit.

Table 22: Implicit Rates of Return for Different Wage Groups

	Average Wage in the Simulations as a Proportion of the Average Insurable Wage Recorded by by the NIS				
	25%	**50%**	**100%**	**200%e**	**400%**
Antigua and Barbuda	11.6%	8.2%	6.9%	6.9%	6.0%
Bahamas	9.1%	6.2%	6.2%	5.1%	4.8%
Barbados	8.4%	4.7%	3.5%	3.5%	2.3%
Belize	8.7%	8.7%	7.1%	7.3%	7.0%
Dominica	7.2%	6.2%	6.2%	6.2%	6.2%
Grenada	11.0%	7.6%	6.9%	6.9%	6.9%
Guyana	10.3%	6.5%	3.1%	3.1%	2.2%
Jamaica	11.4%	9.1%	7.3%	6.0%	5.6%
St. Kitts and Nevis	9.9%	6.4%	6.3%	6.3%	6.3%
St. Lucia	8.4%	6.7%	6.7%	6.7%	6.7%
St. Vin. and Gren.	14.5%	11.1%	9.1%	9.1%	9.1%

Assumptions: Real wages growing at 2% per year, 25 years contributing, retirement at normal age as defined in each country national insurance scheme, age of death is 20 plus life expectancy at 20, single male.

Source: Bank estimates based on Social Security Administration (2006) and Osborne (2004).

64. **The practical relevance of these IRRs may be appreciated by noting that one percentage point difference in the IRR represents about a 23 percent difference in the present value of the pension benefit, keeping contributions constant**.[28] For example, in Guyana a difference of more than 8 percentage points in the IRR was obtained between a worker earning a quarter of the average insurable wage and a worker earning four times that much. In this case, the pension of the poorer worker would be more than five times higher *relative to his or her own contributions* than the pension of the more well off worker.

65. **According to the results in Table 23, public pension schemes in the Caribbean do not fully compensate workers who decide to retire later with higher pensions**.[29] While replacement rates at retirement are marginally higher at age 70 than, for example, at age 65 (Table 24), the substantial reduction in the IRR by extending the retirement by five years suggests that the marginal benefit resulting from delaying retirement is negative. Even though in most cases pensions do increase as workers postpone retirement, these increases seem to be less than what is necessary to compensate workers in actuarially fair terms when compared to those who retire earlier. Due to this design, pensions are less sensitive to contingencies such as job loss or poor health than they would be if the variation in the pension benefit was better connected to the actual age of retirement in actuarially fair terms. This design strongly discourages the postponement of retirement beyond the minimum retirement age. The disincentive might be

[28] The semi-elasticity of pensions to the IRR depends on the enrollment, retirement and death ages. It is approximately 23 percent when enrollment is at 35, retirement at 60 and death at 75. It rises to a range between 25 percent and 27 percent (depending on the IRR itself) when the enrollment age is 30.

[29] We assumed in these simulations that individuals begin to contribute at age 35 and contribute each and every period since that age until retirement.

particularly acute in the case of workers who are directly affected by maximum pensions because these workers would not get larger pensions at all if they postponed retirement.

Table 23: Implicit Rates of Return at Different Retirement Ages

	Age of Retirement		
	60	**65**	**70**
Antigua and Barbuda	6.9%	5.1%	2.7%
Bahamas	a	5.2%	2.1%
Barbados	a	2.8%	–0.5%
Belize	a	6.0%	3.5%
Dominica	6.2%	3.4%	–2.4%
Grenada	6.9%	5.0%	2.3%
Guyana	3.1%	–2.4%	b
Jamaica	a	6.0%	3.3%
St. Kitts and Nevis	a	4.6%	1.4%
St. Lucia	a	5.0%	1.9%
St. Vin. and Gren.	9.1%	6.8%	3.8%

a. The normal age of retirement is higher than 60.

b. The expected age of death is 69 (= 20 + life expectancy at 20).

Assumptions: Average wage in the simulations equal to the average insurable wage of the NIS, real wages growing at 2 percent per year, age of enrollment is 35, age of death is 20 plus life expectancy at 20, single male.

Source: Bank estimates based on Social Security Administration (2006) and Osborne (2004).

Table 24: Replacement Rates at Different Retirement Ages

	Age of retirement		
	60	65	70
Antigua and Barbuda	36.5%	40.9%	44.5%
Bahamas	a	52.1%	55.8%
Barbados	a	53.4%	53.4%
Belize	a	52.1%	55.8%
Dominica	47.4%	52.1%	56.7%
Grenada	42.8%	47.4%	52.1%
Guyana	47.4%	52.1%	b
Jamaica	a	30.9%	31.8%
St. Kitts and Nevis	a	52.1%	55.8%
St. Lucia	a	53.4%	53.4%
St. Vin. and Gren.	45.6%	50.2%	54.9%

a. The normal age of retirement is higher than 60.

b. The expected age of death is 69 (= 20 + life expectancy at age 20).

Assumptions: Average wage in the simulations equal to the average insurable wage of the NIS, real wages growing at 2% per year, age of enrollment is 35, age of death is 20 plus life expectancy at 20, single male.

Source: Bank estimates based on Social Security Administration (2006) and Osborne (2004).

66. **The use of a 3–5 year wage reference period creates a number of weak incentives in addition to creating risk and uncertainty for the worker**.[30] Under this design, workers have an incentive to underreport their wages during most of their career and to declare relatively high wage levels in the short period used for pension benefit computation. At least two complementary rationales have been provided to this design. First, it has been argued that some schemes cannot base pensions on longer histories of contributions because they simply lack the information, i.e., they did not have full records of individual contributions. Although plausible, this argument is becoming less compelling as the development of information technologies dramatically reduces the costs of organizing work history records. The second explanation is that the use of longer histories of contributions requires reliable rules to "revalorize" wages, rules that public pension schemes are unable or unwilling to implement. Because of inflation, wages paid long ago could significantly reduce the average wage that is used to compute pensions. Only if these wages are adjusted according to the inflation index would their inclusion not have a significant negative impact on the average that is used to compute the pension. One reason for resistance to the adoption of such rules is the fear that indexation of the wage base through valorization could encourage the use of indexation in wage setting or in other areas of the economy. These concerns should be balanced against the weak incentives and worker uncertainty that otherwise result.

D. SUSTAINABILITY

67. **Actuarial studies for several Caribbean public pension systems suggest that they are not sustainable under current parameters**. Actuarial studies, analyses of demographic trends and analysis of the rates of return implicit in the pension promises made suggest that the schemes

[30] All of the public pension schemes in Caricom member countries with the exception of Jamaica use a 3-5 year reference period for benefit determination.

require changes to parameters and/or qualifying conditions in order to be sustainable over the long term. These complementary studies also highlight some of the factors that are behind the sustainability issues and provide insights for possible reform. According to the studies summarized in Table 25, Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Guyana, Jamaica and St. Vincent and the Grenadines will face cash flow deficits by 2025 or before, and their reserves will be exhausted no later than 2035. Contribution rates that can sustain the projected benefits over a projected period of 60 years are substantially higher than the current rates for the five public pension schemes for which information could be gathered.[31] Although most Caribbean pension schemes will not face cash flow problems in the near future, evidence suggests a medium-term deterioration. Moreover, unsustainable schemes will continue to accumulate implicit pension debt that in some cases will pose a substantial burden to the Treasury in making good on pension promises. In response to these and other actuarial studies, some schemes such as those in Barbados, St. Lucia, Dominica and Trinidad and Tobago have enacted parametric reforms that will notably improve financial sustainability (see Table 10).

Table 25: Financial Sustainability Indicators for Select Countries

	First Year of Cash Flow Deficit	Year Reserves Exhausted	Current Contribution Rate (LT Branch)	Sustainable Contribution Rate (over 60 years)
Antigua and Barbuda	2020	2030		n.a.
Bahamas [a/]	2019	2029		n.a.
Barbados [a/]	2025	2035	13.9%	19.4%
Belize	2010	2025	4.5%	n.a.
Dominica [b/]	2015	2022		n.a.
Grenada [a/]	2037	2050	6.7%	14.4%
Guyana [a/]	negative	2003	12.0%	34.7%
Jamaica [a/]	2018	2023	5.0%	9.7%
St. Kitts and Nevis	2034	2052	11.0%	16.6%
St. Lucia	2048	2062	10.0%	13.1%
St. Vincent and the Grenadines	2021	2033		n.a.

a. Estimations based on information prior to June 2003.
b. Estimation based on policies in place prior to January, 2007. Recently announced reforms are aimed at eliminating unfunded liabilities.
Source: Herbert (2005); Mitchell and Osborne (2005); IMF (2007); NIC (2005), Government of St. Kitts and Nevis (2007), Government of Belize (2003).

68. **Public pension schemes have had cash surpluses and significant reserves that would be expected in countries in an accumulation phase** (Table 26). Osborne (2004) reports surpluses for 2003 ranging from 2.6 percent to 12.5 percent of insurable wages. In that same year, reserves held by the public pension schemes ranged from 8 percent to 75 percent of GDP, and represented no less than 3.9 years of expenditure in any country, reaching as much as 22 years of expenditure in St. Kitts and Nevis (Table 26). Thus, many schemes have positive cash-

[31] It should be noted that the financing policy applied at the inception of almost all the schemes in the region was one of scaled-premium, whereby the contribution rate is set to satisfy the funding requirements for a time horizon of 20-30 years. As a result, the long-term sustainability challenges posed here have often not been addressed even by the actuarial reviews that have utilized such a time horizon.

flow from contributions and returns on reserves but still face substantially growing levels of implicit pension liabilities and projected cash-flow imbalances in the medium term.

Table 26: Reserves as a Percent of GDP
(end-2003)

Antigua and Barbuda	27%
Bahamas	24%
Barbados	31%
Belize	16%
Dominica	45%
Grenada	37%
Guyana	16%
Jamaica	8%
St. Kitts and Nevis	75%
St. Lucia	40%
St. Vincent and Grenadines	35%
Trinidad and Tobago	18%
Unweighted Average	32%

Source: Figure 2 in ECLAC, Social Security in the English-Speaking Caribbean, 2005.

69. **Rates of return implicit in the promises made by the public pension schemes in the Caribbean are generally high compared with anticipated long-term wage growth and the returns that can be expected from the investments and the contributions.** For example, Figure 10 compares the average IRR computed for the average-wage full-term worker with a 3.5 percent real GDP growth figure, which some economists view as a potential long-term convergent growth rate for high-income economies. In this case, only Barbados and Guyana have IRR calculations less than the 3.5 percent threshold. Further, the figure compares the projected IRR with the observed real rate of return on investment assets for the 10 years up to 2003, and only in Barbados, Belize and Guyana did returns exceed the projected IRRs. With IRRs greater than realistic estimates of long-term GDP growth, it is very likely that many of these economies will at some time in the future face substantial financial sustainability challenges.

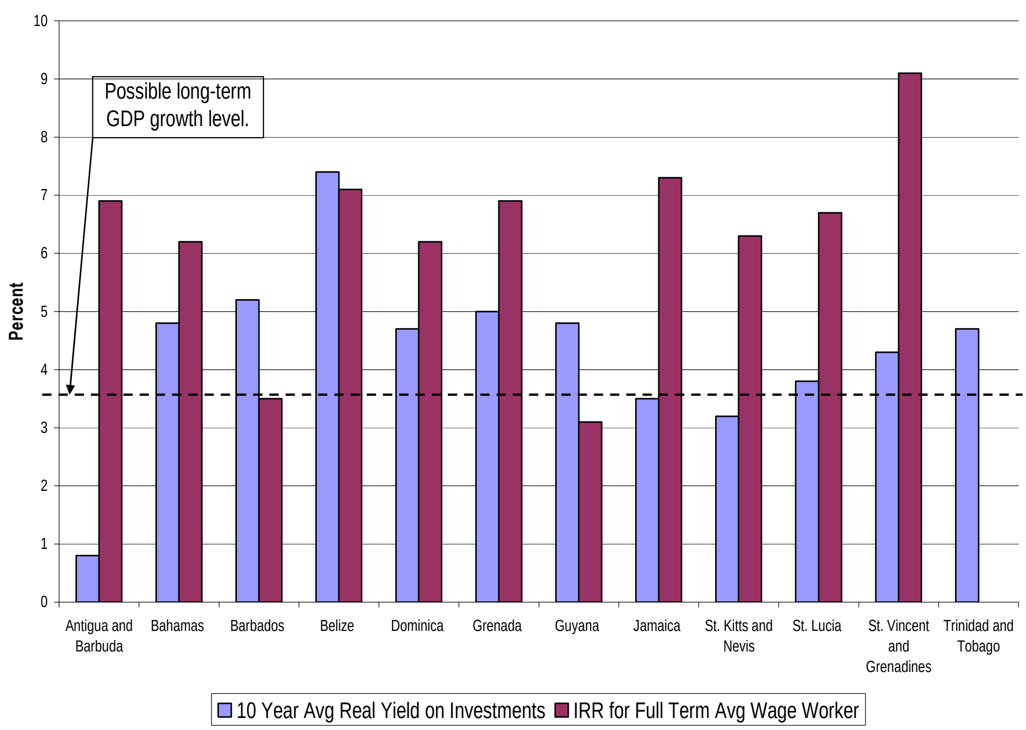
70. **If the parameters of the system are kept constant, the rate of growth of contributions depends on the rate of growth in the number of contributors and the rate of growth in real wages.** If, for example, the number of contributors grows at 1 percent per year and real covered wages grows at 2 percent, total contributions would grow at approximately 3 percent in real terms, substantially below the observed IRR calculations. These numbers suggest that current parameters in a number of Caribbean pension schemes cannot be sustained by current contribution levels.

Table 27: Real Returns on Pension Investments
(as of end-2003)

	5-year Average real yield on investments	10-year Average real yield on investments
Countries	**2003**	**2003**
Antigua and Barbuda	1.5	0.8
Bahamas	4.0	4.8
Barbados	5.2	5.2
Belize	7.5	7.4
Dominica	4.6	4.7
Grenada	4.9	5.0
Guyana	4.1	4.8
Jamaica	9.8	3.5
St. Kitts and Nevis	4.0	3.2
St. Lucia	4.1	3.8
St. Vincent and Grenadines	5.6	4.3
Trinidad and Tobago	4.7	4.7
Average	4.2	3.8

Source: ECLAC, Social Security in the English-Speaking Caribbean (2005).

Figure 10: IRRs for Average Income Workers verses Real Returns



Source: Bank estimates based on Social Security Administration (2006) and Osborne (2004).

71. **The most important reason why public pension schemes in the region have yet to face financial difficulties is because the relatively recent establishment of such schemes has squarely placed them in an accumulation phase in spite of the simultaneous population aging process.** Almost all of the schemes are in an accumulation phase whereby contribution and investment return revenues exceed benefit disbursements (Table 28). Old-age dependency ratios are relatively low and are only gradually growing in the Caribbean. Population aging is likewise only taking place gradually, but it is expected to accelerate in the medium term with decreases in fertility rates and increases in life expectancy projected to significantly raise the dependency ratios in the Caribbean in the next decades. In 2003, the highest old age system dependency in the region could be found in Barbados and Guyana, with 3.3 and 3.4 active contributors per pensioner, respectively (Table 29). St. Lucia presented the lowest old age system dependency ratio in that year with 11 active contributors per pensioner. System dependency ratios in the Caribbean are projected to converge upon those in the OECD countries in the next 50 years.[32] As the systems mature and the population ages, the system dependency ratios will deteriorate.

72. **The projected deterioration in the finances of some Caribbean pension schemes results from the expected increase in the ratio of pensioners to contributors and from benefit formulas and eligibility conditions that cannot be sustained over the long term with current contribution rates.** System dependency ratios will deteriorate as old-age dependency ratios increase for the overall population and the pension schemes approach maturity. Moreover, the relatively young Caribbean pension schemes are making promises that will be hard to sustain. It is useful to analyze these two parts of the equation separately to better understand what lies behind the projections.

[32] This is in part based on the so-called convergence hypothesis whereby fertility rates are expected to converge over the long-term across countries.

Table 28: National Insurance/Social Security Financial Performance Indicators, 2003

	As a % of Insurable Wages				% of Nominal GDP		Reserve-Expenditure Ratio
	Investment Income	Admin. Expenditure	Total Expenditure	Surplus	Reserves	Expenditure	
Antigua-Barbuda	2.1%	1.4%	5.7%	4.3%	27%	1.7%	12.1
Bahamas	4.7%	1.7%	9.1%	4.4%	23%	2.0%	9.3
Barbados	4.3%	0.9%	14.1%	5.4%	31%	5.0%	5.5
Belize	3.4%	2.2%	7.7%	3.3%	13%	1.6%	6.0
Dominica	5.3%	1.7%	11.2%	4.3%	44%	4.3%	8.7
Grenada	5.7%	1.1%	5.7%	9.5%	35%	1.6%	16.8
Guyana	2.3%	1.9%	11.7%	2.6%	15%	3.3%	3.9
Jamaica	6.1%	0.7%	3.8%	7.4%	6%	0.4%	11.2
St. Kitts-Nevis	7.7%	1.6%	6.3%	12.5%	73%	2.5%	22.2
St. Lucia	7.8%	1.3%	6.9%	11.4%	40%	1.5%	20.8
St. Vincent and The Grenadines	4.6%	1.0%	5.0%	5.6%	33%	1.6%	16.3
Trinidad and Tobago	6.3%	0.6%	4.6%	10.1%	14%	0.6%	20.1

Source: Osborne (2004, Table A.9).

Table 29: Active Contributors per Pensioner

Country	Number of Active Contributors per Pensioner
Antigua-Barbuda	6.3
Bahamas	4.9
Barbados	3.3
Belize	10.4
Dominica	4.5
Grenada	7.3
Guyana	3.4
Jamaica	Not Available
St. Kitts-Nevis	7.5
St. Lucia	11.4
St. Vincent and The Grenadines	8.9
Trinidad and Tobago	4.1

Source: Osborne (2004, Table A.9).

73. **Medium-term sustainability concerns can be mitigated by reducing costs, such as happens when there are no formal benefit indexation rules.** This makes it possible, though likely not desirable, for governments to adjust pensions at rates that are lower than inflation, thus reducing pension costs and, at the same time, lessening threats to sustainability. Similarly, the absence of valorization means that real reductions in covered wages can also decrease pension liabilities at least in the short run. Finally, the cap on covered wages moderates pension benefits, but only for a limited period.

74. **Measures to improve sustainability generally include increases in the contribution rate and the retirement age or decreases in the accrual rate.** Other modifications to qualifying conditions can also impact sustainability. In addition, measures to improve the risk-adjusted return on pension assets can improve pension sustainability, although such improvements by themselves are unlikely to be sufficient to close the gaps observed above.

75. **In the face of such challenges, several countries have taken measures to improve financial sustainability** (Table 10)**.** Barbados and St. Lucia enacted gradual increases in the retirement age and Dominica has enacted increases that will begin in 2009. Barbados, Belize, Dominica, Guyana, St. Vincent and the Grenadines and Trinidad and Tobago all enacted increases in the contribution rate. All schemes have periodically adjusted the minimum pension provision and covered wages subject to contributions and benefits but these measures generally have a minimal impact on long-term sustainability and can even negatively impact sustainability.

E. Portability of Pension Rights

76. **With efforts in the region to strengthen international competitiveness, there has been growing interest in the portability of pension rights from both public and private schemes for workers who switch jobs either within or between countries**. Pension schemes that limit the ability of workers to accumulate benefit entitlements from several employers can negatively impact labor mobility. The issue seems to be particularly relevant for the Caribbean countries, given their small size, historical labor mobility both within and between countries and the Caricom Single Market and Economy (CSME) agreement that aims to facilitate labor mobility in the region. Caricom member states have made significant progress in ensuring the portability of pension rights of public social security schemes, but some challenges remain.

77. **The literature reviewed suggests that it is safer to make the case for enhancing the portability of occupational pensions on the grounds of protecting pension rights than on the grounds of enhancing labor mobility.** The idea that more labor mobility is always beneficial in terms of efficiency has been challenged by the view that stresses the contractual nature of labor relationships. In addition, recent empirical studies show that the lack of portability of pensions might not be a significant deterrent to labor mobility. While enhancing pension portability does not warrant any significant efficiency gains, governments might want to strengthen portability for the sake of improving the protection of pension rights.

78. **The 1996 Caricom Agreement on Social Security (CASS) provides a framework for the recognition and portability of social security benefit entitlement for workers moving between Caricom countries.** Benefits covered include contributory schemes for invalidity, disablement, old age, survivorship and death benefits. Short-term benefits (like maternity

allowances or sickness benefits) are not covered. With the assistance of the Caricom Secretariat, substantial efforts have been made at a regional level to ensure that pension rights are recognized across Caricom member states. Recent efforts have also been made to increase public awareness of individual rights accruals under the agreement. However, because of the differences in the plans, there is room for adverse selection (see Hendrikx 2006).

79. **Although bilateral agreements have been signed with Canada, the UK and Quebec, as yet there are no bilateral agreements on the transferability of social security rights with the United States** (Table 30, SSA, 2007a). This impacts labor mobility and therefore deserves further attention. The Barbados-UK and Jamaica-UK bilateral agreements on social security follow a standard format and include the basic provisions for totalization and apportionment (UK, 2007). These agreements help preserve pension rights generated in the region for workers who move abroad and for those who decide to return to their home countries. As hypothesized by Koettl (2006), the portability of pension rights might contribute to the return home of migrant workers, shifting the balance between permanent and temporary migration.

80. **The OECS Convention on Social Security** has a broader scope than the CASS because it covers both short-term and long-term benefits. Contributions under the convention are always totalized, including for cases in which a worker qualifies in one or more states, and the inequities mentioned in previous paragraphs do not arise. However, the OECS convention is more limited in terms of the countries that it can potentially cover Only nine countries belong to the OECS, and most are *not* signatories to the convention. (See Osborne, 2004, p. 45).

81. **The Common Single Market Economy (CSME) agreement does not yet have provisions for the extension of pension rights throughout the region** (Gordon, 2006). In line with the CSME norms on labor mobility, the *Agreement on Social Protection* only covers skilled workers. CSME signatories agreed on the principle of free labor mobility in 1989 (Grand Anse Declaration) but decided to implement free movement in a "phased approach," beginning with university graduates and extending gradually to other workers. Because of these limitations, workers who want to move within the region must first obtain a Certificate of Recognition of Caricom Skills Qualification. Under the Caricom Free Movement of Persons Act, workers within some specified categories can apply for "skills certificates" that permit free movement across the region. In recent years the categories of workers covered by this legislation have been expanding and free movement of all persons is scheduled to take place in 2009. To date, the fact that only skilled workers have been covered is an important limitation to labor mobility in the Caribbean.

Table 30: Social Security Agreements in the Caribbean

Country	Agreement		
	CASS	OECS	Other
Antigua-Barbuda	√		Canada
Bahamas	√		
Barbados	√		Canada, Quebec, UK
Belize	√		
Dominica	√		Canada
Grenada	√	√	Canada
Guyana	√		
Jamaica	√		Canada, UK
St. Kitts-Nevis	√		Canada
St. Lucia	√		Canada, Quebec
St. Vincent and The Grenadines	√		Canada
Trinidad and Tobago	√		Canada

Source: Osborne (2004).

82. **The CASS agreement includes totalization and apportionment rules similar to those in European Union (EU) coordination norms**. But unlike the EU rules, the Caricom agreement has no provisions to avoid the overlap of frontloaded benefits so that some pensioners could end up with replacement rates above the maximum of any single country. The problem arises because: (i) the agreement does not apply when a worker has made sufficient contributions to qualify for a pension in more than one country, and (ii) the accrual rate in most of the Caribbean schemes is higher during the initial years of contribution than in later periods ("frontloading"). The following example adapted from Osborne (2004, pp. 42–4) illustrates the problem: Consider three countries with identical qualifying conditions and benefit formulas. Each country requires a minimum of 10 years of contributions, and the accrual rate is 3 percent during the first 10 years and 1 percent thereafter. A worker who has contributed 16 years in country A and 7 years in countries B and C directly qualifies for a pension only in country A. But thanks to the CASS agreement, he or she would also be able to accrue benefits for the periods of contributions in countries B and C. Assuming for the sake of simplicity that the worker contributed the same amount each year, the total accrued rights would be computed as in Table 31.

Table 31: Accrued Benefit Totalization, Example 1
(assumes a 3% accrual rate/year for the first 10 years of service and 1%/year for each subsequent year)

Country	Years of Contributions	Accrued Rights
A	16	(3%*10) + (1%*6)
B	7	(7/10) * (3%*10)
C	7	(7/10) * (3%*10)
Total	**30**	**78%**

83. **Consider a second example of a worker who has also contributed 30 years, but with a different distribution of work histories and contributions among countries.** Suppose this second worker contributed 10 years in each country and that the contributions wages are the same as in the previous example. The CASS would not apply because the worker has enough contributions to get an independent pension in each country. The total benefit would then be as indicated in Table 32. Hence, even if total number of contributions as well as contribution wages were the same, the pension could be different depending on *where* the worker made the contributions. The difference can be quite substantial as this example illustrates.

Table 32: Accrued Benefit Totalization, Example 2
(assumes a 3% accrual rate/year for the first 10 years of service and 1%/year for each subsequent year)

Country	Years of Contributions	Accrued Rights
A	10	(3%*10)
B	10	(3%*10)
C	10	(3%*10)
Total	**30**	**90%**

84. **The CASS could be improved through the design of rules against overlapping.** In principle, workers should not profit from decisions to migrate in order to accrue multiple entitlements.[33] Thus, while it seeks to avoid portability losses, the agreement should also be amended to eliminate such motivations for migration, particularly in the Caribbean where frontloading creates an important incentive. As suggested by Osborne (2004), this problem could be fixed by simply applying the totalization and apportionment rules to all contributions made by each worker, irrespective of whether the worker has enough contributions to qualify for a pension in one or more states.

85. **Although occupational pension schemes play a significant role in the Caribbean, there is neither a common framework for pension portability within most countries nor any framework for portability between countries.** As a result, workers changing jobs often cash out funds accumulated in the plans, and such funds might no longer be available at retirement (see Petinatto and Diaz, 2005, and Rudden, 2005, p 108–9). The utilization of such accumulations for severance payments is believed to be relatively common in the region.[34] There have been two key sources of constraints to the portability of occupational pension rights: (i) the absence of a common approach to the regulation and supervision of occupational schemes,

[33] This issue has received considerable attention in the context of the European Union (Whiteford, 1996, p. 246).

[34] According to Brough (2004), the reform enacted in Barbados in 2003 tried to facilitate portability of occupational plans reducing the vesting period to 3 years. Before that, ordinary vesting periods in pension plans in Barbados were 10 to 13 years, so many workers who changed jobs lost their pension rights.

and in some cases very limited regulation and supervision of such schemes within countries, and (ii) diverse and conflicting economic regulations for occupational schemes including conflicting tax treatment and foreign exchange controls. The portability of occupational pensions across countries in the Caribbean could therefore be enhanced through the harmonization of regulatory measures, ideally through a unified regulatory framework, and through coordinated supervision. We understand that the harmonization of economic regulations likely will be pursued through the CSME framework. In the meantime, special treatment could be considered for firms operating in multiple Caribbean states. Occupational schemes therefore pose a significant challenge to the preservation of pension rights of workers moving from one job to another within the same country and the need to mitigate the losses that can thereby arise.

86. **By comparison, even the European Union has not been able to enact significant norms to protect the portability of occupational pensions across its member states**. However, the difficulties are more significant when endeavoring to provide portability across frontiers and not just in a single country. National regulation of occupational schemes can provide some protection by: (i) limiting the extension of the vesting period; (ii) mandating the sponsor of the scheme to reimburse the contributions made by a worker who leaves the job before completing the vesting period; (iii) requiring the sponsor to transfer the accrued pension rights and the necessary funds to the pension scheme of the new job, assuming the worker has completed the vesting period and the new job offers an occupational pension (and reimbursing otherwise); and (iv) mandating pension schemes to have sufficient funding to make portability payments. The Jamaican Pensions Act enacted in 2004 and the regulations passed in 2006 provide examples of how countries in the Caribbean can legislate to enhance the portability of occupational pensions.[35]

F. GOVERNANCE AND INVESTMENT MANAGEMENT

87. **High quality governance of public and private pension schemes is essential to ensuring public accountability, performance and service quality, all of which are key ingredients for the *credibility* of such schemes.** Governance of public schemes is a function of: the country's ***overall level of governance, including public sector governance***; conduciveness of the scheme ***design*** to accountability and good governance; and the ***structure and processes*** applicable to the Governing Body, in this case the Boards of Directors, to service providers such as external investment managers, auditors and actuaries, and to the managing institution of the scheme itself.[36]

[35] The implementation of these norms is currently underway under the Financial Services Commission which is in charge of the regulation and supervision of private pension schemes in Jamaica.
[36] See International Social Security Association, *Guidelines for the Investment of Social Security Funds*, ISSA, 2004; Jeffrey Carmichael and Robert Palacios, *A Framework for Public Pension Management* in Alberto Musalem and Robert Palacios, eds., Public Pension Fund Management: Governance, Accountability and Investment Policies, May 2003; Augusto Iglesias and Robert Palacios, *Managing Public Pension Reserves Part I: Evidence from the International Experience*, Social Protection Discussion Paper Series # 3.

1. Overall Country Governance

88. **Governance of public and private pension schemes is substantially influenced by the *overall level of governance* existing within each country**. The WBI Governance Matters indicators presented in Table 33 provide useful insights into the variance in governance, as measured against certain criteria and between countries. The wide variation in governance indicators suggests that, even if the design features and governance structures of pension schemes in many countries were improved, improving pension fund governance would still be influenced by the broader levels of governance in the country. It is notable that half of the 12 Caribbean countries with governance indicators were in the top decile for two indicators that are often used in an assessment of public pensions, namely Voice and Accountability and Government Effectiveness. All of the 12 countries, with the exception of Haiti, were in the upper fiftieth percentile according to these two indicators. Thus one might conclude that the governance environment is relatively conducive to well-governed public pension schemes.

Table 33: WBI Governance Matters Indicators in Caribbean Countries[37]

(relative percentile score for each indicator, 2006)

	Voice and Accountability	Political Stability	Regulatory Quality	Government Effectiveness	Rule of Law	Control of Corruption
Antigua and Barbuda	65.9	74.5	67.8	67.8	82.4	85.4
Bahamas	79.3	80.8	83.9	84.8	88.6	90.8
Barbados	85.1	84.1	76.6	86.7	83.3	85
Belize	66.3	47.1	45.9	49.8	52.4	48.1
Dominica	77.9	72.6	77.1	75.8	68.6	73.3
Greneda	69.7	62.5	64.4	61.6	56.2	71.8
Guyana	50.5	26.9	32.2	51.7	27.6	32
Haiti	15.4	9.1	20.5	6.2	2.4	2.4
Jamaica	63.9	36.1	58.5	59.7	33.3	44.2
St. Kitts and Nevis	85.6	94.2	80.5	77.7	76.2	81.6
St. Lucia	89.4	81.3	84.4	79.6	76.2	83.0
St. Vicent and the Grenadines	79.8	84.6	77.1	78.7	76.2	81.6
Trinidad and Tobago	62	41.3	71.2	63.5	48.1	54.9

Source: WBI Governance Matters: Governance Indicators 1996–2007 dataset, 2006.
Note: Shading indicates decile ranking with the darkest shade being the highest rating.

89. **Wide country dispersion is evident by the 2007 Corruption Perceptions Index (CPI) score** (Table 34). In this case, Barbados, St. Lucia and St. Vincent and the Grenadines ranked under 37 while all of the rest of the countries for which we have rankings were at 79 or above. In most cases there was a wide range of CPI scores from the surveys used.

[37] It is important to note that each scoring is based on the average of multiple sources of data. Generally, it is useful to evaluate not only the average score for each indicator but also the range of responses to determine such an average score.

Table 34: Transparency International—Corruption Perceptions Index (CPI)—2007

Country Rank	Country	2007 CPI Score	Surveys Used	Confidence Range
23	Barbados	6.9	4	6.6 - 7.1
24	Saint Lucia	6.8	3	6.1 - 7.1
30	Saint Vincent and the Grenadines	6.1	3	4.0 - 7.1
37	Dominica	5.6	3	4.0 - 6.1
79	Grenada	3.4	3	2.0 - 4.1
79	Trinidad and Tobago	3.4	4	2.7 - 3.9
84	Jamaica	3.3	5	3.1 - 3.4
99	Belize	3	3	2.0 - 3.7
99	Dominican Republic	3	5	2.8 - 3.3
123	Guyana	2.6	4	2.3 - 2.7
177	Haiti	1.6	4	1.3 - 1.8

Source: Transparency International, http://www.transparency.org/policy_research/surveys_indices/cpi/2007

2. Public Pension Design

90. **Some challenges are endemic to public pension funds regardless of their governance structure or institutional framework**. These include principal/agent problems whereby the sponsors and administrators of the public pension fund are not easily held accountable to the contributors and beneficiaries of the scheme. Conflicts of interest can also arise from government's role of boosting economic development while at the same time acting as principal for public pension funds; from extensive government participation in the financial sector;[38] and from government support of other sectoral objectives such as housing and commercial real estate development.

91. **Under defined-benefit public pension schemes such as those in the Caribbean, most risks are born by the scheme sponsor, in this case the governments.** As a result, it is difficult to hold the governing institutions of the schemes accountable to the contributors and beneficiaries when they are not the ones bearing most risks. This puts the onus on establishing oversight systems to ensure that the governing institution is carrying out its mandate and is satisfying minimum standards. It also puts a premium on accurate information disclosure so that there is a basis for effective oversight. The framework of the recently established defined-contribution scheme in the Dominican Republic provides stronger incentives for good governance through information disclosure. But it also places considerable responsibility upon the regulator to ensure that disclosure is accurate, forthcoming and with appropriate comparative benchmarks. In Jamaica, part of the NIS benefit is a function of a member's cumulative contributions but benefits are not tied to such returns.

92. **Even within a defined-benefit architecture, some policy design features should be held subject to greater public scrutiny.** In this case, oversight, and information disclosure are

[38] These are: (i) as regulator of financial institutions; (ii) as owner of financial institutions; (iii) as a market participant; (iv) as a fiduciary agent; and (v) through direct intervention in the market. See Carmichael and Palacios, 2003.

paramount. Specifically, disclosure to individuals of work histories and entitlements provides a means for verification and validation thereby reducing the potential for disputes at retirement. Further, timely disclosure of audited accounts, investment performance (including measurement against relevant benchmarks), and actuarial reports provides a means by which multiple stakeholders can more authoritatively be informed of the status of the social security fund. Finally, oversight by a separate agency is one means of improving accountability.

3. Governance Structure, Operational Policies and Processes

93. **The governance structure in almost all of the region's public pension schemes establishes the authority and responsibility of a Board of Directors with such Boards accountable to a Minister.** The National Insurance Scheme in Jamaica is a unique case in which the managing agency is a department within the Ministry of Labor and Social Security, and in the Dominican Republic funds are managed by separate fund administrators, each with their own accountabilities under a unified governance framework. Generally the Board of Directors has representation of business and labor, with the appointment processes varying substantially by country. The legal scope of the authority of the Minister and his or her role also varies substantially between countries. The Board of Directors typically has some form of tripartite representation, although the actual appointment process may or may not directly involve business groups and labor unions. Moreover, the practice varies widely as to whether the election of a new party into office will result in the appointment of new Board members.

94. **Governance of investment management tends to follow a relatively centralized framework,** with final authority on investments residing in the Board of Directors and in many jurisdictions—and ultimately with the Minister responsible for National Insurance.[39] Some jurisdictions employ external investment advisors, but most investment management, strategy-making and oversight is carried out by the governments' national insurance or social security institutions.

4. Investment Management

95. **Reserve accumulations represent a substantial portion of domestic financial markets in the Caribbean, as indicated above** (Table 26). The ratio of pension reserves to GDP was significantly larger in the English-speaking Caribbean (32 percent on average) than in Europe (less than 20 percent), Asia (less than 15 percent), the Middle East (about 10 percent), North America and Africa (8 percent) and Latin America and the Caribbean (5 percent).[40] Such large reserve accumulations domestically invested create a number of challenges: (i) ensuring a governance structure to maximize returns and manage risks; (ii) maintaining competitive market conditions for different financial market instruments when there exists such large market power in a single asset holder; (iii) mitigating the fiscal tendency to use long-term reserve accumulations as a basis for fiscal spending; and (iv) managing volatility in small economies.

---

[39] For a much more detailed discussion of the governance framework for investment management, see Frank Alleyne, *Investing Social Security Surpluses in the English-Speaking Caribbean*, in Plamondon and Osborne, Social Security Financing and Investments in the Caribbean, 2001. Alleyne has extensive tables tabulating the results of the 1999 survey: *Survey of Investment Management Practices in the English-speaking Caribbean*.

[40] The figures for regions other than the Caribbean were taken from IMF (2007, p. 83).

96. **While the performance of public pension funds over 5- and 10-year periods (as of 2004) has varied, it has generally been good though subject to substantial risks when measured against similar schemes internationally.**[41] The unweighted average real returns were 4.2 percent and 3.8 percent for 5 years and 10 years, respectively (Table 27). These returns generally were good relative to domestic market benchmarks. Moreover, we suspect that the returns in most cases exceeded average covered wage growth, which is an essential benchmark for performance in defined benefit schemes.[42] In the years since, we understand that the returns have generally decreased, as has the real returns on Government securities. The IMF (2007, p. 72) reports relatively high risk-adjusted returns on reserve assets in several Caribbean countries. Nevertheless, the same report highlights the risk to which these funds are exposed due to the lack of diversification and concentrations of their assets in government securities.

97. **Because asset allocation generally forms the largest basis for the variance in risk and returns, it is important to note that approximately half of all public pension reserves in the region were invested in fixed income securities (such as loans and bonds) and a third in fixed deposits** (ECLAC, 2005(a), p. 12).[43] Overall, an estimated 11 percent of reserves were invested in equities and 4 percent in real estate (end-2003). The reasons for such portfolio concentration are: (i) legislation in many countries in the region does not allow for social security funds to be invested abroad, and (ii) capital markets in the region are, to a large extent, in a nascent stage: only three regional stock exchanges exist, each with just a few listed securities. Corporate fixed income securities are limited, too. Rudden (2005, p. 105) and Pettinato and Diaz (2005) also argue that the lack of regional investment opportunities led fund managers to grow overexposed in real estate.

98. **Public pension fund investments in the Caribbean are heavily exposed to government securities.** Public sector securities and publicly guaranteed assets represented 75 percent of the reserves in Antigua and Barbuda in 2004, 67 percent in Dominica in 2004, 40 percent in Grenada in 2002, 83 percent in St. Kitts and Nevis in 2002, 32 percent in St. Lucia in 2004 and 79 percent in St. Vincent and the Grenadines (IMF, 2007, p. 83). Besides, most of the deposits held by pension funds in the domestic banking system are held in locally incorporated banks that have lent significant funds to governments.

99. **As indicated above, several countries impose restrictions on overseas investments by pension plans**. In addition, foreign exchange controls make such investments very difficult in Barbados and members of the Eastern Caribbean Currency Union: Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, St. Lucia and St. Vincent and the Grenadines. Most countries have portfolios heavily skewed towards local investments. Six have invested domestically exclusively, including the larger economies of Trinidad and Tobago, Jamaica, the Bahamas and Belize. Only seven countries had regional investments, which were in each case less than 10 percent of total investment, except in St. Vincent and the Grenadines where about 20 percent is invested regionally. According to Rudden (2005), three regional insurance companies

[41] More updated data since 2003 was not available across the Caribbean on a uniform basis.
[42] We do not have historic wage growth figures to compare to.
[43] This para is taken virtually verbatim from ECLAC, 2005(a), p. 12.

provide a large portion of pension administration and investment services in the English-speaking Caribbean: CLICO/British American, Sagicor and Guardian Life.

100. **Consistent positive current balances create a temptation for governments to use funds to finance public programs, particularly when countries face negative shocks.** Programs with reserves in government securities may face financing problems well before they exhaust their reserves; when they begin selling government securities, the government will have to reduce expenditure or raise taxes, including social security payroll taxes (Mitchell and Osborne, 2005, p. 370). The high exposure of pension funds to government securities is not exclusive to Caribbean countries or to public funds. Some analysts have argued that it is due to the lack of investment opportunities. Arguably, it could also be the result of fiscal needs.

5. Oversight

101. **Mandatory public pension schemes managed by quasi-governmental authorities generally are only subject to the oversight of their parent ministry.** Actuarial valuations and annual audits are used as a means of ensuring accountability although rarely are such documents made public. Furthermore, public disclosure of statements indicating acquired rights is not common.

102. **Tax regulation and supervision.**[44] Of 12 English-speaking Caribbean countries, eight impose direct income taxes (Barbados, Dominica, Grenada, Guyana, Jamaica, St. Lucia, St. Vincent and the Grenadines and Trinidad and Tobago) and their tax authorities play a supervisory role. Yet supervision of pension plans by tax authorities is generally limited to approval of initial pension plan documents and any amendments. All the countries require occupational pension plans to be established as formal trusts and provide for minimum retirement ages and maximum benefits. Table 35 (below) shows a summary of regulatory systems for occupational schemes. There also is indirect regulation by financial service regulators. For example, insurance companies and brokers providing pension services are generally subject to the supervision of the insurance regulator. External audits and actuarial reviews help ensure observance of basic accounting and actuarial standards.

[44] This section draws closely from Kyle Rudden, *Private Pension Regulation and Supervison*, in Brunton and Masci, eds, Workable Pension Systems, Reforms in the Caribbean, 2005.

Table 35: Regulatory Systems for Occupational Schemes

Regulation by Tax Authority	Regulation by Other Authority	
	No	**Yes**
Yes	Jamaica Barbados Dominica St. Vincent and the Grenadines Grenada	Trinidad and Tobago St. Lucia
No	Antigua St. Kitts and Nevis Bahamas	Guyana

Source: Kyle Rudden, *Private Pension Regulation and Supervision, in* Workable Pension Systems Reforms in the Caribbean.

G. ADMINISTRATION AND EFFICIENCY

103. **Public pension schemes typically have responsibility for collecting contributions, recording individuals' wage and service histories, facilitating investment management, processing claims and paying benefits**. The scope of functions performed by these schemes varies considerably, with many schemes performing other functions both for their members and the wider community (see Osborne, 2004, p. 35). These include the issuance of employer and individual identity numbers, and the maintenance of wage and employment records for policy purposes.

104. **Administrative cost ratios are relatively high in most countries in the Caribbean suggesting the possibility of measures to improve efficiency** (see Table 28 and Table 36). According to ECLAC (2005), administrative costs from 2001 to 2003 averaged between 7.0 percent and 41 percent of contribution income with an unweighted average across countries of 17.7 percent. These costs are relatively high by middle-income country standards, particularly for defined-benefit schemes with centralized administration. Of course, the nature of services provided for such costs varies substantially across countries.

105. **Osborne (2004) noted that the larger countries tended to have the lowest costs while the smallest countries tended to have the highest costs.** According to Osborne, staffing generally has consumed about 60 percent of operating costs in the English-speaking Caribbean countries. Also, those countries with the highest ratios of staff to active members and pensioners tend to have the highest cost ratios.

106. **Overall, the high cost ratios suggest that there is room for enhancing efficiency.** The following are options for doing so: (i) centralizing collections and compliance in the tax authority (as is currently done in Jamaica) as a way of not just increasing efficiency but also improving incentives for compliance, (ii) outsourcing all or part of account administration (with appropriate monitoring and supervision) as a means of realizing investments in information infrastructure, improving efficiency and realizing economies of scale for those systems with very small numbers of members, (iii) making needed internal investments in information

infrastructure while at the same time rationalizing the staffing mix to meet the revised, automated processing of routine functions, and (iv) adjusting or refining services provided where costs are prohibitive such as the periodicity of disbursements to retirees with low benefit levels.

Table 36: Administrative Cost Ratios

Countries	Administrative Expenditure as a % of insurable wages 2003	Administrative Expenditure as a % of Contribution Income 2001-2003
Antigua and Barbuda	1.4	17
Bahamas	1.7	19
Barbados	0.9	6
Belize	2.2	34
Dominica	1.7	16
Grenada	1.1	12
Guyana	1.9	15
Jamaica	0.7	12
St. Kitts and Nevis	1.6	15
St. Lucia	1.3	13
St. Vincent and Grenadines	1.0	17
Trinidad and Tobago	0.6	7
Average	1.5	17.7

Source: ECLAC, Social Security in the English-Speaking Caribbean (2005).

107. **Service quality is an essential element of public perception about the credibility of public pension schemes**. Important elements of service quality are: (i) accurate recording and maintenance of member contribution and wage histories, (ii) accurate calculations of benefit entitlements, (iii) transparent disclosure of benefit entitlements, (iv) transparent disclosure of individual entitlements through annual statements, (v) timely turnaround in benefit calculation and processing, and (vi) timely and convenient disbursement of benefits. We have very little information about actual or perceived service quality in Caribbean pension schemes.[45]

[45] Osborne (2004) suggests that a common complaint found was that insufficient information was provided on how benefits were determined and that very few schemes provide details on how pensions are calculated.

V. POTENTIAL REFORM DIRECTIONS

108. **We believe that three reform directions deserve further consideration by authorities in many of the countries in the region.** Before considering reform directions, it is necessary to reiterate the importance of continuing to implement and enforce provisions for inter-island labor mobility in the CSME agreement; of amending the totalization provisions in the CASS agreement for the portability of social security benefits; and of considering medium-term measures for portability between private occupational schemes. We believe that parametric reforms are needed in most of the schemes in the region in order to: (i) improve the predictability and actuarial fairness of benefits so as to strengthen incentives for participation and coverage, and (ii) achieve long-term sustainability of the schemes. In addition, we believe that (iii) policy and institutional reform measures are necessary to improve the governance of public pension schemes.

A. STRENGTHENING THE PREDICTABILITY AND FAIRNESS OF BENEFITS

109. **Some characteristics common to public pension systems in the Caribbean weaken the predictability and fairness of benefits and limit potential public confidence, coverage and compliance**. Policy options for improving fairness and predictability of benefits include establishing:

- a uniform accrual rate applicable to all years of service so that individuals who exit the labor force are not unfairly advantaged and, similarly, so migration is not unfairly advantaged;

- automatic indexation of benefits according to a transparent and well-defined framework such as one linked to growth in the consumer price index or average wage growth;

- similar automatic indexation of the ceiling on covered wages subject to pension contributions and benefits;

- a gradual increase in the income averaging period for determining pension benefits from the current 3–5 years to a worker's lifetime and indexing or "valorizing" such income according to a transparent and well-defined indicator such as average covered wage growth; and

- a minimum pension that reflects the minimum costs of ensuring that a vested member stays out of poverty—and adjusting such a minimum in accordance with changes in the minimum poverty level in each country.

Together, we believe that such measures will improve the incentives for participation and therefore contribute to increasing coverage.

110. **These measures admittedly come at a cost, namely a shifting of some of the risks of real wage growth and inflation growth from the pension system member to the sponsor, in this case governments in the region.** If governments cover such risk, this in turn creates additional fiscal risks that have to be managed. A fundamental issue therefore is whether the sponsor, the government will cover inflation risks or whether retirees will bear such risk. One

means of risk-sharing is to establish benefit indexation up to a pre-determined band based on a trusted reference index. Many policymakers also have concerns that indexation of pension benefits can cascade into the indexation of other entitlements such as wages or benefits. From the worker's perspective, there is a tradeoff between the initial replacement rate received at retirement and the level of indexation that can be provided by the scheme through his or her lifespan during retirement.

111. **There are similar kinds of tradeoffs with respect to the ceiling on wages used to determine social security contributions and benefits, which varies significantly across the region**. In 2005, the ceiling was almost six times per capita GDP in Dominica and only about 80 percent of per capita GDP in Trinidad and Tobago (Figure 9). We do not have detailed information about the evolution of the ceiling in each country, but in most cases adjustments do not seem to be based on rules, and as a result, the real value of the ceiling has often fluctuated over time. In some cases, infrequent and insufficient adjustment of the ceiling seems to have negatively impacted the proportion of workers' salaries that are actually insured. Jamaica is one such example. Infrequent adjustment of the ceiling has also had a significant impact on the equitability of the benefit. For instance, workers who retire shortly after a major rise in the ceiling are able to capitalize on the increase in their benefit determination from the increase in insurable wages while contributions may likely have been made under a lower ceiling.

B. Strengthening Sustainability

112. **Many of the mandatory public pension and social security schemes in the Caribbean will face future threats to their sustainability—their ability to deliver current and future benefit promises without changes in the contribution rate or benefit formula.** These sustainability threats are suggested by our analysis of the Implicit Rates of Return as well as by the limited actuarial assessments to which we had access.

113. **Improving sustainability can be achieved by changes to the contribution rate, the accrual rate or the minimum retirement age:**

- ***Increases in the contribution rate*** need to be weighed by each country's policymakers against the effects on the competitiveness of both business and labor. Given the range of contribution rates and labor costs in the region, this needs to be evaluated on a country basis.

- ***Changes in the accrual rate*** need to be weighed against what policymakers views as an adequate replacement rate and also a sustainable and affordable one. As suggested above, we believe that a uniform accrual rate across one's work life creates stronger incentives and fairness between workers. It is important to note that one cost of providing indexed benefits through retirement will inevitably be a reduction in the accrual rate for those countries where benefit indexation has lagged inflation.

- ***Increases in the minimum retirement age*** need to be weighed against ongoing increases in life expectancy at retirement for both men and women. With growing longevity, many countries worldwide are adopting increases in the retirement age in an effort to increase the sustainability of their public pension schemes while at the same time encouraging individuals to work longer as they live longer. A related corollary for those countries in the region that allow for early retirement: Benefits provided prior to the minimum retirement age should be subjected to an actuarial reduction that results in the total anticipated income stream being equalized with what the individual would receive had he or she waited until the normal retirement age. Generally, increases in retirement ages need to be gradually phased in to avoid disruptions to labor market decision-making.

114. **Additional modifications are possible in the qualifying conditions and other parameters** such as vesting periods, the cap on covered wages, income averaging periods, valorization, benefit indexation and minimum and maximum pension benefits. Such modifications are essential to improving predictability, fairness and ensuring against elderly poverty but are unlikely to have the same magnitude of a financial impact on sustainability as the three measures above.

115. **As a result, it is suggested that a sequenced approach be considered towards making parametric adjustments**: First, review and assessment of the core objectives of income replacement and elderly poverty protection. Second, determination of the level of income redistribution both within and between generations. Third, a determination of the level of risks born by the members and the government, respectively. Finally, calibration of the parameters through actuarial projections which contemplate modification of the key parameters discussed in the two sections above and which are found through sustainability analysis to offer a reasonable probability of achieving long-term sustainability.

C. Improving Governance

116. **Public pension governance is a complex area where structures and processes depend upon country and scheme characteristics.** [46] Some core principles however apply. With respect to governance *structures* the following principles could be considered: (i) there should be clear identification of the responsibility and authority of Board members and clear lines of authority required between the governing Minister and the Board; (ii) Board members should meet minimum standards of professional qualifications, professionalism and integrity; (iii) the Board should have the authority to delegate select responsibilities to external service providers while retaining the responsibility for monitoring and oversight; (iv) there should be transparent processes for the selection of members, including the prevalence in the region for representation of business and labor where applicable; (v) there should be transparent processes and disclosure of key Board policy decisions; (vi) Board members should be accountable for observance of the "duty of care" principle in exercising their duties and observance of codes of conduct both by Board members and senior management; and (vii) transparent requirements for all external service providers including auditors, actuaries, investment advisors and custodians.

117. **Governance *mechanisms* which form the fabric for the accountable functioning of social security institutions also are country and institution-specific**. In this case, we suggest that mechanisms be put in place to validate that the managing institution's internal control systems are sound and support essential administrative functions, service delivery, and risk

[46] This section draws upon the International Social Security Association, *Guidelines for the Investment of Social Security Funds*, 2005. See footnote 36.

management. Similarly, the internal reporting systems should be reviewed. Most important, we believe that the timely disclosure of both aggregated and individual information is essential to ensuring accountability. This should include timely public disclosure of audited financial statements, investment performance (including measurement against market benchmarks), operational and investment policies, and actuarial reviews. In some cases this may entail changing current requirements for such documents to be first presented before Parliament. Further, disclosure of individual pension entitlements to members and redress mechanisms for dispute resolution are essential to public credibility.

118. **The investment management policy, strategy and processes should satisfy certain principles**: (i) the objectives of maximizing long-term returns while limiting risk should be both specified in law and operationalized through the investment policy; (ii) social dimensions of investment policies need to be clearly specified; (iii) the investment policy should contemplate different risk parameters, and establish the framework for strategic asset allocation; (iv) the investment strategy should be consistent with the profile of the social security liabilities and the anticipated cash-flow requirements; (v) the investment strategy should be consistent with the macroeconomic and fiscal requirements; (vi) valuation should, as much as possible be done both in accordance with both generally accepted accounting principles and reflect market-based valuation techniques; and (vii) performance analysis should be both timely and measured against relevant benchmarks. In addition, in a number of country cases, it would be useful to consider the outsourcing of investment management functions to qualified regional investment managers and putting in place an evaluation process for the risk and returns of such managers. Finally, it is important to further diversify risk by increasing intra-Caricom and external investment limits, subject to regulatory oversight and macroeconomic conditions.

119. **Efficiency can be improved by actively pursuing the integration of functions across public pension schemes, particularly in smaller countries.** This could be accomplished by agreeing to common account administrators, for example, and by entrusting such a function to a regional service provider, properly supervised in each jurisdiction where it operates.

VI. CONCLUSIONS

120. **This report began by identifying the common socio-economic characteristics that frame the needs, challenges and policy options for pension schemes in the Caribbean**. It was found that the population aging process is ongoing in the region, although it varies considerably between countries. There is substantial emigration and immigration both within the Caribbean and from the Caribbean to countries outside the region. The prevalence of small island economies and substantial migration raises the importance of the mobility of labor and the portability of pension rights. Almost all Caribbean countries have faced considerable volatility arising from economic concentration and climatic conditions, including hurricanes. Finally, limited data suggest that poverty prevalence varies substantially in the region. While insufficient data exist to determine whether the elderly are more or less poor than the working-age population, they are likely to be more vulnerable to poverty.

121. **English-speaking Caricom member states, with the exception of Jamaica, share the same kind of defined-benefit design structure for social security schemes across the region.** A number of design parameters are common to most of these schemes including higher accrual rates for the initial 10–15 years, similar vesting periods, and caps on covered wages and benefit indexation that are generally subject to parliamentary approval. Replacement rates and the level of explicit income redistribution were found to be similar across social security schemes.

122. **The report reviewed key public pension system challenges**. We examined the following variables and identified key challenges in each:

(i) *adequacy of benefits*—this includes sufficiency of public schemes to provide for consumption smoothing, absolute benefits relative to prevailing wages and coverage of the working and retired populations;

(ii) *predictability of contribution and benefit levels*—we found substantial worker and retiree uncertainty and risk stemming from the absence of benefit indexation as well as the absence of valorization of the wage base for determining benefits;

(iii) *equity and incentives* including income redistribution through the public pension systems and implicit redistributions between cohorts and income groups—we found that all schemes in the region explicitly redistributed income through the pension system but that the accelerated or frontloaded accrual rates in the Caricom member states leads to weak incentives;

(iv) *public pension financial sustainability*—this was found to be weak in several of the countries in the region and would be much easier to remedy through parametric adjustments in the short term;

(v) *portability of pension rights*—a strong Caricom regional agreement has been established and implemented to provide for the portability of pension rights between members states;

however, additional measures are needed to facilitate labor mobility within the region and provide for the portability of pension rights under occupational schemes;

(vi) *governance environment and framework*—we found that a number of measures could be taken to improve the governance framework for public pension funds and, in particular, reduce the level of risk in investment management; and

(vii) *administration and efficiency*—we found highly variable levels of efficiency in public pension schemes in the region, with administrative costs generally higher the smaller the size of the country.

123. **As countries in the Caribbean region seek to become increasingly competitive internationally, strengthening their public social security schemes and private pension provision becomes more and more important.** It is essential that CSME provisions for inter-island labor mobility are reinforced with continued implementation of agreements for the portability of social security benefits. Additional measures are needed to provide for similar portability between private occupational schemes.

124. **Social security provision also has an important macroeconomic dimension** as many schemes in the region will face challenges to their *sustainability* in the medium term unless proactive parametric measures are taken in the short term.

125. **We have suggested that parametric adjustments are needed for most schemes in the region in order to improve the predictability of contributions and benefits**. Such *predictability* is of paramount importance in achieving the core mandate of public social security schemes—to smooth consumption in retirement and ensure against poverty for members.

126. **Finally, we believe that the good governance and accountability of public pension schemes are essential to public credibility, trust and compliance.** We have therefore suggested a number of measures to improve the *governance* of public pension schemes and thereby maintain and reinforce credibility and trust among members.

Bibliography

ADECRI Consultants (2006), *Guyana's Public Service Pension Scheme* (Draft), mimeo, June 2006.

Alleyne, Frank (2001). "Investing Social Security Surpluses in the English-Speaking Caribbean." in Plamondon and Osborne, *Social Security Financing and Investments in the Caribbean.*

Andrietti, Vincenzo (2001). "Portability of supplementary pension rights in the European Union." *International Social Security Review*, Vol. 54, 1/2001, pp. 59–83.

Andrietti, V. and V. Hildebrant (2001). *Pension Portability and Labour Mobility in the United States. New Evidence from SIPP Data*. SEDAP Research Paper No. 42.

Becker, Gary (1964). *Human Capital: A Theoretical and Empirical Analysis*. New York: Columbia University Press.

Bertranou, F. and A. Sánchez (2003). "Características y determinantes de la densidad de aportes a la Seguridad Social en la Argentina 1994–2001." *Oficina Internacional del Trabajo* (pp. 24).

Black, D. and M. Orszag (1997). *Portability and Preservation of Pension Rights in the United Kingdom.* Office of Fair Trading, UK: 121.

Bobb, E. and P. Masci (2005). "Pension Reform and the Role of Multilateral Development Banks." P. D. Brunton and P. Masci, *Workable Pension Systems. Reforms in the Caribbean.* IADB-CDB: 391–411.

Brough, Michael (2004). *Pension Reform in the Caribbean*, http://www.watsonwyatt.com/multinational/render2.asp?ID=12471.

Bucheli, M., N. Ferreira-Coimbra, A. Forteza and I. Rossi. (2005). *El acceso a la jubilación o pensión en Uruguay: ¿cuántos y quiénes lo lograrían?* (pp. 29). Uruguay: dECON-UDELAR y CEPAL.

CARICOM (1996). *CARICOM Agreement on Social Security*. http://www.sice.oas.org.

CARICOM (nd). *The Free Movement of Skills and Social Security*. http://www.caricom.org/jsp/single_market/freemovementskills_socialsecurity.pdf

Carmichael, Jeffrey and Robert Palacios, *A Framework for Public Pension Fund Management* in Musalem, A. and Palacios, R. eds., Public Pension Fund Management: Governance, Accountability, and Investment Policies, The World Bank, 2003.

Davies, Omar (2007), 2007/2008 *Jamaica Budget Presentation*, Dr. The Hon Omar Davies Minister of Finance & Planning, Thursday, April 12, 2007.

ECLAC (2005a). *Migration in the Caribbean—What Do We Know?* Report of the Caribbean Expert Group Meeting on Human Rights and Development in the Caribbean, Port of Spain, Trinidad and Tobago, September 14–15, 2005.

ECLAC (2005b). *Social Security in the English-Speaking Caribbean*, December 9, 2005.

ECLAC (2005c). *Social Security Reforms and Their Implications for the Caribbean*, December 15, 2005.

ECLAC (2006). *Report of the High-Level Ministerial Dialogue—Social Security and Sustainable Social Development in the Caribbean*, June 14–15, 2006.

Escobar, Maria-Luisa, Gladys Lopez-Acevedo, Andrew D. Mason, Marcela Rubio Sanchez and Jaime Saavedra (2006). *Strengthening Social Protection in Mexico. Recent progress, Future Challenges.* Chapter 11.

European Community (2004). *The Community provisions on social security. Your rights when moving within the European Union*. European Commission: 53.

Fabel, O. (1994). *The Economics of Pensions and Variable Retirement Schemes*. Chichester, UK: Wiley.

Gordon, Susan (2006). "Pensions not in scheme with CARICOM Single Market (CSM)." Paper published in the newspaper *Jamaica Gleaner*, January 23. http://www.jamaica-gleaner.com/gleaner/20060123/carib/carib2.html.

Government of Belize (2003), 6th *Actuarial Review of the Social Security Scheme as of 31 December 2002*.

Government of Guyana (1998a), Laws of Guyana, Cap. 91:02 (B), Insurance.

Government of Guyana (1998b), Laws of Guyana, Cap. 36:01, *National Insurance and Social Security Act.*

Government of St. Kitts and Nevis (2007), *8th Actuarial Review of the Social Security Fund as of 31 December 2005*.

Gustman, A. I. and T. L. Steinmeier (1993). "Pension portability and labor mobility. Evidence from the survey of income and program participation." *Journal of Public Economics* 50: 299–323.

Guyana National Insurance Scheme (2006), *Comparative Analysis of NIS' Investment Portfolio with the Recommended Prudential Portfolio as of 31.12.2006*.

Guyana Office of the Commissioner of Insurance, (website), www.insurance.gov/gy

Guyana Office of the Commissioner of Insurance (2003a), *Form PP1R3.1: Registration of New Pension Plans*, 2003.

Guyana Office of the Commissioner of Insurance (2003b), *Winding-up of Pension Plans – a guide to regulatory approval*, Draft OCI Guideline 2.1, 2003.

Guyana Office of the Commissioner of Insurance (2006), *General compliance requirements for Pension Fund Plans*, Draft OCI Guideline 3.0, 2006.

Halcrow Group Limited, Caribbean Development Bank, Government of the Commonwealth of Dominica (2003), Dominica Country Poverty Assessment: Final Report -- Volume 1 of 2: Main Report

Hendrikx, M. (May 2006). *Appropriate Social Security for Migrant Workers. Implementation of Agreements on Social Security*. International Social Security Association, Regional Conference for the Americas, Belize.

Hendrikx, M. (May 2006). *Implementation of Agreements on Social Security*. Social Security Board, Belize.

Herbert, A. Charles, 2005, *Social Security Schemes and Potential Reforms in Five Caribbean Countries*, in P. D. Brunton and P. Masci, Workable Pension Systems: Reforms in the Caribbean. IADB-CDB: 323-52.

Holzmann, Robert and Richard Hinz (2006). *Old Age Income Support in the 21st Century*. World Bank.

Holzmann, Robert, J. Koettl and T. Chernetsky (2005). "Portability regimes of pension and health care benefits for international migrants: an analysis of issues and good practices"**:** 80.

Iglesias, Augusto and Robert Palacios (2002). *Managing Public Pension Reserves Part I: Evidence from the International Experience.* Social Protection Discussion Paper Series # 3.

International Monetary Fund (2003). *Barbados: Financial System Stability Assessment.* http://wbln0018.worldbank.org/FPS/fsapcountrydb.nsf/(attachmentwebFSSA)/Barbados_FSSA.pdf/$FILE/Barbados_FSSA.pdf.

International Monetary Fund (2007). *Eastern Caribbean Currency Union: Selected Issues*.

International Monetary Fund (2006). *Jamaica: Financial System Stability Assessment.* http://wbln0018.worldbank.org/FPS/fsapcountrydb.nsf/(attachmentwebFSSA)/Jamaica_FSSA.pdf/$FILE/Jamaica_FSSA.pdf.

International Social Security Association (2004), *Guidelines for the Investment of Social Security Funds*.

Ippolito, R. A. (1985). "The Labor Contract and True Economic Pension Liabilities." *American Economic Review* 75(5): 1031–1043.

Kairi Consultants. (2006). *The Assessment of Poverty in St Lucia*, Vol. I: Main Report, p. xiv.

Kalogeropoulou, K. (2006). "European Governance after Lisbon and Portability of Supplementary Pensions Rights." *Journal of Contemporary European Research* 2(1): 75–91.

Koettl, Johannes (2006). *The Relative Merits of Skilled and Unskilled Migration, Temporary and Permanent Labor Migration, and Portability of Social Security Benefits*. SP Discussion Paper No 0614: 37.

Lazear, E. (1979). "Why is there mandatory retirement?" *Journal of Political Economy 87*, 1261–1284.

Mitchell, O. S. and D. M. Osborne (2005). *Old Age Pension Reform in the English-Speaking Caribbean: A Policy Assessment*. In: P. D. Brunton and P. Masci, Workable Pension Systems. Reforms in the Caribbean. IADB-CDB: 353-88.

Musalem, Alberto and Robert Palacios, eds. (May 2003). *Public Pension Fund Management: Governance, Accountability and Investment Policies.*

National Insurance Corporation (2005). *Annual Report.* St. Lucia.

Osborne, Derek (2004). *Social Security in the CARICOM Single Market & Economy*. CARICOM: 178.

Paddison, O. (2006). *Social Security in the English-Speaking Caribbean*. Financiamiento del Desarrollo, No.178. E. CEPAL.

Palacios, Robert and Montserrat Pallares-Miralles (2008). *International Patterns of Pension Provision* (Revised). World Bank, forthcoming.

Palacios, Robert and Edward Whitehouse (May 2006). *Civil Service Pension Schemes around the World*. World Bank, Discussion Paper 0602.

Palacios, Robert and Montserrat Pallares-Miralles (2000). *International Patterns of Pension Provision.* Social Protection Discussion Paper, World Bank.

Palacios, Robert (2003). *Pension Reform in the Dominican Republic*. Pension Reform Primer, World Bank.

Pettinato, Stefano and Javier Diaz (2005). "A Needs Assessment of Pension Systems in the English-Speaking Caribbean." Brunton, P. Desmond and Petro Masci, eds., *Workable Pension Systems. Reforms in the Caribbean*. IDB-CDB.

Plamondon, P. and D. Osborne (2001). *Social Security financing and investments in the Caribbean.* Issues in Social Protection. ILO.

Planning Institute of Jamaica (2004), *Economic and Social Survey*, Jamaica.

Rofman, Rafael and Leonardo Lucchetti (August 2006). *Social Security in Latin America: Concepts and Measurements of Coverage*. World Bank.

Robalino, David (2006). *Middle East Pensions in Crisis.* World Bank.

Rudden, Kyle (2005). "Private Pension Regulation and Supervision in the English-Speaking Caribbean." Brunton, P. Desmond and Petro Masci, eds., *Workable Pension Systems. Reforms in the Caribbean.* IDB-CDB.

Schmahl, W. (1993). "Harmonization of Pension Schemes in Europe? A Controversial Issue in the Light of Economics." A. B. Atkinson and M. Rein, *Age, Work and Social Security*. St. Martin's Press: 308–340.

Shapiro, Carl, and J. Stiglitz (1984). "Equilibrium Unemployment as a Worker Discipline Device." *American Economic Review*, v74, n3 (June 1984): 433–44.

Snyder and Yackovlev (April 2000). *Political and Economic Determinants of Government Spending on Social Protection Programs.* The MIT.

Social Security Administration (2006). *Social Security Programs Throughout the World: The Americas, 2005* (No. SSA Publication No. 13-11803): Social Security Administration, ISSA.

Social Security Administration (2007a). *U.S. International Social Security Agreements*. USA. http://www.socialsecurity.gov/international/agreements_overview.html.

Social Security Administration (2007b). *Social Security Programs throughout the World.* USA. http://www.ssa.gov/policy/docs/progdesc/ssptw/.

Social Security Administration. (2008). *Social Security Programs Throughout the World: The Americas, 2007* (No. SSA Publication No.): Social Security Administration, ISSA.

Sommer, J. (2003). "The Open Method of Co-ordination." Some remarks regarding old-age security within an enlarged European Union. Bremen.

UK (2007). *Social Security Agreements between the United Kingdom (UK) and other countries. Department for Work and Pensions*. http://www.dwp.gov.uk/lifeevent/benefits/social_security_agreements.asp.

United Nations Population Division, *World Population Prospects, The 2006 Revision Population Database*, http://esa.un.org/unpp/index.asp?panel=1.

Van Beek, Patrick (2006), *Support for the Implementation of the National Investment Scheme Investment Framework: Report of Consultant*, DRAFT, July 2006.

Whiteford, E. A. (1996). *Adapting to Change: Occupational Pension Schemes, Women and Migrant Workers.* Kluwer Law International.

Whitehouse, Edward (2007). *Pensions Panorama: Retirement Income Systems in 53 Countries.* World Bank.

Whitehouse, Edward (2008). *Pensions at a Glance, Asia.* OECD and World Bank, forthcoming.

World Bank (1997). *Poverty Reduction and Human Development in the Caribbean. A Cross-Country Study*. World Bank Discussion Papers. World Bank. Washington DC: 234.

World Bank (2001a). *Dominican Republic Poverty Assessment*, Report No. 21306-DR, Vol. I, December.

World Bank (2001b). *Dominican Republic Poverty Assessment*, Report No. 21306-DR, Vol. II, December.

World Bank (2001c and 2004), *Jamaica Social Safety Net Assessment*.

World Bank (2003a). *OECS Fiscal Issues: St. Kitts and Nevis. Policies to Achieve Fiscal Sustainability and Improve Efficiency and Equity of Public Expenditures*. Report No. 25185-LAC, June.

World Bank (2003b). *Dominica. Social Protection Review*. June 9.

World Bank (2004a). *OECS Fiscal Issues: Grenada. Policies to Achieve Fiscal Sustainability and Improve Efficiency and Equity of Public Expenditures.* Report No. 28334-GRD, April.

World Bank (2004b). *Dominican Republic Public Expenditure Review. Reforming Institutions for a More Efficient Public Expenditure Management*. Report No. 23852-DO.

World Bank (2005a). *Saint Vincent and the Grenadines OECS Fiscal Issues.* Report No. 30885-SVG, May.

World Bank (2005b). *Caribbean Social Protection Strategy Paper.* Report No. 33571-LAC, November.

World Bank (2006a). *Trinidad and Tobago, Financial Sector Assessment*. http://wbln0018.worldbank.org/FPS/fsapcountrydb.nsf/(attachmentwebFSA)/TT_FSA.pdf/$FILE/TT_FSA.pdf.

World Bank (2006b). *Jamaica Poverty Assessment: Breaking the Cycle of Unemployment, Vulnerability and Crime.* Report No. 35882-JM, May.

GLOSSARY[47]

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.

Additional voluntary contributions. Contributions to an occupational pension scheme over and above the employee's normal contribution rate.

Adverse selection. A problem stemming from an insurer's inability to distinguish between high- and low-risk individuals. The price for insurance then reflects the average risk level, which leads low-risk individuals to opt out and drives the price of insurance still higher until insurance markets break down.

Agency slack. A situation in which individuals are unable to monitor the efforts of their agents comprehensively. Agency slack occurs when the agent is averse to effort and so underperforms. In the case of pensions, for example, investors may not be able to monitor fund managers, who, as a consequence, may not do their best for the investors. See also moral hazard.

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.

Basic state pension. The flat-rate state pension paid to all persons of pensionable age meeting the national insurance contribution test and their surviving dependents.

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

Contribution ceiling. A limit on the amount of earnings subject to contributions.

---

[47] This glossary is adopted from Robert Holzmann and Richard Hinz, Old Age Income Support in the 21st Century, The World Bank, 2005.

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.

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 non-financial.

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.

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

Non-financial (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 non-financial) 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 non-financial) 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 non-financial 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 aged 15–59, the number of persons over 60 divided by the number of persons aged 20–59, and so forth.

Overannuitization. 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 because 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 1: COMPUTATION OF IMPLICIT RATES OF RETURN

A. METHODOLOGY

1. We computed the implicit rates of return of the simulated cash flows of the contributions to be paid and benefits to be received by workers under a variety of circumstances and options. We computed a basic scenario first, and then we carried out sensitivity analysis by changing some of the assumptions. The sensitivity analysis allows us to assess the robustness of the results regarding sustainability and to explore a number of equity and incentive issues.

2. In the basic scenario, workers contribute during the 25 years that precede retirement, i.e., they are assumed to enroll in the system 25 years before retirement and to contribute without interruptions until they retire. Their average wage was set at the average insurable wage of the country's NIS in 2003.[48] The real wage was assumed to grow at 2 percent per year.

3. The insurable wage ceilings, the minimum and maximum pensions and all other system parameters that are set in nominal terms were adjusted according to the inflation rate. The same adjustment was applied to pensions. However, there are no formal rules in the Caribbean for the adjustment of these variables, so the results could vary significantly if the authorities do not adjust these nominal variables according to past inflation. Under the assumptions we made, the inflation rate can still have some impact on the real value of pensions because the average wage that is used to compute the initial pension is based on nominal wages. The initial pension can thus lose purchasing power as a result of inflation. This phenomenon can be particularly significant in the case of Jamaica, where the earnings-related component of the old-age pension is based on lifetime contributions. We set the annual inflation rate at 2.7 percent, which was the median average inflation rate in the Caribbean between the early 1990s and the mid-2000s.[49]

4. Under the simulations, workers do not generate survivors' benefits or suffer disability, so the only benefit is the old-age pension. Retirement in the base scenario takes place at the minimum age required to qualify for an ordinary pension. Individuals live until they reach the "age of death," which is 20 plus life expectancy at 20. Therefore, our IRRs approach the expected rates of return as of 20 years old. Life expectancy was estimated using the national mortality tables projected by the World Bank and the United Nations in 2002.

5. All the flows are before taxes, so we computed gross IRRs. All the IRRs we present in the text are real. All the simulations were done for males. The rules and parameters of each pension scheme were taken from the Social Security Administration (2006).

6. We performed sensitivity analysis in five dimensions, namely: (i) the average wage level, (ii) the age-earnings profile, (iii) life expectancy, (iv) the length of the contribution period, and

[48] The average insurable wages were computed from the tables in the annex in Osborne (2004).

[49] We considered for this computation the CARICOM countries for which we have the inflation data in the period. We computed the average inflation rate between 1990 and 2005 for Bahamas, Barbados, Belize, Dominica, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname and Trinidad and Tobago. In the case of Grenada and Guyana, we used the 1990–2002 and the 1994–2005 average inflation rate respectively, because of data availability.

(v) the age of retirement. The *average wage* along the lifecycle of the simulated worker was set at five different levels, corresponding to 1/4, 1/2, 1, 2 and 4 times the average insurable wages in the scheme. The *age-earnings profile* is the profile of earnings along the lifecycle. We generated three profiles, setting the rate of growth of the real wage along the lifecycle at 1, 2 and 3 percent per year in real terms. The *age of death* was set at 20 plus life expectancy at 20 in the base scenario and reduced by 1 and 2 years in the other two scenarios. We assessed the impact of the *length of the period of contributions* on the IRRs by simulating different enrollment ages, keeping the retirement ages as in the base scenario. We considered five scenarios, with 10, 15, 20, 25 and 30 years of contribution. In turn, we analyzed the impact of the *age of retirement*, changing this variable and keeping constant the enrollment age. It should be noted that this approach implies that the length of the period of contributions is being changed in parallel to the age of retirement.

7. We believe that IRRs in the cash flow of contributions and benefits promised to scheme affiliates provide a comprehensive synthetic indicator of both the generosity and the sustainability of the current pension plans. A scheme is not sustainable under the current parameters if the average implicit internal rate of return is higher than the rates at which the scheme receives funds from investments and from new contributions. Of course, there is still the difficulty of computing the *average* implicit rate of return that each scheme will have to pay, as different workers will likely be getting significantly different rates, according to their specific circumstances. Indeed, the IRRs are sensitive to several variables that vary greatly from individual to individual and whose actual distribution is hard to obtain.

B. SENSITIVITY ANALYSIS AND FINDINGS

8. The IRRs in the middle column of Table 22 are a useful, albeit probably conservative, estimation of the promises made on average by the Caribbean public pension schemes. As the table shows, the IRRs are sensitive to the wages earned by the simulated workers, but using the estimations in the middle column (workers earning the average insurable wages) seems appropriate when examining the promises that the schemes are making on average. We will call this the base scenario and discuss in what follows the extent to which this scenario can be thought to approach the average situation in each case.

9. If, for example, the design of the scheme favored low-income workers relative to high-income workers, the former would be getting higher IRR than the latter. In turn, the pension scheme might be inducing workers to retire at the minimum retirement age if the increase in the pension they are entitled to when they postpone retirement does not compensate them for the longer period of contributions and shorter period spent as a pensioner. Lower IRR associated with later retirement would be an indicator that the system provides incentives for workers to retire earlier. A system that promises implicit rates of return that are higher than the rate at which the system can add to its funds is not sustainable.[50]

10. In order to isolate the impact of average earnings, we held other characteristics equal in the set of simulations presented above. However, low-income workers tend to have flatter age-

[50] Robalino (2005) follows a similar strategy to assess incentives, redistribution and sustainability of the pension schemes in the Middle East and North Africa.

earning profiles than high-income workers and this might have an impact on the IRRs. Most Caribbean schemes provide public pensions that depend on the average wages of contribution during the last three to five years of working careers. These formulas benefit workers whose earning profiles are steeper along the lifecycle and whose average wages are low compared to the wages used to compute their pension. We simulated in each country three different age-earnings profiles based on three different rates of wage growth along the lifecycle. In each case, the IRR increased with the rate of growth of wages (Table 22). Jamaica is a country in which this effect is weaker, and it is the only country in the region in which the benefit formula takes into account the whole history of contributions.

11. As would be expected, workers with lower life expectancy receive a lower IRR because they receive pension benefits for a shorter period than those with higher life expectancies. But insurance against the "risk" of living too long turns into redistribution in expected terms when different groups of workers with different life expectancies are covered under the same rules. In particular, low-income workers tend to have shorter lives than high-income workers. Once this factor is taken into account, pension systems looks less "pro-poor" than otherwise might be expected from a first review of the results. Unfortunately, we do not have estimations of life expectancy by income levels in the Caribbean. Nevertheless, in order to assess the possible magnitude of this redistributive effect, we computed IRRs for the average citizen of the country and for workers who live one and two years less than average (Table 37).

12. As expected, the IRRs of workers who have shorter lives are smaller. The lower the life expectancy relative to the age of retirement, the higher the impact on the observed IRR of living one less year as a pensioner, which represents a proportionately larger loss the shorter the total time spent as pensioner. Guyana, a country in the region with relatively lower life expectancy, is one in which this effect is correspondingly more significant.

Table 37: Implicit Rates of Return and Life Expectancy

	"Age of death" = 20 + Life expectancy at 20		
	- 0	**- 1**	**- 2**
Antigua and Barbuda	6.9%	6.7%	6.6%
Bahamas	6.2%	6.2%	5.8%
Barbados	3.5%	3.5%	3.1%
Belize	5.2%	4.5%	3.7%
Dominica	6.2%	6.2%	6.2%
Grenada	4.6%	4.0%	3.3%
Guyana	3.1%	3.1%	3.1%
Jamaica	6.7%	6.3%	5.9%
St. Kitts and Nevis	6.3%	6.3%	6.1%
St. Lucia	6.7%	6.4%	6.2%
St. Vin. and Gren.	9.1%	9.1%	8.9%

Assumptions: Average wage in the simulations equal to the average insurable wage of the NIS; wages grow at 2% per year; retirement at normal age as defined in each country national insurance scheme, single male.

Source: Bank estimates based on Social Security Administration (2006) and Osborne (2004).

13. **Age-earnings profiles**. The simulations summarized in Table 38 show that the IRRs

could actually be lower if age-earnings profiles were flatter than those assumed in the base scenario. The rate of growth of wages that determines the profile in the base scenario—2 percent per year—is the same as Whitehouse (2007) used to compute pension indicators around the world. But as he rightly warns, this does not mean that the assumptions adopted to facilitate comparability across countries are appropriate for each and every case. However, lacking better guidance for the Caribbean NIS's contributors, we stick to the assumption that has been considered more reasonable in the international comparisons.

Table 38: Implicit Rates of Return and the Age-Earnings Profile

	Annual rate of growth of wage		
	100%	**200%**	**300%**
Antigua and Barbuda	6.3%	6.9%	7.5%
Bahamas	5.5%	6.2%	6.9%
Barbados	2.9%	3.5%	4.1%
Belize	6.9%	7.1%	7.7%
Dominica	5.6%	6.2%	6.9%
Grenada	6.3%	6.9%	7.6%
Guyana	2.4%	3.1%	3.7%
Jamaica	7.1%	7.3%	7.5%
St. Kitts and Nevis	5.7%	6.3%	7.0%
St. Lucia	6.0%	6.7%	7.3%
St. Vin. and Gren.	8.4%	9.1%	9.8%

Assumptions: Average wage in the simulations equal to the average insurable wage of the NIS, retirement at normal age as defined in each country national insurance scheme, age of death is 20 plus life expectancy at 20, single male.

Source: Bank estimates based on Social Security Administration (2006) and Osborne (2004).

14. **Life expectancy**. The IRRs are also sensitive to life expectancy, as Table 37 shows. We do not have mortality tables for contributors to the public pension schemes in the Caribbean and hence we have used the national mortality tables of each country. These tables should provide a reasonably good proxy of the life expectancy of contributors in countries in which the schemes have high coverage. But they might underestimate the life expectancies of contributors in countries in which coverage is low, because pension schemes that provide only partial coverage tend to exclude mostly low income workers, who are precisely the ones with lower life expectancy. In those cases the IRRs computed for the base scenario might underestimate the returns that the public pension schemes are promising on average.

15. **Length of work histories**. The simulations presented in Table 20 show that IRRs are highly sensitive to the number of years that workers contribute to the schemes. If workers contributed to the NIS on average less than the 25 years assumed in the base scenario, the schemes' IRRs could be significantly higher than what the base scenario shows. Unfortunately, we do not have hard data about this variable in the Caribbean. The region's relatively low vesting periods (between 10 and 15 years), and the already mentioned warning by Osborne that raising vesting periods might risk leaving many workers without protection, suggest that Caribbean experts believe that these short contribution histories are not uncommon in the region.

Thus, the assumption in the base scenario that workers contribute 25 years on average might be optimistic. In this light the IRRs presented in Table 20 suggest that these schemes might be making overly generous and hard-to-sustain promises. At the very least, our results highlight the importance of looking at work histories in the Caribbean in order to better assess the sustainability of the promises the schemes are making.

16. **Age of retirement**. IRRs are also sensitive to the age of retirement (Table 23). We assumed in the base scenario that workers retire at the minimum age that qualifies for an ordinary pension. This assumption could be somewhat pessimistic given that some workers might retire later and thus raise the average. On the other hand, several countries in the Caribbean have early retirement programs and so some workers might actually retire before the ages considered in Table 23.

17. **Exclusion of disability and survival benefits**. Finally, our estimations of the IRRs that Caribbean public pension schemes promise are conservative to the extent that we only took into account old-age pensions even though schemes also provide disability and survival benefits. We have not computed these benefits because we have no basis to judge the probability and amounts involved in covering these risks. Incorporating such benefits would necessarily increase the estimated IRRs.

APPENDIX 2: COUNTRY BY COUNTRY PENSION PARAMETERS

Category	Antigua-Barbuda	Bahamas	Barbados
First law	1972 (social insurance) and 1993 (social assistance).	1956 (old-age noncontributory pensions) and 1967 (public assistance for disability).	1937 (social assistance).
Current law	The same.	1972 (national insurance), with 1999 amendment.	1966 (social insurance), with 2002 amendment.
Type of program	Social insurance and social assistance system.	Social insurance and social assistance system.	Social insurance and social assistance system.
Coverage			
Social insurance	Employees and self-employed persons aged 16 to 59. Exclusions: A married woman working for her husband, certain family members working for a family business, and casual workers with weekly earnings less than EC$7.50; employed persons with any earnings paid on the basis of commissions, fees, or profit sharing.	Employed persons, self-employed persons, and the voluntarily insured.	All employed persons, public-sector employees, and the self-employed aged 16 to 64. Exclusions: Unpaid family labor.
Social assistance	Persons who were aged 65 or older in 1993; age 60 or older and blind with annual income up to EC$ 5000.	Residents who do not qualify under the National Insurance Act.	Residents aged 65 or older; aged 18 or older and incapable of work because of defective eyesight or serious hearing and speech problems.
Source of Funds			
Public employee	2%	3.4%	5.93% to 13.5% of earnings.
Private employee	3%	3.4%	5.93% to 13.5% of earnings.
Self-employed	8%	8.8% (including work injury benefits).	13.5% of quarterly earnings.
Voluntary contributions	n.a.	5%	n.a.
Employer	5%	5.4%	5.93% to 6.75% of payroll.
Government	None; contributes as an employer.	None	None; contributes as an employer.

Category	Antigua-Barbuda	Bahamas	Barbados
Qualifying Conditions			
Full old age pension	Age 60 with at least 500 weeks of contributions.	Age 65 with 150 weeks of paid contributions.	Age 65.5 with 500 weeks of contributions, including at least 150 weeks of paid contributions.
Partial pension	Age 60 with 350 to 499 weeks of contributions.	Early pension is payable between ages 60 and 64.	Age 60 and no longer employed or self-employed.
Transitional pension	Age 60 with 156 weeks of contributions starting before 1975.	None.	None.
Old age settlement	Age 60 or older and does not meet the qualifying conditions for the old-age pension, but has at least 26 paid contributions starting before 1975 or at least 52 contributions starting after 1974.	None.	Age 65.5 with at least 50 but not more than 499 contributions.
Old age assistance	Age 77 or older; age 60 if blind or disabled.	For resident retired workers aged 65 or older who do not qualify under the National Insurance Act.	Age 65.5, satisfies the residency conditions, and does not meet the qualifying conditions for a social insurance pension.
Old-Age Benefits			
Full old age pension	The full pension is equal to 25% of the insured's average earnings, plus 1% for every 50-week period of contributions above 500 contributions, up to a maximum of 50%. Average earnings are based on earnings in the best-paid 5 years in the last 10 years of work; if the number of years worked is less than 5 years; the average is based on total earnings.	The pension is equal to 40% of the ▪ covered wage with 750 weeks of paid or credited contributions; ▪ 15% to 38% of the covered wage with between 150 and 749 weeks of paid or credited contributions. ▪ The pension is increased by 1% of the covered wage for each 50-week period of paid or credited contributions exceeding 750 weeks, up to a maximum of 60%. ▪ The covered wage is based on average weekly earnings in the best 3 years in the 10 years before the contribution year in which the insured reaches age 65.	▪ The pension is equal to 40% of average insurable earnings, plus 1% of earnings for each 50-week period of contributions exceeding 500 weeks. ▪ Average earnings are based on earnings in the best 5 years in the last 15 years; if the number of years worked is less than 5 years, the average is based on total earnings. ▪ Average earnings are based on earnings in the best 5 years in the last 15 years; if the number of years worked is less than 5 years, the average is based on total earnings. The maximum pension is equal to 60% of average insurable earnings.

Category	Antigua-Barbuda	Bahamas	Barbados
Partial pension	The full pension is reduced in proportion to the number of weeks of contributions.	The benefit is reduced by between 20% and 4%, depending on the age at which the pension is taken between ages 60 and 64.	n.a.
Transitional pension	25% of average earnings in the best paid 5 years in the last 10 years of work.	n.a.	n.a.
Old age settlement	EC$ 1200 or 75% of the combined employer and employee contributions, whichever is higher.	n.a.	A lump sum equal to 6 weeks' earnings for each 50-week period of contributions.
Old age assistance	EC$255/month.	B$ 46.15 a week.	The minimum weekly pension is B$123.
Administrative Organization			
General supervision	Ministry of Finance	Ministry of Housing and National Insurance	Ministry of Labor
Administration	Social Security Board	National Insurance Board	National Insurance Office

Source: Based on Social Security Programs Throughout the World, The Americas, 2007, http://ssa.gov/policy/docs/progdesc/ssptw/2006-2007/americas/index.html

Category	Belize	Dominica	Dominican Republic
First law	1979 (social security), with amendments.	1970 (provident fund).	1947.
Current law	Same	1975 (social security).	2001 (social security), implemented in 2003; and 2002 (pensions regulation).
Type of program	Social insurance and social assistance system.	Social insurance system. Government-financed social assistance benefits are administered by the Division of Social Welfare.	Mandatory individual account and social assistance system.
Coverage			
Social insurance	Employed persons aged 14 to 64, including public servants and self-employed persons. (Persons aged 60 or older who have previously received an old-age benefit and who return to work are covered for work injury benefits only.) Exclusions: Casual labor, persons employed for less than 8 hours a week, and military personnel.	Employees, self-employed persons, voluntary contributors, and apprentices aged 16 to 60. There are no special systems for any specified groups of employees.	All public and private-sector workers, employers, and Dominican citizens living abroad. Self-employed persons with income above the minimum wage have a special subsided mandatory individual account.
Social assistance	Women aged 65 or older who are citizens or permanent residents of Belize.	Not applicable.	Severely disabled, indigent, unemployed, or self-employed persons with income below the minimum wage.
Source of Funds			
Public employee	Weekly contributions vary according to eight wage classes: • B$0.83 if weekly earnings are under B$70; • B$1.35 if B$70 to B$109.99; • B$1.95 if B$110 to B$139.99; • B$3.15 if B$140 to B$179.99; • B$4.75 if B$180 to B$219.99; • B$6.35 if B$220 to B$259.99; • B$7.95 if B$260 to B$299.99; and • B$9.55 if B$300 or over.	4% of covered earnings.	2.87% of covered earnings plus a fixed. 1% of gross earnings for disability and survivor insurance and up to a maximum of 0.57% of gross earnings for the pension fund management company and Superintendent of Pensions.
Private employee	The same.	The same.	The same.
Self-employed	7% of weekly income between B$55 and B$320.	8.65% of declared net earnings.	None.
Voluntary contributions	n.a.	n.a.	n.a.
Employer	Weekly contributions vary according to eight wage classes: • B$3.57 if weekly earnings are under B$70; • B$5.85 if B$70 to B$109.99; • B$8.45 if B$110 to B$139.99; • B$9.65 if B$140 to B$179.99; • B$11.25 if B$180 to B$219.99; • B$12.85 if B$220 to B$259.99;	6.75% of covered earnings.	7.1% of payroll; includes 0.4% of payroll to finance minimum pensions (Social Solidarity Fund).

Category	Belize	Dominica	Dominican Republic
	• B$14.45 if B$260 to B$299.99; and • B$16.05 if B$300 or over.		
Government	Covers any deficit; contributes as an employer.	None; contributes as an employer.	Finances the subsidized mandatory individual account and guarantees the minimum pension.
Qualifying Conditions			
Full old age pension	Age 65 with 500 weeks of paid or credited contributions including 150 paid contributions. Retirement from employment is not necessary if aged 65 or older.	Aged 60 or older with at least 500 weeks of paid or credited contributions, including at least 150 paid contributions.	Age 60 with at least 30 years of contributions; age 55 if the individual account balance is sufficient to finance a pension equal to the minimum pension. In the case of the subsidized scheme, age 65 with at least 25 years of contributions is required.
Partial pension	From age 60 and retired from insured employment, with a total of at least 500 weeks of paid or credited contributions including 150 paid contributions.	Not applicable.	Early pension: The minimum old-age pension is paid until age 60. The maximum early pension is equal to the insured's final salary.
Transitional pension	None.	None.	None.
Old age settlement	Paid at age 60 to an insured person who has at least 26 weeks of paid contributions but does not meet the qualifying conditions for an old-age pension.	A lump sum equal to three times the insured's average weekly covered earnings for every 50-week period of paid or credited contributions.	None.
Old age assistance	Women aged 65 or older who have inadequate or no income.	Not applicable.	The pension is equal to 60% of the minimum public-sector wage (plus a Christmas bonus).
Old-Age Benefits			
Full old age pension	The pension is equal to 30% of the insured's average weekly insurable earnings, plus 2% of earnings for each 50-week period of contributions beyond 500 weeks up to 750 weeks, plus 1% of earnings for every 50-week period of contributions over 750 weeks. Average weekly insurable earnings are based on the best 3 years of earnings. The maximum pension is equal to 60% of average weekly insurable earnings, up to a weekly maximum of B$192.	The pension The pension is equal to 30% of the insured's average earnings, plus 2% for each 50-week period of contributions between 500 weeks and 750 weeks and 1% for each 50-week period exceeding 750 weeks. Average earnings are based on the insured's 3 best years of earnings in the last 10 years. The minimum monthly old-age pension is EC$35. The maximum monthly old-age pension is equal to 60% of the insured's average monthly earnings.	Based on accumulated capital and accrued interest.
Partial pension	Calculated in the same way as the old-age pension.		

Category	Belize	Dominica	Dominican Republic
	The pension is suspended if the insured returns to work before age 65.		
Transitional pension	None.	None.	None.
Old age settlement	The grant is equal to six times the sum of average weekly insurable earnings in the best 3 years of earnings, divided by 150, and multiplied by the number of 50-week contribution periods; or twice the sum of weekly insurable earnings, divided by the number of contributions, and multiplied by the number of 50-week contribution periods. The higher amount is paid.	A lump sum equal to three times the insured's average weekly covered earnings for every 50-week period of paid or credited contributions.	None.
Old age assistance	B$75 a month.	Not applicable.	The pension is equal to 60% of the minimum public-sector wage (plus a Christmas bonus).
Administrative Organization			
General supervision	Ministry of Finance, National Development, and the Public Service	Ministry of Health and Social Security	Superintendent of Pensions
Administration	Social Security Board	Social Security Board	Individual pension fund management companies (AFPs)

Source: Based on Social Security Programs Throughout the World, The Americas, 2007, http://ssa.gov/policy/docs/progdesc/ssptw/2006-2007/americas/index.html

Category	Grenada	Guyana	Haiti
First law	1969 (provident fund).	1944 (old-age assistance).	1965 (old-age insurance).
Current law	1983 (social insurance), with 1988 amendments.	1969 (social security), with amendments.	1967.
Type of program	Social insurance system.	Social insurance system.	Social insurance system.
Coverage			
Social insurance	All private- and public-sector employees and self-employed persons aged 16 to 59. There are no special systems for any specified groups of employees.	All public- and private-sector employees and the self-employed between ages 16 and 59. Voluntary coverage is possible for previously insured persons until age 60. Exclusions: Employees earning below G$7.50 a week, casual employees, and family labor.	Employees of industrial, commercial, and agricultural firms. Exclusions: Unpaid family labor, the self-employed, members of religious communities, and foreign diplomats. Special system for public-sector employees.
Social assistance	Not applicable.	Not applicable.	Not applicable.
Source of Funds			
Public employee	4% of monthly gross earnings.	5.2% of gross earnings. The voluntarily insured contribute 9.3% of average weekly income in the last 2 years before covered employment ceased.	6% of earnings.
Private employee	The same.	The same.	The same.
Self-employed	9% of monthly gross earnings.	11.5% of declared income, up to a maximum.	Not applicable.
Voluntary contributions	n.a.	n.a.	n.a.
Employer	5% of monthly gross wages.	7.8% of monthly payroll.	6% of earnings.
Government	None; contributes as an employer.	None; contributes as an employer; provides loans to cover any deficits.	Subsidies as needed.
Qualifying Conditions			
Full old age pension	Age 60 with at least 500 weeks of coverage, including at least 150 weeks of paid contributions.	Age 60 with 750 weeks of paid or credited contributions, including at least 150 weeks of paid contributions; 25 weeks of contributions are credited for each year that the insured was older than age 35 in 1969, up to a maximum	Age 55 with at least 20 years of contributions.

Category	Grenada	Guyana	Haiti
		credit of 600 weeks.	
Partial pension	Age 60 with at least 260 weeks of coverage, including at least 150 weeks of paid contributions.	Not applicable.	Not applicable.
Transitional pension	None.	None.	None.
Old age settlement	Age 60 and does not meet the qualifying conditions for the old-age pension. Must have at least 50 weeks of paid or credited contributions.	*The insured does not meet the qualifying conditions for a pension but made at least 50 weeks of contributions before age 60.*	The insured does not meet the qualifying conditions for a pension.
Old age assistance	Not applicable.	Not applicable.	Not applicable.
Old-Age Benefits			
Full old age pension	The pension is equal to 30% of average weekly earnings, plus 1% of earnings for each 50-week period of contributions over 500 weeks. Average weekly earnings based on average annual earnings in the best 5 years divided by 52. The maximum weekly pension is EC$311.50.	The pension is equal to 40% of the insured's average weekly covered earnings, plus 1% of average weekly covered earnings for every 50-week period of contributions above 750. Average weekly covered earnings are based on the insured's best 3 years of the last 5 years before age 60.	The pension is equal to 33% of the insured's average earnings in the last 10 years.
Partial pension	The pension is equal to 16% of average weekly earnings, plus 1% of earnings for each 25-week period of contributions over 150 weeks up to 499 weeks.	Not applicable.	Not applicable.
Transitional pension		None.	None.
Old age settlement	A lump sum equal to five times average weekly insurable earnings is paid for each 50-week period of contributions.	The grant is equal to 1/12 of the insured's average annual covered earnings for every 50-week period of paid or credited contributions.	A refund of contributions without accrued interest.
Old age assistance	Not applicable.	Not applicable.	Not applicable.
Administrative Organization			
General supervision	Ministry of Health, Social Security, the Environment, and Ecclesiastical Relations.	Minister of Finance.	Ministry of Social Affairs

Category	Grenada	Guyana	Haiti
Administration	National Insurance Board.	Ministry of Labor, Human Services and Social Security.	National Office of Old-Age Insurance of the Social Insurance Institute (managed by a tripartite board and a director general).

Source: Based on Social Security Programs Throughout the World, The Americas, 2007, http://ssa.gov/policy/docs/progdesc/ssptw/2006-2007/americas/index.html

Category	Jamaica	Saint Kitts and Nevis	Saint Lucia
First law	1965 (national insurance), with amendments.	1968 (provident fund).	1970 (provident fund).
Current law	The same.	1977 (social security), implemented in 1978, with 1996 and 2002 amendments; and 1998 (social assistance).	2000 (national insurance corporation), with 2002 amendment; and 2003 (national insurance).
Type of program	Social insurance system. Government-financed social assistance benefits of J$530 a month are provided to low-income and vulnerable persons older than age 60 and to low-income and vulnerable disabled persons.	Social insurance and social assistance system.	Social insurance system. A government-financed social assistance program provides EC$80 a month to persons of pensionable age, subject to conditions.
Coverage			
Social insurance	Employed and self-employed persons. Voluntary coverage is possible, if older than age 18 and younger than the normal retirement age. Exclusions: Casual workers and unpaid family labor.	Employed (including public-sector employees and apprentices) and self-employed persons aged 16 to 62. Voluntary coverage for those who cease to be compulsorily covered but who have at least 2 years of contributions. Exclusions: Unpaid family labor. Special system for civil servants.	Employees, self-employed persons, and apprentices aged 16 to 65. Exclusions: Civil servants were excluded until February 1, 2003. Special system for civil servants not covered by the National Insurance Corporation.
Social assistance	Not applicable.	Resident elderly or disabled persons.	Not applicable.
Source of Funds			
Public employee	Employees contribute 2.5% of gross earnings. Domestic workers, Jamaica Defense Force personnel, and the voluntarily insured contribute a flat-rate J$20 a week.	5% of weekly or monthly earnings.	5% of covered earnings.
Private employee	The same.	The same.	The same.

Category	Jamaica	Saint Kitts and Nevis	Saint Lucia
Self-employed	J$20 a week, plus a maximum of 5% of insurable annual earnings.	10% of monthly earnings, according to earnings categories ranging from EC$200 to EC$1,350 a week.	5% of declared average monthly Earnings.
Voluntary contributions	n.a.	n.a.	n.a.
Employer	2.5% of wages.	5% of monthly payroll.	5% of payroll.
Government	None; contributes as an employer.	None; contributes as an employer.	5% of payroll for contributing civil servants.
Qualifying Conditions			
Full old age pension	Age 65 (men) or age 60 (women) with 1,443 weeks of paid contributions, including an annual average of 39 weeks of paid or credited contributions.	Age 62 with at least 500 weeks of paid or credited contributions, including 150 weeks of paid contributions.	Age 62 with at least 13 years of contributions. Retirement from gainful employment is necessary.
Partial pension	A reduced pension is paid for annual average contributions of between 13 weeks and 38 weeks.	Not applicable.	Early pension: Age 60 with at least 13 years of contributions. Retirement from gainful employment is necessary.
Transitional pension	None.	None.	None.
Old age settlement	The insured does not meet the qualifying conditions for a pension. A lump sum is paid if the insured has at least 52 weeks or 1 year of contributions. Substantial retirement is necessary until age 70 (men) or age 65 (women).	Age 62 and does not qualify for an old-age pension.	Age 62 and does not meet the qualifying conditions for the old-age pension.
Old age assistance	Not applicable.	Older than age 62, not in gainful employment, and does not qualify for the old-age pension.	Not applicable.
Old-Age Benefits			
Full old age pension	A basic benefit of J$1,500 a week with an annual average of 39 weeks of paid or credited contributions (reduced to J$1,125 a week with annual average contributions of between 26 weeks and 38 weeks; J$750 with 10 weeks to 25 weeks),	The monthly pension is equal to 30% of the insured's average annual wage, plus 2% for each 50-week period of paid or credited contributions exceeding 500, up to a maximum of 750 contributions,	The pension is equal to 40% of the insured's average covered earnings, plus 0.1% of average covered earnings for each month of contributions exceeding 156 months. Average covered earnings are based on the

Category	Jamaica	Saint Kitts and Nevis	Saint Lucia
	plus an earnings-related benefit of J$0.06 a week for every J$13 of employer–employee contributions paid during the working lifetime.	and 1% for each 50-week period of contributions exceeding 750. The pension is determined by dividing this sum by 52. The average annual wage is based on earnings in the 3 years in which the insured made the most contributions in the last 15 contribution years.	insured's earnings in the best 5 years.
Partial pension	Not specified.	Not applicable.	Early pension is reduced by 0.5% for each month the pension is taken before age 62.
Transitional pension	None.	None.	None.
Old age settlement	A lump sum of J$20,000.	The grant is equal to six times the average weekly wage for each 50-week period of paid or credited contributions, up to a maximum of 499 contributions.	A lump-sum refund of 50% of contributions, without interest, is paid.
Old age assistance	J$ 530/month for low-income elderly over age 60.	EC$210 is paid every month.	Not applicable.
Administrative Organization			
General supervision	Not specified.	Ministry of Education, Youth, Social and Community Development, and Gender Affairs.	Minister of Finance.
Administration	Ministry of Labor and Social Security administers the program through its National Insurance Division and local offices.	Social Security Board.	National Insurance Corporation.

Source: Based on Social Security Programs Throughout the World, The Americas, 2007, http://ssa.gov/policy/docs/progdesc/ssptw/2006-2007/americas/index.html

Category	Saint Vincent and the Grenadines	Trinidad and Tobago
First law	1970 (provident fund).	1939 (social assistance) and 1971 (social insurance), with amendments.
Current law	1986 (social insurance), with amendments.	The same.
Type of program	Social insurance system. The Family Services Division of the Ministry of Social Development administers social assistance cash benefits for needy persons, including needy elderly persons, the disabled, and orphans.	Social insurance and social assistance system.
Coverage		
Social insurance	Employed persons aged 16 to 59. Voluntary coverage for self-employed persons aged 16 to 59, previously insured persons with at least 150 paid or credited contributions, and persons living abroad.	Employed persons aged 16 to 64, including agricultural and domestic workers, apprentices, and public-sector employees. Voluntary coverage for the old-age pension, survivor pension, and funeral grant for persons younger than age 60 who cease to work in insured employment. Exclusions: The self-employed, persons who work less than 10 hours a week and earn less than TT$100 per week or TT$433 per month, and persons employed by international organizations who are granted specific exemptions.
Social assistance	Not applicable.	Citizens aged 65 or older with 20 years' residence; aged 40 or older if blind and needy.
Source of Funds		
Public employee	3.5% of gross earnings	3.11% of gross weekly or monthly earnings, according to 16 wage classes. The voluntarily insured contribute 10.5% of weekly earnings, according to 16 wage classes.
Private employee	The same.	The same.
Self-employed	A voluntary contribution of 5.5% of declared gross earnings, according to eight income categories.	Not applicable.
Voluntary contributions	n.a.	n.a.
Employer	4.5% of monthly payroll.	6.23% of weekly or monthly payroll, according to 12 wage classes.
Government	None; contributes as an employer.	None; contributes as an employer.
Qualifying Conditions		
Full old age pension	Age 60 With 500 weeks of contributions.	From age 60 with 750 weeks of contributions paid or credited An additional amount is paid for each 25-week period of contributions in excess of 750
Partial pension	Reduced pension at age 60 for insured persons aged 37 and older on January 5, 1987 with at least 150 weeks of	Not applicable.

Category	Saint Vincent and the Grenadines	Trinidad and Tobago
	contributions plus an additional 25 weeks of contributions for each year the insured was younger than age 50 on January 5, 1987.	
Transitional pension	None.	None.
Old age settlement	Age 60 with at least 50 weeks of contributions.	The insured does not meet the qualifying conditions for a pension.
Old age assistance	Not applicable.	Aged 65 or older with 20 years' residence and monthly income not exceeding TT$1,000.
Old-Age Benefits		
Full old age pension	The annual rate of age pension shall be given sixteen per centum of the average annual insurable earnings of the insured person to which shall be added one per centum of his average annual insurable earnings for each complete twenty-five (25) weekly contributions paid by or credited to him in excess of the first one hundred and fifty weekly contributions and up to the first five hundred weeks, plus one half per centum of his average insurable earnings for each complete twenty-five weekly contributions paid or credited to him in excess of the first five hundred weeks. Average annual earnings are based on the insured's earnings in the best 3 of the last 15 years before the year in which the insured reaches age 60. Benefits adjusted for inflation every three years, subject to actuarial review.	The pension is equal to between 30% and 48% of the insured's average weekly earnings, according to 16 wage classes, plus between 0.56% and 0.71% of average weekly earnings for each 25-week period of contributions exceeding 750 weeks. Average weekly earnings are based on career average earnings, according to 16 wage classes.
Partial pension	Reduced age pension – minimum equal to 16% of insured's average annual earnings in best 3 of last 15 years.	Not applicable.
Transitional pension	None.	None.
Old age settlement	The grant is equal to six times average weekly insurable earnings for each 50-week period of contributions.	A lump sum equal to three times the total employer and employee contributions is payable. The minimum settlement is TT$2000.
Old age assistance	Not applicable.	TT$1,550 or TT$1,650 a month, depending on income.
Administrative Organization		
General supervision	Not specified.	Ministry of Finance.
Administration	National Insurance Board.	National Insurance Board.

Source: Based on Social Security Programs Throughout the World, The Americas, 2007, http://ssa.gov/policy/docs/progdesc/ssptw/2006-2007/americas/index.html