

CHAPTER III
EVALUATION OF PENSION PROGRAMS AND SYSTEMS

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III.1 Introduction

The evaluation of pension programs and systems is concerned with the extent to which these have fulfilled their goals. Monitoring aids in their evaluation by allowing the examination of follow-up indicators related to their pursued objectives. Pension programs are aimed at preventing people from falling into poverty by providing adequate standards of living at old-age; in case of disability or death pension programs are also concerned with providing for the well-being of the economically dependent individuals.

A pension system may be comprised of one or several programs. When focusing on a system at the country level reference is usually made to pensions from a broad or agency-inclusive point of view. When pension systems are fragmented, as in several countries in LAC (see CISS 2004a), each existing program generally has its own agency, with its own particular financial and administrative procedures.¹ While the aim of providing pension protection is the same across pension systems the means to attain this goal may be quite different in terms of the pension system's design.

The literature on the optimal design of pension systems suggests that they should include at least three sources of retirement income: a safety net or minimum pension for all citizens financed by general

taxes; a contributive (occupational) pension financed by payroll taxes; and individual voluntary saving (World Bank 1994). More recent studies have redefined the optimal design to include five sources (World Bank 2005a, 2005b): pillar zero is a non-contributive pension; pillar one is a contributive pension according to earnings; pillar two is compulsory and based upon the creation of individual accounts; pillar three consists of flexible voluntary arrangements (financed by the employer, of the defined contribution or defined benefit type); and pillar four consists of additional monetary or in-kind transfers (inter or intra-generational transfers, including health insurance, and family transfers).

The design of pension systems in LAC is often affected by informality in the labor markets that leads some informal sector workers to avoid paying social security contributions. The low levels of tax collection increase budget limitations which have led some governments to develop non-universal pension systems wherein some workers are entitled to neither a basic non-contributive pension nor a contributive pension. At present, the situation is that many people are living in poverty at old-age (CISS 2006, ECLAC 2003). For this reason LAC governments are assessing the possibility of expanding pension coverage through non-contributive pension programs.

¹ Fragmentation of pension systems means that there are different social security agencies for different types of workers—such as the workers of the public sector, the private sector, the oil industry, etc.

This Chapter is aimed at addressing the following questions related to the evaluation of pension programs and systems in LAC. Have pension programs achieved the goals for which they were created? Is the true financial situation of pension programs known? Is there a sound fiscal policy that addresses future government expenditure in pensions? Are appropriate laws and regulations in place to guarantee the correct operation of pension programs? Have the effects of pension programs on poverty, employment, and saving been measured? Has the performance of the agencies responsible of pension programs in the region been examined?

These questions are the focus of the various approaches to the evaluation of pension programs and systems—fiscal, actuarial, legal, economic, social, administrative—that were identified in Chapter II as the most relevant to obtaining a comprehensive view of a variety of disciplines concerned with the design, operation, and management of pensions. Some studies have focused on the desirable aspects of pension systems, such as equity, coverage, income replacement level, and financial sustainability, to examine their performance (Council of the European Union 2003, Aon Consulting 2007). The balanced approach presented here discusses these aspects and helps to organize the study of the evaluation of pension systems when fragmentation occurs.

For a credible evaluation of pension programs or systems those who perform it should be independent of those who request it, typically the Congress, Ministry of Social Protection, the Treasury, or the social security agency. Identifying the purpose of the evaluation, whether to gain greater administrative control or knowledge of fiscal imbalances, or re-examine design issues such as equity and adequacy of benefits, indicates which evaluation approach would be more useful.

The Chapter is divided into six Sections; each of which examines the orientation of the different approaches and presents recommendations based upon their analysis. The actuarial approach focuses

on the financial situation of a pension program in Section III.2. The fiscal approach examines how governments face pension liabilities using public funds in Section III.3. The legal approach is based upon the necessity of regulating pension programs to promote transparency and economic competition in Section III.4. The social approach addresses the adequacy of pensions regarding the level of benefits and the extent of insurance provided for the population in Section III.5. Finally, the effects of the rules and benefits of pension schemes on economic outcomes are considered in Section III.6. The administrative approach, which evaluates the performance of the pension agency, is widely discussed in Chapter II.

III.2 Actuarial Approach: Financial Projections

Is the pension program financially sustainable in the short- and long-term? What are its expected revenues and expenditures? Should premiums be adjusted? When and by how much? Actuarial studies examine the financial and fiscal situation of pension programs and systems to address these questions. According to the International Labor Organization (ILO 1998) the main objectives of actuarial studies are to: 1) establish the financial status of a pension scheme and its likely future financial development; 2) assess the long term financial sustainability of the scheme with respect to current contribution rates and the chosen method of financing; 3) identify reasons for possible future disequilibria; 4) propose measures of ascertaining financial equilibrium; 5) propose possible changes to the financing method; and, 6) assess the adequacy of the level of benefits provided.

III.2.1 Actuarial Valuations

Actuarial valuations produce projections of income, expenditure, and the fiscal deficits for defined benefit (DB) schemes, in terms of cash flows and of associated metrics of liabilities—acquired, projected, and generated throughout the year. To do so, actuarial models require as inputs: 1) knowledge of the legal

framework that describes which benefits will be provided in the pension scheme and under which eligibility conditions; 2) biometric tables that provide information on mortality, disability, and retirement rates; and, 3) economic assumptions on interest and inflation rates, and economic growth.

Common outputs in actuarial and financial studies for the purposes of the technical evaluation of pension programs are: 1) demographic projections of current and new-entrant workers, including de modeling of the expected mortality of the beneficiaries, and the calculation of dependency indexes; 2) indicators of solvency and fiscal sustainability derived from coverage rates and financial cost in terms of gross domestic product (GDP) and aggregate salaries; and, 3) indicators of the benefits' adequacy as gross and net replacement rates and the calculation of the premium needed to maintain the level of benefits during a period of time.

III.2.2 Actuarial Practice in LAC

Actuaries should follow generally accepted accounting principles when producing financial reports. In spite of this fact, actuarial valuations in LAC are performed in a variety of formats. To examine this topic in detail the Inter American Conference on Social Security performed a comparative study on actuarial practice in social security agencies in the Americas.

The document (CISS 2004b) identifies common elements in actuarial studies of social security agencies in Argentina, Canada, Chile, the United States, Mexico, Panama, and English-speaking Caribbean nations. Among the main topics it examines are: economic and demographic projections, assumptions and methodology, review of financial experience, benefit schemes, legal and administrative issues, short-term projections, alternative scenarios for sensitivity analysis, and long-term projections of income and expenditure.

The document finds that only few actuarial studies include most aspects examined. The main areas in which actuarial studies of social security

pensions could be improved are the analysis of alternative economic assumptions, the clarification of the methodology that is being used, and the explanation of the role of the government in reducing fiscal deficits (see Section III.3 below).

III.2.3 Recommendations

Actuarial valuations of pension programs should be undertaken periodically; usually no later than every three years, depending on national legislations, following the main principles of objectivity, transparency, scientific rigorousness, explicitness, simplicity, and consistency. Useful guidelines of actuarial practice in pensions can be found in IAA (2002) and ILO (1998).

Some of the features of the actuarial approach are the following:

- Actuarial valuations of pension plans are very sensitive to the demographic and economic assumptions adopted. Alternative scenarios for the aging process, mortality trends, interest rates, and inflation rates may lead to surprisingly different results. For this reason, actuarial studies should include alternative scenarios in which the sensitivity of income and expenditures is assessed.
- Actuarial models are now easier to develop due to increasing availability of IT and databases. However, in many situations the basic input data for actuarial models, such as biometric tables or individual records on work history, including wages, contributions, and periods of employment and unemployment, are still unavailable. Efforts to collect these types of data should be encouraged to increase the accuracy of the models.
- If changes in the behavior of individuals affect the assumptions made in actuarial models—e.g, a reduction in the labor force participation rates due to changes in benefits—the results obtained by actuarial studies may be misleading. This

suggests the inclusion of behavioral models in actuarial studies, if possible.

Assessment of the objectivity of the evaluation of a pension program should be based upon the degree of interdependency between the actuary responsible for performing the actuarial valuation and the person who requested the valuation. Is the actuary an employee of the social security agency or an independent consultant? Some countries believe that credibility is increased by employing independent actuaries to audit the models and evaluate the results of the agencies. Other countries believe that the strengthening of the public service sector and ensuring that a legislative body or a national accounting office performs the evaluation provides a level of trust required to gain public confidence in the work of their social security actuaries.

Performing an integral actuarial valuation is useful for governments wishing to assess the fiscal burden of all pension programs within fragmented pension systems. However, such a valuation is rarely performed.

III.3 Fiscal Approach: Solvency of Pension Systems

How do governments face the fiscal burden of pension systems? This burden may not only include being a contributor to the financing of pension benefits but also being responsible for the payment of direct and indirect costs of pension reforms. For example, governments must fund the transition from pay-as-you-go (PAYG) systems towards a system of individual accounts, as well as pay the costs of implementing the regulatory structure. The main issue for the evaluation of pension systems from the fiscal point of view is determining how pension debt can be most effectively managed over time. This issue has significant relevance because it has both inter- and intra-generational effects (see CISS 2003).

III.3.1 Examining Government Expenditures Expenditure and Fiscal Adjustments in LAC

In LAC, periods of public expenditure contractions have had repercussions for the financing of pension systems. Braun and Di Gresia (2003) document that public spending is procyclical in Latin America (i.e. decreases during recessions)² and, although social spending as a percentage of total spending has increased during crises, the depth of fiscal adjustment during economic downturns has resulted in a decline in real social spending. Thus, fiscal adjustments in LAC have constrained the effectiveness of social policy to protect the vulnerable population during economic downturns.

Another significant factor in government expenditures is fiscal transparency, which is broadly defined as the openness of the government to the public regarding its structure and functions, fiscal policy intentions, public sector accounts, and fiscal projections; thus, permitting a clear assessment of past fiscal performance, the current fiscal position, fiscal risks, and the future direction of fiscal policy (Parry 2007). Transparency goes beyond the internal monitoring of government activities for greater accountability; improved internal monitoring promotes better accountability which in turn promotes better governance and decreases corruption (Shah and Shacter 2004).

Among the factors that should be promoted to increase fiscal transparency and accountability in LAC are the following: 1) forward-looking fiscal policy; 2) the identification of fiscal vulnerabilities; 3) the monitoring of fiscal activities; 4) decentralization, a process that is still incipient in many countries; and, 5) increased public access to information because, unfortunately, much of the information that citizens need to hold governments accountable for their

² Braun and Di Gresia (2003) explain that both, the automatic and discretionary responses of the budget to the cycle are more procyclical in LA than in wealthier countries. The automatic response is more procyclical because Latin American governments have a smaller proportion of automatic stabilizers such as unemployment insurance (CISS 2006, Chapter V). The discretionary response is more procyclical because volatility, political constraints, and weak institutions make saving during good times difficult.

policies in the course of a budget-year is not currently publicly available Parry (2007).

Despite this challenge, Braun and Di Gresia (2003) offer some cause for optimism: [Efforts for] “...reforming the budget process, improving federal fiscal arrangements and implementing credible and flexible fiscal rules require difficult political compromises that generate payoffs in the future... However, the recent experience with fiscal management in Chile, together with the implementation of the Fiscal Responsibility Law in Brazil, can provide hope, good examples and useful lessons. For example, the central government in Brazil took advantage of the negotiating power it gained from offering to take over the States’ debts to pass a reform that appears to be limiting sub-national spending and debt...” (p. 30).

Public Pension Spending

Palacios and Pallares-Miralles (2000) documented that, in the 1990s, public expenditure on pensions in LAC was positively related with the proportion of the population that was elderly. They also found that public pension spending as a percentage of the GDP in LAC oscillated between 0.2 and 15% of the GDP. For these

years, Uruguay, Cuba, Argentina, and Chile were the countries with the highest levels of expenditure on pensions.

CEPAL (ECLAC, 1998) calculated the total implicit retirement pension debt based upon the same methodology (of a simulation of a common reform) in all countries examined. The results showed a very high cost (debt) in Uruguay, Brazil, Argentina (between 202 and 305% of the GDP); a high cost in Cuba, Panama, Chile, and Costa Rica (between 94 and 151%); a low cost in Peru, Mexico, Venezuela, Paraguay, Colombia, Venezuela, Nicaragua, Bolivia, Guatemala, and the Dominican Republic (between 22 and 45%); and a very low cost in Ecuador, Honduras, El Salvador and Haiti (between 4 and 19%). The pension debt depended upon the size of the elderly population, the coverage offered by social security, and the generosity of the pension systems. These results are not comparable with those of countries that use different methodologies.

Other recent calculations of the fiscal cost of pensions are presented in Table III.1.³ It is precisely due to discrepancies in results when using different methodologies that Section III.2 points at the

Table III.1
Estimations and Projections of the Fiscal Cost in Six Countries
Before and After Reforms Compared with 2003 World Bank Projections
(percentage of GDP)

	Initial and national projections				WB projections		
	Initial year	2000	2020	2040	2001	2020	2040
Argentina	2.5	1.8	0.3	0.2 ^{4/}			
Argentina	N.A.	3.1 ^{1/}	1.2	0.3	2.5 ^{1/}	2.3	3.6
Bolivia	0.2	2.2	0.9	0.2	3.5 ^{6/}	2.1	1.7
Colombia	0.9	1.5 ^{2/}	2.2	2.0 ^{5/}	1.6	1.0	3.4
Chile	3.8	6.1 ^{3/}	3.6	3.3	7.2	3.4	0.5
Mexico	0.9	N.A.	1.0	N.A.	0.5	0.7	0.7
Uruguay	5.1	4.5	3.8	3.6	4.0	2.1	2.5

N.A. = not available.

Notes: 1/Averaged 4.6% annually in 1995–2001. 2/A further study estimated 3% in 2000. 3/Averaged 5.7% annually in 1981–2000. 4/A further study estimated +1%. 5/Year 2025, the projection stops before reaching the year 2040. 6/The WB also estimated 5% in 2001.

Source: Mesa Lago 2004

³ For more details about the used methodologies, see Mesa-Lago (2004).

usefulness of the guidelines for actuarial practice regarding social security pensions. Table III.2 presents some examples of fiscal sustainability indicators (rate of return to investment, expenditure in terms of the GDP, superavit or deficit of the pension system in terms of revenues and GDP, assets relation to pensioner), in 2000-2002 in LA countries, using different methodologies and projection periods.

III.3.2 Best Practices in Managing Government Expenditure

The monitoring and auditing of government expenditures is crucial in achieving the adequate use of public funds. In the case of pensions and other social programs this issue is controversial as there is uncertainty regarding revenues and expected obligations. However, there is disagreement on the best way of accounting for these obligations. Over what period government obligations to pension programs should be assessed? Is it from the moment that people are eligible to receive benefits (when they become elderly) and the obligation is explicit, or from another date (such as when people start working) at which obligations start being implicit?

Accrual and Cash Flow Accounting of Pension Obligations

Cash flow accounting is based on the present value of a quantity of cash (paid or received) within a certain period.⁴ The actuarial studies examined in Section III.2 are based on projected cash flows. The accrual accounting of government expenditures differs from the cash flow method in the timing at which transactions are considered; under accrual accounting the government would record transactions when it is obligated to pay for them.

More specifically, accrual accounting “recognizes transactions and events when they occur, irrespective of when cash is paid or received. Revenues reflect

the amounts that came due during the year, whether collected or not. Expenses reflect the amount of goods and services consumed during the year, whether or not they are paid for in that period. The costs of assets are deferred and recognized when the assets are used to provide service” (IFAC 1991). Full accrual accounting is similar to the commercial accounting systems used by private enterprises— (Schiavo-Campo and Tomassi 1999).

It has been argued that accrual accounting provides a more convenient framework for registering general government liabilities and expenditures. Regarding pension systems, and other social assistance programs, large debates have been taking place in recent years to find the best accounting approach to obligations (IMF 2007, OECD 2002, 2003a, GAO 2007). This has been particularly motivated by episodes of pension plan under funding, lack of comparability across studies, and by the growing necessity of recognizing government’s pension liabilities, such as recognition bonds in some countries. Monitoring, in all debates, has been the main component of the proposed changes to the government accounting method used for pensions.

In most countries, pension obligations have been only recognized as cash flows when pensions are due for payment (PAYG). Studies that compare the expected pension payments with the expected tax revenues are very useful in assessing whether future cash receipts will be sufficient to fund pension payments. However, governments have accumulated considerable pension obligations to be paid in the future that they have not measured. The failure to measure these accumulating obligations means that important data on the current liabilities of governments are not recognized in general purpose financial statements. These obligations must be accounted for if governments want to control their future flows of resources (Donaghue 2003).

⁴ Discounted (money) value in a specific date of money transactions at different points in time, using an interest rate and a discount rate.

GAO (2007) examines some of the challenges of using accrual accounting methodologies to account for pension liabilities. First, the data analyzed should be timely and reliable. Second, it remains difficult to make assumptions regarding inflation, interest rates, and other related variables included in projection studies. Third, although accrual budgeting can provide more information about annual operations that require future cash resources, it does not provide sufficient information to understand broader long-term fiscal sustainability; an accrual budget does not include costs associated with future government operations and thus would not aid in recognizing some of the long-term fiscal challenges faced by social security. Fourth, the social security financial sustainability is better examined in relation to other national governmental programs. At present, a combination of traditional actuarial budgetary projections and accrual accounting methodologies would aid the better assessment of government liabilities.⁵

III.3.3 Recommendations

Regarding the issue of accrued pension liabilities the consensus has been to include, or at least to attempt

to include, accrual accounting methodologies in addition to traditional cash flow projections to examine future expenditure planning. Including accrual accounting methodologies appears to be a necessity in financially vulnerable countries in LAC.

This will not be an easy task for LAC countries, particularly because their large informal labor markets pose an additional challenge in terms of considering the exact periods in which governments accrue pension liabilities, which relate to transitions into and out from formal employment. In this regard, adequate data collection continues to be a priority.

Among the range of measures for a fiscal position that have been suggested are the projected debt-to-GDP ratios, and the construction of fiscal gaps. Reports on accrued government pension obligations should be produced periodically and be part of the information available to citizens and to those who make budget decisions; public awareness of fiscal concerns should be promoted.

III.4 Legal Approach: Regulation and Surveillance of Pensions

Are the regulators and persons in charge of surveillance, governance practices, accountability,

Table III.2
Financial Sustainability Indicators, 2000–2002
(percentages, except in the first and last column)

Countries	Financial regime (2003)	Real investment return ^{1/}	Pension expenditure (% PIB)	Superavit (+) or deficit (-) as a percentage: Income GDP		Contribution equilibrium (%) ^{2/}	Assets relation per pensioner
Brazil	PAYGO	0	10.5	-61.1	-4.4	N.A.	1.7
Cuba	PAYGO	0	6.5	-51	-2.2	15 a 20	2.5
Guatemala	PCC	10.4	0.4	+47.2	+0.2	3.9	5.9
Honduras	PCC	6.2	N.A.	+66.1	N.A.	3.5	22
Panama	PCC	6.2	4.1	+20.8	+1.1	16.2	5.9
Paraguay	PCC	N.A.	0.7	+37.7	+0.4	N.A.	7.5
Venezuela	PAYGO	N.A.	0.5	-26.7	-2.4	11	7.5

N.A. = not available. PCC = partial collective capitalization.

Notes: 1/Guatemala 1999-2000, Honduras 1994-2002, Panama 1997-1999. 2/The methodology and the projection periods are different among the countries studied.

Source: Mesa Lago 2004.

⁵ See Diamond and Orzag (2004) for a discussion on the pros and cons of substituting actuarial projections for accrual accounting methods to assess pension liabilities.

and investment prepared to operate a pension system? Once a pension system is designed and implemented, it is necessary to oversee the different processes and results. Regulation and surveillance are activities defined primarily by information gathering and processing to evaluate compliance with the law; particularly, with respect to investment of pension funds.

In a typical centralized, horizontally integrated, pension system two evaluation and control structures are used. First, there is an obligation to report to one or more national ministries, usually the Ministry of Finance, Labor and Social Protection, and the Ministry of Health, Human, and Social Development. Although these ministries sit on the board of the agency, often in a tripartite (or even wider) arrangement, the agency is actually quite autonomous regarding its decision-making processes, and evaluation is usually performed on general policies. This does not mean that evaluation is lax, only that it is performed internally. The second instrument in this arrangement is usually a set of internal and external auditing offices. The internal office works with the agency on a daily basis, while the external office can be an independent third party, such as an accounting firm or an institutional high level auditor, such as a congressional general accounting office.

Coordination among agencies in a decentralized pension model consists of different processes: comparison of the return of alternative fund managers, evaluation of the costs and benefits of the disability policies offered by alternative suppliers, and evaluation of the commissions that affect the value of the pension. It is becoming increasingly common for national legislations to opt for alternative degrees of horizontal integration for different processes within centralized models. For example, the registration and collection system may be centralized, but alternative providers manage funds, accounts, and customer service; in turn, fund managers may outsource part of their processes to large specialized corporations that manage account statements and other customer service

functions. In these models, it has become necessary to develop regulatory tools to control vertical relationships such as those that pertain to the standardization of information flows between collecting agencies and pension fund managers, and the cost for such transactions. Because decentralized solutions typically aim to introduce some competition among providers, governments have become interested in comparing their performance in terms of costs to workers, return on investments and customer service solutions.

III.4.1 Institutional Comparison of Regulatory Commissions

To gain understanding of the regulatory agencies in the Americas, it is useful to examine the North American Model and the Reformed Latin American model, two administrative maps developed in the previous CISS Report (CISS 2007). The key to each model is the measurement of the capacity of the national government to efficiently manage the early financial processes of affiliation and collection, which in turn creates the possibility for a national administration to control collections, tax deductions and the registration of pension plans and personal savings. These functions can all be accomplished within the North American Model. If such capacity is not available, governments opt for regulatory solutions that stress the management of risk and employ third parties (fund managers and collection agencies) for the needed functions.

Canada and the United States have very high levels of tax compliance, which allows their social security agencies to rely upon the general tax administration to support worker and employer registration. In turn, the tax agency receives regular information on payments to both the social security agency and private pension plans, whether employer-based or individual-account. In the North American Model regulations on the solvency of plans have reduced the need to have specialized regulatory commissions overseeing pension plans.

One special type of North American agency guarantees pension benefits. In the United States this type of agency is represented by the Pension Benefit Guarantee Corporation (PBGC) of the United States and in Canada the Pension Benefit Guarantee Fund for the Canadian Province of Ontario. In 2005 the Canadian federal Department of Finance issued the *Consultation Paper Strengthening the Legislative and Regulatory Framework for Defined Benefit Pension Plans Registered under the Pension Benefits Standards Act of 1985*.⁶ This paper considers, among other issues, the possibility of establishing a federal program of this type. These American and Canadian agencies collect a fee from privately DB pension plans and provide insurance against losses that affect worker benefits.

To succeed, this type of agencies must ensure the fulfillment of the following three key information regulations: 1) pension insurance is priced properly; 2) adequate funding requirements are defined; 3) plan funding status is transparent to the participants. It should be noted that these concerns are not specific to the North American Model or an agency such as the PBGC, as they are relevant also for the Latin American Model. A feature that shows the relevance this type of guaranteed fund is that it is designed for DB plans. This sort of guaranteed fund is not applicable in a model that relies predominantly upon individual savings, as it is the case in several Latin American nations, and increasingly the case in North America. For that other type of pension funds, regulation is not concerned with evaluating funding in relation to liabilities in the same manner as are DB systems.

The Latin American Model has had to advance without the support of a tax agency capable of registering almost all of the individuals in a country. Thus, the models' registration and collection processes are fully controlled by social security agencies. With the reforms of the 1980s and 1990s, governments found that they needed a regulatory agency to define rules and resolve conflicts among participants in the market, which has not been

needed in the past, because vertically integrated agencies had resolved all issues internally. After deciding to create decentralized funds that can register workers and firms, collect contributions, manage funds, and pay benefits, regulatory commissions now define rules, oversee compliance, and penalize those who do not comply.

III.4.2 Fragmentation of Regulatory Bodies and Accounting Rules

State governments may also be involved in the regulation of pension plans. Pension funds for state workers and funds for poverty programs are often under the regulatory umbrella of states in Brazil, Argentina, Mexico, Canada and the United States.

In Canada, the federal Office of the Superintendent of Financial Institutions (OSFI) oversees only the smallest proportion of the private plan regime—8% of the regulated plans and 10% of the membership. Having regional authorities is not necessarily costly and may facilitate solving the issues related to the pricing of risk and provision of information to participants in the plan; as long as regional regulations do not impose barriers to the mobility of labor across plans, regional authorities can play a positive role.

Some countries have specialized agencies for pension fund supervision, while others assign the responsibility to the agency in charge of general financial supervision (i.e. the same agency that oversees banking and insurance). A number of OECD countries, including Norway, Denmark, Sweden, and Canada have moved towards an integrated model. The main motivation behind this approach is that the financial market is dominated by corporations that participate in several of the markets that used to be regulated separately. In the United States, private occupational pension plans are supervised by the Department of Labor through the Pension and Welfare Benefits Administration (PWBA), the Pension Benefit Guaranty Corporation (PBGC), and the Internal Revenue

⁶ http://www.fin.gc.ca/activty/consult/PPBnfts_1e.html http://www.fin.gc.ca/activty/consult/PPBnfts_1e.html

Service (IRS). The PWBA ensures the protection of worker's rights, the PGBC insures plans that need to be rescued financially, and the IRS oversees and registers tax obligations (OECD 2003b).

III.4.3 Questions Regarding Regulatory Commissions

Why would governments want to have a regulatory agency? It is unknown why traditional cabinet ministries are not considered wholly adequate for performing certain administrative functions. This leads to the following questions: Why are regulatory agencies sometimes seen as a source of new problems? What are these new difficulties and how do we overcome them?

The reason why a regulatory commission can improve upon the actions of a traditional government ministry pertains to information; it is costly to collect, process and to analyze data on the behavior of providers, consumers and other participants in a pension system. A regulatory commission with specialized personnel can perform these functions much better than a centralized department. The cabinet department may be subject to more frequent personnel changes due to political reasons and may have goals that are legitimate but in conflict with the mandates in the law. A cabinet member has a role as leader in identifying new social needs and in promoting change through political channels, which may involve taking a stand towards modifying existing laws. While such a role is very valuable in a democratic society, frequent personnel changes and the discretionary application of regulations can result in costly bureaucracies and the erratic application of the law. Regulatory commissions are specialized, and their officers are not only granted high-level appointments, sometimes ratified by the legislative body, but also irrevocable term limits and career options uncommon within cabinet offices, which are intended to lessen the influence of politics upon their careers.

Economic models of regulatory commissions are best explained by Laffont (2005). In his analysis, a regulatory commission allows the government to

improve the flow of information available to control the agents who provide a public service, and thus improves social welfare. A pension system regulatory commission typically determines the solvency of pension funds, the degree of compliance with risk-safety criteria, the quality and reliability of accounting and information systems, and compliance with contracts and other customer service events. It also issues somewhat specialized regulations that need to be changed frequently after technological or market developments, conducts inspections, performs audits, and can issue penalties without prior review by a court or ministry. A regulatory commission can be effective to the extent that it can obtain and process information valuable to the regulated pension funds, but is not obtained easily by the government.

Some of the theories on "interest groups" have been developed by George Stigler (1971), Sam Peltzman (1976), and Gary Becker (1985). According to Becker, a regulatory commission will be subject to competing pressures from those willing and capable of influencing it. Namely, to the extent that a regulatory commission can be corrupted, it will be corrupted. Laws should restrict the relations between providers and regulatory commission officers (e.g. through enacting transparency regulation, enforcing strong penalties for the misuse of information, and certainly, through the selection of outstanding officers).

III.4.4 Consumer Protection Mechanisms

Consumer protection issues primarily concern two issues: the provision of an informational framework conducive to adequate choices by workers and retirees, and the prevention of abusive behavior by providers. The latter includes the adoption of mechanisms for the resolution of conflicts. Within the field of consumer protection it is generally preferable to define protections in terms of performance rather than inputs. Ultimately, the worker and the regulator are more interested in the workers' net return on savings than in the internal workings of a pension fund.

The agencies in charge of managing a plan, be it public or private, are always large in terms of the

number of affiliates and the quantity of financial resources they must manage. This large number increases the risk of abusive behavior and of treating individuals as a small risk to be addressed through cost minimization strategies. For example, in a pension fund it may be decided that errors that affect workers will not be corrected unless the individual obtains a direct order from a tribunal or a regulatory authority. For the fund, this can mean accepting a few errors that have little impact from a financial perspective but great impact from the perspective of a family.

Complaints by individual workers and families must be solved using low-cost mechanisms to address conflicts between funds and individuals, supported by legislation that fully recognizes the asymmetry between the parties. To aid this effort the regulatory agency must first adopt regulations on the information the pension fund provides to workers and retirees. This information must be clear, simple to understand and delivered in a timely fashion. Second, the regulatory agency must provide, by itself or through state mechanisms, a low-cost and effective procedure for the hearing and resolution of complaints by workers and retirees. Finally, the state must allow and sometimes sponsor class-action suits when the misbehavior of a provider affects a large group of workers.

III.4.5 Worker Choice

Several recent reform models promote creating individual accounts that are controlled by a national social security agency but allow workers to choose from a menu of private and public investment funds. The belief is that providing workers with some degree of choice of pension fund provider can improve their welfare. Regulatory agencies and governments have generally assumed the task of continuously evaluating the results of pension funds and their relationship with the actual pensions paid.

Why is increasing choice justified as a policy option? The answer is closely linked with the evaluation of a pension system, in particular, the

increasing desire of workers to have more flexibility and choice in their investments. Pension systems with an individual account component have been moving towards a “multi-fund” framework to channel workers’ savings. More specifically, this means that Chile and the other countries that have moved towards capitalized systems are allowing workers to choose among several funds. In the United States and Canada workers can generally direct their individual savings for retirement into several options available in the market. In models in which management of the account remains the responsibility of a national social security agency but allow individual savings, such as the Swedish or the new Panamanian model, several options are allowed in a model similar to that of the multi-fund.

The overall objective of increasing choice within pension systems is to increase the ability to invest in higher return options while still avoiding large risks that could threaten to decrease the final replacement rate. There is strong evidence that allowing individuals to invest their pension funds in stocks and bonds rather than having the government do it for them leads them to earn higher returns. According to Mehra and Prescott (1985) the real world presents a phenomenon called “equity premium puzzle”. They explained that throughout history, investment in stocks has realized greater returns than investment in bonds. Nevertheless, authorities have experienced some complexities arising from the investment in stocks that have motivated them to enact multi-fund regulation. Authorities want to decrease the possibility of what they term investment errors, which generally arise from the assumption of excessive investment risk, and help workers who have difficulty for correctly choosing the funds to invest their savings.

In a typical multi-fund regulation, young workers are allowed to invest a higher proportion of their savings in more risky assets (stock funds), while this option is not available for those who are closer to retirement, who can only invest in funds composed of short term bonds, whose value fluctuates little. In Peru, funds for older workers are called funds of

capital maintenance, and they are available for those aged 60 and over; balanced or mixed funds are available for persons between 45 and 60 years of age; and funds of growth are only available to the younger population.⁷

Typically, the countries that have adopted the multi-fund strategy allow workers to change funds within a particular pension fund manager (PFM) without being charged a commission. The countries that guarantee a minimum return have been under pressure to extend the regulation to multi-funds.⁸ To do so, they would need to address behavioral issues regarding how individuals respond to the complexity of a pension plan when making their investment decisions. This new trend, which began only several years ago, aims to adopt regulations that set limits to the choices that workers and retirees can make to reduce the incidence of seemingly obvious errors that are made systematically by a large number of individuals. These regulations include establishing defaults and restrictions on the investment choices of workers depending on their age: typically, older workers can only invest in safer assets, while younger workers are induced or allowed to invest in more risky assets with greater long term perspectives for higher return. Table III.3 summarizes the use of these restrictions in Chile, Mexico and Peru.

There also can be significant effects from the way information is regulated. Plan features such as automatic enrollment, automatic cash distributions, employer matching provisions, eligibility requirements, investment options, and financial education can have large effects on the value of pensions. Thaler (2001) has surveyed the field. This points out to a series of empirical results that affect the choice of pension funds and retirement options. This has led to policy proposals that aim to achieve large effects on behavior at a small cost, when the government or a regulator can identify systematic errors made by the population. These proposals have come under the

headings of “liberal paternalism (Thaler and Susstein 2003), “regulation for conservatives” (Camerer, et al 2003) and others.

Employees often follow “the path of least resistance” (Choi, Laibson, Madrian and Metrick 2002), meaning that workers tend to accept the default choices made by regulators or employers (in their role of fund managers). Another example of accepting the defaults is that workers tend to divide their savings evenly among options. Thus if there are N options, workers assign 1/N of the resources to each option (Thaler and Benarti 2001). This has become an issue for countries where private savings are an important part of social security, because it has become necessary for regulators to define these default choices. Strategies such as the Chilean “Multi-funds” regulation are based upon this issue (see Table III.3).

A different feature of the psychology and economics literature refers to how individuals define their own welfare in terms of how it relates to others. Now we talk about “errors” individuals make on defining their future preferences: 1) individuals do not correctly assess the consequences of their actions and may be somewhat “myopic”; 2) the way in which options are presented (“framed”) crucially affects the choices made by individuals, even if no modifications are made to the options; and, 3) individuals may face problems of self-control that make them incapable of committing to a long term plan of action (e.g. they may procrastinate taking action). The issues presented in Rabin (1998) have brought a fresh insight into issues that have appeared ambiguous in the evaluation of pension systems. For example, none of us truly questions that society cannot accept that a large share of its members falls into poverty at old age, but we are not sure about why many of us find ourselves in that situation. It is not clear how profound the influence of the psychological approach to economics will be on social security programs. Certainly, there seems to be an unstated

⁷ <http://www.sbs.gob.pe/portalsBS/spp/Multifondos/multifondos.htm>

⁸ http://www.fiap.cl/prontus_fiap/site/edic/base/port/articulos.html#20070102155434

assumption in all countries saying that in fact many persons are myopic, make errors or lack self-control. The main question is: How can we develop a social security regulatory system that can better address these issues?

III.4.6 Competition Policy

Competition policy has become a tool of state action to the extent national pension systems have been reformed to allow a capitalized, privately managed segment, a process that accelerated the growth of private pensions. Competition policy avoids the use of direct restrictions on the behavior of providers, aiming to guarantee entry to markets and eliminate the creation and use of monopoly power. To the best of our knowledge, to this date significant antitrust action has not been taken against pension funds in the Americas. Often, pension markets are evaluated by competition authorities in relation to mergers by financial institutions. However, we have not been able to find a significant antitrust case affecting pension fund managers as such.

Nevertheless, perhaps the most discussed issue after the reform to pension systems in Latin America refers to the level of commissions. For example, in 2006 the Mexican Federal Competition Commission issued an opinion to Congress on the need to introduce legislation to promote competition (*Comisión Federal de Competencia* 2006). A proper evaluation of competition conditions in pension systems appears to be an assignment yet to be completed.

III.4.7 Recommendations

Regulatory agencies face “traditional” challenges of overseeing the fair and safe investment of funds, and the adequate application of the laws on contributions and benefits. However, new challenges are arising from the real behavior of workers. Workers are not financial experts, and their decisions are subject to biases that can affect the ultimate

goals of the pension system. New research on the manner in which decisions are made is affecting regulation, and more research will have to be performed to gain better understanding of the saving decisions of workers and the best way in which regulations can support those decisions.

III.5 Social Approach: Adequacy of Coverage and Benefits

Discussion on the desirable aspects of pension systems leads to consideration of the question of the manner in which society evaluates pension programs. From a social perspective, pension systems can be examined in relation to access to the pension insurance and the adequacy of benefits. Indicators of coverage show how many people are entitled to pension benefits. Indicators of the level of benefits allow assessment of whether people have acceptable standards of living, which is usually measured with respect to an income of reference, such as average wages. In LAC it is particularly difficult to analyze these indicators due to fragmentation, which makes corresponding records from different social security agencies difficult to obtain (see Section IV.2.3 in CISS 2007).

Most social security pension systems in LAC originated as fragmented PAYGO schemes for specific groups of workers. They gradually expanded their coverage during the past several decades hoping for a reduction in the number of informal sector workers and the achievement of universal coverage. However, coverage has not reached the expected levels mainly due to lack of tax compliance and voluntary non-affiliation to social security (CISS 2004a, World Bank 2007a). Most pension reforms implemented since the 1980's have been aimed at increasing the financial sustainability of the systems, and increasing coverage by encouraging workers to affiliate by showing them a clearer link between contributions and benefits. These types of reforms in LAC preserve the state income guarantee, but allow competition in the provision market⁹ (Martínez 2006, p.32).

⁹ Annuities.

Table III.3
 Main Issues in Multifunds

	Starting date	Guarantee of minimum rate of return	Balance transfers between funds	Eligibility rules to choose a fund		Name of fund	Investment limit in stocks		Distribution of investment between funds (percentage; to July 2007)	Distribution of affiliates' accounts between funds (percentage; to July 2007)	Default rules applied to the name of the fund
				Age cohort	Fund		Upper	Lower			
Chile	In 2000, PFM's offered two types of funds, one allowing investment in stocks and one allowing only investment in bonds. Since 2002, PFM's have been allowed to offer three additional types of funds.	YES	Affiliates may transfer their balance between funds of the same PFM no more than twice a year without cost. If the affiliate exceeds this number, a commission can be charged.	1) Men <= 55 and women <= 50	A, B, C, D or E	A	80	40	22.36	12.03	--
				2) Men > 55 and women > 50	B, C, D, or E	B	60	25	23.13	40.24	Men and women <= 35 years
				3) Pensioners	C, D or E	C	40	15	43.10	38.3	Women between 36 and 50 years; men between 36 and 55 years
						D	20	5	10.11	8.85	Women >= 51 years; men >=56 years
						E	0	0	1.30	0.59	--
								TOTAL: USD\$110,118 million ^{3/}	TOTAL: 8.75 million accounts ^{2/}		
Mexico	In 2005, PFM's offered two types of funds: Siefore Básica 1 (SB1) and SB2. Since March 28, 2008, PFM's have offered three additional types of funds.	NO	Affiliates may transfer their balance between funds of the same PFM without any restriction or cost.	Both sexes:		SB1	0	--	10.14	38	>= 56 years
				1) >= 56 years	SB1	SB2	15	--	89.86	62	Between 46 and 55 years
				2) Between 46 and 55 years	SB1 or SB2	SB3	20	--	--	--	Between 37 and 45 years
				3) Between 37 and 45 years	SB1, SB2 or SB3	SB4	25	--	--	--	Between 27 and 36 years
				4) Between 27 and 36 years	SB1, SB2, SB3 or SB4	SB5	30	--	--	--	<= 26 years
				5) <= 26 years				TOTAL: USD\$73,469 million	TOTAL: 37.53 million accounts		
Peru	Since 2005, PFM's have offered three types of funds.	YES ^{1/}	For affiliates older than 60 years of age or those who have chosen programmed withdrawal for retirement		Fund 1	Fund 1, of capital maintenance or conservative	10	--	4.74	N.A.	>= 60 years
					Fund 2 o 3	Fund 2, balanced or mixed	45	--	75.45	N.A.	< 60 years
					<= 60 years	Fund 3, of growth	80	--	19.81	N.A.	--
								TOTAL: USD\$19,872 million	--		

N.A = not available. Notes: 1/The minimum guaranteed rate of return was replaced by a new system based upon reference indicators or benchmarks. If the rate of return is lower than the benchmark, the PFM must cover the differential with its own resources. 2/To March 2008. 3/To December 2007.

Source: Own elaboration based on FIAP 2007, CONSAR 2008, and CIEDESS 2008.

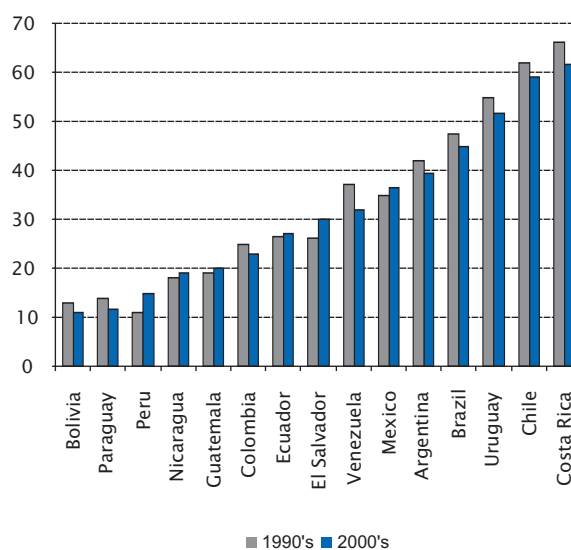
III.5.1 Measures of Coverage and Benefits

One way of measuring pension coverage is by administering household surveys to collect personal, labor market, and expenditure data, which can be examined to determine the distribution of coverage and income in populations with specific characteristics. Such data in LAC, however, do not always include disaggregated income variables and labor market histories of individuals. Using household surveys Rofman (2005) and Rofman and Luccetti (2006) examine coverage by gender and rural/urban areas of residence across LAC countries. These studies found lower coverage among women and rural areas. Several other studies have also documented low coverage levels (CISS 2004a, ECLAC 2007, and IADB 2003¹⁰). Rofman and Luccetti (2006) found very small variation in pension coverage in LAC between the 90s and this decade (Figure III.1); among the countries they examined the social security coverage of the economically active population (EAP) ranges between 12 and 67%.

Measures of pension benefits are difficult to calculate without individual data on contributions and earnings. One feasible measure is the replacement rate, calculated as the quotient of the average monthly pension benefit over average wages (see below). Notice that average wages of those who pay contributions tend to be higher than average wages of the economically active population because formal sector workers who are in the minority tend to earn incomes within the upper half of the income distribution of a country (Palacios and Pallares-Miralles 2000).

In Table III.4 indicators of social security coverage and benefits (replacement rates) for 2004-2006 are presented for Brazil, Costa Rica, the Dominican Republic, and Mexico.¹¹ Social security coverage is measured as: 1) the number of affiliates (contributors and their dependants) with respect to total population; 2) the number of social security contributors with respect to the economically active population (EAP), and 3) the number of old-age pensioners with respect to population aged 60+.

Figure III.1
Social Security Coverage of Total Population in LA Countries, 1990s and 2000s



Source: Rofman and Luccetti 2006

¹⁰ This study focuses on labor market features in Latin America.

¹¹ Using information of CISS member institutions.

Coverage remains constant in the countries under analysis between 2004-2006, regardless of the definition used, except for the Dominican Republic as coverage rises from 10% (2004) to 17% (2005) and 21% (2006), under definition 2. From definition 1, column 1 shows coverage in relation to total population during the period, which is about 33% in Brazil, 70% in Costa Rica, 15% in the Dominican Republic, and 54% in Mexico. From definition 2, if coverage is measured as the number of contributors in relation to the EAP, column 2 shows coverage rates of about 43% in Brazil, 60% in Costa Rica, 10-21% in the Dominican Republic and 45% in Mexico.

Coverage of older adults is presented in column 3. In countries with a large number of non-contributive pensions such as Brazil it is of about 76%. Decomposition of old-age coverage rates into social security and non-contributive pensions' coverage is presented in Figure III.2. Mexico also has non-contributive pension programs for the elderly but the increase in non-contributive pension coverage was not expected until 2007.¹²

It may not be appropriate to conclude that the social security agencies that were created to insure only a specific group of workers are not performing well in terms of total coverage in a country, as these

Table III.4
Coverage and Benefits of Social Security Pensions, Selected Countries: 2004-2006

		Coverage ^{1/}			Replacement rates (average pension/average wages) ^{3/}					
		Percentage of total Population ^{2/} (1)	Percentage of the EAP (2)	Percentage of older adults in population (3)	Old- age (4)	Disability (5)	Workers' compensation (6)	Survivors		
								Widows (7)	Orphans (8)	Other ^{4/} (9)
Brazil	2004	32	42	76	85	57	72	N.A.	N.A.	N.A.
	2005	33	43	76	84	58	73	N.A.	N.A.	N.A.
	2006	33	44	74	83	59	72	N.A.	N.A.	N.A.
Costa Rica	2004	69	60	27	59	42	N.A.	29	16	20
	2005	71	59	27	75	53	N.A.	36	20	24
	2006	72	63	26	61	42	N.A.	29	16	19
Dominican Republic	2004	13	10	N.A.	N.A.	94	N.A.	30	27	--
	2005	15	17	N.A.	N.A.	46	N.A.	25	28	--
	2006	17	21	N.A.	N.A.	51	N.A.	28	28	--
Mexico	2004	52	44	23	35	25	28	28	8	8
	2005	54	45	24	38	27	30	30	9	8
	2006	56	47	25	40	27	31	31	9	8

N.A. = not available.

Notes: 1/Coverage in the countries correspond to the general regime; in Brazil it includes the own regimens (public, civil, and military servants). 2/Data include the dependants of the active affiliates, when this information is available. 3/Average replacement rate defined as the average monthly pension of the affiliates to the general regime (salaried workers) as a proportion of national average monthly wages. In Costa Rica, the reference wage is the social security contribution wage for the population aged 15 to 59. 4/In Costa Rica it refers to parents and siblings, in Mexico to parents.

Source: Own elaboration using information gathered from CISS member institutions. ILO (2004-2006) for the EAP in Costa Rica. Population data for the Dominican Republic were obtained from the following source: http://www.one.gob.do/index.php?option=com_docman&task=cat_view&gid=5&Itemid=122.

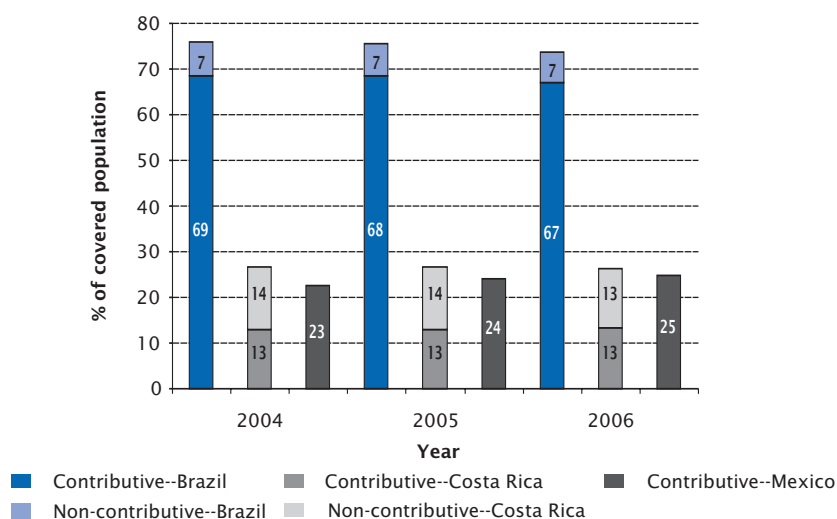
¹² Most non-contributive old-age pensions provided by SEDESOL started in 2006. Another program in Mexico City started earlier.

agencies are indeed providing pensions to the population they are intended to insure. Several studies have concluded that a revision of the fragmented design of pension systems' is needed to increase coverage in LAC (Rofman 2005) and that complementary pension programs must be integrated to avoid duplication and inefficiency (CISS 2007).

Columns 4 to 8 in Table III.4 display the calculated pension replacement rates in relation to average wages of each country. Average replacement rates of old-age pensions in 2004-2006 are of around 84% in Brazil, 59-75% in Costa Rica, and 38% in Mexico. Replacement rates for disability pensions (column 5) are of around 57% in Brazil, 42-53% in Costa Rica, 46-

94% in the Dominican Republic—variation due to inflation rates—and of about 27% in Mexico. Workers' compensation replacement rates¹³ (column 6), which are higher than the disability rates, are around 72% in Brazil and 30% in Mexico. For some of these countries benefits for widows and orphans have also been reported in columns 7 and 8. In Costa Rica, the Dominican Republic, and Mexico, replacement rates for widows are about 25% to 35% with respect to the wages of each country. The replacement rates for orphans are lower than those for widows because in these countries a stipulated amount of benefits should be divided among the number of beneficiary children.¹⁴

Figure III.2
Old-Age Pension Coverage (Contributive and Non-Contributive Regime) of the Population 60+ in Selected LAC Countries^{1, 2}



Notes: 1. Old-age coverage refers to the population aged 60 years and over, including non-contributive programs. 1/Contributive coverage in Brazil includes the so-called "own regimes" (public, civil, and military servants). It neither includes the category "pensioners," special pensions (per Law no. 593/48), or retirees from the extinct CAPIN classified under the category "others" (General Regime), nor the category "pensions" (Own Regimes). In Costa Rica and Mexico contributive coverage refers to the general regime (salaried workers). 2/Non-contributory coverage in Brazil is for 2007; in Costa Rica to the period 2003-2008; in Mexico the program was started by SEDESOL in 2006.

Source: Own elaboration using information of CISS member countries, ILO 2004-2006 for the distribution of the population aged 60+ in Costa Rica.

¹³ It includes pensions and non-monetary benefits.

¹⁴ In Mexico, the replacement rates for orphans reported in Table III.4, column (8), correspond to the average benefit per orphan.

By examining average monthly pensions relative to average wages we can get an estimate of the adequacy of pension benefits. These figures show that there is no unique pension level appropriate for all countries; the appropriate level depends upon the number of contributions made, wages earned, the manner in which pensions are taxed, mortality rates, rules for pension calculation, and returns on invested funds. However, it should be noted that such replacement rates partially represent standards of living. Therefore, if benefits are fixed in USD a relatively

high replacement rate of 90% in one country may be equivalent to a much lower replacement rate in another. To analyze this phenomenon in detail, it is helpful to examine old-age and disability pensions in relation to U.S. pensions, which are shown in the lower rows of Tables III.5 and III.6. While Canada has higher replacement rates than does the U.S., the remaining countries have considerable lower replacement rates due to variations in the generosity of pension systems and prices.

Table III.5
Average Monthly Old-Age Pension, Selected Countries: 2004–2007

Monthly Average Pension in Nominal USD					
Year	United States	Canada	Mexico	Brazil	Costa Rica
2004	\$951.25	\$1,260.39	\$134.04	\$195.34	\$249.04
2005	\$998.50	\$1,280.55	\$158.55	\$267.67	\$323.34
2006	\$1,041.05	\$1,303.92	\$166.34	\$309.42	\$290.02
2007	\$1,053.70	\$1,332.15	\$193.77	\$362.54	\$333.97
In Relation to U.S. Old-Age Pensions (%)					
2004	100	132	14	21	26
2005	100	128	16	27	32
2006	100	125	16	30	28
2007	100	126	18	34	32

Source: Own elaboration using information gathered from CISS member institutions, Statistics Canada, and SSA 2004-2007.

Table III.6
Average Monthly Disability Pension, Selected Countries: 2004–2007

Monthly Average Pension in Nominal USD					
Year	United States	Canada	Mexico	Brazil	Costa Rica
2004	\$883.50	\$994.59	\$96.98	\$130.87	\$178.74
2005	\$928.05	\$1,012.05	\$112.38	\$185.08	\$228.00
2006	\$968.60	\$1,032.91	\$113.67	\$220.96	\$200.59
2007	\$1,021.20	\$1,055.67	\$128.04	\$263.53	\$229.66
In Relation to U.S. Disability Pensions (%)					
2004	100	113	11	15	20
2005	100	109	12	20	25
2006	100	107	12	23	21
2007	100	103	13	26	22

Source: Own elaboration using information gathered from CISS member institutions, Statistics Canada, and SSA 2004-2007.

III.5.2 Recommendations

Based upon the information presented thus far, social security agency are recommended to:

- Construct data sets with the information needed to study social security coverage trends, especially when pension systems are fragmented, as total coverage figures may remain unknown in much of LAC.
- Analyze whether the goals of the pension system have been reached, and identify what has been the role of implemented reforms across the region for in addressing concerns related to the assessment of proposed pension system reforms.
- Review the design of pension systems in LAC as fragmentation and low levels of coverage remain in spite of costly structural reforms.

III.6 Economic Approach: the Effects of Pensions

An economic evaluation approach focuses on the impact of government interventions, typically that of a pension system reform on economic outcomes of interest, such as labor market choices (i.e. labor force participation and retirement), consumption and saving choices, and related aggregate variables, including wages and rates of employment, saving, and poverty. This approach attempts to provide insights into developing effective pension policy interventions. The methodologies used to perform an economic evaluation of pension programs are mostly based on micro-econometric analyses, some of which have been described by Angrist (1999), Blundell and Costa-Dias (2002), Heckman and Robb (1985), and Heckman, et al. (1997 and 1999).

At the center of an economic evaluation is the comparison of the outcome of interest among people who have been treated by an intervention (a treatment group) and people who have not been treated (a control group); for example, those who have been affected by a change in pension rules and those who have not. This is, however, a difficult task because rigorous impact evaluations usually require special

data collection for the event under study. When it is econometrically possible to identify the desired effect, such as that of social security pensions on saving, usually under certain assumptions, causality is believed to have been established, such as the conclusion that saving is affected by social security pensions. This Section reviews econometric analysis in the study of pension systems in LAC and their effects on labor market and saving outcomes.

III.6.1 Effects of Pensions on Labor Market Outcomes

This section addresses the following considerations: Do contributions to pension programs have significant effects on employment and wages? Do pensions affect the decision of working in the formal sector? How does accrued pension wealth affect the age at which people retire?

Employment and Wages

The relation between social security and employment and wages has been studied to assess the costs of regulation. It has been argued that social security is based on strict employment regulations that may penalize employers by increasing their production costs. In consequence the main hypothesis has been that the level of employment and the wages paid are reduced when employment protection policies are implemented. Some references on this topic are Heckman and Pagés (2005)—and all the studies therein, Garro and Melendez (2004), CISS (2003), and Marrufo (2001). The main finding of these studies for several LAC countries is that contributions to social security have indeed had a negative effect on wages and employment, to the extent that contributions are perceived as taxes instead of benefits.

Retirement

The literature on retirement in developed countries has greatly expanded over the last three decades as societies have perceived retirement ages as excessively young. Most studies understand retirement as a transition between full time work to

either partial work or inactivity. Several theoretical models have been developed to explain the decision of stop working. Early models assume static framework, perfect capital markets and income uncertainty; some examples are: Boskin (1977), Boskin and Hurd (1978), Burkhauser (1979, 1980), and Gordon and Blinder (1980).

In more recent dynamic models of retirement it is affected by the present value of income streams at the time of retirement. These models have been used to examine the influence of social security programs on retirement decisions (Burbidge and Robb 1980, Burtless and Moffit 1984 and 1985, Fields and Mitchell 1984, Stock and Wise 1990).

Surveys on the effects of public and private pensions on retirement in developed countries are presented in Atkinson (1987), Lazear (1986), Lumsdaine (1996) and Lumsdaine and Mitchell (1999). A generalized result in studies that focus on the effects of pensions in OECD countries is that social security provides strong disincentives to participate in the labor markets at old age; mainly due to pension schemes' generosity (Gruber and Wise 1999, 2004, Duval 2003).

Among the few studies that examine labor force participation and retirement decisions in LAC are Aguila (2006), Miranda-Muñoz (2007), and Lanza-Queiroz (2008). The first two studies corroborate that higher pension wealth reduces participation in the labor market. A relevant issue in developing countries is the fact that pensioners can take up a job in the informal sector after claiming their pensions. As a consequence of informality the retirement age is not likely to be equivalent to the pensionable age, as in developed countries.

III.6.2 Micro and Macroeconomic Effects of Pensions on Saving

The life-cycle model (Modigliani and Brumberg 1954, Deaton 1992) provides the economic framework to examine savings behavior. The hypothesis of this model is that individuals smooth their consumption during their lives by increasing their savings when young to use them when old. One derived hypothesis that has been examined by several authors is that compulsory saving in the form of pensions might reduce other forms of saving (Feldstein 1974). Aguila (2006) and Charles (2005) find a reduction in saving for individuals in Mexico¹⁵ and Argentina, respectively, as a consequence of the pension system reform.

The literature on pensions and saving considers that it is through increased private saving in the pension system that economic growth is spurred, which indirectly affects the well-being of individuals. After the wave of pension reforms in LAC, some authors have suggested that total saving in a fully funded pension system should increase (Schmidt-Hebbel and Servén 2001). Chapter III in CISS (2003) has been devoted to examine this topic and provides evidence for several LAC countries.

The life cycle framework has also been used to study the effects of reforms on consumption patterns and GDP growth rates (see for example in Kohl and O'Brien 1998 an exercise of the effects of hypothetical reforms in OECD countries using general equilibrium¹⁶ models). Studies on the effects of pensions on the poverty of families in developing countries are scarce. Schwarzer and Querino (2002) and Scott (2005) examine the topic for Brazil and Mexico, respectively. These studies emphasize that the availability of pensions prevents people from poverty at old-age, although pension systems can be regressive.¹⁷

¹⁵ For more details on the Mexican pension system reform see Sales, et al (1996) and Solís and Villagómez (1999).

¹⁶ These models attempt to explicitly account for second order effects.

¹⁷ When they offer higher protection to the rich.

III.6.3 Recommendations

- Promote training in economic evaluation methodologies for rigorously assessing the effects of pension reforms.
- This in parallel implies the effort of collecting the best possible data to apply such methodologies.
- Advocate the use of formal and credible economic evaluations in pension policy debates.