The performance of social security contributory and tax-financed pensions in Central America, and the effects of the global crisis

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Abstract Over the last 30 years, Latin America has pioneered structural pension reforms. This article focuses on a representative regional sample of seven Central American countries with diverse levels of development (Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama) studying contributory and tax-financed pensions as well as recent pension reforms. It comparatively assesses system performance regarding five social security principles: unity; universal coverage; adequacy of benefits; equal treatment, solidarity and gender equality; and financial sustainability. It also evaluates the impact of the world crisis on these pension systems, highlighting the differences between public and private pensions, and extracts lessons and suggests policies for the future.

Keywords gaps in coverage, social category, social security financing, social solidarity, comparison, Central America

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Introduction

In the last three decades, 11 of the 20 Latin American countries implemented structural contributory pension reforms, which completely or partly transformed the social insurance "public" system into a "private" system. In 2008-2010, three "re-reforms" returned the private system to the public sphere or substantially modified it. In addition, some public pension systems have been strengthened by parametric reforms. In recent years, taxed-financed pensions have expanded rapidly. This article focuses on the Central America sub-region, little analyzed in the literature: Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama and English-speaking Belize. These seven countries have dissimilar levels of development as well as different types of pension systems and pension reforms: Costa Rica, El Salvador and Panama implemented diverse structural reforms; Nicaragua approved and annulled a structural reform; whereas Belize, Guatemala and Honduras retain public systems. Here, the performance of the seven countries is comparatively assessed with regard to five social security principles: unity; universal coverage; benefit adequacy; equal treatment, social solidarity and gender equity; and financial sustainability.

Pension systems that have undergone structural reforms ("private") are characterized by defined contributions, non-defined benefits, fully-funded financing and private administration, whereas "public" systems are characterized by non-defined contributions, defined benefits, pay-as-you-go or collective-partial-funding and public management. There are three distinct structural pension reform models: i) the "substitutive" model — in Chile, Bolivia (until 2010), Mexico, El Salvador and Dominican Republic — that closes the public system (not allowing new affiliates) and privatizes provision; ii) the "parallel" model — in Peru and Colombia — that keeps the public system, but also creates a private system and the two compete for affiliates (no other countries elsewhere have followed this model), and; iii) the "mixed" model — in Argentina (until 2008), Uruguay, Costa Rica and Panama — that combines a public "first pillar" that grants a basic pension and a private "second pillar" that offers a supplementary pension.

In Latin America, the percentage of the insured population covered by the privatized system varies from 43 per cent of all insured in Uruguay to 100 per cent in Mexico. Among Latin American countries, the Central American state of El Salvador has the third highest level of the total insured population covered by a privatized system (96 per cent): the reform forced all younger workers insured under the public system to move to the private system while older insured workers were left in the public system, and all new insured entrants to the workforce must join the private system. Costa Rica is unique as all insured employees and self-employed workers must be members of the public pillar that pays the main social insurance pension, while insured employees must also contribute to the private pillar that pays a minor supplementary pension. Hence, in Costa Rica, the use of the term “private” is not entirely appropriate. In Panama, young workers insured under the public pillar must request expressly to join also the private pillar of the mixed system, and the degree of privatization is the smallest in Latin American states (Mesa-Lago, 2008a).

Since 2007, there have been no further structural pension reforms in Latin America and in some countries a reversal of existing ones has occurred, partly prompted by the world economic crisis. In 2008, Chile implemented comprehensive changes to improve its private pension system, whereas Argentina shut down its private system and transferred all insured persons and funds to the public system (Mesa-Lago, 2009a). Bolivia has followed the same path as Argentina with a law enacted at the end of 2010. Currently, 11 Latin American countries have pension systems that are entirely public and some of them have introduced parametric reforms. Non-Latin Caribbean countries, such as Belize, Guyana and Suriname, retain public systems.

The author has conceived a taxonomy of social security development that classifies the 20 Latin American countries and Belize into three groups (1-High, 2-Medium and 3-Low), based on the five social security principles outlined above and other socio-economic variables (poverty incidence, informal-sector size). The taxonomy ranked the seven Central American countries as follows: 1-High) Costa Rica and Panama; 2-Medium) none, and 3-Low) Belize, El Salvador, Guatemala, Honduras and Nicaragua (Mesa-Lago, 2011).

This analytical approach, applied in the remainder of this article, also assesses the performance of public and private pension systems and pension reform models with regard to the five principles of social security.

Unity

System fragmentation is widespread in Central America and adversely affects the social security principles: unity and coverage, as a consequence of a lack of coordination between multiple schemes that leads to coverage overlaps and gaps; equal treatment and social solidarity, because separate schemes[1] often enjoy more generous entitlement conditions and benefits than the main national pension programme; and financial sustainability, owing to the high cost of generous conditions and benefits in separate schemes that often provoke actuarial deficit. The most united, thus least segmented, systems have a higher capacity to confront rapidly the adverse impacts of economic crises. This is especially so if the systems integrate contributory and tax-financed pensions (Belize, Costa Rica), which are more able to respond flexibly to rising levels of poverty.

1. See Table 1 for examples of separate schemes.

Table 1. *Ranking by degree of unity/integration of contributory pension systems in Central America, 2010*

Countries	Number of programmes[a]	Separate schemes		
		Armed forces	Civil servants	Others
Panama	1			None
Belize	3	X	X	Self-employed (regime within the main programme)
Costa Rica	3			Judiciary, teaching
Guatemala	3	X	X	None
El Salvador[b]	4	X	X	Private-sector employees
Nicaragua	4	X		Police, war victims
Honduras	10	X	X	Executive, judiciary, congress, teaching, university, central bank, journalism

[a] Includes the major programme; in Costa Rica all insured are in the mixed system that is counted as one programme.
[b] El Salvador has two closed programmes (civil servants and private-sector employees) under one agency, but with diverse conditions/benefits.
Source: Legislation.

Central American pension systems are classified and ranked by their degree of unity/integration, by counting the number of programmes in operation and identifying separate schemes for armed forces, civil servants and other groups (Table 1). Panama is the only system in the sub-region with total unity (i.e. one programme), followed, with declining levels of unity, by Belize,[2] Costa Rica and Guatemala (three programmes), El Salvador and Nicaragua (four programmes) and Honduras (ten programmes). Costa Rica and El Salvador each have a single Superintendence of Pensions that regulates/oversees the entire system (the other five countries lack such a body), which enables these countries to respond more rapidly to crises. No difference was found regarding unity between public and private systems.

Coverage

Economically active population (EAP) pension coverage estimates rely on social insurance statistics or household surveys. The former estimates are lower because they are restricted to measuring coverage under the main programme only, excluding the separate schemes (which is important for countries with segmented

2. Non-Latin Caribbean countries (including Belize) have more unified systems than countries in Latin America.

systems). Across the countries, the number of active insured may be calculated differently according to the contribution period used: one contribution in the last month (Costa Rica, El Salvador) or in the last six months (Panama), or one week in the last year (Belize). The longer the period used, the greater the overestimation of the active insured: it is probably highest in Belize and Panama, whereas coverage is underestimated in Costa Rica and El Salvador. EAP coverage statistics are standardized for private systems (AIOS, 2000-2009) but not for public ones, and coverage data of the elderly (age 65 or older) are scarce. Household surveys can help solve the problems of the omission of active insured persons in separate schemes, the lack of statistical standardization in public systems and the absence of coverage data for the elderly, but they cannot overcome the comparability problem arising from using diverse contribution periods. Moreover, because surveys are normally not undertaken annually, a complete time series is unavailable (Mesa-Lago, 2010).

The EAP coverage figures under contributory pension programmes derived from social insurance statistics for 2000-2009 (Table 2) exhibit trends that permit to assess the impact of the global crisis on coverage levels. Belize, Costa Rica and Panama had the highest levels of coverage (recall the probable overestimation in Belize and Panama), which increased in 2000-2007 (with the exception of Costa Rica for the years 2000-2005). Guatemala, Nicaragua, El Salvador and Honduras (in that order) had much lower coverage and a declining or stagnant trend, except for Nicaragua where coverage grew. In 2008, in spite of the crisis, coverage rose in Belize, Costa Rica and Nicaragua. However, coverage stagnated or declined in the rest. In 2009, the worst year of the crisis, coverage in nearly all countries declined. In that year, coverage in Costa Rica (ranked 1-High) was 3.6 times that of Honduras (ranked 3-Low). The non-weighted average coverage in the seven countries rose from 36.1 to 38.4 per cent in 2000-2008, but decreased to 36.8 per cent in 2009.[3] The decline in levels of coverage in the latest global crisis has been much weaker than under the crisis of the 1980s. On this occasion, the region was better prepared, having stronger national economies and less external debt and economic indicators were less affected than the more-developed countries. For instance, GDP in the region grew 6 per cent in 2010 (ECLAC, 2010).

High levels of coverage for the EAP eventually brings better protection of elderly persons through contributory pensions, and more so if they are also entitled to tax-financed pensions. Coverage of the elderly by both kinds of pensions, based on 2000-2006 surveys (Table 2), was highest in Costa Rica (increasing) and Panama (declining), both countries ranked 1-High. Scattered data indicates coverage was stagnant in El Salvador, was lower in Guatemala, and lower but rising in Honduras

3. Weighted coverage of the seven countries estimated by the author increases steadily from 25.7 per cent in 2003 to a peak of 29.8 per cent in 2007, stagnates in 2008 and then declines to 28.3 per cent in 2009, a fall of 1.5 points after the peak.

Table 2. *Evolution of coverage of the EAP by contributory pensions 2000-2009 and of the population 65+ by contributory and tax-financed pensions 2000-2006, in Central America (percentage)*

Countries	2000	2004	2005	2006	2007	2008	2009
EAP[a]							
Belize	64.0	67.9	64.3	70.0	65.7	69.2	62.3
Costa Rica	50.3	48.0	47.5	50.4	53.7	57.9	56.2
El Salvador	19.3	17.7	17.7	18.7	19.1	19.1	18.8
Private	18.3	17.2	17.3	18.4	18.8	18.8	18.6
Public	1.0	0.5	0.4	0.3	0.3	0.3	0.2
Guatemala	24.3	23.1	22.8	22.4	22.6	21.8	21.1
Honduras	18.3	17.1	18.1	17.1	18.3	17.8	15.8
Nicaragua	17.4	17.2	18.5	20.3	20.9	21.5	19.8
Panama	59.2	53.2	55.4	59.8	62.9	62.1	64.0
Averages[b]	36.1	34.9	34.9	37.0	37.6	38.4	36.8

Countries	2000	2001	2002	2003	2004	2005	2006
Population 65+[c]							
Costa Rica	55.6	57.4	59.6	n.a.	60.1	62.0	59.2
El Salvador	14.5	14.5	15.7	13.9	14.6	n.a.	16.2
Guatemala	11.2	n.a.	n.a.	n.a.	n.a.	n.a.	15.4
Honduras	3.1	4.7	4.7	4.6	n.a.	n.a.	5.3
Panama	45.0	41.1	42.5	41.9	41.7	41.5	41.7
Averages[b]	25.9						27.5

[a] Coverage from social insurance statistics; active insured in Belize are affiliates who contributed at least one week annually, and coverage is overestimated; in Costa Rica and El Salvador, those who contributed in the last month.
[b] Non-weighted averages.
[c] Coverage from household surveys.
Sources: Coverage of EAP based on BSSB (2009, 2010); CCSS (2008, 2009a); SP (2001-2009a), ISSS (2009); IGSS (2007, 2008a, 2008b, 2009a); IHSS (2007, 2009); INSS (2008, 2009a, 2009b); CSS (2009a, 2009b). Additional data for 2002-2009 taken from Central Bank Internet sources. Unpublished data provided by Caja del Seguro Social, Panamá; and Instituto Hondureño de Seguridad Social, Honduras. Coverage of population 65+ based on Rofman, Luccetti and Ourens (2008). No data on Belize and Nicaragua, and after 2006.

(no data available for Nicaragua). Coverage in Costa Rica (1-High) was more than ten times that of Honduras (3-Low). Averages for the five countries for which data are available indicate that coverage of the elderly rose from 25.9 to 27.5 per cent in 2000-2006, which is still very low. The impact of the crisis cannot be assessed

Table 3. *Ranking of systems by pension coverage of EAP and population 65+, informality and poverty incidence, in Central America, circa 2006 (percentage)*

Countries[a]	Coverage EAP[b]	Coverage pop. 65+[c]	Informal sector[d]	Poverty incidence[e]
Costa Rica	62.7	59.2	32.2	19.0
Panama	45.0	41.7	36.3	30.8
El Salvador	29.1	16.2	49.6	47.5
Guatemala	26.8	15.4	51.6	60.2
Honduras	20.1	5.3	54.2	71.5
Nicaragua	18.5	n.a.	55.5	69.4
Averages[f]	33.7	27.6	46.5	49.7

[a] Ranked by the arithmetic average of the four indicators; no data available on Belize.
[b] Covered by contributory pensions.
[c] Covered by contributory and tax-financed pensions.
[d] Percentage of urban employed EAP.
[e] Percentage of total population.
[f] Non-weighted average.
Sources: Columns 1-2, from household surveys, see Rofman, Luccetti and Ourens (2008); columns 3-4, from ECLAC (2008).

because household surveys taken in 2007-2009 had a different methodology and cannot be connected to the series in Table 2. Nevertheless, they suggest minor increments in coverage in El Salvador, Guatemala, Honduras and Panama (Mesa-Lago, 2011).

Several factors influence coverage levels of the EAP and the elderly. In the least-developed countries (3-Low), the informal sector comprises most of the EAP: self-employed, unpaid-family, domestic and micro-enterprise workers, who are often unskilled with low levels of productivity and without an employer (often, those who do have an employer evade registration and the payment of contributions). Besides, these countries have a significant proportion of non-salaried, rural workers who also lack an employer. Poverty afflicts most of the population. All these population segments are excluded from social insurance coverage (van Ginneken, 2010). Table 3 (based on more accurate survey data) shows that in 2006 the coverage levels of both the EAP and the elderly population declined as the informal sector and poverty incidence increased, and vice-versa. Costa Rica and Panama (the most developed of the seven, 1-High) had the highest levels of coverage of the EAP (respectively, the first and fifth in Latin America) and the elderly, as well as the smallest informal sector and lowest poverty incidence. Conversely, Honduras and Nicaragua (the least developed of the seven, at the bottom of 3-Low) had the lowest coverage of the EAP (respectively, 14th and 15th in the region) and the elderly, as well as the highest levels of informality and poverty. A regression analysis indicated that for every 1 per cent increase in informality, the EAP coverage for pensions fell by 1 per cent, whereas for each 1 per cent increase in poverty incidence, coverage shrank 0.33 per cent (Mesa-Lago and Castaneda-Angarita, 2010).

The countries operating more unified systems (Panama, Costa Rica and Belize) have higher coverage than those with highly segmented systems (Honduras). The type of structural reform implemented appears to have affected coverage in diverse ways. In El Salvador coverage fell from 26 per cent in 1998 (prior to its substitutive structural reform) to 17.7 per cent in 2004, and although it rose to 19 per cent in 2007 was still 7 percentage points below the pre-reform level. Conversely, in Costa Rica coverage decreased from 50.3 per cent in 2000 (prior to its mixed structural reform) to 48 per cent in 2004 but later rose, eventually recovering the previous level in 2006 and exceeding it by 7 points in 2008. Coverage in Costa Rica's public pillar in 2009 was three times that of the two Salvadorian systems combined (Table 2).

Social security policies play a key role in coverage also. Costa Rican self-employed workers are covered mandatorily and those with low income receive a fiscal subsidy in lieu of the employer's contribution; 44 per cent of agricultural workers are covered; 43 per cent of the non-salaried EAP had pension insurance in 2008, and most of the elderly are protected, aided by tax-financed pensions (INEC, 2008). Conversely, in El Salvador, Guatemala, Honduras and Nicaragua about 80 per cent of the EAP and 84-95 per cent of the elderly are excluded. In these countries, social insurance provisions have been unable to incorporate informal and non-salaried rural workers and, until recently, tax-financed pensions did not exist; this is still the case in Nicaragua. The self-employed are excluded in Honduras and have voluntary affiliation (which is ineffective) in the other three countries. In Nicaragua, 0.8 per cent of the total insured population was covered voluntarily in 2008 and only a small part were self-employed although they represent up one-third of the urban employed EAP (INSS, 2009a). In El Salvador and Guatemala, compulsory coverage is restricted to workers in large plantations, whereas in Honduras it is only those in agricultural enterprises with more than ten employees. Hence, for these three countries, just 2 to 6 per cent of all agricultural workers are affiliated (Mesa-Lago, 2008b). Although the crisis has not provoked a significant decrease in coverage, a possible growth in the number of informal workers would reinforce existing barriers to affiliation.

Adequacy of benefits

The retirement ages to receive a contributory pension are highest in Honduras (65 for men; 60 for women), despite having the shortest life expectancy at retirement. Conversely, in Panama the retirement ages are low (62 for men; 57 for women) relative to their retirement life span, particularly for women (Table 4). In El

Table 4. *Entitlement conditions and calculation of the old-age pension, and adjustment of pensions to inflation, in Central America, 2010*

Countries	Retirement age (years)[a]	Contribution (years)	Base salary (years)	Adjustment to inflation
Belize	64/60[b]	10	3 best	Discretional
Costa Rica	65	25	20 latest	CPI
El Salvador	60/55[b]	25	10 latest	Discretional
Guatemala	60	15	5 latest	Discretional
Honduras	65/60[b]	15	3-5 best	Discretional
Nicaragua	60	15	5 latest	Discretional[c]
Panama	62/57[b]	15	7-10 latest	Discretional

[a] In the general system; separate schemes have lower retirement ages and fewer contribution years.
[b] Men and women.
[c] Annual adjustment to currency devaluation equal to less than half the inflation rate.
Sources: Legislation; and SSA/ISSA (2010).

Salvador the retirement age is 60 for men and 55 for women, but the private system allows earlier retirement if the sum accumulated in the individual account is sufficient to finance 160 per cent of the minimum pension. However, only a minority of the insured population has income and contribution density sufficient to finance a pension with an adequate replacement rate. Most countries require at least 15 years of contributions to be eligible for a pension, except in Belize where it is 10 years (too short)[4] and in Costa Rica and El Salvador where it is 25 years (the third longest period in Latin America). The majority of countries calculate the base salary used in the pension calculation as the average of the best or previous 3 to 5 years before retirement, a too-short period. The replacement rates usually exceed the International Labour Organization (ILO) minimum norm of 40 per cent. Entitlement conditions above international standards are financially unsustainable and, if not tightened, could induce serious financial-actuarial imbalances.

Costa Rica has the strictest eligibility conditions (age 65 with 25 years of contributions and a base salary calculated on the last 20 years), but is the only system that adjusts pensions to the consumer price index (CPI); in the rest, the government or social insurance agency has discretionary power to adjust the pension, subordinated to available resources. Panama has generous entitlement conditions, but lacks a periodic adjustment of benefits. During the crisis of the 1980s, the average contributory pension fell drastically in most Latin American countries, while it increased steadily in all in 2000-2009, albeit with great variety. For

4. The ILO Social Security (Minimum Standards) Convention of 1952 (No. 102) suggests at least 15 years of contributions.

Table 5. *Average monthly contributory pension in 2000-2009, and monthly minimum and tax-financed pensions circa 2008, in Central America (in USD)*

Countries	Average monthly contributory pension[a]							Monthly pension	
	2000	2004	2005	2006	2007	2008	2009	Minimum	Tax-financed
Belize	72	100	99	107	114	132	152	94	50
Costa Rica	138	152	161	174	205	240	286	190	118
El Salvador									
Public	167	218	231	233	238	241	259	143[b]	50
Private	n.a.	n.a.	n.a.	266	n.a.	n.a.	278		
Guatemala[c]	51	58	63	66	70	74	85	55	50
Honduras	24	42	43	46	57	58	84	85	No
Nicaragua[d]	55	74	79	86	94	114	120	78	No
Panama	298	326	333	352	372	373	385	175	100

[a] Weighted average of old-age, disability and survivor pensions.
[b] Old-age; disability is smaller.
[c] Author's estimate based on total amount paid in all pensions, number of pensioners and US dollar exchange rate.
[d] Includes all pensions: normal, specials, war victims, etc.; the minimum pension is the normal, others are smaller.
Notes: Conversion to US dollars based on the official exchange rate.
Sources: Based on BSSB (2009, 2010); CCSS (2001-2008, 2009a); SUPEN (2009b); SP (2009a); ISSS (2009); IGSS (2008b, 2009b, 2009d); IHSS (2007); INSS (2009a); and CSS (2009a, 2010). Unpublished data provided by Caja Costarricense de Seguro Social, Costa Rica; Instituto Guatemalteco de Seguridad Social, Guatemala; and Instituto Hondureño de Seguridad Social, Honduras.

instance, pensions were equivalent to USD 385 in Panama and USD 286 in Costa Rica vis-à-vis USD 85 in Guatemala and Honduras (Table 5). In 2003-2009, the average pension adjusted for inflation rose 42 per cent in Costa Rica, but decreased by 4 per cent in El Salvador and 2 per cent in Panama (Mesa-Lago, 2011). Structural reformers promised that private pensions would be substantially higher than public ones, an assumption difficult to prove because of a lack of replacement-rate projections. The average private pension in El Salvador was 14 per cent higher than the public pension in 2006, but that gap decreased to 7 per cent in 2009.

In private systems, the recent financial crisis may have reduced the pensions of those close to retirement, as the individual account fund would have declined in line with the value of the fund and capital returns. Chile has created several portfolios — *multifondos* — with diverse risks profiles and capital returns. As the age of retirement approaches, the insured should move to a lower-risk portfolio that provides a cushion against financial-crises risks. None of the three Central American private systems have established *multifondos*, although mixed systems should mitigate the crisis' impact because risks are balanced between the public

Table 6. *Features of tax-financed pensions in Central America, 2009-2010*

Features	Belize	Costa Rica	El Salvador	Guatemala	Honduras	Panama
Start year	2003	1974	2009	2007	2006	2009
Beneficiary's socio-economic status	Poor w/o pension	Poor w/o pension	Extreme poor w/o pension	Extreme poor w/o pension	Poor w/o pension	Poor w/o pension
Required age[a]	67/65[b]	65	70	65	65	70
Monthly sum (USD)	50	118	50	50	3[c]	100
Number of beneficiaries	4,257	78,950	6,487[d]	80,852	52,493	75,000
% total poverty	3.9	9.2	0.6	1.0	1.0	9.0
Cost (million USD)	2	112	10	32/48	2	90
% of GDP	0.16	0.38	0.02	0.08/0.12[e]	0.01	0.38

[a] Also for disability in Costa Rica, Guatemala and Honduras.
[b] Men and women.
[c] Annual aid of USD 37.
[d] In 2009; 28,415 are projected for 2010.
[e] Two different cost figures.
Notes: w/o = without.
Sources: Belize from BSSB (2010); Costa Rica and Panama from Mesa-Lago (2011); and the other countries from Mesa-Lago and De Franco (2010).

pillar with defined benefits and the private pillar with a benefit submitted to capital-market risks. Public systems' pensions should not be affected in the short run by the crisis; the medium- to long-term impacts would depend on their financial regime.

All seven countries grant a minimum contributory pension. El Salvador's structural reform increased the number of years of contribution required to gain such a pension, from 10 to 25 years, making it difficult for many workers to meet such a requirement. Panama's reform did not increase the number of contribution years, and neither have done the four public systems (El Salvador, Guatemala, Honduras and Nicaragua). The minimum pension in 2008 ranged from USD 190 in Costa Rica to USD 55 in Guatemala.

All countries have tax-financed pensions (four of which were introduced in the last five years), except Nicaragua that endures the second highest poverty incidence. Honduras, with the highest poverty incidence, provides a small level of annual aid. To be eligible, beneficiaries should be at least aged 65 (women) or 70 (men), poor or extremely poor and without a contributory pension. The monthly benefit varies: the equivalent of USD 3 in Honduras; USD 50 in Belize, El Salvador and Guatemala; USD 100 in Panama; and USD 118 in Costa Rica. The cost ranges from 0.01 per cent of GDP in Honduras to 0.38 per cent in Costa Rica and Panama. These pensions protect 9 per cent of the poor in Costa Rica and Panama, 4 per cent in Belize and about 1 per cent in the other three countries (Table 6). The costs of covering all the poor would be 0.7 per cent of GDP in Costa Rica and Honduras and 1.2 to 1.6 per cent in Panama, Belize and El Salvador (author's estimates). Bertranou, Solorio and van Ginneken (2002) have proven that properly targeted tax-financed pensions have reduced poverty significantly in Latin America.

To avoid disincentives for affiliation, the benefit levels of the average-contributory pension, minimum pension and tax-financed pension should be suitably differentiated. In Guatemala, minimum and tax-financed benefits are very close, in Honduras the minimum is almost identical to the average, and in Costa Rica the tax-financed pension is 53 per cent of the minimum and this, in turn, is 62 per cent of the average. In the other countries, the differences in the benefits provided by the pension programmes are acceptable (Table 5).

Equal treatment, social solidarity and gender equality

Social solidarity is low in segmented systems because the insured persons covered by separate schemes enjoy more generous entitlement conditions and benefits than in the main programme, and also because the separate schemes are financed in part by regressive fiscal subsidies. Private systems lack endogenous solidarity as a consequence of using individual accounts. Coverage is determined largely by income, education and location. The excluded often contribute indirectly to financing the benefits of the insured through taxes, such as value added tax (VAT), which is regressive. Women are usually discriminated against in terms of access to coverage and pension levels.

According to 2006 surveys, pension coverage of the EAP and the elderly increased with income and educational levels and was higher in urban than rural areas (Table 7). Average EAP coverage in six countries (no data available for Belize) was 14 per cent in the poorest quintile and 53 per cent in the wealthiest quintile, 22 per cent among those with only primary education and 56 per cent among those with higher education, 23 per cent in rural areas and 38 per cent in urban areas. A similar pattern is seen as regards coverage of the elderly, but with significant differences among countries: in Costa Rica and Panama, coverage is normally above average, whereas for the other countries it is below average, particularly in Honduras.

Members of separate schemes, relative to the main programme, usually enjoy lower retirement ages, access to seniority pensions, a benefit equal to the last salary prior to retirement and automatically adjusted to the salary of active personnel, lower contributions and fiscal subsidies. Moreover, the salaries of the members of separate schemes are normally higher than those in the main programme. In Costa Rica's closed teachers' scheme, the retirement pension is paid with 30 years of service regardless of age or at age 60 with at least 10 years of service, the base salary is the best in the last 15 years, and the replacement rate is 100 per cent. These conditions are considerably more generous than those of the main programme

Table 7. *Inequalities in pension coverage of the EAP and the population 65+, by location, income, education and gender in Central America, circa 2006 (percentage)*

Countries[a]	Location		Quintiles[b]		Education		Gender	
	Rural	Urban	First	Fifth	Primary	Higher	Men	Women
EAP								
Costa Rica	58.4	65.1	48.3	78.1	52.3	84.4	67.9	53.8
Panama	29.3	52.1	15.1	64.5	29.0	65.6	42.3	49.5
Guatemala	15.9	35.0	n.a.	n.a.	16.7	56.2	26.8	26.7
El Salvador	15.1	36.2	3.8	57.9	n.a.	n.a.	29.1	29.2
Honduras	7.4	32.0	0.9	38.2	n.a.	n.a.	17.0	25.6
Nicaragua	6.5	26.1	3.1	35.6	7.2	50.8	16.2	22.3
Averages[c]	23.1	38.0	13.6	53.0	21.7	56.7	32.9	33.9
Population 65+								
Costa Rica	29.6	48.4	11.9	61.7	36.9	67.5	52.5	32.1
Panama	19.3	55.5	5.3	77.1	30.0	82.5	49.8	34.1
El Salvador	5.2	22.3	1.0	36.8	n.a.	n.a.	22.6	11.1
Guatemala	8.2	22.0	n.a.	n.a.	11.6	62.8	20.0	11.0
Honduras	1.0	10.2	n.a.	n.a.	1.2	40.0	6.5	4.2
Averages[c]	22.7	40.3	19.8	54.0	31.6	67.7	30.2	18.5

[a] Countries are ranked by the arithmetic average of the rankings of all indicators; no data available for Belize and for 65+ in Nicaragua; El Salvador and Guatemala are very close in the EAP.
[b] First is the poorest and the fifth the wealthiest.
[c] Non-weighted.
Sources: Based on household surveys from Rofman, Luccetti and Ourens (2008).

(Mesa-Lago, 2009b). In the same vein, Honduran teachers and civil servants can retire at age 50 with 10 years of contributions and the base salary is the average of the last three years (World Bank, 2007). In Costa Rica, on average, the judiciary-scheme pension was four times that in the main programme, whereas in Guatemala civil-servant supplementary pensions were four to 11 times higher (Durán Valverde, 2009). In the armed forces' schemes of Guatemala, El Salvador, Honduras and Nicaragua, the insured's contributions are lower than in the main programme, but benefits are more generous.

In 2006, coverage of women in the EAP was lower than men in Belize and Costa Rica, equivalent to men in El Salvador and Guatemala, but higher than men in the other three countries, and averaged 34 versus 33 per cent (Table 7; BSSB, 2009). Conversely, coverage of elderly women was lower in all countries, and averaged

18.5 versus 30.2 per cent for elderly men. Women's average pensions are lower than men's for several reasons. First, women receive a lower wage for an equivalent job, suffer higher unemployment, have greater participation in informal work, and their absences from the workforce to raise children are neither paid nor taken into account in calculating pensions, resulting in a lower density of contributions. Second, women live four to five years longer than men, and in four countries their retirement age is five years younger, thus resulting in nine to ten years more in average retirement spans. Costa Rica, Guatemala and Nicaragua have equal retirement ages, facilitating women to accumulate more contributions and increase their pension amount, but not compensating for longer life expectancy. El Salvador's private system accentuates gender inequality because it applies mortality tables differentiated by sex (vis-à-vis unisex tables in public systems), which generate lower pensions for women owing to their longer life expectancy.

In Belize, female insured workers rose from 35.0 to 36.5 per cent of the total in 2004-2008, while female beneficiaries of contributory pensions grew from 26 to 29 per cent; women beneficiaries of tax-financed pensions were 63 per cent of the total in 2008 and the average female pension was 5 per cent higher than that of men (BSSB, 2009). Costa Rican females directly insured in their own right increased from 30.9 to 31.6 per cent of the total in 2000-2008; female contributory pension beneficiaries grew from 44 to 46 per cent of the total; the average contributory pension for women relative to that of men rose from 67 per cent to 72 per cent; and the tax-financed pension is the same for both sexes and jumped 170 per cent (CCSS, 2009a).

Financial sustainability

In Latin American private systems, the worker pays an average of 56 per cent of the total contribution and the employer 44 per cent. Three countries have eliminated employers' contributions, thus infringing the minimum norm set by the ILO's Social Security (Minimum Standards) Convention of 1952 (No. 102) that the worker should not pay more than 50 per cent. All Central American countries follow the ILO norm, as their averages are 40 per cent from workers and 60 per cent from employers (based on Table 8). The highest total contribution as a percentage of earnings are in Panama (18.8 per cent, which finances generous benefits); in El Salvador's public system (14 per cent, because it was closed and lost most contributors); and Costa Rica (12 per cent, in the two pillars). The lowest levels of contributions (3 to 5 per cent) are in Belize, Honduras and Guatemala (the last two paying meagre benefits). The average percentage contribution paid by self-employed workers in Belize, El Salvador, Guatemala and Nicaragua (all with voluntary affiliation; in Honduras they are excluded) equals the sum of the percentages paid by the salaried worker and the employer, a heavy burden that makes it more difficult to incorporate these workers (i.e. the self-employed average

Table 8. *Contributions on salaries/income for pension systems in Central America, 2010 (percentage)*

Countries	Salaried workers				Self-employed
	Employers	Workers	State	Total[a]	
Belize	3.00[b]	1.50[b]	0	4.50[b]	4.50[c]
Costa Rica	8.17	3.67	0.41	12.25	
First pillar	4.92	2.67	0.41	8.00	4.75-7.25[c]
Second pillar	3.25	1.00	0	4.25	
El Salvador					
Private	6.75	6.25	0	13.00	13.00[c]
Public	7.00	7.00	0	14.00	14.00[c]
Guatemala	3.67	1.83	0.25	5.50	5.50[c]
Honduras	2.00	1.00	0.50	3.00	No
Nicaragua	6.00	4.00	0	10.00	10.00[c]
Panama	10.25	8.00	0.80	18.75	11.00[c]
Averages[d]	5.70	3.80		9.50	9.08

[a] Excludes state contributions because it is not always based on the payroll, could be taxes, and often are not paid.
[b] Increases with income; mandatory affiliation in the first pillar; excluded in the second.
[c] Voluntary affiliation.
[d] Arithmetic average.
Sources: Legislation; and SSA and ISSA (2010).

contribution is 9.1 versus 3.8 per cent for salaried workers). Costa Rican self-employed workers have mandatory coverage and the fiscal subsidy granted to those with low income has helped to increase affiliation.

In 2006, before the crisis, 38 per cent of Latin American affiliates contributed (65 per cent covered by public systems and 57 per cent by private systems). In Central America, Costa Rica and Panama had the highest percentages (second and fourth in the region), followed by El Salvador, Honduras, Guatemala and Nicaragua — the latter being one of the lowest three in the region (ECLAC, 2008). In 2007-2009, the proportion of contributors declined in all private systems in the region. El Salvador suffered the worst fall and in 2009 was ten points below the regional average. Among public systems, Costa Rica's contribution income rose by 17 per cent in 2008-2009, as a result of the expansion of coverage and better enforcement of compliance (SUPEN, 2009b). No data are available for the other five public systems.

Table 9 presents the balance of income and expenditures of public pension systems in 2006-2009, both in US dollars and as a percentage of GDP. Prior to the

Table 9. *Evolution of the financial balance in public pension systems (millions of US dollars and percentage of GDP), ratio active insured (A) per pensioner (P) and effects of the crisis in Central America, December 2006 to June 2009*

Countries	2006	2007	2008	2009
Belize				
Income	22	24	24	25
Expenses	7	8	11	12
Balance	15	16	13	13
% GDP	1.2	1.2	1.0	0.9
Ratio A/P	17.2	16.4	18.1	14.2
Costa Rica				
Income[a]	692	716	757	900
Expenses	404	530	558	687
Balance	288	186	199	213
% GDP	1.3	0.7	0.7	0.7
Ratio A/P	7.0	7.4	7.8	7.1
El Salvador				
Income	9	8	8	22
Expenses	185	152	155	266
Balance	–176	–144	–147	–244
State subsidy	177	146	147	245
% GDP[b]	0.9	0.7	0.7	1.1
Ratio A/P	0.2	0.2	0.1	0.1
Guatemala				
Income	224	250	267	294
Expenses	134	143	154	177
Balance	90	107	113	117
% GDP	0.3	0.3	0.3	0.3
Ratio A/P	7.0	7.7	7.9	7.8
Honduras				
Income	62	68	69[c]	75
Expenses	10	13	22[c]	32
Balance	52	55	46[c]	44
% GDP	0.4	0.4	0.3[c]	0.3
Ratio A/P	26.4	27.6	27.0	23.8
Nicaragua[d]				
Income	258	308	369	382
Expenses	191	216	283	330
Balance	67	92	86	52
% GDP	1.1	1.4	1.2	0.8
Ratio A/P	4.1	4.4	4.1	4.4
Panama				
Income	594	652	892[e]	453
Expenses	656	723	820	443
Balance	–62	–71	72	10
% GDP	–0.4	–0.4	0.3	0.04
Ratio A/P	5.3	5.4	5.6	5.6

a Collected; the balance is higher with income owed but not collected.
b The final balance with the state subsidy is zero.
c June; IHSS gives diverse figures for 2006-2007.
d Data for all branches; pensions not disaggregated.
e Includes state subsidy of USD 71 millions without which the balance would be zero.
Sources: Based on BSSB (2009, 2010); CCSS (2004, 2008, 2009b); ISSS (2009); SP (2009a); IGSS (2007, 2008a); IHSS (2006, 2007); INSS (2009a); CSS (2009a, 2009b, 2010). GDP figures from Central Banks. Unpublished data provided by Caja del Seguro Social, Panama; Instituto Guatemalteco de Seguridad Social, Guatemala; and Instituto Hondureño de Seguridad Social, Honduras.

crisis, all systems generated a surplus, except for Panama and El Salvador. The deficit of the latter was the highest and growing because the public system was closed. Costa Rica's surplus was the highest, while Honduras' and Guatemala's surpluses were the lowest. In 2008-2009, a decline in the surplus (in US dollars and as a measure of GDP) occurred in Belize, Costa Rica, Honduras and Nicaragua. In Guatemala, the surplus size rose but stagnated relative to GDP. In El Salvador's public system the deficit grew by 39 per cent and the fiscal transfer rose from 0.9 to 1.1 per cent of GDP. In Panama the deficit became a small surplus, owing to the rise in contributions introduced by the 2008 reform.

The ratio of insured persons per pensioner in public pension systems is a financial-sustainability indicator. Compared with ageing countries in the region, Central American ratios are high, particularly in countries with young populations and relatively new pension systems, such as Honduras (24) and Belize (14). The lowest ratios, in countries with ageing populations and older programmes, are in El Salvador's closed public system (0.1), Nicaragua (4.4) and Panama (5.6). The ratio rose in Costa Rica, Nicaragua and Panama, where coverage has expanded, and in Guatemala, where the number of pensioners has fallen (Table 9). Regardless, population ageing is advancing and the "window of opportunity" (resulting from a temporary decline in the total dependency ratio) will disappear soon in Costa Rica (the most advanced in the demographic transition), followed by Panama. El Salvador, Nicaragua and Honduras are less advanced in such a transition, whereas Guatemala is the only country in the region with a moderate transition (ECLAC, 2007).

The pension funds with the highest absolute value and as a percentage of GDP before the crisis were in El Salvador (private), Costa Rica (both pillars) and Panama (public). The lowest were in the public systems of Guatemala, Nicaragua and Honduras (Belize had the lowest absolute fund value — owing to its small population — but the third largest relative to GDP). El Salvador's private fund was large and growing, but the public one endured a rising deficit that required strong fiscal transfers. The crisis and the fall of GDP did not affect the value of the fund in four of the seven countries; actually, they grew in 2008-2009 in absolute size and as a percentage of GDP. The exceptions were Belize, where levels stagnated, and Panama where levels declined; no data are available for Nicaragua (Table 10; AIOS, 2007-2009).

Before the crisis, pension systems were exposed to political and financial risks. Political risk stemmed from state behaviour in systems with heavy investment concentration in public debt and state bank deposits. Risk arises because the government sets the interest rate — which it can reduce as well as increase — and can force the conversion of dollar instruments into national currency, which it can then devalue with adverse effects (this risk is reduced if the state pays interest equal to the market rate and abstains from intervening in investment decisions). Financial

Table 10. *Effects of the world crisis on the fund value and capital returns in public and private pension systems, in Central America, December 2007 to June 2009*[a]

Systems A = public B = private	Fund value					Average real annual capital return (%)				
	Million USD			Change (%)		Last 12 months			Long term[b]	
	Dec 07	Dec 08	June 09	2008/07	2009/07	Dec 07	Dec 08	June 09	Dec 08	June 09
Belize (A)	125	131	138	4.8	5.3	5.2	–0.5	7.8	4.0	4.4
Costa Rica (A)	1,927	2,257	2,214	17.1	14.9	2.8	1.6	4.9	5.1	5.5[c]
Costa Rica (B)	1,396	1,513	1,723	8.3	23.4	–0.7	–9.0	–1.7	3.6	4.1
El Salvador (B)	3,958	4,471	4,763	13.0	20.3	1.4	–2.2	3.7	7.7	7.8
Guatemala (A)	968	1,145	1,159	18.3	19.7	–0.5	–0.5	9.5	3.2	3.2
Honduras (A)	354	433	n.a.	22.3	n.a.	–3.0	5.4	7.8	0.6	1.8
Nicaragua (A)	405	n.a.	n.a.	n.a.	n.a.	–3.2[d]	–7.3[d]	n.a.	n.a.	n.a.
Panama (A)	1,557	1,624	1,639	4.3	5.2	–0.1	–0.6	–3.0	3.2	2.5

[a] Belize in December 2009.
[b] Last 10 years in Belize, El Salvador, Guatemala and Panama; last 9 years in Costa Rica; last 6 years in Honduras.
[c] Diverse figures ranging from 4.9% to 9.5%.
[d] Author's estimates.
Sources: Public systems: same sources as in Table 9 and CCSS (2009a), SUPEN (2009a), SP (2002-2009b), IGSS (2009d), IHSS (2009). Private systems: AIOS (2007 to 2009). Unpublished data provided by Caja del Seguro Social, Panama.

risk, related to capital market volatility, affected systems with substantial investments in local stocks and foreign instruments. In the short run, the crisis heightened more the risk of the latter than the former.

In 2006, the highest short-term capital returns were 8 per cent in Costa Rica (jointly in the two pillars) and 4 per cent in Panama, but 2.8 per cent in Belize and 1 per cent in Guatemala and El Salvador's private system, while they were negative in Honduras and Nicaragua. In 2008, all returns turned negative, except in Costa Rica's public pillar and in Honduras. The trend reversed in 2009 with strong returns, aided by deflation or the deceleration of inflation in Belize, Costa Rica's public pillar, El Salvador, Guatemala and Honduras, but returns were negative in Costa Rica's private pillar and in Panama. Long-term capital returns in 2009 were positive and rose above those of 2008, except for Panama (ordered from the highest to the lowest return): El Salvador, Costa Rica's public, Belize, Costa Rica's private, Guatemala, Panama and Honduras (Table 10).

Capital-return performance is largely explained by portfolio composition (Table 11). Prior to the crisis, systems with the most diversified portfolios had the best returns (e.g. Costa Rica, particularly in the private pillar), whereas those with a high concentration of public debt, bank deposits and high-risk mortgages had the

Table 11. *Percentage distribution of portfolio by instrument and effects of the crisis in Central America, 2007-2009*

Countries	Public debt	Financial institutions[a]	Non-fin. institutions[b]	Stocks	Mutual funds	Foreign emissions	Others[c]
Belize							
2007	0	36.2	12.9	20.7	21.8	0	8.4
2008	0	43.6	10.6	18.5	19.5	0	7.8
2009	0.8	45.1	9.5	17.0	19.8	0	7.8
Costa Rica							
Public							
2007	71.1	12.9	7.5	0	0	0	8.5
2008	74.5	6.1	9.1	1.0	0	0	9.3
2009	92.8	1.4	0	0.8	0	0	5.0
Private							
2007	60.3	14.5	3.4	0.2	5.4	13.4	2.8
2008	59.8	19.3	3.1	0.5	5.6	9.0	2.7
2009	57.3	23.1	4.8	0.3	4.9	6.5	3.1
El Salvador[d,e]							
2007	78.6	16.4	5.0	0	0	0	0
2008	77.7	17.9	3.9	0	0	0.5	0
2009	77.7	18.2	3.6	0	0	0.5	0
Guatemala							
2007	41.4	53.4	5.2	0	0	0	0
2008	55.4	40.1	4.5	0	0	0	0
2009	56.9	40.2	2.9	0	0	0	0
Honduras							
2007	53.0	42.5	0	0	0	0	4.5
Nicaragua							
2007	27.7	72.2	0	0	0	0	0.1
2008	40.7	59.1	0	0	0	0	0.2
Panama[e]							
2007	49.5	45.2	0	0.3	0	0	5.0
2008	46.3	48.7	0	0.7	0	0	4.3

[a] In some countries, these include bank deposits; in Belize there is an undisclosed part in cash.
[b] In some countries, these include mortgage loans.
[c] Include real estate in Belize, investment in the health care branch in Honduras, and loans in Panama.
[d] Loans to the private sector in all years.
[e] Private system.
Sources: Public systems: same sources as in Table 9 and CCSS (2009a), IGSS (2009c), and INSS (2008). Private systems: AIOS (2007 to 2009). Unpublished data provided by Caja Costarricense de Seguro Social, Costa Rica.

worst (e.g. El Salvador, Honduras and Nicaragua). During the crisis, portfolios with substantial investment in stocks, foreign instruments and mutual funds (e.g. El Salvador and Costa Rica's private pillar) suffered drastic declines in the short run, whereas highly concentrated portfolios (e.g. in public debt and bank deposits) performed better, although the state and bank interest rates played a diverse role. Long-term capital returns, however, were much better in diversified portfolios (e.g. El Salvador, and both Costa Rican pillars) than in the others (Guatemala, Honduras and Panama).

Five countries underwent actuarial valuations using 2008 data, preventing evaluation of 2009, the worst crisis year: Belize, Costa Rica, El Salvador, Guatemala and Nicaragua; while Honduras used pre-crisis data from 2004-2005. The results suggest that Belize's system will have to rely on its reserves after 2018 and these will be exhausted by 2029 (BSSB, 2008). Costa Rica's internal actuarial valuation in 2007 calculated that the public pillar will remain in equilibrium until 2048 (CCSS, 2007), but an external study projected that after 2018 expenditures will exceed income and reserves will be depleted by 2023 (Nathal Actuarios y Consultorios, 2008). The Social Insurance Fund of Costa Rica contested that study and an ILO arbitration fully validated the internal projections (CCSS, 2009c and 2010). El Salvador projected that total state debt for future net obligations of the public and private systems were equivalent to 69 per cent of GDP in 2009 (Melinsky, 2009). Under an optimistic scenario in Guatemala, expenditures will exceed income after 2016, whereas a more conservative scenario anticipates this to occur in 2013 (IGSS, 2009d). In Honduras, three conservative scenarios in 2006 forecast expenditures surpassing income between 2029 and 2038, while under two optimistic scenarios income will grow faster than expenses, thus ensuring equilibrium until 2050 (IHSS, 2006). Nicaragua's programme will be solvent until 2017 or 2021, and the contribution rate would have to be raised from 10 to 24.7 per cent to restore equilibrium (INSS, 2010). Panama confronted a serious actuarial disequilibrium in 2007; the structural reform raised the contribution rate, but not the retirement ages. The previous financial deficit worsened in 2006-2007, then turned into a small surplus in 2008, but which fell in 2009 (Table 9). The 2009 actuarial study was not published.

Lessons and policy suggestions

Based on the above evidence, some lessons may be drawn and policies suggested. Overall, Costa Rica and Panama (1-High), performed better than the other five countries (3-Low), although Belize was close as regards to some indicators. No difference on unity was found between public and private systems and between reform models. Structural reforms were followed by declines in coverage, but while Costa Rica's mixed model had surpassed amply the pre-reform level by 2009, the opposite was true of El Salvador's substitutive model. Coverage under the Costa

Rican public pillar was three times that of the two Salvadorian systems combined, which ranked sixth among the seven countries. Costa Rica's and Panama's tax-finance pensions reached 15 times the proportion of poor than that of El Salvador's. Public systems have better solidarity and gender equity than private systems. Conversely, in 2009, El Salvador's private pension was 7 per cent higher than the public pension, although the gap was declining. El Salvador's private pension fund was the largest of the seven and also generated the highest long-term capital returns, but was one of the most affected by the crisis albeit that it has since recovered strongly.

Preceded by a process of social dialogue (to promote consensus and political sustainability) and the undertaking of financial viability studies and cost projections, the seven countries should ponder reforming their systems in response to the crisis and to correct previous problems. The three systems with structural reforms could follow improvements introduced by Chile's re-reform, whereas the four public systems may consider parametric or structural reforms. Whatever their nature, reforms should be implemented before the opportunity window closes and the dependency ratio resumes its increase.

Suggested policies follow, distinguishing between groups 1-High and 3-Low, individual countries, and types of reforms. ISSA (2010a) "good practice" recommendations are adapted and expanded herein to Central America.

Unity. Lack of unity affects other principles. Highly-segmented systems (Honduras) and systems with significant segmentation (El Salvador and Nicaragua) need better integration. The incorporation of separate schemes of powerful groups is politically difficult and requires an education campaign to explain their unjustified generous conditions/benefits and high, regressive and unsustainable fiscal costs. If unification is politically unviable, fiscal transfers should be eliminated and new entrants obliged to join the main programme. The state should integrate social policy and establish a single autonomous Superintendence of Pensions with regulatory-overseeing powers for all pension programmes.

Coverage. Costa Rica, Panama and Belize, which cover most of the EAP and half of the elderly, face lesser problems than the other four countries (3-Low) where 80 per cent of the EAP and 85 to 95 per cent of the elderly are excluded. In these latter cases, this is partly because of their higher informal sector and poverty incidence, but also because of a lack of adequate social security policies. The world crisis reduced average coverage by 1.4 points in 2007-2009, much less that during the 1980s crisis, but it may increase informality and poverty, aggravating exclusion.

The challenge of extending coverage is a long-standing priority of the International Labour Organization (ILO) and of the International Social Security Association (ISSA). The ISSA's (2010a, 2010b) new "strategy" for the extension of coverage combines social insurance and social assistance approaches and places an emphasis on the needs of low- and middle-income countries (as those analyzed in this article), exhorting social security organizations to use their capacity to incorporate informal and other excluded workers. The strategy provides useful guidelines on coverage extension and makes a case for more cooperation among international agencies in support of coverage extension.

Examples of incorporation policies are: flexible programmes adapted to excluded workers' socio-economic conditions, e.g. quarterly or annual contributions instead of monthly, that may be paid jointly with taxes (as in Argentina and Uruguay) through banks, post offices, etc.; contributions/benefits adjusted to the payment capacity of excluded workers, obligating enterprises hiring self-employed workers to collect their contributions; and support to cooperatives/associations of informal and rural workers, as intermediaries to help affiliate members and to collect their contributions. The government should incentivize formalization by simplifying tax declaration for small enterprises, allowing tax deductions for self-employed contributions and providing coverage for work injury and family allowance benefits.

The three countries with the higher levels of coverage (Belize, Costa Rica and Panama) still have one-third of the EAP unprotected, and should reinforce their efforts to incorporate the excluded. To incentivize affiliation, Belize and Panama may provide a fiscal subsidy to low-income self-employed workers, in lieu of the employer contribution (as in Costa Rica). Belize suffered the sharpest fall in coverage in 2009 and its contributory programme covers only a fraction of self-employed workers, hence it needs a plan to cope with those two problems.

Coverage extension demands reliable data on the excluded and their socio-economic conditions, collected either from improved social security statistics or household surveys. Such data will permit the design of appropriate plans and the estimation of costs. A universal definition of "active contributor" with a standardized contribution period is needed for accurate comparisons among countries. Public systems should compile coverage statistics and diffuse them annually by Internet.

The five countries that grant a tax-financed pension targeted on the elderly poor have diverse development levels (1-High and 3-Low). Their example should be followed by the other two countries, which endure the highest poverty incidence and the lowest levels of coverage for the EAP and the elderly. Honduras provides a meagre annual aid that covers only 1 per cent of the poor whereas Nicaragua lacks any type of aid. The cost of a "universal" pension is higher than one targeted on extreme poverty and the latter would be more financially viable and progressive in these two countries.

Adequacy. The ILO-led initiative for a "Social Protection Floor" (ILO, 2010) should be implemented in the seven countries, particularly in group 3-Low, strengthening the public system/pillar to fight poverty. All countries except Costa Rica lack periodic mechanisms to adjust pensions to the CPI or wages, leaving it to the government's or social insurance organization's discretional power and subordinated to available resources. In 2003-2009, Costa Rica's real average pension increased 42 per cent, while El Salvador's fell by 4 per cent and Panama's by 2 per cent. An inflationary rebound could severely reduce the real value of pensions, as occurred in the 1980s; hence, the need to introduce a periodic automatic adjustment method.

Panama should increase its retirement ages in line with pensioners' life expectancy, while the retirement ages in Honduras should be reduced. In El Salvador, the requirement of 25 years of contributions to gain the right to a minimum pension is difficult to meet, and should be reduced. In contrast, in Belize, the minimum requirement of 10 years of contributions is too short and should be raised. Except Costa Rica and El Salvador, all systems use a very short period to estimate the base salary and it should be lengthened, while adjusting wages to inflation. Most countries should decrease over-generous replacement rates to sustainable levels. To avoid disincentives for affiliation, an adequate gap should exist in Costa Rica, Guatemala and Honduras between the levels of the three pensions; e.g. the tax-financed pension should be at most half of the minimum contributory pension and this should have a similar relation to the average contributory pension.

Equal treatment, solidarity and gender equity. The most segmented systems have the worst inequalities and least solidarity, hence the need to standardize the separate schemes' generous entitlement conditions with those of the main programme. This will reduce unjustified significant differences between pensions (e.g. the generosity of those for the judiciary in Costa Rica and civil servants in Guatemala). The crisis may have accentuated inequalities in coverage of the EAP and the elderly by income, education, location and gender, especially in group 3-Low, thus making it even more urgent to expand coverage by contributory and tax-financed pensions.

Labour market gender discrimination should be corrected, through paying equal wages for the same work, creating child-care facilities, etc. Gender inequities derived from the pension system itself (i.e. lack of compensation for women raising children) could be tackled, in Costa Rica and Panama, by granting a child bonus (as in Chile and Uruguay). Public systems soothe gender inequality while private systems accentuate it and the latter should introduce unisex mortality tables to avoid lower annuities paid to women, and divide the pension among spouses (as in Chile). Social insurance statistics must be disaggregated by gender to better assess the situation of women and design corrective policies. Measures used in Belize, Costa Rica and El Salvador to improve female coverage and benefits should be followed by Panama. The poorest countries could provide cash transfers, conditional or not, targeted on women and managed by social security.

Financial sustainability. Contributions paid by employers are mandated in all Central American countries and should not be eliminated as has been done in some private systems. Measures to address evasion and delays in contribution payments must be strengthened, such as exchanging data with state tax-collection agencies and imposing strong sanctions on those who fail to comply (as done in Costa Rica). Some countries should reform their tax system to improve collection efficiency, reduce current regressive effects and widen state capacity to provide tax-financed pensions for the poor.

Prior to the crisis, virtually all systems generated a financial surplus, which decreased in 2008-2009 (data are not yet available for 2010). The value of pension funds, however, rose in most countries in 2007-2009 (while it decreased dramatically in Chile, Mexico and Peru). Short-term capital returns were mostly negative in 2008 but turned strongly positive in 2009, whereas long-term returns were positive and generally growing in 2008-2009. Portfolio composition largely determined capital returns: the most diversified portfolios with substantial investment in stocks, foreign instruments and mutual funds suffered short-term declines, whereas those heavily concentrated on public debt and bank deposits performed better. The opposite was true regarding long-term returns, confirming the need for diversified portfolios to balance long-term risks.

World economic recovery has been weak and financial markets remain volatile. This makes it advisable for the pension superintendence, or other competent authority, cautiously to reassess norms for portfolio composition, investment instruments and their ceilings. A drastic shift towards very low-risk instruments should be avoided because it would affect long-term capital returns, and thus the pension value in private systems or the financial-actuarial equilibrium in public systems. To minimize the negative impact of capital market volatility on the pension level of insured persons during potential future crises (particularly in El Salvador's private system), *multifondos* should be established (as in Chile, Mexico and Peru). The insured could choose among various portfolios with diverse risks and capital returns, but the superintendence should regulate a shift toward lower-risk instruments for those approaching retirement.

To conclude, except for Costa Rica, Central America's recent actuarial studies based on 2008 data, or earlier, do not take into account the crisis' adverse effects in 2009. Hence, there is a need to conduct actuarial studies immediately to assess the potential impact of the crisis on actuarial equilibrium and to implement the needed adjustments. Such studies should include an understandable summary of the current system status and available alternative options for public scrutiny and debate.

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