REASSESSING PENSION REFORM IN CHILE AND OTHER COUNTRIES IN LATIN AMERICA1

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Chile has been a world pioneer in the structural reform of social security pensions and influenced similar changes in Latin America and Eastern Europe, as well as the programs of international financial organizations and the world debate on the subject. More than two decades have elapsed since the Chilean reform was implemented and several other countries in Latin America have accumulated important experience also. This paper gathers and analyzes legal and statistical data, as well as technical studies on such reforms in eleven countries of the region, in order to accomplish three tasks: (1) describe the three different general models followed and the features of the reforms in those countries; (2) evaluate the effects of the reforms in key aspects: labor force coverage, compliance, competition, administrative costs, pension level and gender, impact on national savings, fiscal costs, capital market development and investment returns; and (3) draw useful lessons from these reforms (in general and on social protection for the poor) to Latin America, Asia and other regions of the world.[2]

I. DESCRIPTION OF MODELS AND FEATURES

A. Features of Public and Private Pension Systems

The international debate on "public" versus "private" pension systems has been marred by the vagueness and ideological implications of those words. In pursuit of more precise and neutral terms, four principal features of both systems are shown in Table 1: contributions, benefits, financial regime and administration.

Table 1. Features of Public and Private Social Security Pension Systems

Features	Systems	
	Public	Private
Contribution	Non-defined	Defined
Benefit	Defined	Non-defined
Financial regime	Pay-as-you-go (PAYG) or partial collective funding (PCF)	Fully-funded, individual (FFI)
Administration	Public	Private or multiple

The features of the public system are: (1) non-defined contributions (tending to increase in the long term), (2) defined benefits (the law determines the formula to calculate the pension, often with a

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minimum and a maximum, but financial and demographic conditions could make those benefits unfeasible in the long run), (3) financial regime based on pay-as-you-go (PAYG) or partial collective funding (PCF), and (4) public administration.

The features of the private system are: (1) defined contributions (set at a fixed level over the long term), (2) non-defined benefits (uncertain, based on what is accumulated in the individual account of the insured, which will depend on his/her salary level, amount and density of contributions, and the investment return, as well as macroeconomic factors), (3) financial regime based on fully-funded individual accounts (FFI), and (4) private administration, although it might also be multiple (public, private and mixed).[3]

B. Non-structural and Structural Pension Reforms

Non-structural or parametric reforms improve a public pension system to strengthen it financially in the long run, e.g., by raising the retirement age or contributions, or tightening the formula used for calculating the pension. This type of reform was applied in Latin America until the start of the 1980s, and will not be the main focus of this paper. Structural reforms radically change the public system either by replacing it completely with a private one, or by introducing a private component in addition to the public one, or by creating a private system that competes with the public one. This paper will analyze the eleven structural pension reforms that were approved in the region up to mid-2002 with a special focus on Chile (on the political economy of the reforms see Madrid 2002; Mesa-Lago and Müller 2002).

C. Three General Models of Structural Reform in Latin America

The three general models of structural pension reform existing in Latin America are the substitutive, the parallel and the mixed. Table 2 shows which countries have applied these models, the date of their inception and their diverse features (see Mesa-Lago 2001a).

Table 2. General Models and Features of the Eleven Pension Reforms in Latin America, 2002

Model	Country and date of implementation	System	Contributions	Benefits	Financial regime	Administration
Substitutive	Chile: May 1981 Bolivia: May 1997 Mexico: Sept. 1997 El Salvador: May 1998 Nicaragua: 2002 Dominican Rep 2003-5	Private	Defined	Non-defined	FFI	Private[b]
Parallel	Peru: June 1993 Colombia: April 1994	Public or Private	Non-defined Defined	Defined Non-defined	PAYG[a] FFI	Public Private[b]
Mixed	Argentina: July 1994 Uruguay: April 1996 Costa Rica: May 2001	Public and Private	Non-defined Defined	Defined Non-defined	PAYG[a] FFI	Public Multiple

[a] In Peru, Argentina and Uruguay, but PCF in Colombia and Costa Rica. [b] Multiple in Mexico, Dominican Republic and Colombia.
Source: Legislation of eleven countries.

1. Substitutive Model. Six countries have followed the substitutive model. Chile reform was enacted in 1980 and implemented in 1981, but 16 years elapsed until its model was replicated: in Bolivia

[3] The world debate has focused on PAYG versus FFI, but several pension systems in Latin America are based on PCF.

and Mexico (1997), El Salvador (1998), Nicaragua (planned to start in 2002) and the Dominican Republic (planned to start in 2003-2005).[4] This model is labeled private (as characterized in Table 1) and has its four typical features, except that the administration is multiple in the Dominican Republic and Mexico. The public system is closed (new affiliates are not allowed) and replaced by a private system. In Mexico, the benefit may be either defined or non-defined, because all those who were insured at the time of the reform have the right, upon retirement, to choose the higher pension among two: the one provided by the public system (closed) and the one based on the individual account in the private system.

2. Parallel Model. Two countries have applied the parallel model: Peru (1993) and Colombia (1994). The public system is not closed down in this model but rather reformed (entirely in Colombia but partly in Peru), while a new private system is created and the two compete. The public system (as characterized in Table 1) meets its four typical features, except that Colombia's financial regime is PCF instead of PAYG. The private system has its four typical features, except that the administration in Colombia is multiple.

3. Mixed Model. Three countries have introduced the mixed model: Argentina (1994), Uruguay (1996) and Costa Rica (2001). A public system, which is not closed down and offers a basic pension, is integrated with a private system, which offers a supplementary pension, therefore, the mixed model combines both systems (as characterized in Table 1) in two "pillars." The first pillar has the four features typical of a public system, while the second pillar has the four features of a private system, except for the administration, which is multiple in the three countries.[5]

D. Structural and Non-Structural Reforms Under Consideration

Brazil implemented a parametric reform and has been debating an structural reform mixed model for some time. Honduras and Paraguay are studying a substitutive model. Since 1984 Ecuador have discussed both parametric and structural reforms but the political and economic crises in that country have impeded to reach an agreement. Guatemala has been debating a structural reform since 1997. In Venezuela, a substitutive model was approved but annulled by the current government, which reopened the reform debate and is considering a mixed model (Mesa-Lago 2000c); as of August 2002, the reform had not been approved. Panama studied a parametric reform, with actuarial aid from the International Labor Office (ILO) and workers, employers and government involvement, but the current government halted its approval (Mesa-Lago 2000b). Cuba's pension scheme is in urgent need of reform and, since 2000, the government has been debating a parametric one but it had not been approved as of August 2002 (Mesa-Lago 2003). Information on Haiti is not available.

II. EVALUATION OF REFORM EFFECTS

This section undertakes a comparative evaluation of the effects of structural pension reforms in Latin America.[6] Statistics are provided on the nine countries whose reforms have been implemented; legal information is given only on the two countries whose reforms are not operational yet. Ten effects are assessed herein: (A) transfers from the public to the private or mixed system, (B) labor force coverage, (C) compliance (payment of contributions), (D) competition among administrators, (E) administrative

[4] The Dominican Republic reform is called "mixed" but actually follows the substitutive model (Mesa-Lago 2000d) and will be implemented in three stages: February 2003 for salaried workers; August 2004 for self-employed, other low-income groups and the poor, and August 2005 for self-employed professionals with high income (Guzmán 2002). Outside of Latin America the substitutive model has only been implemented in Kazakhstan in 1998 (Müller 2002).

[5] The mixed model is the most extended outside of Latin America: in at least three Western European countries and in seven Eastern European countries (Müller 2002; Mesa-Lago and Hohnerlein 2003).

[6] An international debate of pension reform "myths" started with a paper by Peter Orszag and Joseph Stiglitz presented at a World Bank meeting in 1999. It was later published in a book (Orszag and Stiglitz 2001), followed by five critical comments from World Bank officials and experts who support structural reforms, especially of the substitutive type. An article on pension "myths" has been recently published (Barr 2002). These two works, however, are mainly theoretical and provide little empirical data to support their conclusions. For a testing of the "myths" with Latin American data see Mesa-Lago 2002.

costs, (F) overall pension level and impact of gender, (G) capital accumulation in the pension fund and impact on national saving, (H) fiscal costs of the transition, (I) capital market development and portfolio diversification, and (J) real investment returns.

A. Transfers from the Public to the Private or Mixed System

It is claimed that the private system is better than the public one, hence, the majority of the insured will transfer to the former. Available data at the end of 2001 (Table 3) seemed to confirm that claim: 100% of the insured were in the private system (or private component of the mixed system) in Bolivia, Costa Rica and Mexico; 94% to 97% in Chile, El Salvador and Peru, and 75% in Argentina.

Table 3. Insured (Affiliates) in the Public and Private or Mixed System, 2001

Model	Country	Total insured	Public system		Private or mixed system	
		Thousands	Thousands	% of total	Thousands	% of total
Substitutive	Chile	6,627	200	3	6,427	97
	Bolivia	675	0	0	675	100
	Mexico	26,518	0	0	26,518	100
	El Salvador	975	55	6	920	94
Parallel	Peru	2,882[a]	150[a]	5	2,732	95
	Colombia	8,902	4,566	51	4,336	49
Mixed	Argentina	11,258[b]	2,199	20	8,920	79
	Uruguay [c]	1,179	602	51	577	49
	Costa Rica	889	889[d]	100[d]	889	100

[a] Author's estimates. [b] Includes 1.3% of undecided; all the insured in the second pillar (private system) are also in the first pillar (public system). [c] 2000; no data are available of affiliates in the public system, hence, it shows contributors and the number of affiliates must be higher; all the insured in the second pillar (private system) are also in the first pillar (public system). [d] All the insured are in both the public first pillar and the private second pillar of the mixed system.

Sources: ANSES 2002; BCU 2002; CONSAR 2002; SAFJP 2002; SAFPa 2002b; SAFPb 2002; SBC 2002; SPa 2002; SPb 2002; SPVS 2002; SSS 2002.

Such transfers, however, do not depend solely on the advantages of the private system but also on other variables: (1) freedom of choice of the insured to stay in the public system or transfer to the private--the age of the insured is a determinant factor in some countries (see Table 4); (2) state incentives and measures to promote the transfer, as well as advertisement; (3) the rate of return of the public system compared with the investment return in the private system; and (4) span of time the reform has been in operation (see Table 2).[7] For instance, in the three countries with the 100% insured in the private system (Bolivia, Costa Rica and Mexico), the law made mandatory such transfer for all the insured, therefore, they did nor have a choice. Furthermore, in all six countries in the substitutive model, as well as in two in the mixed model (Costa Rica[8] and Uruguay), the new insured who enter the labor force must join the

[7] Other factor is the difference in political risks between the two systems (Keinjans 2002).

[8] Costa Rica is an unique case, because the law obliged all insured (current and future) to join the mixed system, therefore, all insured are both in the public system (first, most important pillar) and the private system (second pillar, supplementary pension).

private system or component. When the reform has been a long time in operation (for example 21 years in Chile), that obligation combined with the gradual retirement of the insured who remain in the public system, result in a high proportion of insured in the private system. In three other countries (El Salvador, Nicaragua and the Dominican Republic) those insured at the time of the reform were divided into age groups and the largest group made up of the younger workers is obliged to move. In Chile, the insured at the time of the reform were given a period to decide whether to remain or transfer, but the contribution was reduced for those who transferred. In Peru, after few insured were moving, a law raised the contribution level of the public system above that of the private system. Furthermore, in Argentina and Peru those insured who have transferred from the public to the private system cannot return to the former.[9] Advertisement has been a key factor in the transfer also, as the private system promised better pensions, lower administrative costs and no government interference.

Table 4. Freedom of Choice of the Insured in Eleven Reforms, 2002

Model	Country	Between systems: Current insured	Between systems: Future insured	Between administrators: Annual changes	Between administrators: Name (abbreviation)
Substitutive	Chile	May choose between public and private within a deadline	Must join private system	Four	AFP
	Bolivia	Must transfer to private system		None	AFP
	Mexico			One	AFORES
	El Salvador	Grouped by age; only middle group has option		One	AFP
	Nicaragua	Grouped by age; -43 must move to private, few can stay		One	AFP
	Dom. Rep.	Grouped by age; -45 must move to private		One	AFP
Parallel	Peru	May switch from public to private, but not the reverse	Must join private system	Unlimited	AFP
	Colombia	May switch between public and private system every three years	May choose between public and private	Two	SAFP
Mixed	Argentina	May switch from the public to the mixed but cannot return to the public	May choose between public and mixed	Two	AFJP
	Uruguay	Grouped by age; young must join mixed and older were allowed to choose between public and mixed	Must join mixed	Two	AFAP
	Costa Rica	Must join mixed		One	OPC

Source: Legislation of the eleven countries.

In contrast to the other six countries, the public systems of Colombia and Uruguay (parallel and mixed models, respectively) have the majority of insured persons: 51% in both (see Table 3). In Colombia, the public system was entirely reformed and financially strengthened, hence, it has a large reserve (PCF); contributions and entitlement conditions are the same in both systems; the rate of return in the public system (the formula to calculate the pension) is higher than the investment return in the private system, and there is freedom to transfer from one to the other system every three years (Kleinjans 2002). In Uruguay, the law gave those over 40 years of age a specified deadline for choosing between the reformed public system and the mixed one and the majority preferred the former; in addition, only the insured above a given salary level can join the mixed system.

[9] Due to the 2001-2002 economic and pension crises in Argentina, there is proposal in congress to allow free change between the two systems every two years.

Pension reforms should attempt to reach an optimal equilibrium between freedom of choice and other goals such as the need to take age into account for accumulation purposes, and the closing of a public system. The latter also generates different fiscal costs depending on the model of the reform and the degree of legal force used to promote the switch and its rapidity (see section II-H).

B. Labor Force Coverage and Social Protection of the Poor

If indeed the private system is better than the public one, it will create an incentive for affiliation and increase labor force coverage. Before the reform, Latin American countries were divided into three groups, according to the date of inception of their pension system and their degree of labor force coverage: pioneers, intermediates and latecomers. The eight countries that have implemented the pension reform can be classified as follows: (1) the pioneers, including Argentina, Chile and Uruguay, were the first to introduce pension systems and had the highest coverage (70% to 85%); (2) the intermediates, including Mexico, Costa Rica, Colombia and Peru, established pension schemes later and their coverage ranged from 20% to 45%, and (3) the latecomers, including Bolivia and El Salvador, were the last to introduce pensions and their coverage was below 20% (Mesa-Lago and Betranou 1998).

Table 5 shows the percentage of the labor force covered by the two systems (public plus private/mixed) but excludes several groups: armed forces in all countries (except Costa Rica that doesn't have them), civil servants and oil workers in Mexico and in Colombia, most provinces in Argentina, and three minor funds in Uruguay. If these groups were added, labor force coverage would increase. Two estimates of coverage are shown in Table 5, based on: (1) affiliates, that is all insured registered in the system, and (2) active contributors or affiliates who contributed in the last month (except for the last two months in Mexico and the last eight months in Costa Rica; AIOS 2002).[10] Coverage based on affiliates is about twice higher than based on active contributors.

Table 5. Percentage of the Labor Force Covered by the Two Systems, 2001

Model	Country	Based on affiliates	Based on active contributors
Substitutive	Chile	112	60
	Bolivia	21	10
	Mexico	64[a]	28[a]
	El Salvador	39	21
Parallel	Peru	26	11
	Colombia	51	24[b]
Mixed	Argentina	70	22
	Uruguay[c]	77	60
	Costa Rica	53[d]	53[d]

[a] Based on a high estimate of the labor force; based on a lower estimate, coverage increases to 74% and 33%. [b] Excludes contributors in public funds. [c] 2000 data. [d] Based on same number of contributors and affiliates because a period of eight months is taken for the last contribution (AIOS 2002); the actual percentage must be lower if only the last month were used.

[10] AIOS 2002 estimates lower percentages of labor force coverage (particularly for Argentina and Uruguay, no data are given for Colombia), because uses only affiliates/contributors in the private/mixed system, excluding insured in the public system.

Sources: Author's calculations based on labor force data from ECLAC 2002, and those for affiliates and active contributors from ANSES 2002;BCU 2002; CONSAR 2002; SAFJP 2002; SAFPa 2002b; SAFPb 2002; SBC 2002; SPa 2002; SPb 2002; SPVS 2002; SSS 2001.

Within the pioneer group, Chile exhibits an anomaly because 112% of the labor force appears to be covered based on affiliates, a statistical impossibility; moreover, this figure excludes an additional 26% of the labor force, made up by 3% insured in the armed forces scheme and 23% non-covered, for a total of 138%. But based on active contributors, Chilean coverage falls to 60%. In the other two pioneer countries the corresponding coverage figures (based on affiliates and active contributors) are: Uruguay 77% and 60%, and Argentina 70% and 22%. In the intermediate group, coverage figures are: Mexico 64% and 28%; Colombia 51% and 24%; Costa Rica 53% in both;[11] and Peru 26% and 11%. In the latecomer group, the figures are: El Salvador 39% and 21%, and Bolivia 21% and 10%.

It is not possible to compare coverage before and after the reform based on active contributors because of absence of data prior to the reform. A comparison based on affiliates is difficult because of lack of accurate and comparable statistics prior to the reform in all countries, but available estimates indicate that coverage has increased in five countries (Chile—but see comment above,[12] Bolivia, Mexico, El Salvador and Colombia), is stagnant in two (Costa Rica and Uruguay) and has decreased in two (Argentina and Peru). A major problem is that coverage decreases by about one half based on active contributors, and the gap is even wider in Argentina, Peru and Mexico (the smallest gaps are in Costa Rica and Uruguay). There are several reasons for this gap: (1) many affiliated workers are unemployed and do not contribute (for instance, 17.4% in Argentina and 18.5% in Colombia in 2001; ECLAC 2001); (2) some affiliates are no longer in the labor force because they have emigrated or don't seek employment or are temporary workers or women that have left their jobs for child rearing; (3) evasion and payment delays are serious and increasing problems to be discussed in the next section; (4) frequent shifts of providers by affiliates and not enough rapid transfer of records in the individual accounts provoke double counting of an insured in two administrators, hence, inflating the number of affiliates; and (5) the insured have an incentive to minimize their contributions in order to qualify for the minimum pension guaranteed by the state when the fund in the individual account is insufficient to finance such pension and, hence, to maximize the fiscal subsidy (Mesa-Lago 2001b).

Coverage of self-employed workers is much lower than that of salaried workers and in some countries, such as Peru, this group makes up the majority of the labor force. Self-employment coverage is voluntary in Chile and reached only 5% of active contributors in 2001, after two decades of reform; only 2.5% of total contributors are self-employed but they account for 25% of the labor force (Acuña and Iglesias 2001). In Argentina and Uruguay coverage is mandatory, while it is voluntary in the other five countries (Costa Rica introduced mandatory coverage in 2001). The large and growing self-employed, the main component of the so-called informal sector in Latin America, endures extremely low coverage; making coverage mandatory is not necessarily the solution because of low capacity to contribute and serious obstacles for enforcement. In Costa Rica a fiscal subsidy is granted to the self-employed with low income to facilitate their affiliation. In Argentina, Costa Rica, Chile and Uruguay, the state provides a means-tested social assistance pension to dispossessed uninsured persons (Brazil and Cuba have not implemented structural reforms but also provide these pensions). Those four countries have the lowest poverty incidence and the highest coverage of social insurance pensions. Conversely, the remaining countries of the intermediate group and particularly all those in the late-comer group, suffer a much higher poverty incidence and considerably lower social insurance coverage; as these countries do not provide social assistance pensions, the poor lacks social protection.

[11] Coverage based on active contributors is relatively overestimated in Mexico and Costa Rica because it is based in the last two and eight months respectively, instead of the last month.
[12] Coverage of the employed labor force in Chile based on private contributors decreased from 87% in the 1970s to 60% in 1998-2000; based on all contributors (public and private) it was 70% in 1997 (Acuña and Iglesias 2001).

Pension reforms should include a goal of extending social insurance coverage to low income groups difficult to incorporate (e.g., self-employed) and consider the financial feasibility of social assistance pensions. High fiscal costs of the structural pension reform should be balanced with the need of resources for social protection of the poor (Mesa-Lago 2001c). The International Social Security Association (ISSA) is about to publish a world study (including 15 countries, three from Latin America and three from Asia) on social security coverage. Several important studies have been recently published on pension coverage and social assistant pensions in the region (Arenas 2000; Bertranou 2001).

C. Compliance

Pension reforms have treated differently insured' and employers' contributions. Initially, such contributions remained unchanged in Argentina, Mexico and Costa Rica. In Argentina, however, employers' contributions were later cut by one half through exemptions, while workers' contributions to the private system were also halved. In Costa Rica, existing contributions were reassigned, while in Mexico the state contribution as a third party was raised. In Uruguay, employer's contributions were reduced slightly while the insured' share went up proportionally. Three countries abolished employer contributions: Chile, Bolivia and Peru. Six countries increased insured contributions: Bolivia, El Salvador, Nicaragua, Dominican Republic, Peru and Colombia. Only three countries increased employer contributions: Colombia, Nicaragua and Dominican Republic. In most countries the elimination/ reduction in employers' contributions has largely resulted in a raise in the insured' contribution or in the fiscal burden or both.

A common claim of structural reform is that ownership of individual accounts in a private system stimulates punctual payment of contributions, given that the greater the contribution and the investment return they earn, the greater the fund accumulated in the individual account and hence the pension, and vice versa. The direct linkage between contribution and pension levels, the argument goes, should be an incentive for the worker to affiliate to the private system and pay contributions on time. On the other hand, the augmented financial burden on the insured could create disincentives for affiliation and punctual payment of contributions. Table 6 suggest that the disincentives might be more powerful than the incentives, based on the percentage of affiliates who were active contributors at the end of 2001: the lower that percentage, higher the payment delays, and vice versa.

Table 6. Percentage of Affiliates Who are Active Contributors in the Private System, 2001

Model	Country	Affiliates Thousands	Active contributors Thousands	Active contributors/ affiliates (%)
Substitutive	Chile	6,427	3,450	53.7
	Bolivia	676	317	47.0
	Mexico	26,518	11,853	44.7
	El Salvador	920	489	53.2
Parallel	Peru	2,732	1,125	41.2
	Colombia	4,336	2,112	48.7
Mixed	Argentina	8,843	2,562	29.0
	Uruguay	597	318	53.3
	Costa Rica	889	889[a]	100.0[a]

[a] Data from AIOS 2002, which explains the high percentage due to the use of eight months for the last contribution; the actual figure must be considerably lower.

Sources: AIOS 2002; BCU 2002; CONSAR 2002; SAFJP 2002; SAFPa 2002b; SAFPb 2002; SBC 2002; SPa 2002; SPb 2002; SPVS 2002.

The proportion of contributing affiliates was: 41% to 48% in Peru, Mexico, Bolivia and Colombia, and 53% to 54% in El Salvador, Uruguay and Chile. Data on Costa Rica are not comparable (because are based on the last eight months), while Argentina proportion is the lowest (29%) due to the severity of the economic crisis. Excluding those two countries, an average of 49% of affiliates in seven countries were not active contributors, evidence that the reform has not improved compliance. Long-run data from Chile indicate that the problem worsened from 76% in 1983 to 54% in 2001 (SAFPb 1983, 2002). More research is needed on the causes of the poor compliance in private pension systems, but pension reforms should carefully evaluate the elimination or reduction of employers' contribution to avoid increasing the financial burden on the workers (or a rise in fiscal costs) and disincentives for compliance.

D. Competition

A common criticism of public pension systems is that they operate as a monopoly without incentives for cutting administrative costs. Competition between administrators is, therefore, an essential element of a private pension system, as it should reduce managerial costs. Administrators are expected to compete for workers, who are supposed to have the necessary information and skills to choose the best providers, that is, those charging the lowest commissions and paying the highest investment returns, as that would lead to growing insured individual accounts and, consequently, better pensions. Although competition is good, it largely depends on the size of the insured market. Table 7 demonstrates that the greater the number of insured (affiliates), the larger the number of providers and vice versa. For example, Mexico has 26.5 million affiliates and 12 administrators; Argentina has 8.8 million and 12; Chile 6.4 million and 7; Colombia 4.3 million and 6 (but it has multiple administrators, which facilitates market entrance); Peru 2.7 million and 4; El Salvador 919,805 and 3 (but one of them only have 1% of total affiliates and is expected to disappear soon); Costa Rica 889,260 and 9 (as in Colombia there are multiple administrators and this system has just started, see below); Uruguay 596,964 and 4 (also multiple administrators); and Bolivia 676,000 and 2. The number of insured in Bolivia is so small, that the government authorized only two administrators, divided the affiliates between the two according to affiliates' domicile, and banned transfers between the two providers at least until the end of 2001, hence, there is no competition but two monopolies. El Salvador should be soon left with two administrators also and confront similar problems, and Nicaragua will face the same limitations. Historical series from all countries demonstrate that the number of administrators grows, peaks and then shrinks through mergers: in Argentina the number decreased from 25 to 12; in Chile from 21 to 7; in Mexico from 17 to 12; in Colombia from 10 to 6; in Peru from 8 to 4; in Uruguay from 6 to 4; and in El Salvador from 5 to 3 (soon probably 2).

Table 7. Competition Between Administrators in the Private System, 2001-2002

Model	Country	Affiliates Thousands	Number of administrators	Insured in the top three administrators (%)
Substitutive	Chile	6,427	7	79
	Bolivia	676	2	100
	Mexico	26,518	12	37
	El Salvador	920	3	100

Parallel	Peru	2,732	4	76
	Colombia	4,336	6	65
Mixed	Argentina	8,843	12	58
	Uruguay	597	4	87
	Costa Rica	889	9	51
Fuentes: BCU 2002; CONSAR 2002; SAFJP 2002; SAFPa 2002b; SAFPb 2002; SBC 2002; SPa 2002; SPb 2002; SPVS 2002.				

Even in those countries with a considerable number of administrators, competition may be hampered by excessive concentration. Table 7 (last column) exhibits the concentration of affiliates in the three largest administrators: 100% in Bolivia and El Salvador because there only are two and three administrators respectively; 87% in Uruguay; 79% in Chile (steadily rising from 60% in 1983; SAFPb 1983-2001); 76% in Peru; 65% in Colombia; 58% and 51% in Argentina and Costa Rica, respectively; and 37% in Mexico. The latter has the lowest concentration because the law set an upper limit: no administrator can have more than 17% of the total affiliates in the first four years of operation of the system (20% since 2001). It could be argued that if the three biggest administrators are the best, concentration is not a bad thing. But a study of Chile shows that, systematically in the long run, the three biggest administrators have not charged the lowest commissions and paid the highest investment returns. The insured have chosen the three administrators, even though they are not the best, for three reasons: (1) most of the insured lack the needed information and/or skills to make and educated selection; (2) the insured has been lured by advertising, which usually sells an image of security and reliability but fails to provide key information to the insured on the commission charged and the real of return in order to identify the best providers; and (3) many insured have been affiliated by salespersons who receive a commission from the administrator for each affiliate they transfer and whose interest is to switch as many insured as possible. In Chile there was one salesperson per 160 active contributors in 1998, but that ratio has declined significantly since then; in Argentina there was one salesperson per 225 active contributors in 2001. Often salespersons bribe affiliates with gifts to switch administrators; some countries have banned such practices.

Countries with a small insured market must be cautious in carbon copying models from bigger countries as there is a great risk that competition, which is essential to the private pension system, will not work. Such countries must also decide whether they should allow only private administrators, as in half of the Latin American countries, or multiple administrators, as in the other half, because the latter approach allows for easier market entry for administrators and possibly for less concentration (although these issues require more research). Another important issue is that of "exclusive dedication," which means that administrators can only manage pension funds and must develop their own nationwide infrastructure (buildings, equipment, staff), involving considerable expense. It is advisable that countries with a very small number of insured consider permitting administrators to use the infrastructure of other existing institutions (such as banks, insurance companies or financial entities), with proper caution and separation, in order to lower costs and foster broader competition (this approach was incorporated in the Dominican Republic). A ceiling to the percentage of affiliates that a single administrator could enroll could be feasible and perhaps positive in countries with a large insured market and many providers, but more difficult in countries with a small market and few providers. Strict regulation on salespersons is required as well as measures to avoid excessive changes (for instance, introducing penalties for shifts before a minimum period of affiliation).

D. Administrative Costs

The claim that competition reduces administrative costs in a private system, is tempered by the questions raised on the previous section on whether adequate competition truly exists in many countries. Administrative costs consist of two charges: commissions for managing the individual account, the fund investment and the old-age pension, and premium to private insurance companies for coverage on disability and survivors risks (except in Mexico and Colombia, where these are covered by the public system). Charges are calculated as a percentage or a fixed amount of the insured salary or, in some cases, on the balance of the individual account or on the investment return. Such charges are paid by the insured only, except in Colombia and the Dominican Republic, where the employer shares costs. Table 8 exhibits the total charges (commission and premium)as a percentage of the payroll, but the comparison is complex because there may be different types of charges involved that could be difficult to merge into an average.

Total charges in Bolivia are the lowest at 2.21%, because there is neither competition nor advertising the commission is only 0.54%, but the premium is very high at 1.71%. Total charges then climb: 2.27% in Argentina (1.73% commission and 0.54% premium); 2.44% in Chile (1.77% and 0.67%); 2.74% in Uruguay (1.98% and 0.76%); 2.98% in El Salvador (1.69% and 1.29%); 3.5% in Colombia (1.92% and 1.58%); 3.73% in Peru (2.39% and 1.34%); and 4.53% in Mexico (2.19% and 2.5%). In Mexico the premium managed by the public system is the highest and increases the total charge. In Costa Rica and the Dominican Republic the commission has been set as a percentage of the investment rate of return (in order to introduce an incentive to improve such rate): 10% and 30% respectively; the latter is rather high and there is an additional 1.5% on the payroll.

Table 8. Administrative Costs in the Private System, 2001 (as a percentage of wages)

Model	Country	Deposit in the individual account	Administrative costs (commission and premium)[a]	Total deductions	Administrative costs as a percentage of total deductions
Substitutive	Chile	10.00	2.44	12.44	19.61
	Bolivia	10.00	2.21	12.21	18.10
	Mexico	10.73	4.53	15.26	29.68
	El Salvador	9.50	2.98	12.48	23.87
	Dominican Rep.[b]	3.50	1.50	5.00	30.00
Parallel	Peru	8.00	3.73	11.73	31.80
	Colombia	10.00	3.50	13.50	25.93
Mixed	Argentina	2.73	2.27	5.00	45.40
	Uruguay	12.26	2.74	15.00	18.26
	Costa Rica	4.50	[c]	n.a.	n.a.

[a] Commission paid to the administrator for old age insurance and premium paid to the insurance company for disability and survivors insurance (the latter paid to the public system in Colombia and Mexico). [b] The system does not start to operate until 2003; in addition of the charge shown, there will be 30% on investment return. [c] The commission is not charged on the salary but 10% on the investment return.

Sources: BCU 2002; CONSAR 2002; Ley 2000; Ley 2001; SAFJP 2002; SAFPa 2002b; SAFPb 2002; SBC 2002; SPa 2002; SPb 2002; SPVS 2002. The last column was calculated by the author.

The two components of the administrative costs show different levels and trends. The premium varies between 0.54% and 1.69% (except in Mexico), is the smaller component and has diminished in almost all countries. The commission ranges from 1.73% and 2.39% (except in Bolivia) and constitutes the larger component; it has oscillated over time but not exhibited a declining trend in most countries. It is the commission, therefore, that largely explains the burden of the total charge and why it has not diminished significantly. In Chile the total percentage charge rose from 2.44% in 1981 to 3.60% in 1984, declined to 2.92% in 1993 and 2.44% in 2001, the same as at the start, after 21 years of reform; the cost of the commission alone in U.S. dollars per insured increased from $64 in 1982 to $82 in 1983, decreased to $75 in 1988, peaked at $176 in 1997 and diminished to $131 in 2000, still more than two-fold the initial charge. In 1998 these costs were 67% higher than fees charged by other financial institutions (on bank savings and time deposits) as well as costs of stockbrokers on custody accounts (Acuña and Iglesias 2001).

Total administrative costs as percentage of total salary deductions at the end of 2001 were: 18% in Bolivia and Uruguay, 20% in Chile, 24% in El Salvador, 26% in Colombia, 30% in Mexico, 32% in Peru and 45% in Argentina[13] (Table 8, last column). From one-fourth to almost one-half of the salary discount went to administrative expenses, hence reducing proportionally the deposit in the individual account. Supporters of the structural reform acknowledge now that competition alone (if indeed it functions properly) does not ensure low administrative costs and that charges are high (Holzmann, Valdés-Prieto 2001). The causes of the high managerial expenses are marketing, advertising and commissions to salespersons (in Chile 26% in 1983 and 28% in 2000), frequent shifts among providers, wages of personnel, etc. Setting those costs as a percentage of the salary creates no incentive to reduce them and the state has been unable to control excessive costs. We lack experience on the effects of a percentage over the investment return vis-à-vis a fixed rate over the payroll as sources for administrative costs, hence, the outcome in Costa Rica should be watched. More state regulation may be needed to control and cut costs.

E. Overall Pension Level and Impact of Gender

Structural reforms have promised that the private system will pay better pensions than the public system. This important effect, nevertheless, is difficult to asses due to the lack of comparative, up to date statistical series. Chile's statistical report on the private pension system is the most complete in the region and provides detailed historical series on affiliates, contributors, number of pensioners, commissions, portfolio composition, investment returns and so forth, but no regular data on the average amount of private pensions compared with public pensions. Two Chilean scholars stated in a paper released at the end of 2001 that "the latest information published by the Superintendency of AFPs (corresponding to June 1992)", almost ten years old at the time, indicated that average private pensions in relation to public pensions were: 43% higher for old-age, 68% higher for disability, 42% higher for surviving widows, but 9% lower for surviving orphans (Acuña and Iglesias 2001: 27). These figures are partly contradicted by the following data on average pensions in the private system (March 2002) contrasted with similar data from the public system (December 2001): (1) the old-age private pension (accounting for 63% of all pensions) was 24% *smaller* than the public pension; (2) the disability private pension (7% of all pensions) was 15% higher; (3) the survivors pension (28% of all pensions) was 110% higher; and (4) the weighted average of all private pensions was only 3% higher than the average public pension (based on INP 2001; SAFPb 2002). Argentina has the second best series of statistical publications related to the private pension system in the region but neither its monthly bulletin nor its quarterly report include data on the pensions of the private system. Furthermore, changes introduced during the 2001-2202 crisis (a drastic cut in the employee's contribution, conversion of financial instruments from dollars into devaluated pesos, etc.) are projected to reduce by 65% the benefit of an average pensioner with 30 years of contribution (ILO 2002). In Colombia, public pensions have a higher rate of return than the capital market return of the private system, a key reason for the majority of the insured remaining in the public

[13] In 2001 the insured contribution to the private system in Argentina was cut from 11% to 5%, while total charges were reduced from 3.41% to 2.27%, but the proportion deposited in the individual account shrank from 7.59% to 2.73% and the burden of administrative costs as a percentage of total salary deduction jumped from 31% to 45.4% (ILO 2002).

system (Kleinjans 2002).

In Latin America women pensions are usually lower than men's for three reasons: (a) women salaries are often lower than men in the same position and women are more likely to work in the informal sector and earn lower income; (b) women age of retirement is earlier than men (as much as 5 years) and they accumulate less contributions than men because of temporary withdraw from the labor force for child rearing; and (c) female's life expectancy is higher than male's. Gender inequalities exists in both public and private pension systems but they tend to be more severe in the latter. Public systems are relatively more gender neutral because while women have a longer life expectancy, the benefit formula relies on "unisex" life tables that distributes equal monthly benefits, thus providing subsidies to women from men; nevertheless if women retire earlier, with lower years of contribution, their pension would be lower. Conversely, private systems apply gender-based mortality tables both for annuities and scheduled withdrawals; the accumulated pension fund in the individual account is divided by the average years of life expectancy, hence, women pensions are lower than men and even more so if they retire earlier. It is argued that this approach is fairer because it avoids cross gender subsidies, but it ignores the fact that women entirely pay the cost of child rearing as Latin American pension systems do not grant credits for child rearing. Furthermore, most structural reforms have increased the years of contributions required to earn a pension, for instance, in Argentina from 15 to 30 years, thus making more difficult for women to meet that condition. On the other hand, many reforms have equalized the age of retirement (Bolivia, Mexico, Peru and, gradually, Argentina and Uruguay), therefore, helping women to accumulate a higher fund in their individual accounts to be paid in fewer years of retirement; but don't compensate for the higher life expectancy (Arenas de Mesa and Montecinos 1999; Bertranou 2001).

In order to properly support the claim that private pensions are better than public pensions, historical statistical series on the average amount of private pensions, disaggregated by risk, should be published by the institutions that supervise private pension systems and compare with similar figures for public pensions. The equalization in the age of retirement is a positive step to reduce gender inequalities but still private pension systems should design techniques to ameliorate the adverse effects of higher life expectancy and lower contribution density of women compared with men.

G. Capital Accumulation and Impact on National Saving

The World Bank (1994) has asserted that the structural pension reform will increase capital accumulation and promote national saving, which in turn will propel economic growth, stimulate employment and eventually pay better pensions. The preamble of the Mexican pension reform law forecasted that the pension reform would increase national saving, and most reformers in Latin America have made identical predictions. Data supports the claim of considerable capital accumulation(in millions of US dollars) in the majority of the pension funds at the end of 2001: Chile had the highest with $35,461, followed by Mexico with $26,987, Argentina $20,786, Colombia $4,956, Peru $3,589, Uruguay $1,045, Bolivia $936, El Salvador $768 and Costa Rica $23 million dollars (Table 9, first column).

Table 9. Accumulated Funds and Real Investment Returns, 2001

Model	Country	Accumulated fund		Average annual real returns (%)[a]
		Millions of US dollars	Share of GDP (%)	
Substitutive	Chile	35,461	55.0	10.70
	Bolivia	936	11.0	15.76
	Mexico	26,987	4.3	11.04
	El Salvador	768	5.5	12.62

Parallel	Peru	3,589	6.6	6.0
	Colombia	4,956	6.0	7.38
Mixed	Argentina	20,786	7.4	7.95
	Uruguay	1,045	6.1	8.44
	Costa Rica	23	0.1	n.a.

[a] From the inception of the system until the end of 2001.
Sources: AIOS 2002; BCU 2002; CONSAR 2002; SAFJP 2002; SAFPa 2002b; SAFPb 2002; SBC 2002; SPa 2002; SPb 2002; SPVS 2002. Colombia first two columns and Costa Rica last column are author's estimates.

The amount of capital accumulated varies in the nine countries according to the length of time the system has been in operation, the number of insured, the size of the economy and the wage bill, and the investment return. Chile, whose system was more than 20 years old, had accumulated the largest fund. The Argentinean reform had been functioning seven and a half years, but it had accumulated a fund almost 60% the size of Chile's, due to the larger scale of the Argentine economy and a higher number of insured. In Mexico the system was four years old and had accumulated 76% of the Chilean fund and surpassed Argentina's, because the Mexican economy is the second largest in the region and the system had the largest number of insured. The relative low accumulation in Uruguay, Bolivia and El Salvador is explained by the small size of their economies and the fact that their reform was introduced more recently (this is even more so in Costa Rica). The percentage of accumulated funds to GDP (second column of Table 9) depends not only on the amounts accumulated in the fund but also on the size of the GDP: the larger the GDP the smaller the chance of a high percentage and vice versa. In Chile it was 55%; in Bolivia 11%; in Argentina 7.4%; in Colombia, Uruguay and Peru from 6% to 6.6%; in El Salvador 5.5%, and in Mexico 4.3%.

The above figures only reflect accumulation on individual accounts, not the fiscal costs of the transition (see next section). Chile is the only country whose pension reform has been in operation long enough to assess its impact on national saving and several studies have tackled this question, mostly reaching negative conclusions. Robert Holzmann (1997), in an econometric exercise of general equilibrium that deducted fiscal costs of the reform (negative) from private pension savings (positive), concluded that the impact of the pension reform on national saving in 1981-1995 had been negative until 1988 and that no direct positive impact could be observed thereafter; he then warned Latin American and Eastern European countries not to harbor hopes that pension reform would strengthen national saving. Alberto Arenas de Mesa (1999), using a partial equilibrium model, also deducted the fiscal cost of the reform from the capital accumulated in individual accounts in 1981-1996. The net result of these two factors measured the impact on national saving in annual average as percentage of GDP: the capitalization in individual accounts was 2.7%, the fiscal cost was -5.7% and the net outcome was -3%. Arenas de Mesa forecast that in the first five years of the 21st century the situation would change as savings become slightly higher than fiscal costs, hence the net result would be positive and continue growing. It would probably take 20 years, however, to catch up the losses of the previous 20 years, so that 40 years would elapse before a net positive impact on domestic savings materializes. Acuña and Iglesias (2001) subtracted the "transitory social security [pension] deficit" (excluding the deficit caused by the minimum and welfare pensions and the armed forces scheme) from the private pension savings and got a negative net outcome but declining from -6.2% to –0.5% of GDP in 1982-1997, for an annual average of –2.7%, relatively smaller than Arenas de Mesa because the latter included the total pension deficit. Conversely, Haindl Rondanelly (1997) concluded that the pension reform had a positive impact on aggregate savings in 1990-1994 but based on the overall tax burden instead of the directly related fiscal cost of the reform. Using his own figures, if he had deducted the average cost of the deficit in the public system (-4.6%) from the average pension savings (3.1%) he would have reached a negative net outcome (-1.5%) and this without taking other fiscal costs into account.

The above discussion on the impact of the pension reform on national saving in Chile demonstrate how difficult is to measure such effect and the contradictory results of several studies in the Latin American country with the largest and most successful private pension system. It is unwise, therefore, to launch a structural pension reform with a major goal of increasing national saving.

H. Fiscal Costs of the Transition

Fiscal costs of the reform during the transition are difficult to compare among countries because of diverse components and methodologies; rough estimates as percentage of GDP in 2000 were: 6% in Chile (after 20 years of reform); above 2% in Argentina, Bolivia and Uruguay; and 1% to 2% in Colombia and Mexico. There are three components of the fiscal cost, all of them financed by the state with few exceptions (see Table 10): (1) the deficit of the public system, (2) the recognition bond and (3) the minimum pension. In addition, in some countries the state provides other guarantees and social assistance pensions, which increase fiscal costs (this section is mostly based on Mesa-Lago 2000a). As this section refers to legal rather than statistical elements, information is provided on the eleven countries that have engaged in reform.

Table 10. Fiscal Costs of the Reform, 2002

Model	Country	Government financial responsibilities		
		Covers the public system deficit	Pays recognition bond	Guarantees minimum pension
Substitutive	Chile	Yes	No ceiling, adjustable to inflation, earns 4% real annual interest, requires previous contributions	Yes
	Bolivia		Has a ceiling, adjustable, unclear whether earns real interest, requires one month of contribution	No
	Mexico		No	Yes
	El Salvador		No ceiling, not adjustable, earns real interest equal to inflation, requires previous contributions	Yes
	Nicaragua		No ceiling, not adjustable, earns no interest, requires one year of previous contributions	Yes
	Dom. Rep.		No ceiling, adjustable, earns 2% real interest, requires previous contributions	Yes
Parallel	Peru	Yes	Has a ceiling, adjustable, earns no interest, requires 4 years of previous contributions	Not initially (then recognized by law but not implemented)
	Colombia		Has a ceiling, adjustable, earns 3% real interest rate, requires 3 years of previous contributions	Yes (with limitations)
Mixed	Argentina	Yes	No ceiling, adjustable, earns no interest, requires 30 years of previous contributions (paid by the first pillar--public system)	Yes (paid by the first pillar--public system)
	Uruguay	Yes	No	
	Costa Rica	No	No	

Source: Legislation of the eleven countries.

1. Public System Deficit. In ten out of the eleven countries the state is committed to finance the public system deficit. Costa Rica is an exception because its public system financial regime (PCF) is strong to finance ongoing pensions. This fiscal burden varies according to the implicit pension debt (IPD), which is the present value of long-term obligations, including both ongoing and future pensions. Under the financial regimes based on PAYG or PCF, there always is an IPD, but the reform model can either make it explicit, engendering an immediate fiscal cost for the total debt, or postpone the debt, totally or partially. Under the substitutive model, the public system is shut down completely and the entire IPD is made explicit immediately, because both ongoing pensions and those eventually collected by the few insured remaining in the public system must be paid by the state. This is due to the fact that 100% of the insured (in Bolivia and Mexico) or 94% to 97% of them (in El Salvador and Chile, respectively) switch to the private system and stop paying their contributions to the public system, which is left with virtually all the pensions to pay but with very few contributors if any, hence the ensuing deficit. Under the parallel model, the IPD is made explicit only in the private system, not in the public one, whose IPD is postponed; as the public system retains contributing affiliates (much more in Colombia than in Peru) the fiscal cost is reduced, at least for a given period. Under the mixed model, the IPD is made partly explicit in the second pillar (the supplementary private system) but not in the first pillar (the public system), where it is postponed. In Uruguay the fiscal cost is reduced to a larger extent than in Argentina, since in the former the majority of the insured has stayed in the public system whereas in the latter these are only a minority.

2. Recognition Bond. In eight of the eleven countries the state is committed to the payment of a recognition bond (under different names) for a value equivalent to the contributions accumulated in the public system by all insured who switched to the private system. Said value is adjusted to inflation (except in Nicaragua), and in three countries (Chile, Colombia and the Dominican Republic) earns a real annual interest rate from 2% to 4%. Entitlement to the bond is subject to a minimum period of previous contributions ranging from one month to 30 years. Five countries have not set a ceiling for the value of the bond (Chile, El Salvador, Nicaragua, Dominican Republic and Argentina) while three countries set a ceiling (Bolivia, Peru and Colombia). Three countries do not grant the bond: Mexico (because of the option available to affiliates when they retire: see section I-C-1), and Uruguay and Costa Rica (because in a mixed model, the insured do not transfer but stay in the first pillar, which pays them a basic pension). In Bolivia the bond is limited and in Peru only one half of those who switched to the private system had been granted the bond by April 2002 (SAFPa 2002).

3. Minimum Pension. In nine of the eleven countries, the state guarantees a minimum pension in the private system, to the insured whose individual account is insufficient to finance such pension; the state finances the difference. Under the mixed model in Argentina, Uruguay and Costa Rica the minimum pension is in fact the basic pension financed by the first pillar of the public system. A minimum number of previous contributions are required for entitlement to such a pension, varying from 20 to 35 years. Bolivia does not grant such minimum pension and Peru has not enacted the needed regulations of the reform law to establish one.

4. Additional Guarantees. In four countries (Argentina, Chile, Colombia and Uruguay), the state offers two other guarantees: (a) when an administrator is unable to guarantee a minimum investment return on individual accounts, the state makes up the difference, and (b) if an administrator or insurance company goes bankrupt the state bears the responsibility for paying the pensions (in Uruguay such guarantees are only granted to those insured in the public administrator, which accounts for 50% of all insured). In the Dominican Republic, the law makes the state generally responsible for any failure or lack of fulfillment that could occur in the system.

There is a trade-off in all eleven countries. On the one hand, the state tries to curb fiscal costs, either by not granting the recognition bond or the minimum pension, or by making them subject to restrictions (capped, not adjusted, no interest earned, previous contributions required). These cutbacks were introduced in various countries after the Chilean reform, which was the most generous of all, but also the most onerous from a fiscal standpoint. On the other hand, curtailing the fiscal burden is detrimental to the insured welfare, as they are not entitled to the recognition bond and the minimum pension, or receive them but under severe restrictions. Chile endures the highest transition fiscal costs, while those of Bolivia and Peru are the lowest, but these are also the two countries that have limited beneficiaries' rights the most. Countries undertaking a structural reform should carefully balance costs and benefits and also calculate the fiscal costs during the transition and plan ahead how to finance them, because the transition may last from 40 to 60 years, according to the demographic characteristics and the age of the pension system in each country. Virtually no research has been done on the distributional impact of the fiscal costs of the reform but, in countries with small population coverage, the state finances the transition of a minority of insured usually in the middle and lower-upper income group, and the majority of the population (uninsured) contributes to those costs through taxes and other means. If the poor lack protection, as is usually the case in those countries, the regressive effects of the reform should be more severe.

I. Capital Market Development and Portfolio Diversification

Another important claim is that the reform will contribute to capital market development and the creation of new financial instruments, all of which will lead to a more diversified investment portfolio, which in turn will help to compensate for risks. A couple of empirical studies have reviewed the impact on capital market development in Chile but either in a superficial manner or without reaching solid conclusions. The most sophisticated analysis, done by Holzmann's (1997) concluded that the private pension system had made the financial markets more liquid and mature, and that the empirical evidence coincided with the claim that the pension reform had contributed to financial market development and a more diversified portfolio; but he cautioned that such evidence did not constitute watertight proof that the pension reform was the decisive factor in the development of financial markets since the mid-1980s, because the latter might simply have reflected changes in legislation and other lessons learned from experiences and errors of the 1970s and early 1980s.

Table 11 exhibits the portfolio percentage distribution by financial instrument at the end of 2001, indicating that much still ought to be done to achieve an adequate degree of diversification. In Uruguay, Argentina, Bolivia, El Salvador, Mexico and Costa Rica, from 61% to 92% of the portfolio is made up of government debt securities. Only in Peru, Chile and Colombia (48%) that investment share is a minority; it took 15 years in Chile to bring it down from 46% to 35% in 1986-2001 and largely because of the role of the public supervisory agency. The large majority of investment in most countries is still in public instruments and, if they have generated a good rate of return, it is because the state has paid high interest rates on its debt paper (for instance in Argentina), but this is costly for the economy and it cannot be sustained in the long run. Stocks are among the most popular instruments to diversify the portfolio and if the capital market develops, there should be a variety of stocks in which to invest the fund. But only in Chile, Argentina and Peru from 10% to 25% of the portfolio is invested in stocks; as for the other countries it is practically zero. If investment opportunities on the domestic market are inadequate, one option is to invest abroad, but it is forbidden in some countries because is deemed contrary to national interests. In Chile 13% is invested in foreign instruments, 5% in Peru, 4% in Colombia and less than 2% in Argentina, nothing in the rest (data from Colombia comes from SBC 2002).

Table 11. Percentage Distribution of Investment Portfolio by Financial Instrument, 2001

Model	Country	Government Debt	Financial institutions	Non-financial institutions	Stocks	Mutual and investment funds	Foreign issuers	Others
Substitutive	Chile	35.0	32.5	6.2	10.6	2.6	13.1	0.0
	Bolivia	73.2	10.5	13.4	0.0	0.0	0.0	2.9
	Mexico	89.8	2.4	7.8	0.0	0.0	0.0	0.0
	El Salvador	80.7	17.7	0.9	0.7	0.0	0.0	0.0
Parallel[a]	Peru	13.8	37.2	16.4	24.7	0.5	4.8	2.6
Mixed	Argentina	68.1	10.9	1.7	10.2	3.3	1.8	4.0
	Uruguay	61.2	35.4	1.7	0.0	0.0	0.0	1.7
	Costa Rica	91.5	3.0	5.5	0.0	0.0	0.0	0.0

[a] Data from Colombia are not comparable with the rest SBC 2002).
Source: AIOS 2002.

The crisis in Argentina has provoked dramatic erosion in the value of the pension fund and an increase in the concentration of the portfolio in public debt paper. In 2001 the government pressured the administrators to convert instruments in dollars and tradable in international markets into “guaranteed loans” with a lower interest; several subsequent decrees forced the investment of the product of certificates of bank deposits and cash into debt paper. The public supervisory agency (*Superintendencia*) cooperated with that move by raising the investment ceiling on that type of instrument. In 2002 the government converted the “guaranteed loans” and other financial instruments in dollars into pesos, and reduced even more the interest rate; the value of the Argentinean currency (that was par with the dollar) plummeted to 3.5 pesos per dollar in mid 2002. As a result, the percentage of the portfolio invested in government paper jumped to almost 76% in and the value of such portfolio declined significantly. This negative experience, contrasted with that of Chile, suggests that the public supervisory agency should be truly independent vis-à-vis de executive and play a more active role in promoting portfolio diversification (ILO 2002).

J. Real Investment Returns

It is conventional wisdom that the reform will generate high investment returns and data support this assumption though results are uneven among countries and also vary according to the period used for the calculation. The last column in Table 9 shows the average real annual rate of return (adjusted to inflation) from the inception of the system until the end of 2001. Bolivia had the highest return with 15.7%, followed by El Salvador 12.6%,[14] Mexico and Chile 11%, Uruguay and Argentina 8%, Colombia 7.4%, and Costa Rica and Peru 6%. These are *gross* returns, before deducting commission costs, hence, *net* returns are from 0.2 to 2.4 percentage points lower, for instance, 6% gross and 3.6% net in Peru, 11% and 8.8% in Mexico, and 10.7% and 8.9% in Chile. In 1981-2000, investment gross returns in Chile averaged 11.9 percentage points lower than returns of the Selective Share Price Index of the Santiago stock exchange and 3.8 points higher than the average rate of deposits (Acuña and Iglesias 2001).

The figures mentioned above refer to averages over the entire period the reform has been in operation; if we take the period until the mid 1990s, however, these averages are much higher, but thereafter they are much lower because of the financial/stock market crises in 1995, 1998 and 2001 (the situation worsened in 2002). For example, returns in Chile averaged 13.8% in 1981-1994 vis-à-vis 4.6% in 1995-2001, and there were negative rates in 1995 (-2.5%) and 1998 (-1.1%) (SAFPb 2002). In Argentina the average return was 19.7% in 1994-1997 vis-à-vis 7.2% from mid-1997 to mid-2001, and there were negative rates from February 1998 to February 1999 (-6.6%) and from December 2000 to December 2001 (-13.7%) (SAFJP 2001a, 2002). Such fluctuations in the rate of return involve a major risk: the insured who retire in the midst of a capital market boom will have a good pension, but the fund in the individual account can shrink substantially during a crisis. If the crisis is brief (as in 1995 and 1998) the fund can rapidly recover, but if the crisis is longer, it could result in a much lower pension (as seems to be the case of Argentina in 2001-2002). This risk is attenuated under mixed models, where two systems are combined: the guaranteed defined benefit and the undefined benefit.

III. LESSONS FROM THE STRUCTURAL PENSION REFORMS IN LATIN AMERICA

[14] The figure for El Salvador comes from AIOS 2002, but it is doubtful. The author estimated the average in 1998-1999 as 6.7% (Mesa-Lago 2001a) and it was officially reported as 7.8% in 2000-2001 (SPb 2002), for an average of 7.4% in the four years.

In this section eleven lessons are drawn from the preceding analysis and assessment of the effects of structural pension reforms in Latin America. Issues requiring further research are identified also.

1. Models of Reform. There is no single universal structural pension reform model (for world differences in structural pension reforms see Mesa-Lago and Hohnerlein 2003). In Latin America three distinct general models were identified (substitutive, parallel and mixed) and with considerably diversity in the features of the eleven countries, even within a particular model. Generally, countries have crafted their reform adapting it to their financial, economic, social, political and social security circumstances, although some have copied a model unsuitable to their own circumstances and faced serious obstacles for lack of essential elements. It is, therefore, inappropriate to promote a single reform model in Latin America, Asia or elsewhere. The nine countries that have not yet enacted a reform law in Latin America, as well as countries in Asia, should carefully study the experience of the reformers (their advantages and disadvantages, successes and failures) before opting for one of the general models and then adapting it to their specific circumstances.

2. Freedom of Choice and Switch to the Private System. In six of the nine countries that have implemented the reforms, either all insured persons switched to the private system (Bolivia and Mexico) or most of them did, particularly when the substitutive model was applied. In Peru, that followed a parallel model, and Argentina that applied a mixed model, the majority of insured also moved to the private system. These changes cannot be attributed solely to the merits of the private system, but also to the obligation to transfer, restrictions imposed on the affiliates' free choice, legal provisions and state incentives to foster the switch, and the length of time the system has been operating. In two countries, a slight majority of affiliates has stayed in the public system: Colombia, which opted for a parallel model, with a strengthened public system able to compete with its private counterpart, and Uruguay, under a mixed system. In Costa Rica all the insured were mandatory moved to the mixed system, hence they are in both pillars, although the public one pays the majority of the pension. Pension reforms should try to reach an optimal equilibrium between freedom of choice and other goals such as the need to take age into account for accumulation purposes, and the closing of a public system.

3. Coverage of the Labor Force. Although comparisons of pension coverage of the labor force prior and after the reform are either impossible or very difficult, data based on affiliates indicate an increase in coverage in five countries (albeit doubtful in Chile), stagnation in two and a decrease in two. But based on data of active contributors, coverage decreases by one half in comparison with coverage based on affiliates. In the past 20 years, Latin America has endured growing informality of the labor force, a trend that is worsening with the transformation of the labor market (job flexibility) partly due to globalization and international competition. Social security has not adapted to these trends and must do so, since they probably will continue and provoke adverse effects on coverage. Pension reforms should include a goal of extending social insurance coverage to low income groups difficult to incorporate (e.g., self-employed) and consider the financial feasibility of social assistance pensions. High fiscal costs of the structural pension reform should be balanced with the need of resources for social protection of the poor. Recent studies on coverage done by the ISSA (including countries in Asia and Latin America), the ILO and individual countries should be consider by reformers. Still there is a need to undertake research on adequate policies to extend coverage and social protection.

4. Compliance. Ownership of the individual account and the direct link between contribution and pension levels have not succeeded in solving the problem of evasion and payment delays. Indeed, in seven countries approximately half of the affiliates are not active contributors to the system, a proportion that decreases to less than one-third in Argentina. More research is needed on the causes of the poor compliance in private pension systems and to design adequate remedies, but pension reforms should carefully evaluate the elimination or reduction of employers' contribution to avoid increasing the financial burden on the workers (or a rise in fiscal costs) and disincentives for compliance.

5. Competition. For competition to work there must be an adequate number of administrators but that largely depends on the size of the insured market. Big countries with many insured (particularly Mexico and Argentina) are those with the largest numbers of administrators; conversely, small countries with relatively few potential insured, only have two or three providers (Bolivia and El Salvador). In Bolivia, the government divided the insured into two providers according to the insured domicile, and banned transfers between the two at least until the end of 2001. Initially administrators proliferate, but later on merge and decline in number. Even in those countries where the number of administrators is adequate, there is a high concentration of insured in the biggest three, and this trend is growing. Countries with a small insured market should be cautious in carbon copying models from bigger countries as there is a risk that competition--essential to the private pension system--will not work. Countries should decide whether to allow only private administrators, as in half of the Latin American countries, or multiple administrators, as in the other half, because the latter approach appear to facilitate easier market entry for providers and less concentration. It is advisable that countries with a very small number of insured consider permitting providers to use the infrastructure of other existing institutions (such as banks, insurance companies or financial entities), with proper caution and separation, in order to lower costs and foster competition. A maximum percentage of affiliates legally set to a single administrator could be feasible and perhaps positive in countries with a large insured market and many providers, but more difficult in those with a small market and few providers. Selection of administrators by insured is normally not based on their merits (low commissions charged, high investment returns paid) but on other factors such as the role of salespersons and advertising. It is essential to improve information and educate the insured on the selection of the best providers. Strict regulation on salespersons is required as well as measures to avoid excessive changes of insured.

6. Administrative Costs. Competition does not seem to have worked properly in many countries, hence, administrative costs are high and have not significantly diminished. Total charges range from 2.2% to 4.5% of salaries (the insured pay those charges, except in two countries where the employers share costs) and proportionally reduce the amount deposited into individual accounts. Total charges take from 18% to 45% of the total salary deduction, one of the most serious challenges that the reform faces: costs must be brought down to alleviate the burden on the insured and increase deposits in their individual accounts. The disability and survivors premium is the smaller component of total charges and has tended to decline (except in two countries), but the commission charged for managing the old-age scheme is the major component of those charges, remains high and has not exhibited a significant decrease in most countries. The causes of the high managerial expenses are mainly marketing, advertising and payment of commission to salespersons. Setting administrative costs as a percentage of the payroll creates no incentive to reduce them and the state has been unable or unwilling to control excessive costs. There is little knowledge on the effect of using a percentage over the investment return vis-à-vis a fixed rate over the payroll as the major source of administrative costs, hence, the outcome in two countries that are introducing the former approach should be watched. More state regulation may be needed to control and reduce costs.

7. Overall Pension Level and Impact of Gender. There are little and contradictory data on the level of pensions in the private system compared with those in the public pension. The most recent data from Chile indicate that: old-age private pensions (two-third of the total) are smaller than public pensions, while the opposite is true of disability and survivors pensions (one third of the total), and the average of all private pensions is slightly higher. Statistical series on the average amount of private pensions, disaggregated by risk, should be published by the institutions that supervise private pension systems and compared with similar data for public pensions. The equalization in the age of retirement is a positive step to reduce gender inequalities, but still private pension systems should design techniques to ameliorate the adverse effects of both higher life expectancy and lower contribution density of women vis-à-vis men.

8. Capital Accumulation and National Saving. Capital accumulation has been quite considerable, though it varies in the nine countries according to how long the reform has been in operation and other factors. In 2001 it reached 55% of GDP in Chile, the country with the oldest reform (21 years), and from 4% to 11% in the remaining countries (less than 1% in Costa Rica because the system just started). If historical trends persist, the fund will grow and so its ratio to GDP. The effect on national saving is difficult to measure and there are contradictory results. But three studies on Chile, the only country with enough experience to bear analysis and whose reform has been among the most successful, deducted fiscal costs from private pension savings as annual average of GDP and showed a negative net result in the first 16 years. These results advise against undertaking a pension reform with the main objective of increasing national saving; the goals of the reform should be others.

9. Fiscal Costs in the Transition. Fiscal costs are due to three state financial responsibilities: the public system deficit, the recognition bond and the minimum pension; some countries offer additional state guarantees. There is a trade-off between lowering the fiscal cost and the welfare of the insured. Chile has endured the highest fiscal costs, but also has granted the most generous conditions to the insured; conversely, Bolivia and Peru have the lowest fiscal costs but the most restricted benefits in detriment of the insured. The fiscal cost and the value of the IPD must be carefully calculated before embarking on reform, and the means of financing both must be taken into consideration, because the transition can last from 40 to 60 years, according to the demographic characteristics and the age of the pension system in each country.

Virtually no research has been done on the distributional effect of the fiscal costs of the reform but, in countries with small population coverage, the state finances the transition of a minority of insured usually in the middle and lower-upper income group, and the majority of the population (uninsured) contributes to those costs through taxes. If the poor lack protection, as is usually the case in those countries, the regressive effects of the reform should be more severe.

10. Capital Market Development and Portfolio Diversification. A couple of empirical studies have reviewed the impact on capital market development in Chile but either in a superficial manner or without reaching solid conclusions. The most sophisticated study found that the private pension system had made the financial markets more liquid and mature, and that the empirical evidence coincided with the claim that the pension reform had contributed to financial market development and a more diversified portfolio, but cautioned that such evidence did not constitute watertight proof that the pension reform was the decisive factor. Pension fund investment portfolios are still sorely lacking in diversification. In six countries from 61% to 92% of the portfolio is concentrated on public debt paper; after 21 years of reform Chile has been able to reduce such concentration to 35%, largely due to the role of the public supervisory agency. Only three countries have investment in stocks (from 10% to 25%), most countries forbid investments in foreign instruments and only four show a significant share (from 2% to 13%). The experience of Argentina in 2001-2002 suggests that the public agency that supervises the private pension system should be truly independent and play a much more active role in promoting portfolio diversification.

11. Real Investment Returns. The average real rate of return since the inception of the reform until the end of 2001 was high in Chile, Mexico, El Salvador and Bolivia (from 11% to 16%), and in the other countries ranged from 6% to 8%. These are gross returns, before deductions for administrative costs, and net returns were from 0.2 to 2.4 percentage points lower. Economic crises have adversely affected rates of return, thus average returns in Argentina and Chile until the mid 1990s were well above the rates thereafter. Fluctuations in the rates of return imply a risk for beneficiaries and may have an adverse impact on their pension level. The mixed model, in which a guaranteed basic pension is combined with a pension based on the individual account, might ameliorate such a risk. More time and further research are needed to test this important point.

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