

# Policy Challenges of Population Aging and Pension Systems in Latin America

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## **Introduction**

Like other regions in the world, Latin America and the Caribbean (LAC) are in a demographic transition with a rising old-age dependency ratio. Aging populations have serious long-term consequences for labor and capital markets, health and pension systems, and macroeconomic and financial equilibriums. In the case of pension reforms, conventional pay-as-you-go (PAYG) pension systems based on defined benefits (DB) are particularly put under stress by aging, as rising population dependency ratios lead to increasing PAYG system deficits. Parametric PAYG reform—raising contribution rates and lowering pension benefits—has been the conventional way to address growing financial imbalances of pension systems worldwide. However, parametric reforms often intensify adverse distributional and efficiency consequences of PAYG systems.

The alternative way—structural reform of DB-PAYG systems by replacing them at least in part by fully funded (FF) systems based on defined contributions (DC)—has been spearheaded in LAC. To date, 12 countries have adopted multi-pillar pension systems that include an FF pillar. Hence, LAC is the region with the largest number of reformed pension systems in the world. However, reformed pension

systems come with their own new problems, often compounded by continuing population aging.

In my presentation, I review the progress made in reforming Latin America's pension systems, analyze the results of pension reforms, and assess the reformed systems' new challenges that policymakers must address under conditions of accelerating aging. First, I briefly review population aging in the region. Then I discuss the main design features of alternative pensions systems to identify the problems of Latin America's traditional PAYG systems that motivated pension system reform. Then I briefly review Chile's pioneer pension reform in 1981 and review subsequent pension reforms in Latin America. Chile's long post-reform experience allows a quantitative assessment of its macroeconomic and growth effects, a subject that I revise next. Finally, I analyze five challenges faced by policymakers in unreformed and reformed pension systems, most of which are compounded by accelerating demographic transition.

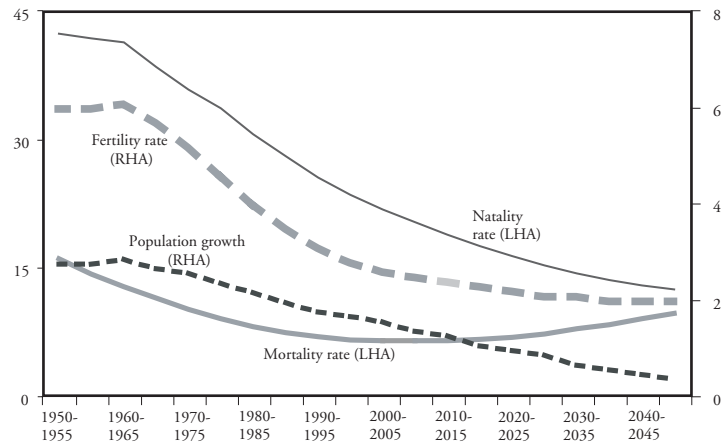
## **Demographic trends in Latin America**

### **1**

Demographic transition toward an older population structure is accelerating in Latin America. As a result of declining mortality rates and even more rapidly falling fertility rates, population growth is currently on a strong downward trend in the region, at a level similar to the world's average rate (Chart 1). Population aging is reflected by a rising old-age dependency ratio<sup>1</sup>, which is starting to accelerate in the region and is projected to increase from 8.5 elderly per 100 working-age people today to a ratio of 27 by the year 2050 (Chart 2).

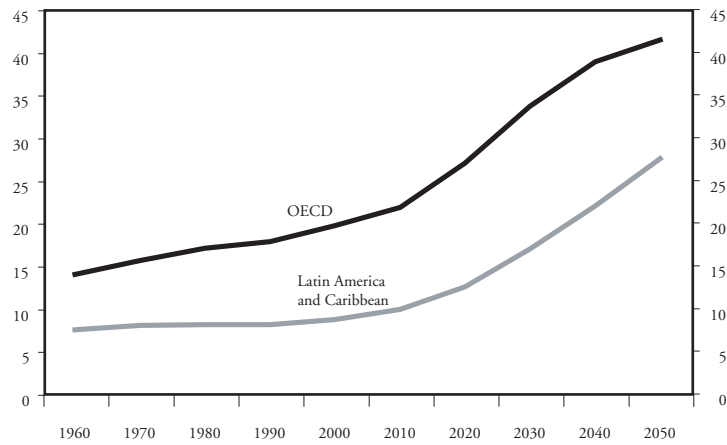
Substantial demographic differences are observed within Latin America. Uruguay, Argentina, and Barbados exhibit the highest dependency ratios in 2000, at 20.7, 15.5, and 15, respectively, while Haiti, Honduras, and Paraguay have the lowest ratios, at less than 6.6 (Chart 3). Large increases in old-age dependency for the next half-century are projected for all countries, with some attaining dependency ratios that may even exceed the averages projected for the OECD in 2050 (Chart 4). Hence, all of LAC will be facing growing

**Chart 1**  
**Historical and Projected Demographic Trends in LAC**



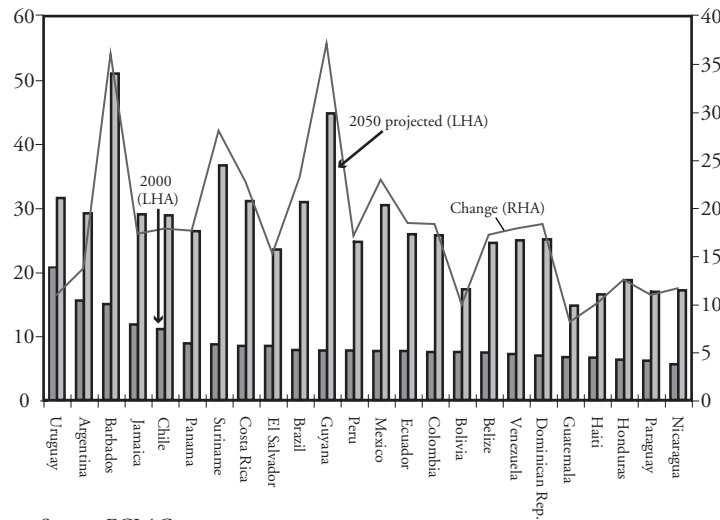
Source: ECLAC

**Chart 2**  
**Old-Age Dependency Ratio in LAC and OECD Countries**



Sources: ECLAC and OECD

**Chart 3**  
**Old-Age Dependency Ratios in LAC Countries,**  
**2000 and 2050 (Percent)**

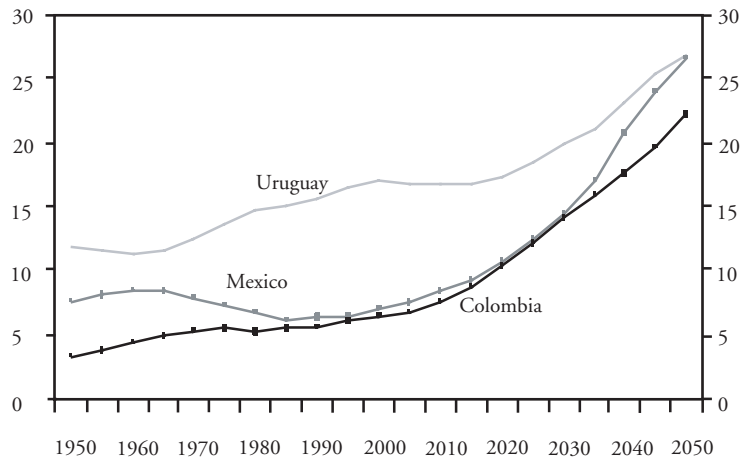
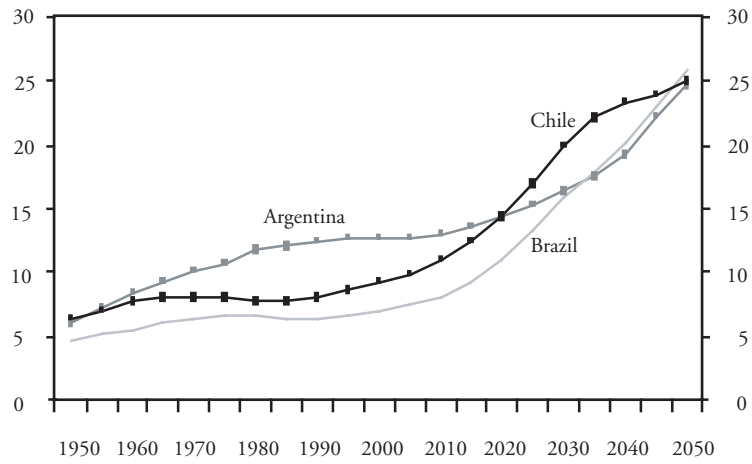


Source: ECLAC

policy challenges derived from population aging, like industrial countries do today.

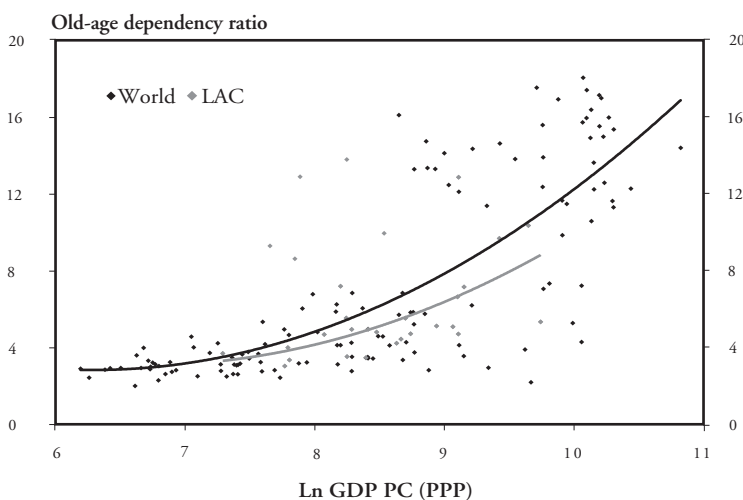
That old-age dependency will rise as Latin America's GDP per capita rises should come as no surprise. Indeed, in the region, as everywhere, a significant positive correlation is observed between economic development and old-age dependency. Four of the five countries with the highest old-age dependency today—Uruguay, Argentina, Barbados, and Chile—also exhibit the region's highest per capita GDP levels at PPP (Chart 5). Future growth and development, complemented by policies in support of health, population planning, and female labor market participation, will contribute to accelerate population aging in the region. But aging itself brings new challenges to policymakers, including rising financial, managerial, and political stress on existing pension systems.

**Chart 4**  
**Historical and Projected Old-Age Dependency Ratios:**  
**Selected Countries**



Source: ECLAC

**Chart 5**  
**Per Capita GDP and Old-Age Dependency**  
**in LAC and the World**



Source: The World Bank

## Design features of pension systems

2

Following Lindbeck and Persson (2002), pension systems can be defined in three dimensions by their main features related to system design and implementation: funding, actuarial fairness, and risk sharing (Table 1). Let me briefly refer to these dimensions and their implications for macroeconomic flows and factor markets as a backdrop for assessing pension reforms in LAC.

*First*, pension systems differ by the degree of explicit *funding* of their liabilities, ranging from fully funded systems backed by explicit pension assets or reserves, to totally unfunded systems that lack any reserves, with pension benefits typically financed on a pay-as-you-go basis, with continuing payments from currently active to currently passive population cohorts. Starting a PAYG scheme involves a large income transfer to initial cohorts from all subsequent generations, with typically large adverse effects on long-term levels of income, wages, consumption, and welfare, only in part dampened by partial intergenerational links or integration into the world economy.

**Table 1**  
**Pension System Design Features and Prevalence in**  
**Latin America and the Caribbean**

Risk sharing	Funding			
	PAYG		FF	
	Act. fair	Unfair	Act. fair	Unfair
Defined benefits (DB)		Most pre-reform systems	Reformed systems: pension annuity phase	
Defined contributions (DC)			Reformed systems: contribution phase	

The opposite effects are observed with a pension reform that replaces a PAYG scheme by a fully funded system, when the reform transition deficit is financed by fiscal adjustment. However, when the transition deficit is financed by issuing net government liabilities, there are no first-order effects on future saving and income levels, or on future factor prices. Hence, aggregate saving effects of reform grow with the share of the transition deficit that is paid by transition generations, and with the degree of non-neutrality of larger government saving and new mandatory pension saving. Under imperfect integration into world financial markets, long-term levels of capital and income will rise as a result of the reform. By channeling pension saving to domestic financial markets, a pension reform can also contribute to financial and capital market development.

Let me now turn to *actuarial fairness*. When for every individual the present value of his or her pension contributions is closely related to the present value of pension benefits at relevant discount rates, actuarial fairness is ensured. This is typically the case in fully funded pension systems, where individuals hold pension assets in individual accounts. In contrast, unfunded systems are typically actuarially unfair, especially when they are not mature and when old-age dependency ratios are rising. Yet, in mature PAYG systems with a stationary dependency ratio and a stable share of labor income, the capitalized difference between the market rate of return and income growth—which is the rate of return to worker contributions—is still an implicit tax on labor employed in sectors that comply with

pension regulations. Therefore, a pension reform toward a fully funded scheme typically contributes to reducing the implicit labor tax and, hence, to a shift from informal to formal sector employment, resulting in higher labor productivity and lower structural unemployment.

*Third*, PAYG systems are nominally defined benefit schemes; hence, individuals are protected on paper against *market risks* affecting pension asset returns. However, in practice, PAYG systems are prone to political, demographic, and economic risks that lead to frequent failure to comply with promised benefits. As opposed to PAYG schemes, most fully funded systems impose a defined contribution scheme during the years of pension asset accumulation. For the passive stage of pension benefit payments, the reformed systems offer pensioners two options: programmed withdrawals from their pension capital or pension annuities bought with their pension capital. The rate-of-return risk of programmed withdrawals is borne by the pensioner, while the rate-of-return risk of the pension annuity is borne by the annuity provider (typically an insurance company). However, in the case of government guarantees, the residual risk is borne by the government. Hence, generally participants of reformed pension systems bear market return risks but are better shielded against the political risks borne by participants of unreformed pension systems.

### **Latin America's pre-reform pension systems and motivations for reform** **3**

Latin America's unreformed pension systems—like elsewhere in the world—were predominantly defined benefit, PAYG systems managed by state social security institutions. Contributions were weakly related to pension benefits and risks were presumably borne by governments. However, PAYG system maturation and recurring demographic, economic, and political economy shocks led to widely differentiated retirement benefits, poor management of assets, and ultimately rising pension deficits. The latter were financed initially by government general revenue but requiring eventually parametric reforms, that is,



unforeseen adjustments in contribution rates, retirement ages, and pension benefits.

Moderately high old-age dependency ratios that led to rising pension deficits were prevalent only in the three Southern Cone countries: Argentina, Uruguay, and Chile. Argentina and Uruguay had implicit pension debt ratios close to 300 percent of GDP by the time of their reforms, while Chile had an implicit debt close to 140 percent of GDP (Chart 6). However, in eight other Latin American reforming countries, implicit pension debt levels were much smaller, reflecting lower pension system coverage and earlier stages of demographic transition. This suggests that additional non-demographic and financial factors also played a part in motivating pension reforms.

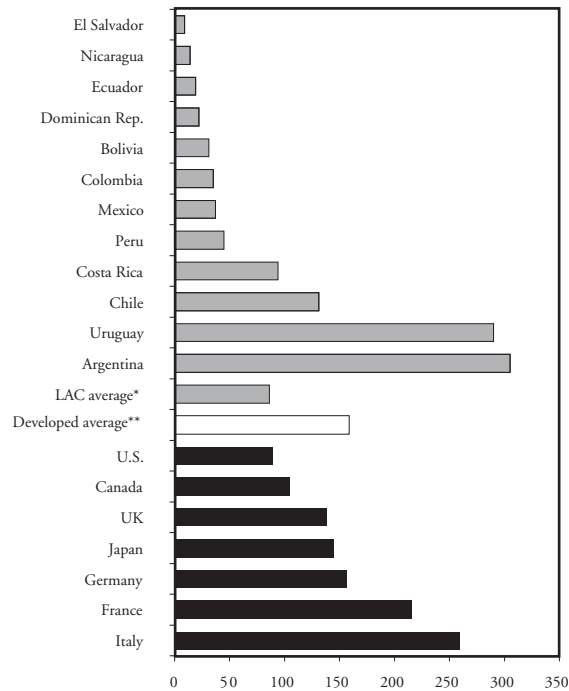
High and rising implicit pension taxes on formal-sector employment contributed in the region to increasing informal employment, higher unemployment, early retirement, and low female labor participation. Inefficient state bureaucracies led to ballooning management costs and increasing dissatisfaction of the people with their pension systems. Highly fragmented schemes with opaque but large intra-system differences in net pension deficits and replacement ratios led to equally opaque and often regressive intra-generational redistribution. Old schemes also contributed to financial underdevelopment and lower saving, investment, productivity, and income levels in the region. Gradual realization of these economic and social costs motivated pension reform in the region. Moreover, pension reform was part of a new development strategy based on market liberalization, trade openness, and privatization that took hold in the region during the 1990s. The successful implementation of the Chilean 1981 pension reform was an additional factor behind the reform drive.

#### **Chile's 1981 reform**

4

The reform to the Chilean pension system in 1981 was the first experience in the world in replacing a mandatory state-managed PAYG system by a mandatory privately managed fully funded system. The compulsory element of the reform was based on the premise that

**Chart 6**  
**Implicit Pension System Debt Ratio to GDP**  
**in Selected Countries (Percent)**



\* By the time of the reform.

\*\* By 1990.

Sources: Palacios 2003 and Valdés 2002

workers lack foresight about the need to save for their retirement. By construction, the main component of the new system is actuarially fair and fully funded. It is based on three components or pillars:

1. Pillar one: assistance and minimum pensions, which are guarantees provided by the government to low-income individuals.
2. Pillar two: compulsory contributions toward pension benefits based on capitalized contributions; hence it is actuarially fair.
3. Pillar three: voluntary saving for old age, on top of the compulsory contributions, supported by government tax incentives.

The reform changed two additional key features of the pension system: the role of government and the transition toward the system's steady state. With respect to the role of government, Chile's 1981 pension reform eliminated gradually but fully the old pension system. Government ownership was replaced by private ownership of pension fund management companies—known as AFP for “Administradora de Fondos de Pensiones”—and life insurance companies. AFPs are responsible for collection and record-keeping of individual pension assets, investing pension assets in capital markets, and paying out benefits to pensioners in cases of programmed withdrawals. Life insurance companies pay out annuities and handle the death and disability insurance component. The reform put into place a specialized supervisory agency (the superintendent of AFP) to develop the regulation and to provide real-time supervision of the pension fund management industry.

The new pension system strengthens government functions in the provision of pension insurance. Government provides guarantees in pillars one and two. In pillar one the responsibility of the government has two components: a means-tested basic welfare pension for people who have not participated in the system (financed by general government revenue) and a minimum pension guarantee for people who have contributed to the system but have not been able to save sufficiently for the minimum pension threshold. Pillar two is supported by government guarantees against idiosyncratic risk on pension fund investment returns and pension assets held by AFPs and insurance companies.<sup>2</sup> Hence, risks are shared by contributors, who bear the absolute rate of return risk, and by the state, which bears minimum pension guarantees and relative rate of return risks.

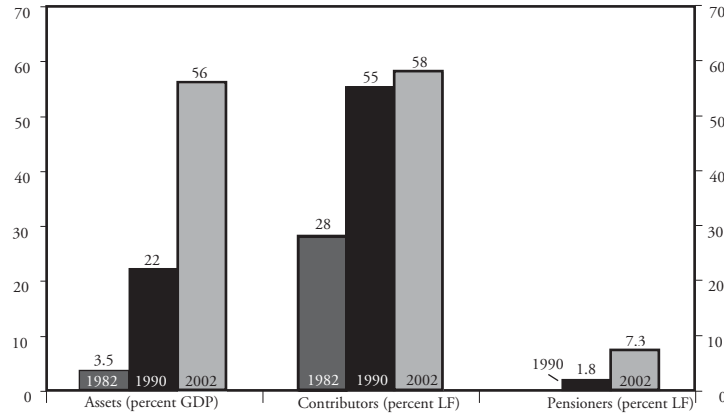
With respect to reform transition, most active pension system participants in 1981 were given the option of shifting to the new scheme, while new labor market entrants were required to enroll in it. The gradual nature of the transition implies that the macroeconomic and growth effects arise more gradually. After a parametric reform was implemented reducing significantly PAYG system deficits and implicit debt levels, the radical 1981 reform maintained promised

PAYG benefits to people who were already retired or would retire after the reform. The reform recognized explicitly contributions of all PAYG system participants who opted for the new pension pillar in the form of a government bond that is paid at the time of retirement. In Chile, the transition financing was facilitated by fiscal adjustment; hence, the current generation assumes an important fraction of the reform costs.

The pension system has grown remarkably since the early 1980s. As of 2002, second-pillar contributors had grown to 58 percent of the labor force. Pension fund assets had attained close to 60 percent of GDP, with a real gross average return of 10.4 percent per year in the post-reform 1981-2002 period. This was possible because Chile implemented broad economic reforms during this period, including macroeconomic stabilization, product market liberalization, and financial reforms, which resulted in a quantum leap in the average annual GDP growth, to 4.6 percent during 1981-2002. Thus, pension savings have been put to good use thanks to better policies and improved institutions. The average mandatory new pension saving flows have been equivalent to 4.6 percent of GDP during the latter period (Chart 7).

A critical measure of pension system performance is “coverage of benefits,” which measures the share of the elderly who receive pension benefits or are not poor. Valdés (2003) reports that the poverty rate among people aged 65 or more was 7.3 percent in 2000, significantly lower than the poverty rate of the general population (Table 2). Measuring replacement rates is difficult due to the short history of the system. However, Palacios (2003) reports simulations of net replacement rates for males who contribute during their full working life to the reformed pension system, using the average lifetime wage as denominator. He reports replacement rates for Chile’s reformed system that range between 59 percent and 67 percent for workers earning from 0.5 to 2.5 times average wages. The system has built-in microeconomic incentives to postpone retirement: One year of earlier retirement means one year less of contributions and returns over past

**Chart 7**  
**Chile's Reform: Selected Results**



Source: Superintendent of AFPs

**Table 2**  
**Old-Age Population in Chile by Income Source (2000)**

	Men	Women	Total
Population at age 65 or above	504,739	663,534	1,168,273
Received a pension	81%	52%	65%
Not pension but personal monetary income above minimum pension	13%	23%	18%
Not pension but household per capita monetary income above minimum pension	1.9%	16%	10%
Poor	4.6%	9.3%	7.3%

Source: Valdés 2003

contributions, and additional lower benefits from one year more of retirement.

**State of progress of systemic pension reform in Latin America** **5**

In the early 1990s, more than a decade into Chile's 1981 reform, 11 LAC countries started to adopt similar pension reforms: Peru (1992-1993), Colombia (1994), Argentina (1994), Uruguay (1996), Mexico (1997), Bolivia (1997), El Salvador (1998), Costa Rica

(1995-2000), Dominican Republic (2001), Nicaragua (2000), and Ecuador (2001). Their common pattern was an adoption of a multi-pillar pension structure, with the second pillar comprising a privately managed, defined contribution, fully funded system. In addition to government guarantees on this pillar, in some reform countries like Argentina, Costa Rica, and Uruguay, the first pillar also comprises a state-managed PAYG system, financed by mandatory worker contributions, with a redistributive objective aimed at providing old-age income security.

Population aging exerts an important influence on fiscal conditions and political factors that explain the share of pension systems replaced by the reform. An expected rise in future dependency ratios could spur a deeper reform now in order to save on future fiscal costs. However, the political support for the no-reform status quo could increase with the share of pensioners. In contrast, contributing generations may support pension reform as they become aware of the rising costs and poor expected benefits of the existing system but may oppose a reform that rests on their shoulders.

Minimum pension guarantees also differ across reformed pension systems. Also, there are substantial differences in replacement ratios across income groups and countries due to heterogeneity in the level of total system contributions and in the relative size of the second pillar. Fixed commissions and pension benefit redistribution toward low-income participants also influence these differences.

Pension reforms imposed ceilings on private fund investments to limit excessive risk taking and possible moral hazard in investment decisions—and they also vary strongly across countries. A critical issue is the possibility to invest pension funds abroad, particularly in countries with limited domestic investment opportunities or with dramatic population aging (Table 3). Regarding structures and limits on commissions, while all countries impose contribution-based variable commissions on wages, differences exist in complementary commissions, including fixed, asset-based, and return-based commissions.

**Table 3**  
**Upper Limits on Private Pension Fund Investments**  
**by Instruments**

	Foreign securities (percent)	Variable income (percent)
Argentina	20	60
Bolivia	50	75
Chile	30	40
Colombia	10	38
Costa Rica	25	20
Dominican Rep.	0	30
El Salvador	0	5
Mexico	20	0
Nicaragua	30	10
Peru	10	35
Uruguay	0	0

Source: Palacios 2003, except for Chile, for which 2004 limits are reported

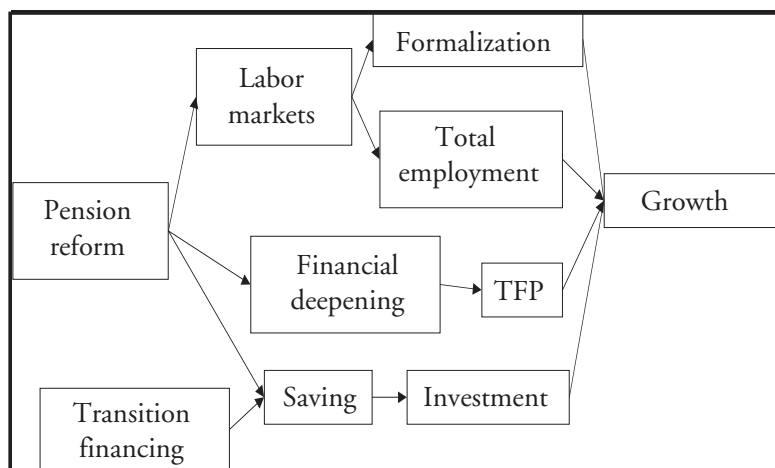
Finally, pension annuities and scheduled withdrawals are the two forms of retirement plans adopted in all reformed systems.

### **Macroeconomic and growth effects of Chile's pension reform 6**

In recent work with Klaus Schmidt-Hebbel (Corbo and Schmidt-Hebbel 2003), we assessed the macroeconomic and growth impact of Chile's pension reform in the period spanned from 1981 to 2001. As I mentioned before, the reform has potential effects on growth through three main channels: saving and investment flows, labor markets, and capital markets (Chart 8). Other reforms adopted in Chile helped and complemented the pension reform, including fiscal stabilization, trade opening, labor market reforms, domestic and external financial liberalization, and capital market reform.

In order to estimate the reform's *saving and investment* effects, we used empirically validated ranges for the government's financing sources of transition deficits, the private-sector saving response to public and mandatory saving flows, and the substitution between national and external saving. We found that the reform raised the average annual national saving rate by a point estimate of 2.3 percent

**Chart 8**  
**Links from Pension Reform to Economic Growth**



of GDP during 1981-2001 and the average annual domestic investment rate by a point estimate of 1.2 percent of GDP.

Regarding *labor markets effects*, the reduction in pension contribution rates and the rise in actuarial fairness brought by the reform led to a significantly lower pure tax on formal employment, which we analyzed using a dual labor-market model. We found that the reform raised total employment by 1.3 percent to 3.7 percent, with a significant change in employment composition toward formal-sector activities, a change that led also to higher average labor productivity.

New mandatory savings have made a significant contribution to Chile's *financial deepening*. We estimated that 31 percent to 46 percent of the large increase in the ratio of financial assets to GDP was due to the growth of pension funds between 1981 and 2001. Then we estimated that 20 percent of TFP growth in the same period was due to the increase in financial deepening caused by pension savings, always controlling for other factors and structural reforms.



Finally, we used a standard production function for the Chilean economy to quantify the *reform's consequences for GDP growth*, combining the effects on capital, labor, and factor productivity. Chile grew by 4.6 percent per year during 1981-2001 (Table 4). Our point estimate for the contribution of the latter growth performance is 0.5 percent, within a range of 0.2 percent to 0.9 percent. That is, approximately one-tenth of Chile's growth during the 21 years after the reform could be attributed to the effects of pension reform. As a consequence of the latter result, our point estimate of the pension reform's contribution to Chile's 2001 GDP level is 5 percent, within a range from 2 percent to 10 percent. For the future, further reform benefits will tend toward zero, as the old PAYG system is gradually abolished and the economy converges to its new stationary equilibrium path.

### **Policy challenges of population aging and pension reform** 7

Demographic change in the region confronts policymakers with important challenges, in both unreformed and reformed pension systems. The growth and welfare costs of unreformed PAYG pension systems, as well as the fiscal transition costs of a reform, rise with an aging population structure. Therefore, it is highly advisable to improve public debt dynamics and implement deep pension reforms before attaining advanced stages of demographic maturity. Several reforming countries that have maintained a large state-managed, defined benefit, pay-as-you-go pillar, might also consider expanding the relative size of their second defined contributions, fully funded pillars.

But reformed pension systems face important challenges of their own, many of them compounded by population aging. First, pension reforms imply making large implicit PAYG debts explicit and *incurring in large fiscal costs* to finance reform transitions (Table 5). One way to reduce the fiscal burden of the reform is by way of a parametric reform of the old system. After downsizing the old regime, the crucial next step is deciding how much of the old system is to be replaced by a fully funded second pillar in the long term. In principle, governments could pay off their debts to old system

**Table 4**  
**Estimated Growth Effects of 1981 Chile's Pension Reform (Percent)**

	Low	Middle	High
Real average growth of the GDP 1980-2001	4.63	4.63	4.63
Estimated effects of the reform on GDP growth			
Saving and investment	0.03	0.13	0.32
Labor markets			
Increase in employment	0.04	0.07	0.11
Increase in productivity	0.01	0.03	0.04
Financial development and TFP	0.13	0.20	0.27
Total*	0.22	0.49	0.93
Estimated effects of the reform on the level of GDP in 2001			
Saving and investment	0.27	1.39	4.28
Labor markets			
Increase in employment	0.35	0.78	1.40
Increase in productivity	0.12	0.27	0.50
Financial development and TFP	1.19	2.17	3.57
Total*	1.92	4.62	9.75

\*The total is calculated as a compound rate and is therefore not equivalent to the sum of the individual effects.

Source: Corbo and Schmidt-Hebbel 2003

**Table 5**  
**Annual Pension Reform Transition Deficits and**  
**Present Values of Transition Deficits in Selected**  
**LAC Countries (Percent of GDP)**

	Transition deficit*	Percent value of reform deficit**
Argentina	2.6	
Bolivia	2.8	
Colombia	1.9	59.2
Chile	3.3	86.1
Mexico		59.3

\*During the first years after the reform.

\*\* After reforming public pillar.

Source: Schmidt-Hebbel 1999

participants during the first reform year. However, financial and political constraints make this impossible; in fact, all reforming countries spread out the fiscal consequences of pension reform over many decades to avoid up-front bunching of large fiscal deficits in a few years. The decision about how to finance pension deficits depends on overall fiscal policy goals that have to be taken into account when considering the large first-order effects on welfare and income levels of current and future generations that arise from reform financing through non-pension government surpluses.

*A second challenge relates to state guarantees* (Table 6). Reformed systems have established several government guarantees or insurance programs that benefit contributors and pensioners. Guarantees are of two types: government insurance of pension assets and returns, and means-tested minimum-pension insurance against low pension levels. Out of 11 reformed systems, the former exists in eight and the latter in six countries. Guarantees are off-budget implicit liabilities, not backed by actuarial calculation of their economic value, and are uncertain because they are sensitive to future macroeconomic, financial, and demographic shocks and developments. Bennett and Schmidt-Hebbel (2001) estimate that future costs of Chile's minimum pension guarantees, currently at 0.05 percent of GDP, are likely to grow exponentially in the future to attain 1.7 percent of GDP by 2030. Countries with more generous guarantees may face

**Table 6**  
**Government Guarantees in LAC's Reformed Pension Systems**

	Absolute rate of return	Relative rate of return	Benefit payout guarantees	Minimum pension guarantees
Argentina	X	X	X	
Bolivia				
Colombia		X		X
Chile		X	X	X
Costa Rica				
Dominican Rep.		X		X
El Salvador		X		X
Mexico				X
Nicaragua		X		X
Peru		X	X	
Uruguay	X			

Source: Palacios (2003)

even larger fiscal costs, which might be amplified by population aging. Also, like all insurance schemes, these programs cause efficiency and welfare costs. In order to reduce assistance pension payments and raise replacement rates, Chile adopted a reform in August 2004 that, among other things, established more stringent requirements for early retirement.

A *third challenge* is how to address one of the main criticisms of the reformed systems: excessively *high commission charges by pension fund management companies* (Table 7). Among the factors that may contribute to this problem are the low responsiveness of contributors to commission differences between pension fund managers, excessive marketing costs, and lack of competition among a few pension funds operating in an industry where fixed costs are high. One proposal put forward is to open up the specialized industry of pension fund management companies to competition by banks and insurance companies. However, this requires careful evaluation to avoid excessive risks in pension fund management and investment that may arise if firewalls between pension fund management activities and other financial operations of non-specialized institutions, like banks, are not maintained.

**Table 7**  
**Commissions in LAC's Reformed Pension as a Share of Assets\***

	2002 (percent)	2003 (percent)
Argentina	1.9	1.3
Bolivia	1.0	0.7
Chile	0.9	0.8
El Salvador	3.4	2.8
Mexico	3.4	3.0
Peru	3.5	2.7
Uruguay	1.7	1.1

\*Net commissions, excluding survivorship and disability insurance contributions.

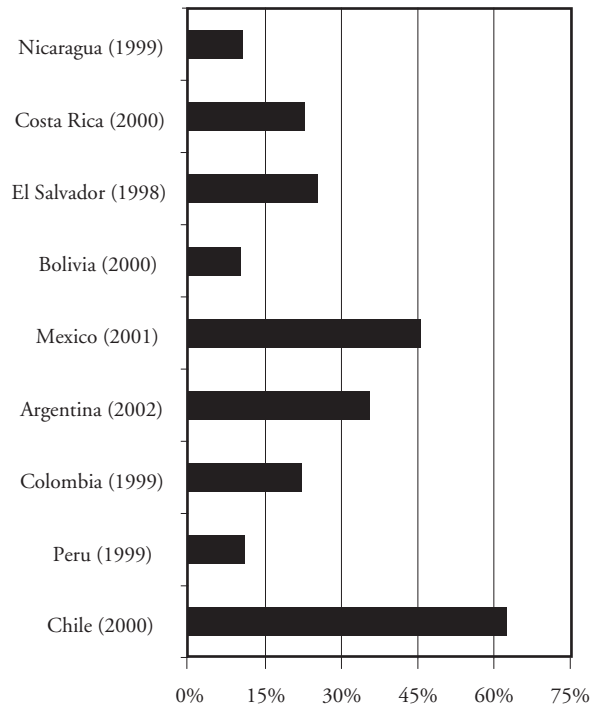
Source: AIOS

The *fourth challenge* is related to *labor force coverage* (Chart 9). Pension reform has contributed little or nothing to raise coverage of the labor force in the region. Moreover, many workers in Latin America go through extended periods of unemployment or informal employment, during which they stop contributing. Yet, it is difficult for a reformed pension system that provides actuarially fairer pension benefits to contribute to higher employment formality if Latin America's other strong incentives for informality are maintained, in the form of high regulatory and tax burdens—and lax enforcement thereof—on formal production and employment.

*Finally*, funded pension systems in aging societies could pose *risks to financial market stability*. Pension reform could raise the probability of banking crises due to reallocation of savings from bank deposits toward other financial instruments (Davis 2004). Additional potential sources of financial instability include moral hazard and herding behavior among institutional investors and large-scale asset sales and asset price deflation when large numbers of people start retiring.

The latter trends may certainly materialize. However, they are not likely to pose risks in the form of unanticipated high-frequency events leading to sudden financial crises. The changes described here take time to build up, allowing financial markets, regulators, and central banks to prepare for them.

**Chart 9**  
**Pension System Coverage in Latin America**



Source: Gill and others 2004

## Conclusions

8

LAC's demographic trends show that population aging is accelerating. Twelve countries in LAC have implemented systemic pension reforms that involve a (partial) shift from pay-as-you-go toward fully funding, an increase in actuarial fairness, and more explicit bearing of return risk by pension system contributors. Faced with accelerating population aging, countries that have not yet implemented structural pension reform should consider doing so, the sooner the better.

Chile's radical 1981 reform has had important growth effects stemming from higher saving and investment flows, reduced labor market distortions, and deeper capital markets.

Reformed pension systems in Latin America face policy challenges, compounded by population aging, in four areas: 1) how to finance pension transition deficits, 2) how to face growing fiscal costs and adverse incentive effects of government guarantees, 3) how to reduce high commissions charged by private pension fund managers, and 4) how to raise typically low labor force coverage. Addressing these problems effectively will require changes in pension systems, complemented by imaginative fiscal and structural reforms in capital and labor markets.

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## Endnotes

<sup>1</sup>Old-age dependency is defined as the ratio of population older than 64 years to the population of age 15 to 64 years multiplied by 100.

<sup>2</sup>There is a minimum level for the rate of return over pension assets determined as a fraction of the median rate of return of the system. If an AFP doesn't achieve this level, it has to pay the difference with its own capital. If this is not enough the state completes the difference with public funds and the AFP is liquidated.

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