Next Generation of Individual Account Pension Reforms in Latin America

by Barbara E. Kritzer, Stephen J. Kay, and Tapen Sinha*

Latin America led the world in introducing individual retirement accounts intended to complement or replace defined benefit state-sponsored, pay-as-you-go systems. After Chile implemented the first system in 1981, a number of other Latin American countries incorporated privately managed individual accounts as part of their retirement income systems beginning in the 1990s. This article examines the subsequent "reform of the reform" of these pension systems, with a focus on the recent overhaul of the Chilean system and major reforms in Mexico, Peru, and Colombia. The authors analyze key elements of pension reform in the region relating to individual accounts: system coverage, fees, competition, investment, the impact of gender on benefits, financial education, voluntary savings, and payouts.

Introduction

By the year 2000, several countries in Latin America had followed Chile's lead in setting up individual retirement savings accounts intended to complement or replace defined benefit, state-sponsored pension systems (Sinha 2000; Kay and Kritzer 2001). Over the past decade, the world has continued to look to Latin America as these maturing pension systems confront ongoing policy challenges related to coverage, contribution rates, costs, and competition. In the intervening years, issues related to gender equity, financial education, and payouts have become more prominent. Meanwhile, significant next-generation reforms have taken place in Chile, Argentina, and Bolivia and are under consideration in other countries, including Uruguay (Bertranou, Calvo, and Bertranou 2009).

In this article we describe the "reform of the reform" of pension systems, with particular emphasis on countries that have in recent years made significant revisions in their systems of individual accounts. We pay special attention to Chile, which is the region's pioneer in pension reform; however we also analyze major reforms in Mexico, Peru, and Colombia.[1] Specifically, and as described briefly in the remainder of this introduction, this article analyzes key elements of pension reforms that feature individual accounts, including system coverage, fees, competition, investment, the impact of gender on benefits, financial education, voluntary savings, and payouts.

Selected Abbreviations

AFORE	Administradora de Fondos para el Retiro (pension fund management company in Mexico)
AFP	Administradora de Fondo de Pensión (pension fund management company in Bolivia, Chile, Dominican Republic, El Salvador, and Peru)

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Selected Abbreviations—*Continued*

CONSAR	Comisión Nacional del Sistema de Ahorro para el Retiro (National Commission for Retirement Savings in Mexico)
EPS	Encuesta de Protección Social (Social Protection Survey)
IADB	Inter-American Development Bank
IMSS	Instituto Mexicano del Seguro Social (Mexican Social Security Institute)
PAYG	pay as you go
RBS	risk-based supervision
ROE	return on equity
SSA	US Social Security Administration
UF	unidad de fomento (a unit of account in Chile)

We begin by examining the issue of coverage, which has become a primary concern given disappointment that rates of coverage have not improved and have in fact declined after the move to individual accounts, as the informal sector remains persistently large. Improving coverage remains one of the primary challenges for policy reform (Gill, Packard, and Yermo 2005; Ribe, Walker, and Robalino 2010).

The region's pension systems have received considerable criticism for high fees and weak competition, even as the pension fund industry has itself been highly profitable. We next examine trends in fees and competition in the pension fund industry and discuss the steps that some governments in the region have taken to lower fees. Then we assess how pension funds are invested. Under systems of individual accounts, a worker's pension is ultimately determined by his or her returns on investment. In the early years of the region's pension funds, investment was largely directed toward government bonds; however, there has been an effort to diversify investment portfolios in recent years. Also, some countries have expanded the range of investment options available to workers in order to better match workers' risk tolerance and life-cycle stage.

We then discuss the issue of financial education, which is increasingly recognized as a critical component of pension reform. Under systems of individual accounts, workers are asked to make well-informed decisions that will affect their future lives, although as social protection surveys reveal, most individuals lack the basic knowledge necessary to make such decisions.

The differential impact of pension reform on men and women has also emerged as a pressing topic for policy reformers and was cited as a primary motivation for the Chilean reform by President Michelle Bachelet (Mensaje 558-354, 2006). Because women tend to earn less than men, spend time outside the labor force in care-giving activities, retire earlier, and live longer, their pension benefits are systematically lower. In this section, we assess the differential impact of gender, and how the Chilean reform seeks to remedy gender bias.

Almost all of the systems of individual accounts include a voluntary savings option, although very few workers participate. The 2008 Chilean reform creates incentives for firms to create employer-sponsored voluntary savings plans; however, as we discuss, even with new incentives to contribute, voluntary savings plans have not caught on in Latin America.

When a worker retires after having contributed to an individual savings account, he or she must choose among a range of payout options, including phased withdrawals, a choice of annuities, or a combination thereof. The choice can be complex and costly, with serious and often irreversible consequences. Yet, policymakers have only recently begun to focus on payout options and how they might best be structured. In short, this study assesses the range of pension reforms that have been implemented over the past decade.

The Chilean Model and the First-Generation Reforms It Inspired: An Overview

In 1981, Chile introduced a new system of privately managed individual accounts, replacing its public pay-as-you-go (PAYG) pension system. Since 1990, 10 other countries in Latin America, as well as countries in Central and Eastern Europe, have adopted some form of what has become known as the "Chilean model."[2]

Under a Chilean-type system of individual accounts, workers contribute a certain percentage of their income each month to a pension fund management company of their choice (administradora de fondo de pension, or AFP).[3] An AFP is a private company, with functions limited to managing pension funds and providing and administering certain pension benefits. Table 1 shows the contribution rates in each country, who must contribute (only employees or both employee and employer), and whether or not workers receive some type of compensation

Table 1.
Financing individual accounts in Latin America

Country	Contribution rates (%) [a]		Recognition of accrued rights under the PAYG system
	Employee	Employer	
Bolivia	10	None	Yes
Chile	10	Voluntary	Yes
Colombia [b]	3.85	11.625	Yes
Costa Rica	1	3.25	PAYG is first pillar
Dominican Republic	2.87	7.1	Yes
El Salvador	6.25	4.05	Yes
Mexico [b]	1.125	5.15	At retirement, choice of PAYG or individual account benefit
Panama	c	d	PAYG is first pillar
Peru	10	None	Yes
Uruguay	e	None	PAYG is first pillar

SOURCE: SSA (2009).

NOTE: Until the end of 2008, Argentina had a mixed system where all insured workers were in the first-pillar public PAYG system; for the second pillar, workers had a choice between contributing to an individual account or the PAYG defined benefit system. A 2008 law closed the second-pillar individual accounts and transferred all workers back to the PAYG system.

a. As a percentage of employee's monthly income.

b. The government also provides a subsidy.

c. 8.5 percent of gross monthly earnings above 500 balboas (US$490).

d. 4 percent of gross monthly earnings above 500 balboas (US$490).

e. 15 percent of gross monthly earnings above 19,805 pesos (US$974).

for the value of their accrued rights under the old public pension system. In some countries, employers are required to make contributions, while in Chile, employer contributions on behalf of the worker are voluntary. Each month, AFPs charge contributors an administrative fee (some systems allow more than one type of fee) and a premium for survivors and disability insurance, which are often a percentage of the worker's income.[4] The Mexican and Colombian governments also provide subsidies to the individual accounts. In Mexico, the "social quota" is a flat-rate government contribution for those who actively contribute to an individual account. In Colombia, the government provides a partial subsidy to the solidarity fund that subsidizes low earners. High earners in Colombia also contribute to the solidarity fund (SSA 2009; Reyes 2008).

In all the individual account systems in the region, workers may change from one AFP to another; the number of times per year varies (Table 2). In most countries, workers may also make voluntary contributions to either their individual accounts or to separate, voluntary retirement savings accounts. AFPs collect workers' contributions, credit them to the workers' accounts, and invest these monies according to regulations set by the government. AFPs also often contract with an insurance company to provide survivors and disability insurance for their members in some countries. (See the Appendix for a more detailed description of survivors and disability insurance in the region.)

Across countries in the region, there is a great deal of variation with respect to pension fund markets (Table 2). Mexico has the most pension funds, with 15, compared with only 2 in Bolivia (see Von Gersdorff (1997) for details).[5] Furthermore, as will be discussed later, some countries allow workers to choose among different types of investment funds, while in other countries only one type of fund is available. Table 2 also shows that in many cases, funds are regulated with respect to their minimum rate of return.

At the normal retirement age (between 60 and 65 in most countries), workers in most countries can use the balance in their individual accounts to do one of the following:

- Purchase an immediate annuity from an insurance company to provide lifetime benefits, or
- Set up programmed withdrawals to provide income over the expected life span. If the retiree dies early, dependents may inherit the balance in the deceased's individual account.

Table 2.
Characteristics of Latin American pension fund management companies

Country	Acronym for pension fund management company	Year system began	Number of companies [a]	Allowable funds per company	Allowable transfers per year [b]	Minimum rate-of-return requirement
Bolivia	AFP	1997	2	1	1	No
Chile	AFP	1981	[c] 6	5	6	Yes
Colombia	SAFP	1993	8	3	2	Yes
Costa Rica	OPP	1995	5	1	1	No
Dominican Republic	AFP	2003	5	1	1	Yes
El Salvador	AFP	1998	2	1	1	Yes
Mexico	AFORE	1997	15	5	1	No
Peru	AFP	1993	4	3	4	Yes
Uruguay	AFAP	1996	4	1	2	Yes

SOURCES: AIOS (1999–2009), FIAP (2008 and 2009), and Tapia (2008).

NOTE: Until the end of 2008, Argentina had a mixed system where all insured workers were in the first-pillar public PAYG system; for the second pillar, workers had a choice between contributing to an individual account or the PAYG defined benefit system. A 2008 law closed the second-pillar individual accounts and transferred all workers back to the PAYG system.

AFAP = Administradora de Fondos de Ahorro Previsional; AFORE = Administradora de Fondos para el Retiro; AFP = Administradora de Fondo de Pensión; OPP = Operadora de Pensión Privada; SAFP = Sociedad Administradora de Fondos de Pensiones.

a. As of December 2009.

b. In several countries, a worker may transfer at any time to another company with a lower administrative fee.

c. A new AFP began operation in August 2010.

Some countries offer variations and combinations of those two options, such as—

- Purchasing a deferred annuity, which means setting a future date for purchasing an annuity and, until then, making programmed withdrawals from the individual account.
- Purchasing an immediate annuity with a portion of the funds in the individual account and making programmed withdrawals with the remaining funds.

This model was the basis for reforms throughout the world. While some countries adopted defined contribution individual accounts to replace financially troubled state-run PAYG pension systems, other countries adopted mixed systems or have made individual accounts optional and supplementary. In short, there has been a range of reforms in the region and elsewhere, all of which were inspired by Chile's reform. More recently, Chile has once again led the region with a second generation of pension reforms. In the 2000s, policy debates turned to coverage for the poor and informal sector, gender equity, financial education, and payouts (Gill, Packard, and Yermo 2005), while issues related to coverage contribution rates, costs, and competition remained unresolved. Chile implemented a comprehensive reform that sought to address these challenges, while Argentina took a contrasting approach when the government ended the system of individual accounts and transferred all workers back to the state-run PAYG system.[6] Other countries that have debated or implemented next-generation reforms to their systems of individual accounts, including Bolivia, Peru, and Uruguay, are discussed later.

Coverage

Coverage is a key indicator of how well a reformed system is functioning. As Gill, Packard, and Yermo (2005, Box 5.2) noted, improving low rates of coverage in developing countries was a core objective listed in the World Bank's (1994) landmark report,[7] in later World Bank documents, and in the discussions among Chilean policymakers designing the 2008 reform (Holzmann, Robalito, and Takayama 2009; Chile, Presidential Advisory Council on Pension Reform 2006). Yet measuring coverage is complex. Rofman and Lucchetti (2006) noted that in the past it was difficult to compare coverage among countries because there was no consistent definition and even within a country, the definition changed over time. However, since 1990, a series of household surveys have been conducted for most countries in the region.[8] These surveys used a consistent definition making it possible to compare coverage across countries at a given point in time or data across time for the same country.

One way to measure coverage is to examine the number of affiliates[9] in the system of individual accounts as a percentage of the labor force. With few exceptions, this percentage has risen (for most countries from 2004 through 2009 (AIOS 2009)) for two reasons. First, because most of these countries have relatively immature systems, most register entry of new affiliates, but do not register many exits. Second, once an affiliate signs up for the system, he or she remains in the system regardless of whether or not they are actively contributing to an account.

When we measure the number of contributors as a percentage of the total labor force, as shown in Table 3, coverage is far lower because the figures only refer to the system of individual accounts and not other special social security systems that exist in these countries for certain groups, such as public employees, the military, and police. For example, in Uruguay, both the banking sector and notaries have separate systems.

Another way of viewing the system is to examine the number of contributors as a percentage of the total number of affiliates of the system, shown in Table 4. This table indicates that in 7 of the 10 countries listed, less than half of affiliates have made regular contributions, while Costa Rica and Uruguay are the only 2 countries where approximately 2 out of 3 affiliates have made regular contributions. Furthermore, as Tables 3 and 4 indicate, significant portions of the labor force have not made regular contributions to their accounts.

In assessing coverage, it is important to consider whether pension system coverage has increased in the region because of the first round of reforms. It is instructive to compare coverage before and after the reform in each country, especially when considering that increasing coverage was one of the primary goals of pension reform (World Bank 1994). Such a comparison leads us to the following conclusion: With the exception of Bolivia, none of the countries increased coverage as a result of reform (Mesa-Lago 2004; AIOS 2006). In Bolivia, coverage before and after reform remains about the same, but is very limited. Overall, it appears that the changes in the system did not result in improved coverage.

In Argentina, coverage rates declined rapidly for the lowest-income workers after the 1994 pension reform. Rofman, Fajnzylber, and Herrera (2008) examined coverage by income quintile in Argentina and found that although coverage for both the lowest and highest quintiles was around 50 percent in 1992, by 2006 coverage had increased to over 60 percent for the highest-income quintile, but had decreased to less than 13 percent for the lowest quintile.

Labor Force in the Informal Sector

Pension coverage (in *any* pension system) is negatively correlated to the size of the informal sector. The larger the informal sector, the smaller the number of workers

Table 3.
Proportion of contributors as a percentage of labor force, June 2004 through June 2009

Country	2004	2005	2006	2007	2008	2009
Argentina	21.3	23.1	24.7	26.1	19.8	a
Bolivia	10.5	10.6	12.1	13.2	12.8	13.4
Chile	55.5	59.8	58.1	60.3	62.2	59.9
Colombia	13.5	11.8	12.7	15.7	17.3	18.4
Costa Rica	48.3	51.1	51.5	53.8	59.1	58.0
Dominican Republic	16.5	17.6	17.8	19.1	20.5	21.3
El Salvador	17.2	17.4	17.9	18.3	19.3	18.6
Mexico	29.0	30.8	31.2	32.0	31.7	29.6
Peru	11.5	11.2	11.6	12.9	13.6	13.3
Uruguay	23.6	25.6	27.5	29.1	32.0	34.2

SOURCE: AIOS (1999–2009).

NOTE: A contributor is defined as a person who has contributed in the last month in question. This definition does not apply to Mexico where a contributor is defined as a person who has contributed in the last *2 months* in question. The difference is because Mexico follows a bi-monthly accounting procedure (see Sinha (2003)).

a. Until the end of 2008, Argentina had a mixed system where all insured workers were in the first-pillar public PAYG system; for the second pillar, workers had a choice between contributing to an individual account or the PAYG defined benefit system. A 2008 law closed the second-pillar individual accounts and transferred all workers back to the PAYG system.

Table 4.
Proportion of contributors as a percentage of affiliates, June 2004 through June 2009

Country	2004	2005	2006	2007	2008	2009
Argentina	37.3	38.7	39.6	40.0	37.9	a
Bolivia	42.7	42.2	47.1	48.0	43.9	43.8
Chile	48.0	51.9	50.7	52.8	54.3	51.4
Colombia	49.5	39.3	40.0	43.3	44.9	44.9
Costa Rica	66.8	69.8	65.1	68.4	71.0	66.4
Dominican Republic	66.8	55.8	52.6	51.0	49.8	47.7
El Salvador	42.5	40.5	38.3	36.5	34.5	29.6
Mexico	38.9	38.5	37.4	37.9	37.1	34.1
Peru	40.0	37.7	37.5	40.3	41.4	40.1
Uruguay	56.1	59.4	61.6	63.3	65.1	64.5

SOURCE: AIOS (1999–2009).

NOTE: A contributor is defined as a person who has contributed in the last month in question. This definition does not apply to Mexico where a contributor is defined as a person who has contributed in the last *2 months* in question. The difference is because Mexico follows a bi-monthly accounting procedure (see Sinha (2003)).

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that contribute to and are covered by social security because this particular sector is rarely covered by social security. Even in the Organisation for Economic Co-operation and Development (OECD) countries, the relationship holds. What is more disturbing is the relationship between the social security contribution rate (as a percentage of wages) and the size of the informal sector.

Chart 1 plots the informality as a percentage of the labor force along with the regression line fitted to the data. It clearly demonstrates that informality is positively correlated with social security contributions as a percentage of the wages.

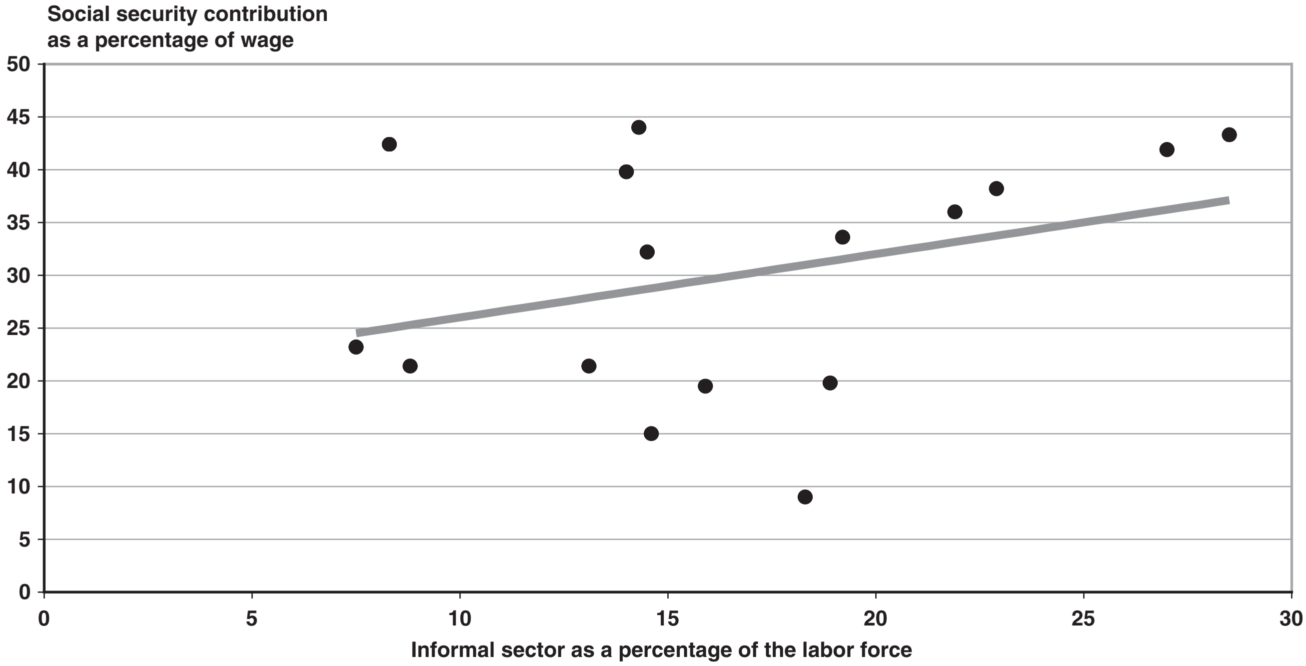
The counterpart to increasing coverage is decreasing the size of the informal sector in the economy. However, there has been very little research on whether a system of individual accounts reduces the size of the informal sector. Schmidt-Hebbel (1999) argued that the reason Chile was the only 1 of 13 Latin American countries without a steadily growing informal-sector share of the economy is that it has a growing fully funded pension system, suggesting that "pension reform may contribute significantly to employment formalization—as reflected in expanding pension system coverage—in countries where initial informality is large." In other words, Schmidt-Hebbel suggested that a fully funded pension may lead to more formalization of the labor market based on the evidence of a higher formal labor market associated with the introduction of pension reform in Chile.[10] However, Sinha (2000, Figure 4.3) came to the opposite conclusion. From 1990 through 1995, the informal market grew in Chile and the formal market expanded in Colombia. During the same period, Chile strengthened its reformed system and Colombia only managed a partial reform in 1994.[11]

More recently, Tokman (2008) presented a comparison of informal employment between 1990 and 2005 in 16 Latin American countries and found that the informal sector has grown. Using that data in Chart 2, we compare the informal sector in 2005 to that in 1990. The diagonal line represents what the results would have been had there been no change in the proportion of the informal sector in the labor market. The chart shows that there are three countries in which the size of the informal sector has shrunk during the 1990–2005 period: Argentina, Brazil, and Chile. The other countries (on the opposite side of the diagonal line) have seen their informal sectors increased, demonstrating that reformed pension systems have not systematically resulted in a reduced informal sector.

From a theoretical point of view, moving from a PAYG to a fully funded system is not equivalent to starting a fully funded system from scratch. Thus, there is no clear economic incentive for *all* workers in the informal sector to move to the formal sector. For example, moving to the formal sector may mean higher income tax (although not for all levels of income).

A theoretical model to measure such incentives was proposed by Orszag and others (1999) in a slightly different context. They found that despite claims that

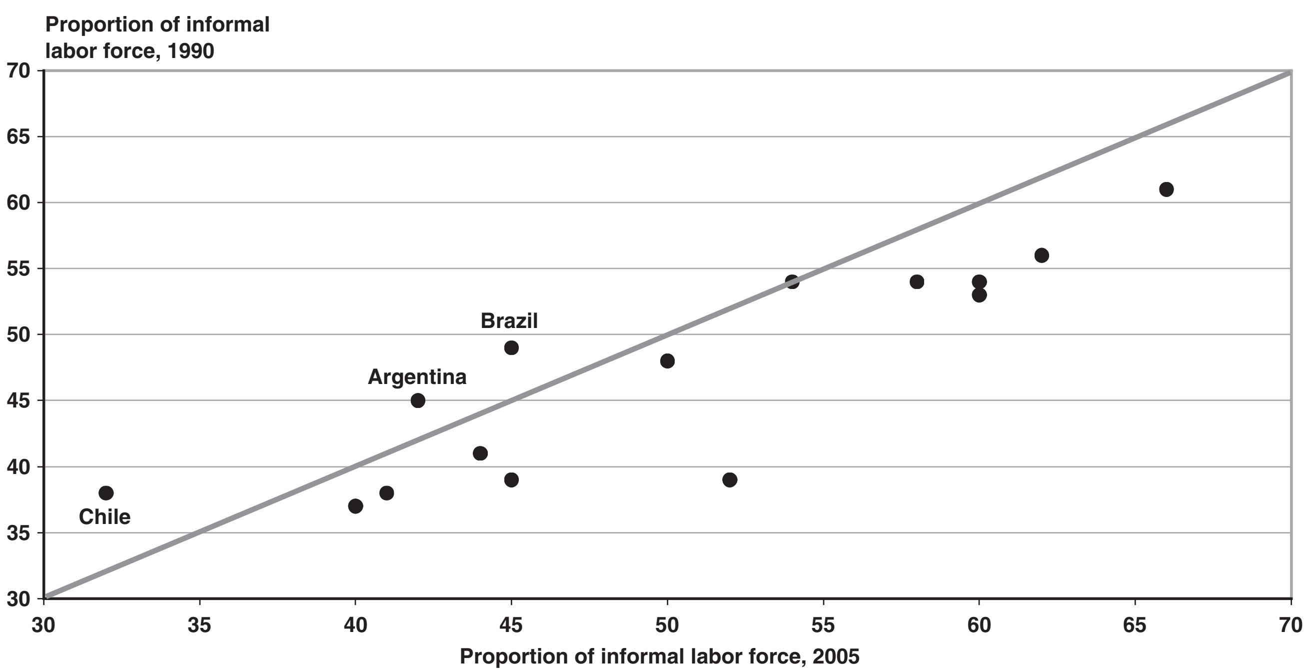
Chart 1.
The informal sector and social security contribution rates in OECD countries, 1996



SOURCE: Schneider (2002).

NOTE: OECD = Organisation for Economic Co-operation and Development.

Chart 2.
The informal labor force in Latin America: 1990 compared with 2005



SOURCE: Tokman (2008).

"individual accounts would improve labor market incentives relative to a defined benefit pension system … the incentive effects of reforms can be complex and, in particular, that in a type of second-best scenario, moving only the pension system to individual accounts may not improve incentives." In other words, a defined contribution system is no guarantee that rates of formal employment will improve, a phenomenon that is demonstrated by the empirical evidence cited earlier.[12]

Coverage of the Informal Sector

It is possible to provide pension coverage to workers in the informal sector, but it is very difficult to incorporate informal-sector workers into the pension system. Hu and Stewart (2009) suggested the following ways of doing so based on experiments conducted in countries with very large informal sectors (such as India, where 90 percent of the labor force work in the informal sector).

1. Offering old-age pension guarantees (provided in some countries, such as Bolivia and Chile).
2. Allowing flexible plans where workers can withdraw money in emergencies and contribute when they have seasonal work. (Pilot programs are underway in China.)
3. Targeting and giving incentives to those who save. This scheme could include tax incentives or matching contributions by the government, although there is no guarantee that such a scheme will be successful. (In Mexico, a pilot scheme was attempted, but it did not last because of lack of interest.)
4. Utilizing existing infrastructure from a broad range of sectors and financial-sector players: Microfinance institutions or rural banks have been mobilized in Bangladesh and the Philippines for this purpose.

Ribe, Walker, and Robalino (2010, 85) noted that the reality of Latin America with large informal sectors should be confronted directly by introducing social insurance programs (for example, pensions, health insurance, unemployment insurance) to the informal sectors as a matter of course with financial and institutional incentives. They argued that behavioral models suggest that moving from a minimum pension guarantee to matching contributions could increase contribution densities and reduce fiscal costs. Given limited international experience with such ex-ante subsidies, the authors called for governments to introduce pilot programs and suggested financial incentives and subcontracting the collection of contributions to aggregators to increase participation. However, a previous experiment with such policies in Mexico suggests that implementation is quite challenging. A pilot plan to incorporate the marginal population in Mexico into a contributory pension program by offering a peso-for-peso subsidy failed primarily because most marginal workers were budget constrained and did not participate.[13] That is, they could not afford to save anything on their own even with the incentive of a matching contribution from the government. Most of the workers in the informal sectors in Latin America are at the lower end of the income distribution, so these incentives would be problematic elsewhere as well.

Low Density of Contributions and Coverage

Contribution density refers to the proportion of months that a worker makes contributions compared with the maximum number of months the worker could have contributed. As noted in the Coverage section, a recurring problem in the region is that workers have low contribution densities; they do not contribute regularly to an individual account. Low density means that at retirement a worker may be eligible for a minimum or low benefit or may not qualify for any type of benefit at all. Chile, Colombia, Mexico, and Uruguay have conducted studies (based on surveys) on workers' contribution patterns in individual account systems, which has led to a series of projections on how density will affect pensions.

Of the workers surveyed in Chile, about half were affiliates of the individual account system. Of the affiliates, men contributed on average about 60 percent of the time and women about 40 percent. Workers in general contributed about 75 percent of the time that they were employed (Bravo and others 2008). Also about 30 percent of low-income workers contributed to social security, compared with about 70 percent of high-income workers (Chile, Presidential Advisory Council on Pension Reform 2006). The density achieved in Chile stands in sharp contrast with what was assumed when the system started: The assumption was that the average density of contribution would be 80 percent (Piñera 1992).

A 2006 study, conducted by several Superintendent of Pension Fund Management Company (the system's regulator) officials in Chile, estimated that—based on the proportion of AFP members who have contributed to an individual account—about 45 percent were expected to have a pension that is below the minimum pension, and most of that group would not have qualified for the lowest benefit level (Berstein, Larrain, and Pino 2006). In 2005, about 66 percent of these workers had fewer than 10 years of contributions. The study predicted that without any changes, by 2025 about 85 percent of these workers would not have enough years of contributions for the guaranteed minimum pension.[14]

Valencia (2007) noted that the average contribution density for a Mexican worker is 51.5 percent, which would require almost 47 years of contributions to qualify for a minimum benefit. In other words, workers with up to a 60 percent density are unlikely to receive a minimum benefit. That means 58 percent of workers have such low densities that they would not be eligible for a retirement benefit. Only about 20 percent of workers (19 percent of men and 21 percent of women) would meet the actual requirements (24 years) for a retirement benefit because they regularly contribute to an account. In general, workers aged 45 to 60 have the highest densities, and those under age 30 have the lowest. But those in the two highest-income quintiles have higher rates for both men and women.

The findings in Uruguay were similar to other countries. Bucheli, Forteza, and Rossi (2008) used administrative data for 1996–2004 from the Banco de Prevision Social (which supervises and administers the country's main social security program) to simulate life-time contribution patterns among different groups of workers. According to their findings, close to 30 percent of workers contributed to an individual account 100 percent of the time, and more than 40 percent did not make contributions for at least half of the time. Workers in the poorest quintile contributed almost 38 percent of the time, while the richest quintile contributed 80 percent. However, unlike in Chile, the rates for men and women were very close: Men contributed 61 percent; and women, 58 percent. As a result, men working in the private sector in the poorest quintile would have a 1 percent chance of reaching the required number of years of contributions at age 65, compared with 64 percent for those in the richest quintile. For women, the figures are 4 percent and 56 percent, respectively.

In Colombia, a 2007 pilot survey found that about 46 percent of workers (42 percent men and 50 percent women) reported not paying contributions, and 20 percent of the labor force regularly contributed to social security. Similar to Chile and Uruguay, less-educated younger workers are more likely to be in the informal sector. But unlike in Chile, in Uruguay the percentage of men and women in the informal sector is about the same (Peracchi, Perotti, and Scarpetta 2007). In addition, most workers in Colombia have very low earnings: 60 percent of affiliates contribute on an income that is equal to the legal monthly minimum wage, and 20 percent contribute on an income of between one and two times the monthly minimum wage (Tuesta 2009).

Measures to Extend Coverage

A few countries in the region have established measures to improve coverage and the level of benefits; indeed this has been a critical component of next-generation reform. Chile's reform is the most extensive. It added a new pillar, known as Sistema de Pensiones Solidarias (System of Solidarity Pensions) to the existing mandatory individual accounts system to expand coverage and provide a basic benefit to a larger percentage of the population. A noncontributory benefit will eventually cover 60 percent of the poorest individuals. In addition, a supplement is available to those who have made contributions to an individual account, but do not qualify for a minimum benefit.[15] In Bolivia, a December 2010 pension reform law creates a solidarity benefit for those workers who do not qualify for a guaranteed minimum benefit (180 months of contributions) but have at least 10 years of contributions. A solidarity fund subsidizes these benefits (*La Razón* 2010). Other examples include Colombia's Periodic Economic Benefits program (Beneficios Económicos Periódicos, or BEP) for workers who have reached the normal retirement age, but do not qualify for a minimum benefit; Bolivia's universal Renta Dignidad benefit for everyone aged 65 or older; and Peru's special pension program for microenterprises (companies with 1 to 10 employees).

Coverage for the Self-Employed

Improving low coverage rates for self-employed workers is a significant policy challenge. Aguila, Attanasio, and Quintanilla (2010) found that the absence of compulsory contributions for the self-employed is a key explanatory factor for low overall coverage in Chile, Colombia, and Mexico. In most of the region, participation for the self-employed is voluntary.[16] As a result, coverage is low and in many countries, about 1 in 10 self-employed affiliates contribute to an individual account (Auerbach, Genoni, and Pagés 2007).

In Chile, the self-employed represent about one-quarter of all workers, 60 percent of whom have been AFP affiliates. By 2007, close to 40 percent of self-employed affiliates actively contributed to an individual account (Bertranou and Vásquez 2007). Chile's recent reform gradually extends mandatory coverage to the self-employed. Beginning January 1, 2012, contributions by the self-employed will be based on 40 percent of taxable earnings, increasing to 100 percent by January 1, 2014. Beginning January 1, 2015, all self-employed persons will be required to contribute 10 percent of their taxable earnings to an individual account (Gobierno de Chile 2008).

In sum, providing adequate coverage remains a challenge for the region's pension systems. Although some have argued that workers would be more motivated to contribute to individual accounts (presumably leading to higher rates of coverage) and given the fact that workers would see a direct link between contributions and pensions (Piñera 1992, 20), the evidence cited earlier suggests that coverage has not improved, especially given the low ratios of contributors to affiliates. Sizable informal sectors, low density of contributions, and low rates of compliance by the self-employed all present challenges to improving coverage.

Fees, Profitability, and Competition

Administrative fees for defined contribution plans in Latin America are generally perceived by industry observers to be high by international standards (see, for example, Christensen (2007)) and have been a major preoccupation of policymakers. High fees contribute to high profits for pension funds (compared with other industries) and reflect a pension funds market with low levels of competition. Policymakers in the region have pursued reforms aimed at increasing competition and lowering fees. This problem of high fees has been identified since the 1990s (Kritzer 1996; Shah 1997). As Queisser (1998) noted, "The financial condition of the private fund management companies has been disappointing despite the fact that workers have been paying high fees and commissions for the pension fund management services. Out of the total contribution rates, workers pay on average from 3 to 3.5 percent of wages for insurance coverage against the risks of disability and survivorship and for the services of the fund management companies. Depending on the level of contribution rates, this amounts to between 20 and 30 percent of workers' contributions.[17]

Administrative Fees

Pension funds can charge fees on contributions, account balances, or returns. All three types of fees are permitted in the region's pension funds; in some countries, the funds may charge account holders more than one type of fee. In most of the region, the AFPs charge a fee on contributions as a percentage of a worker's income (flow), which is the case in Bolivia, Colombia, Chile,[18] El Salvador, Peru, and Uruguay. By contrast, Mexico eliminated this fee in March 2008, and now pension funds are *only* allowed to charge a fee based on the account balance (not on the income flow or as a percentage of the rate of return that was permitted earlier). Bolivia, Costa Rica, and Uruguay also charge a fee on assets, and El Salvador has a fee on returns.[19] In El Salvador, both employers and employees contribute to the individual account, but only the employer pays the administrative fee.

Most countries have set a ceiling on both administrative fees and contributions that is often a multiple of the legal minimum wage (or in the case of Chile, the ceiling is a multiple of the unidad de fomento (UF), a monetary unit adjusted daily to reflect changes in the consumer price index that is used in most financial contracts including pensions). Peru is the only country in the region that does not have a ceiling on either administrative fees or contribution rates; that means account holders must pay both administrative fees and contributions as a percentage of total gross earnings (SSA 2009).

Because of the wide range of fees charged, it is difficult to compare them across the region. Table 5 shows a history of average administrative fees as a percentage of earnings in five countries (Bolivia, Chile, El Salvador, Peru, Uruguay) in selected years from 1999 through 2008. Bolivia's rates are the lowest

Table 5.
Average administrative fees as a percentage of earnings from 1999 through 2008, by selected countries and years, December

Country	1999	2001	2003	2005	2007	2008
Bolivia	0.50	0.50	0.50	0.50	0.50	0.50
Chile	1.90	1.77	1.55	1.54	1.71	1.74
El Salvador	2.05	1.69	1.71	1.71	1.40	1.20
Peru	2.36	2.39	2.27	1.99	1.81	1.87
Uruguay	2.02	1.98	1.93	1.85	1.79	1.71

SOURCE: AIOS (1999–2009).

among the group and have remained exactly the same over the period because the two AFPs, which have monopoly rights in two separate regions, are required to keep their fees at a set level.[20] At the same time, the rates in the other countries have fluctuated, but still remain quite high. In June 2009, in all of these same countries except Bolivia, administrative fees represented between close to 12 and 18 percent of an individual's total contribution, a figure that remains high (see Table 6).

Peru, Chile, and Uruguay also used to charge a flat fee, which was proportionately larger for lower earners than higher earners. Peru eliminated this fee in 1997, although the other two countries abolished their flat fees about 10 years later. Also, until 1988, AFPs in Chile were permitted to charge a fee on the individual account balance. Bolivia, Costa Rica, Mexico, and Uruguay charge a fee on assets, and El Salvador has a fee on returns (Tapia and Yermo 2008).

Bolivia, Colombia, Costa Rica, and El Salvador have set statutory limits on fees. The limits for both Colombia and El Salvador apply to combined administrative fees and premiums for survivors and disability insurance (Tapia and Yermo 2008). There are no limits on the amount of fees in Chile, but all members of one AFP must be charged the same fees.

When account holders only pay a fee upon contributing to their account, in effect, the contributors are subsidizing the noncontributors from whom no fees are received. (Using this logic, a 2008 study calculated that about 40 percent of all individual accounts in Chile were subsidized (Asociación AFP 2008a).) This phenomenon does not occur in El Salvador, where noncontributors are charged a fee on inactive accounts (which could deplete the account value (Tapia and Yermo 2008)).

The average fee in each country at given points in time is shown in Tables 5 and 6. But those tables give an incomplete picture for each country. First, there is tremendous heterogeneity within each country that is not captured in the tables. Second, in each country, there are different types of fees, which can be on the flow or balance, and it is not easy to compare fees cross-nationally given such variation. Finally, some funds allow a "loyalty bonus"—the longer an affiliate stays with a fund, the less he or she pays. Corvera, Lartigue, and Madero (2006) and Impavido, Lasagabaster, and García-Huitrón (2010) provided a more complete picture of fees by taking into account all these factors, and their results are summarized in Tables 7 and 8. Table 7 projects fees—assuming an affiliate stays with a given fund for 25 years. For each country, this table gives the charges (as a percentage of the balance) for the fund, the fund that charges the lowest (minimum) and the highest (maximum) fees, a weighted average (proportional to the market share in capital) of each fund, and the variability (as measured by the standard deviation). Examining the minimum and the maximum values reveal that in the Dominican Republic, the least expensive value is 20 percent less than the most expensive, but the weighted average

Table 6.
Administrative fees and contributions in selected countries, June 2009

Country	Administrative fee as a percentage of earnings	Mandatory contribution as a percentage of earnings	Administrative fees as a percentage of total contributions
Bolivia	0.50	10.00	4.76
Chile	1.73	10.00	14.75
El Salvador	1.50	10.30	12.71
Mexico	[a] 1.87	[b] 8.50	18.03
Peru	1.87	10.00	15.75
Uruguay	1.63	12.17	11.81

SOURCE: AIOS (1999–2009).

a. Calculated after converting all numbers as a percent of earnings.

b. This figure includes the "social quota," which is set at 5.5 percent of the value of the minimum wage in Mexico City and applied to the average wage.

Table 7.
Equivalent fees: 25-year average as a percentage of fund balance

Country	Minimum	Maximum	Weighted average	Standard deviation
Argentina	1.20	1.45	1.35	0.09
Bolivia	0.53	0.53	0.53	0.00
Chile	0.98	1.21	1.07	0.08
Colombia	0.81	1.01	0.92	0.08
Costa Rica	0.75	1.10	1.02	0.16
Dominican Republic	0.81	1.01	1.01	0.09
El Salvador	0.86	0.86	0.86	0.00
Mexico	0.67	1.51	0.89	0.20
Peru	0.94	1.22	1.10	0.13
Uruguay	0.74	1.14	0.90	0.19

SOURCES: Corvera, Lartigue, and Madero (2006); and Impavido, Lasagabaster, and García-Huitrón (2010).

NOTE: Data up to 2007, projected 25 years.

Table 8.
Equivalent fees: 40-year average as a percentage of fund balance

Country	Minimum	Maximum	Weighted average	Standard deviation
Argentina	0.69	0.83	0.77	0.05
Bolivia	0.39	0.39	0.39	0.00
Chile	0.56	0.69	0.61	0.04
Colombia	0.46	0.58	0.53	0.04
Costa Rica	0.69	0.98	0.92	0.13
Dominican Republic	0.64	0.84	0.84	0.09
El Salvador	0.49	0.49	0.49	0.00
Mexico	0.46	0.88	0.62	0.12
Peru	0.54	0.70	0.63	0.07
Uruguay	0.42	0.65	0.51	0.11

SOURCES: Corvera, Lartigue, and Madero (2006); and Impavido, Lasagabaster, and García-Huitrón (2010).

NOTE: Data up to 2007, projected 40 years.

is close to the most expensive range, showing that affiliates have not flocked to the least expensive funds. Mexico and Uruguay show large variability. The average fee in Chile turns out to be higher than that of Mexico over the 25-year horizon.

When we examine the figures projected over 40 years, the panorama changes as Argentina,[21] Costa Rica, and the Dominican Republic turn out to have the most expensive funds. Bolivia, Uruguay, Colombia, and El Salvador have the least expensive plans and exhibit low variability of fees across funds. Corvera, Lartigue, and Madero (2006) cited another important finding: Fees have largely stagnated over the years and are unlikely to decline in the medium term because of insufficient competition, especially in Bolivia and El Salvador with entrenched duopolies. Finally, in comparing fees more broadly, Impavido, Lasagabaster, and García-Huitrón (2010) noted that the fees of pension funds in Latin America (shown in Table 8) have charges that are 50 and 100 basis-points higher than what large US occupational funds and mutual funds charge.

Other Fees: Premiums for Survivors and Disability Insurance

In addition to administrative fees, most AFPs also charge a percentage of earnings for survivors and disability insurance. For many years, each AFP would contract with an insurance company to provide separate insurance for these two contingencies. In some countries like Chile, the amount of the premiums has varied from one AFP to another, and the average premium among all AFPs has fluctuated over time. Table 9 shows average premiums for several countries in selected years. The rates in Bolivia and Mexico have remained the same since 2003, but are higher than the other countries. During the 1999–2008 period, the rates in Uruguay have steadily increased.[22]

In Mexico, the premiums for survivors and disability insurance are two-to-three times higher than other countries in Table 9 (and have remained the same since the system's inception in 1997) despite the fact that it has a younger population than both Uruguay and Chile.[23] This can be explained by the fact that unlike other countries, there is no competition, as disability insurance is still managed by the Instituto Mexicano del Seguro Social (IMSS)—the government agency that managed the PAYG system before 1997.[24] Although a private market for disability and survivors insurance was created under the 1997 law, the IMSS remains the main administrator and dispenser of such pensions in Mexico.[25] Sinha (2008) has shown how the private market for annuities in Mexico did expand rapidly from 1997 through 2001, only to shrink in the subsequent years. When the regulations for the new individual account system were implemented, the initial plan called for buying single premium annuities for widows and disabled workers under the new

Table 9.
Average survivors and disability insurance premiums as a percentage of earnings from 1999 through 2008, by selected countries and years, December

Country	1999	2001	2003	2005	2007	2008
Bolivia	2.00	1.71	1.71	1.71	1.71	1.71
Chile	0.65	0.67	0.71	0.76	0.73	0.94
El Salvador	1.13	1.29	1.28	1.28	1.30	1.50
Mexico	2.50	2.50	2.50	2.50	2.50	2.50
Peru	1.36	1.34	0.92	1.00	0.91	0.88
Uruguay	0.64	0.76	0.90	0.98	0.99	1.00

SOURCE: AIOS (1999–2009).

system. IMSS dominated the market because it was able to provide benefits more quickly than private companies. This change meant that almost all of the eligible affiliates opted for the IMSS option, which led to an exit of annuity companies from the market and a subsequent collapse of the private market (see Pérez and Sinha 2008).[26]

Until 2009 in Chile, each AFP contracted with a separate insurance company to provide survivors and disability insurance for its members through a periodic public bidding process. Reyes (2010) found that a typical contract did not encourage competition for prices and that in most cases, the insurance company that won the bid belonged to the same conglomerate as the AFP. Also, AFPs often used a number of measures to control insurance costs, which include the following:

- Monitoring the application process. While this would discourage fraud, AFPs could also prevent a claim from being processed or recommend another product that the AFP provides such as an early retirement pension.
- Passing increases in insurance costs on to its affiliates instead of absorbing the increase.
- "Cream-skimming" or selecting lower-risk, lower-cost members such as high-income and younger workers.

According to an AFP Association report (Asociación AFP 2008b), the design of the insurance contracts permitted certain groups to subsidize others. For example, the premiums for men and women were the same even though women generally have lower risks than men.

The 2008 Chilean pension reform changed the way premiums are set in order to lower the cost. Since 2009, all AFPs must conduct one joint annual bidding process to establish uniform premiums for all affiliates of every AFP. At the same time, coverage for these programs was expanded to include the following:

- Women up to age 65, provided they continue working. Until 2009, women were covered only up to age 60, the normal retirement age for women.
- Widowers and students up to age 24. Previously, only disabled widowers and students up to age 18 were eligible for a benefit (SSA 2006–2010).

The premiums have been divided into seven categories for men and four for women, which permit multiple companies to participate. To date, two annual competitions have been held, and the rates have gone down by 20 percent on average between the first and second years (Asociación AFP 2010; Reyes 2010).

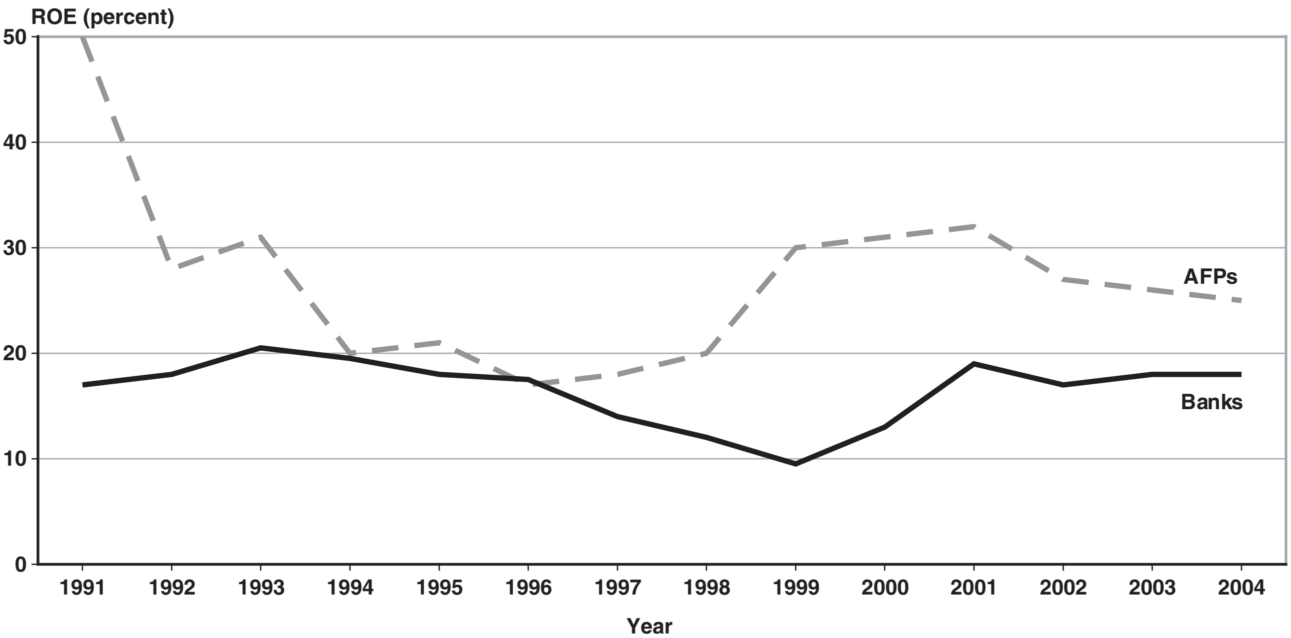
Profitability

Economists have long argued that without barriers to entry, firms in competitive markets will earn "normal" profits. That does not preclude some firms from earning above normal profits in the short run if they innovate; however, the only way that a firm would be able to generate above-normal profits in the long run is to have monopoly power.[27] In this section, we examine the profitability of pension funds in Chile, Mexico, and Peru. In all three countries we observe that over more than a decade, these pension funds have shown persistently higher profitability than comparable industries. We compare returns on equity in the pension fund industry with comparable financial-sector industries and find that pension funds are three times more profitable than other sectors. These pension funds earn profits that are consistently well above what might be expected in a competitive marketplace. This observation suggests that pension fund markets lack competitive pressure. As noted later in the section, recent reforms in the region have sought to increase competition.

Return on Equity (ROE) gives us a measure of the profitability in an industry. A comparison of the ROE in two distinct but related industries is instructive. In Chart 3, we examine the ROE for the AFPs and the banks in Chile from 1991 through 2004. The chart shows that the ROE for the AFPs are consistently higher than the ROE for banks over the entire period, and at times, by a substantial margin. This gives us a reason to suspect that AFPs might be earning supranormal profits.

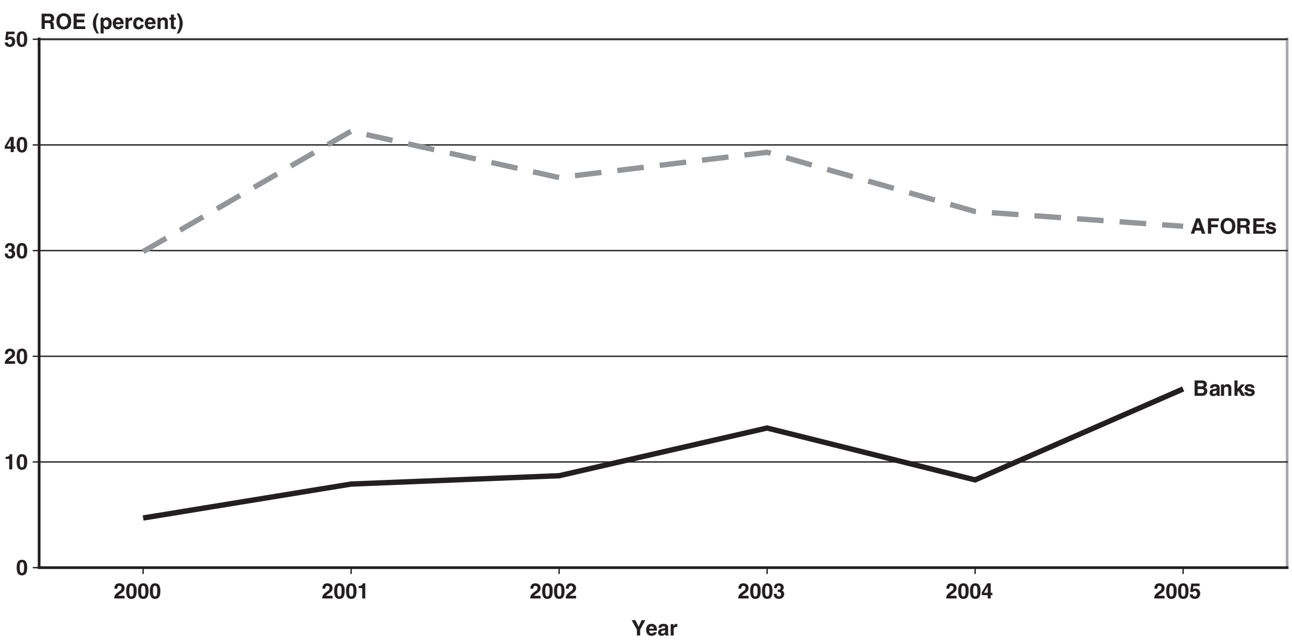
In Mexico, regulators noted with alarm the high ROE of the pension funds industry. The Federal Commission for Competition (Comisión Federal de Competencia 2006) reported to the Senate in 2006, "The AFOREs have earned extraordinary profits that are difficult to attribute to their competitiveness or to the value generated for the workers. For example, during the 2000–2005 period, the largest six AFOREs generated a return on equity (ROE) of 35.6 percent. This rate of return is high by any standards—especially if one considers that it did not come with an accompanying value generated for the workers. As a reference, this ROE is 3.6 times higher than the banking operations undertaken by the same financial groups to which these AFOREs belong" [authors' translation]. Around the same time, Levy (2006, 2008) presented data demonstrating the same phenomenon (see Chart 4).

Chart 3.
Chile's return on equity for AFPs and banks, 1991–2004



SOURCE: Chile, Presidential Advisory Council on Pension Reform (2006).

Chart 4.
Mexico's return on equity for AFOREs and banks, 2000–2005



SOURCES: Levy (2006, 2008).

NOTE: Includes data from Afore Banamex, Bancomer, Banorte, Inbursa, ING, and Santader, which jointly account for 70 percent of all invested funds.

In Peru, there is an even more pronounced gap between ROE for pension funds versus banking and other financial service industries, as Table 10 illustrates. Return on equity averaged 61.7 percent from 2001 through 2005 in the pension sector, compared with 11.9 percent in banking and 14.3 percent in insurance.

In sum, we find the AFPs in Chile to be almost twice as profitable as banks from 1990 through 2004; in Mexico, the AFOREs were more than three and a half times more profitable during the 2000–2005 period; and in Peru, the AFPs were more than four and a half times as profitable from 1996 through 2005. All of this is evidence that these markets are not as competitive as similar financial industry markets.

Competition

The higher profitability of pension funds compared with other financial services can be explained by limited competition. First, given minimum capital requirements and high fixed costs, there are economies of scale in the pension industry. There is a clear first-mover advantage for the firms that entered the market when the system began. They had the chance to enroll affiliates at once when formal-sector workers were forced to select a pension fund management company. In some countries (like Mexico), those workers who did not make a choice were assigned to one. The only way for an AFP to acquire new affiliates afterward was to persuade affiliates to switch from one AFP to another or get new entrants to the job market (formal) to sign up for their company. However, it is extremely costly to get an affiliate to change companies, and AFPs are left competing for new entrants to the workforce—a majority of whom are in the informal sector. (Of those that enter the workforce, many decline to choose a pension fund and are assigned one.)

Table 10.
Return on equity in different industries in Peru, by selected time periods, 1996–2005

Industry	Return on equity		
	1996–2000	2001–2005	1996–2005
Pension	21.8	61.7	46.7
Banking	9.7	11.9	10.9
Financial services	14.2	11.5	13.0
Insurance	7.4	14.3	12.5
Ocean transport	18.3	30.3	25.3
Marketing	23.1	25.3	24.2
Oil and mining	13.2	27.5	22.0
Confectionary	19.6	14.1	15.6
Refineries	13.2	14.5	14.0
Informatics	9.5	18.8	13.1
Construction	11.5	13.6	12.6
Media	15.1	10.2	12.1
Others	8.0	13.7	11.5
General commerce	7.4	12.4	10.8
Surface transport	9.8	10.4	10.0

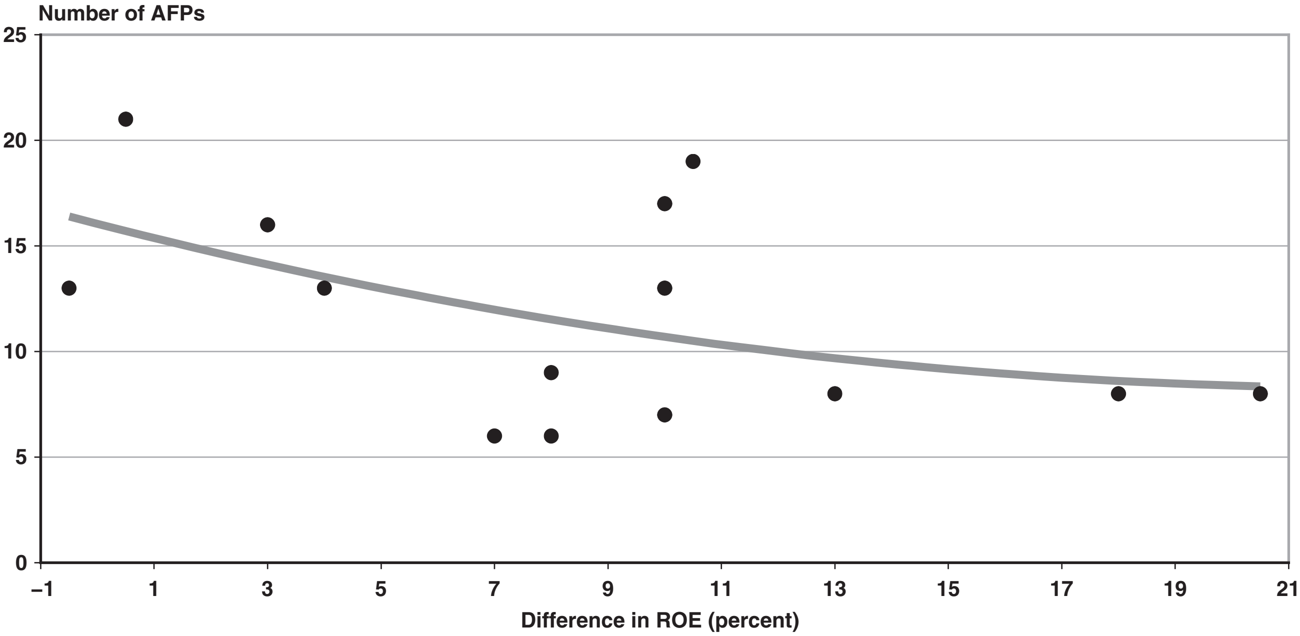
SOURCE: Gerens Escuela de Gestión y Economía (2007).

Chile's pension reform commission (known as "The Marcel Commission") listed several reasons why competition in the pension fund market was weak (Chile, Presidential Advisory Council on Pension Reform 2006). It argued that because most workers do not compare administrative fees before choosing an AFP, firms have less of an incentive to compete by lowering fees. Rather, AFPs often used gifts and other inducements to lure new members. Also, AFPs are required to charge all of their members the same fees, giving them an incentive to target higher-income earners, from whom profit margins are higher. As described earlier, barriers to entry make it hard for new firms to enter the market; and banks, which could be expected to be strong competitors in the AFP market, are specifically prohibited from setting up AFPs.

It is important to develop a measurement of competition. Bikker and Spierdijk (2009) have put forth a set of criteria that marks the level of competition in the financial markets. They list important factors that impede competition, with the primary impediment being the number of firms available. The number of funds in a pension market is dictated by the size of the market, although any variation in the number of funds *within* a given market is endogenous to the market. Thus, one simple way of measuring competitive pressure in a market is to examine the relationship between the number of funds operating in a market against the profitability of the funds in that market. Absolute profitability of the pension funds is influenced by the general economic conditions. Thus, it is necessary to have a benchmark against which the profitability needs to be measured in order to evaluate "excess profit" that the pension funds are earning. One benchmark to measure "excess" profitability of the pension fund market would be a measure of the *difference* in profitability between pension funds and banks.

In Chart 5, we show the results of this exercise. In the years when there were more pension fund firms in the market, the excess profit of the industry was lower. This is a crude measure because it does not take into account the lagged effects of entry of funds (that is, the impact of the entry of a fund in a given year on the excess returns of the following years). If the

Chart 5.
Profit differential and number of AFPs in Chile, 1992–2004



SOURCE: Authors' calculations using data from the Chilean Superintendent of Pensions.

relationship holds, then it suggests that a small number of companies operating in the system would lead to excess profits in the industry.

Mexico and Chile have tried various experiments to encourage pension funds to reduce their fees or increase their net rate of return for the affiliates (net of fees). Before the 1997 reform, Mexico tried to promote competition by a relatively liberal policy for issuing licenses (compared with banking licenses). Although 42 companies expressed interest, less than half of them actually entered the field when AFOREs were allowed to operate. The second experiment came with the assignment of affiliates who had not chosen any AFORE. The initial take-up rate by the formal-sector workers in Mexico in the first 3 years was much higher than that of Chile. (Perhaps this was the result of Mexican workers having previous experience with private individual accounts from the 1992 Sistema de Ahorro para el Retiro (SAR) reform, which required formal-sector workers to contribute 2 percent of wages to retirement accounts.) Approximately 10 million people opened 65 million accounts. There was a lack of cross validation on the part of the employers, and many people ended up with multiple accounts. However, 6 million people were still in the consolidated account of the Central Bank of Mexico (cuenta concentradora).[28] The Comisión Nacional del Sistema de Ahorro para el Retiro (CONSAR) devised a formula for distributing these accounts to the 25 percent of AFOREs with the lowest administrative fees. In June 2001, these accounts were handed over to the AFOREs using this formula. Ever since then, the CONSAR has followed the same procedure for assigning AFOREs to workers who do not choose one. By the end of 2007, the CONSAR had assigned over 17 million affiliates to AFOREs.

Although unexpected, this process provided an incentive for some AFOREs to enter the market with the sole strategy of getting workers' accounts assigned to them. These AFOREs did not invest in marketing or promotion, nor did they seek to provide any service to any affiliate. Their business model depended on collecting fees from the assigned accounts. AFORE de la Gente obtained 99 percent of its affiliates from direct assignment from the CONSAR, while Ahorra Ahora had virtually 100 percent of its affiliates assigned by the CONSAR. The CONSAR considered this practice to be against the spirit of operating an AFORE and forced these pension funds into mergers in 2009 (CNN Expansión 2009).

In the first decade of its existence, the CONSAR has stayed away from explicitly criticizing the AFOREs for their lack of competition or for charging "too much." However, since 2008, the CONSAR has been taking an increasingly activist stance with respect to fees. In 2008 alone, the Board of Governors of CONSAR issued a bulletin, where it took six AFOREs to task by declaring that their management fees were "way above average" (CONSAR 2008). In order to promote more competition, the CONSAR has also changed the way information is presented in the quarterly statement (mandatory) sent out to the affiliates to more clearly state investment returns and fees (described later in the Financial Literacy section).

Along with contributing to pension funds, Mexican workers in the formal sector also contribute 5 percent of their base salary to a housing fund. In April 2010, this housing fund, managed by Instituto del Fondo Nacional de la Vivienda para los Trabajadores (INFONAVIT), proposed starting its own AFORE and charging an administrative fee of 0.52 percent of the fund balance (Sinha 2010). This proposal is controversial as it is not clear if INFONAVIT can legally be permitted to operate a pension fund because it may contravene its charter, managing funding for housing. Because INFONAVIT already manages nearly 30 percent of national long-term mandatory saving (the AFOREs manage the rest), the proposal will certainly create a concern for CONSAR about monopoly power. Moreover, because INFONAVIT is owned by the federal government, the government may not want to expand its role in the pension market after earlier efforts to privatize it. (As of December 20, 2010, no decision has been made on this matter.)

Lack of competition among the AFPs has also been a problem in Chile. The number of AFPs operating in Chile fell from 22 in the mid-1990s to 5 in 2008. In March, 2010, three of those five firms had 87 percent of the pension fund affiliates (Chile, SP 2010e). As part of its 2008 pension reform, Chile sought to lower fees and induce competition by assigning the cohort of 350,000 annual new entrants to the labor force to the AFP with the lowest administrative fee. The bidding process is held every 24 months, and the AFP selected must maintain the lowest fee among all AFPs for 2 years, with all of its account holders being charged the same fee. New workers must remain with their assigned AFP for 2 years unless: (1) another AFP offers a lower fee for at least 2 consecutive months; (2) another AFP provides a higher rate of return sufficient to make up for a higher administrative fee; or (3) the assigned AFP does not maintain the required minimum rate of return, is declared insolvent, or must liquidate its assets. Workers already in the system may switch to the AFP with the winning low bid.

This provision was implemented in March 2010. The first company to win the competition had a bid of 1.14 percent of an account holder's income, which is 24 percent lower than the average fee of 1.51 percent charged by the five current AFPs. The other AFPs that participated in the competition also offered fees below the current average (SSA 2006–2010). On August 1, 2010, Modelo, whose owners also control the information technology services firm Sonda, became the first AFP to enter the market in 15 years.[29]

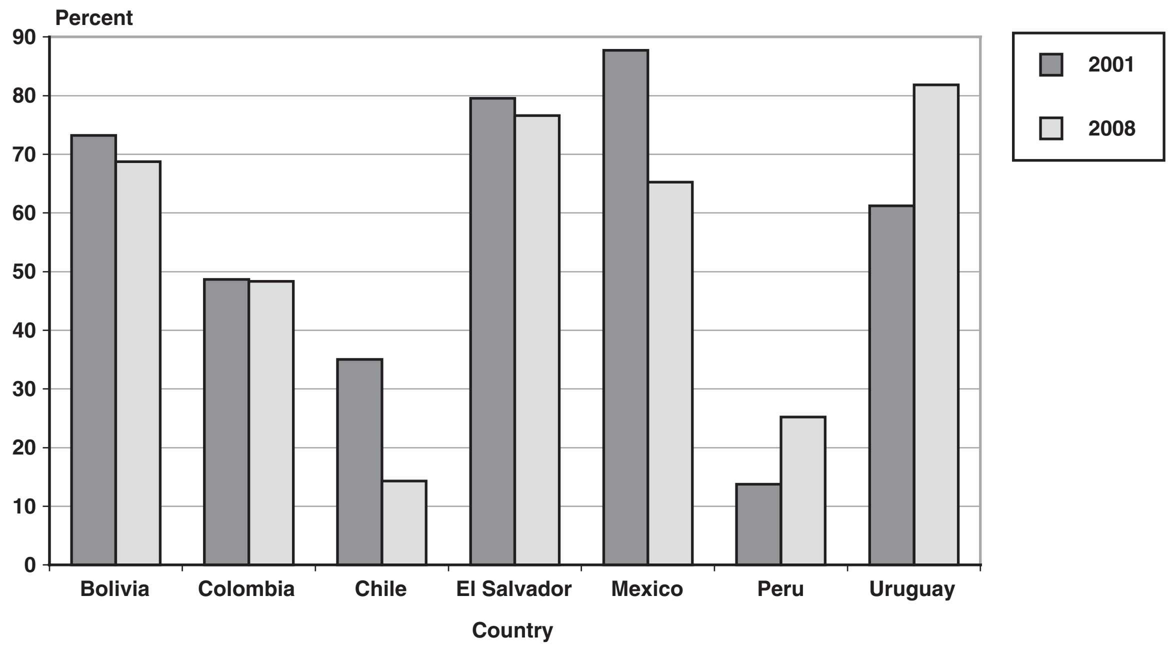
In sum, to achieve the efficiencies that its planners envisioned, pension fund markets must be competitive. As described earlier, the region's pension markets are often oligopolies, charging fees and earning profits that are in excess of what one would expect in a competitive market. Improving competition is critical for reducing fees and costs and improving efficiencies, and recent reforms in Chile and Mexico will be closely watched to see how well they address these policy challenges.

Investment Diversification

A diversified investment portfolio is fundamental to managing investment risk. When the defined contribution systems in the region were first established, investment tended to be concentrated in state-issued bonds, and as Chart 6 shows, that is still the case in many countries. Because investment-grade instruments remain in short supply in emerging capital markets, there is little alternative to investing in government bonds (Uthoff 1997). During the 1990s, firms with investment-grade status found it cheaper to borrow from banks, both at home and abroad, than to turn to the capital markets, while small and medium-sized firms typically did not meet investment-grade requirements. In other words, those firms that could access capital markets did not want to, and those firms seeking such investments did not qualify as investment grade. Consequently, government-issued securities remained the investment of choice for pension funds in most countries (Kay 2009).

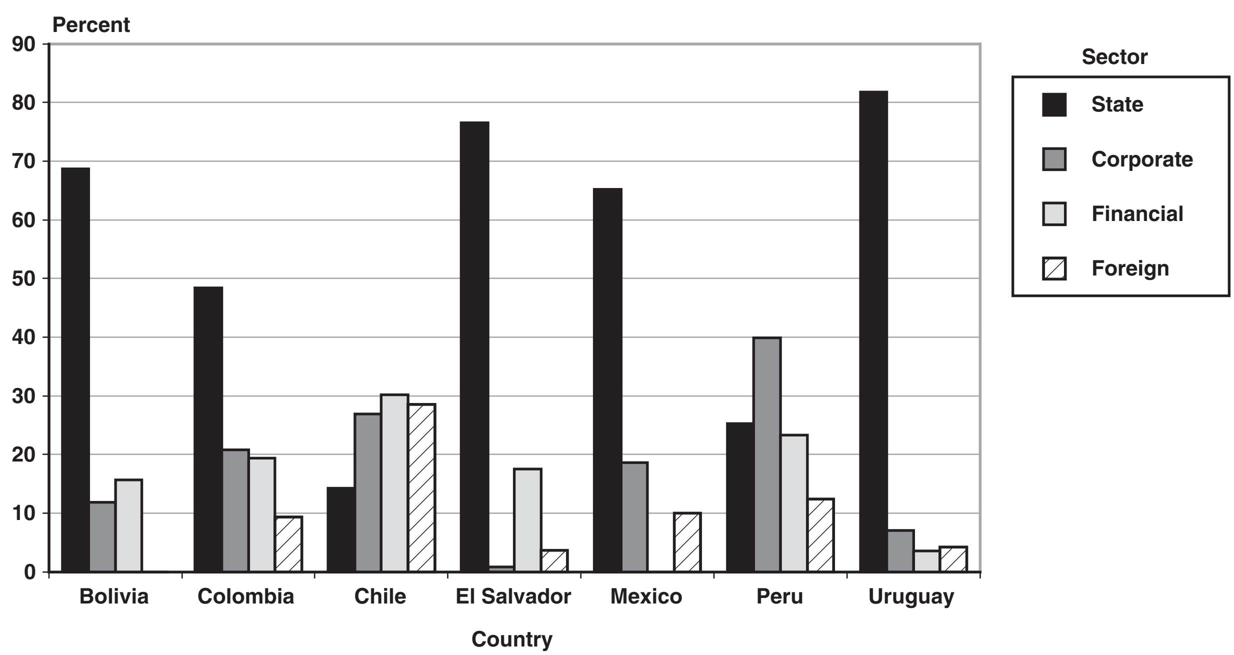
Concentration in government bonds does carry investment risk given that governments can default on their obligations, as Argentina did in 2002 when 80 percent of pension fund investment was in government bonds. Some countries, like Mexico, have encouraged pension funds to diversify away from government bonds (see Chart 7), leading to reduced concentration in government bonds. Nevertheless, in Bolivia, El Salvador, Mexico, and Uruguay, investment in government bonds is well over 50 percent.

Chart 6.
Investment in government securities as a percentage of total pension fund investment, 2001 and 2008



SOURCE: FIAP (2010).

Chart 7.
Pension fund investment, by investment sector, 2009



SOURCE: FIAP (2010).

Foreign investment offers another opportunity to diversify investments and reduce country and currency risk. It has generally been the case that, in part for political reasons, foreign investment is restricted or not permitted during the early years of individual account systems, but is then later permitted as the systems mature. For example, as Chart 7 demonstrates, Colombia and Mexico now have about 10 percent of invested funds in foreign securities, while Peru has 12.5 percent—up from virtually zero in 2001. Meanwhile in Chile, pension fund foreign investment has risen from 5.7 percent in 2001 to 28.5 percent in 2009. (The 2008 pension reform permits up to 80 percent of assets to be invested abroad.)[30]

Multifunds

Over time, some countries have broadened the rules for pension fund investments. As the country with the oldest system of mandatory individual accounts, Chile was the first to increase the type and number of funds available to an individual account holder. In March 2000, Chile introduced a second fund that invested in fixed instruments for workers within 10 years of retirement.[31] Then in 2002, the number of allowable funds was expanded to five in Chile's new multifund system. Since then, both Peru and Mexico have also set up multifunds, and Colombia introduced them at the beginning of 2011.[32]

Chile. In the early stages of the Chilean individual account system, investments were restricted to government bonds, mortgage bonds, bonds of financial institutions, and a very limited amount of corporate bonds; investment in foreign securities was not permitted. As the system matured and became better established, Chile gradually liberalized investment rules, and restrictions on investments in foreign securities have gradually been eased.

For the first 20 years of Chile's program, individuals did not have meaningful investment choices among the AFPs, which could only invest in limited asset classes and had to meet minimum profitability rules. Both requirements effectively forced all AFPs to adopt nearly identical investment strategies, commonly referred to as a "herd effect." As a result, AFPs had to set their investment policy for the short term, thus eliminating any longer-term and potentially more profitable strategies. Furthermore, AFPs were only allowed to offer one type of investment fund, providing no choice for workers in terms of investment time horizons and risk tolerance (Kritzer 2003).

In January 2001, Chile introduced a second type of fund, which is now known as Fund E. Soon after that, in August 2002, Chile's multifund law changed the rules to allow more choice and expand the minimum and maximum rates-of-return requirement. Under the law each AFP must offer four different types of funds—called Funds B, C, D, and E—with varying degrees of risk. AFPs also offer Fund A, with up to 80 percent of its assets in equities. The 2002 law permits account holders to allocate their contributions between two different funds within one AFP. A voluntary savings account can be in a different AFP than the mandatory account. The funds differ in the amount or maximum percentage that they may invest in variable-rate instruments (such as equities) and fixed income (such as bank deposits, mortgages, or government paper that offer a low level of risk or variability) as shown in Table 11. The limit on foreign investment, which applies to all of the funds in a particular AFP, is calculated as the percentage of foreign investment within an AFP's investment portfolio. Each AFP must maintain a minimum and maximum rate of return for each type of fund over the previous 36 months. The rates are calculated separately for each type of fund. The government also guarantees account holders a minimum rate of return (Kritzer 2003). Most affiliates—workers who have enrolled with an AFP and have an individual account—can select any of the

Table 11.
Characteristics of multifunds in Chile

	Limits on investment in equities (percent) [a]		Default age designation (years) [b]	
Fund	Minimum	Maximum	Men	Women
A	40	80	c	c
B	25	60	Up to 35	Up to 35
C [d]	15	40	36 to 55	36 to 50
D	5	20	56 or older	51 or older
E	e	e	f	f

SOURCES: FIAP (2007) and Chile, SP (2010b).

a. Applies to mandatory accounts only.

b. For members who do not choose a fund or do not actively contribute to their mandatory retirement account.

c. Since August 2010, affiliates up to age 30 may sign a contract with an AFP to automatically enroll in Fund A.

d. Through 2002, Fund C was the only investment fund.

e. Mainly fixed instruments.

f. Since August 2010, male affiliates aged 61 or older and female affiliates aged 56 or older can sign a contract with an AFP to automatically enroll in Fund E.

five funds throughout their working lives. Affiliates who do not choose a fund are automatically placed in one according to their age. Those who have not been actively contributing to their accounts and who reach the next age bracket without choosing a fund are automatically enrolled in the fund corresponding to their age bracket. Their assets are transferred gradually—20 percent per year—from one fund to the next (Kritzer 2003). As of December 2009, 69 percent of account holders in Chile had been assigned to a fund according to their age, about 25 percent of account holders chose the higher-risk Funds A and B (split evenly among the two funds), and about 8 percent opted for Fund C (Asociación AFP 2009). Beginning in August 2010, account holders were given another option; they can sign a contract with an AFP to automatically enroll them in a fund according to their age. This contract permits affiliates up to age 30 to be automatically enrolled in the highest-risk Fund A and workers aged 61 or older (men) and 56 or older (women) in the most conservative Fund E (Chile, SP 2010a).

Mexico. When Mexico introduced the system of AFOREs in 1997, affiliates had no choice of funds, and investments were limited to almost all government bonds. Over time, highly rated corporate bonds were permitted, but most AFOREs did not pick them because there were not enough of those bonds in the market until 2002. Soon afterwards, each AFORE was allowed to offer affiliates a choice between two subfunds. One of the riskier funds would invest in structured notes (notas estructuradas)—futures contracts, where the funds would have zero probability of losing the nominal value of the principal. The riskier fund would limit its risk on the return, but protect the principal by the use of the structured notes.

More options were introduced in 2008: SIEFORE Básica 1 through SIEFORE Básica 5, with varying degrees of risk (Table 12). Each affiliate is allowed to choose exactly one fund, with restrictions according to age. An affiliate aged 26 or younger can choose any one of the five funds, whereas an affiliate aged 56 or older can only pick SIEFORE Básica 1, which is invested in fixed instruments. There is no distinction in age for men and women. The idea is that as a worker ages, he or she will be transferred into funds with fewer risks. Many mutual funds in the United States offer these kinds of “life-cycle funds.” Account holders are limited to one fund for both their mandatory and voluntary contributions. The types of investments and levels of risk are much more limited in Mexico than in Chile. In Mexico, the medium-risk fund permits a maximum of 20 percent of investment in equities, compared with 40 percent in Chile; and for the highest-risk fund the ceiling is 30 percent, compared with 80 percent in Chile. Each fund has a maximum limit with respect to type of security, but no minimum. Also, the age restrictions are different in Mexico than in Chile, and the retirement age is 65 for both men and women. The SIEFORES have no required minimum rate of return, and the government does not provide any guarantees.

Table 12.
Characteristics of multifunds in Mexico

SIEFORE Básica (fund)	Limits on investment in equities (percent)	Age designation (years) [a]
1	b	56 or older
2	15	46–55
3	20	37–45
4	25	27–36
5	30	Up to age 26

SOURCE: FIAP (2007).

NOTE: SIEFORE Básica (Sociedad de Inversión Especializada de Fondos para el Retiro) = basic pension fund in Mexico.

a. Members may choose to transfer their accounts to a fund type for an older worker in another AFORE. There is no restriction on transferring from one fund to another within the same AFORE.

b. An affiliate aged 56 or older can only pick SIEFORE Básica 1 (the original fund when there was only one), which is invested in fixed investments.

Peru. Multifunds introduced in Peru in December 2005 consist of three types of funds: Fund 1, preservation of capital; Fund 2, balanced; and Fund 3, growth. Workers up to age 60 may choose any fund they wish, but those who do not make a choice are assigned a fund according to their age: up to age 60, Fund 2; and older than age 60, Fund 1. A proposal to add Fund 4, with only fixed investments, was under discussion in Congress in 2010. Of the 4.3 million Peruvian account holders, only 10 percent had chosen a fund in 2008.

Just as in Mexico, in Peru each fund has a maximum limit on the type of allowable investments, but no minimum (Table 13). A worker may choose one fund for the mandatory contribution and may set up a second account with another AFP for any voluntary contributions. In 2005, the government replaced the guaranteed minimum rate of return with a new system based on benchmarks set up by the AFPs for each type of fund. If an AFP’s rate of return falls below the benchmark

Table 13.
Characteristics of multifunds in Peru: Ceiling on investments (in percent)

Fund	Fixed instruments	Variable instruments
1	100	10
2 [a]	75	45
3	70	80

SOURCES: FIAP (2007), Bernal and others (2008), and SSA (2006–2010).

a. The original fund when there was only one.

for any of its funds, it must make up the difference with its own resources. Also, just like in Mexico, there is no government guarantee (FIAP 2007).

Colombia. AFPs in Colombia are required to offer three types of funds with varying degrees of risk: conservative, moderate, and high risk. Since January 2011, account holders can choose one of the three types of funds for their contributions. But those who do not make a choice are automatically assigned to the moderate fund. Account holders can change from one type of fund to another every 6 months. In addition, according to the "rule of convergence," a certain percentage of an older worker's individual account must be invested in the conservative fund, based on age and sex, ranging from a minimum of 20 percent for women aged 52 and men aged 57, to 100 percent for women aged 56 or older and men aged 61 or older (SSA 2006–2010), as shown in Table 14.

Unlike in Mexico where account holders have age restrictions whether or not they choose a fund type. Colombians who make a choice will not be limited and the default is the moderate fund regardless of age; the only requirement begins 3 years before the normal retirement age when at least 20 percent of an account must be held in the conservative fund. Also, in both Chile and Peru, there is a default fund that depends on age for those workers who do not choose a fund.

Table 14.
Required percentage in conservative fund in Colombia, by sex and age

Required minimum percentage	Women	Men
20	52	57
40	53	58
60	54	59
80	55	60
100	56 or older	61 or older

SOURCE: Colombia (2010).

Multifund participation rates and performance. In comparing the distribution of affiliates in Chile and Peru with respect to fund type, 90 percent of Peruvians are in the intermediate fund, which is the default fund (Arthur 2009). In Chile, 37 percent of affiliates are in the intermediate C fund, with 54 percent of affiliates in the two funds on the riskier end of the spectrum (Asociación AFP 2010); see Table 15. This outcome is no doubt the result of the varying default options. As described earlier, in Chile there are three default options according to age (Funds B, C, and D), while in Peru, the intermediate fund is the default option for all workers up to age 60.

In Chile, 61 percent of the multifund accounts were assigned as a default option, while the remaining accounts were the result of workers' choices (workers have the option of contributing to two accounts in Chile). Of the 39 percent of accounts that were actively chosen by workers, 72 percent of the selections were the higher-risk A and B funds (Asociación AFP 2010); see Table 16 for the actual figures.

Table 15.
Distribution of Chilean and Peruvian affiliates, by type of fund, December 2008 (in percent)

Type of fund	Chile	Peru
Most conservative	2	3
Conservative	8	. . .
Intermediate	37	90
Risky	40	. . .
Riskiest	14	7

SOURCE: Arthur (2009).

NOTE: . . . = not applicable.

Table 16.
Default versus actively chosen accounts in Chile, February 2010

	Accounts		
Fund	Assigned	Chosen	Total
A	--	1,384,737	1,384,737
B	2,353,549	1,344,620	3,698,169
C	2,789,179	797,421	3,586,600
D	730,440	140,310	870,750
E	--	118,095	118,095
Total	5,873,168	3,785,183	9,658,351

SOURCE: Asociación AFP (2010).

NOTE: -- = data not available.

The returns of the multifunds in Chile since 2003 are listed in Table 17. Although Fund A fell the most (40.3 percent) in 2008 in the wake of the financial crisis, it increased in value at the highest rate among the other types of funds in 2009, returning 43.5 percent. Since their inception, higher returns are correlated with the higher-risk funds.

In sum, investment diversification remains a challenge in the region, where capital markets are still emerging, and many countries continue to have a majority of investment in government paper. Increasingly, countries are diversifying into foreign investment, as a hedge against country and currency risk. Starting with Chile's introduction of multifunds in 2001, several countries have provided workers with investment options that vary with respect to risk, which offers the potential for a better match between workers' life cycles and risk profiles.

Gender Equity

The differential impact of gender on pension benefits in defined contribution systems in the region has been well documented (see Arenas de Mesa and Montecinos (1999); James, Edwards, and Wong (2008); and Dion (2008)). In this section, we discuss the link between gender and pension outcomes and measures undertaken in Chile and elsewhere to reduce the gender gap.

As Arenas de Mesa and Montecinos (1999, 8–9) noted, under the defined benefit system that Chile had until 1981, "women received more generous benefits with fewer requirements, and the gap in benefits between men and women was smaller" because women could qualify for a minimum old-age pension with a shorter period of affiliation and without making contributions. They could retire earlier than men and receive similar benefits for a longer period of time (given greater average longevity). Pensions were calculated based on salaries earned in the last years of working life, so that workers were not punished for time spent out of the labor force (favoring women who on average have lower rates of labor participation and fewer years of making contributions).

In contrast, under defined contribution systems, which are based on a tighter link between contributions and benefits, gender inequalities in labor markets are exacerbated upon retirement. Women generally earn lower wages than men because of factors such as gender discrimination, occupational differentiation, and because of time spent outside the paid labor market that is due to care-giving responsibilities. For example, in Chile, 29 percent of women earn the minimum wage, compared with 9 percent of men. Furthermore, women are disproportionately represented in the region's informal labor markets, meaning they are not making contributions to their accounts. As Table 18 shows, women's informal employment as a percentage of nonagricultural employment ranges from 44 percent in Chile and Colombia to 74 percent in Bolivia. Employees in the informal economy do not (by definition) contribute to pension fund savings accounts, with devastating consequences. According to Chile's Social Protection Survey—Encuesta de Protección Social (EPS)—prior to Chile's 2008 reform, 70 percent of those not affiliated with the pension system were women.

With the switch to defined contribution accounts, pensions are determined by the investment performance of actual contributions, so the tendency for women to have both fewer total contributions and

Table 17.
Chile's multifund real annual returns (in percent)

Year	Fund A	Fund B	Fund C	Fund D	Fund E	Total
2003	26.9	16.0	10.5	8.9	3.3	11.9
2004	12.9	10.3	8.9	6.8	5.4	9.1
2005	10.7	7.3	4.6	2.8	0.9	5.7
2006	22.3	18.8	15.8	11.5	7.4	17.0
2007	10.1	7.5	5.0	3.3	1.9	6.5
2008	-40.3	-30.1	-18.9	-9.9	-0.9	-22.0
2009	43.5	33.4	22.5	15.3	8.3	27.7
2010 (January–March)	4.0	3.8	3.6	3.2	3.3	3.7
Cumulative	93.2	70.2	56.8	47.0	32.4	--
Annual average	9.2	7.3	6.2	5.3	3.8	--

SOURCE: Asociación AFP (2010).

NOTE: -- = data not available.

Table 18.
Informal employment in nonagricultural employment, by sex, 1994–2000

Country	Informal employment as a percentage of nonagricultural employment		
	All	Women	Men
Latin America	51	58	48
Bolivia	63	74	55
Brazil	60	67	55
Chile	36	44	31
Colombia	38	44	34
Costa Rica	44	48	42
Dominican Republic	48	50	47
El Salvador	57	69	46
Guatemala	56	69	47
Honduras	58	65	74
Mexico	55	55	54
Venezuela	47	47	47

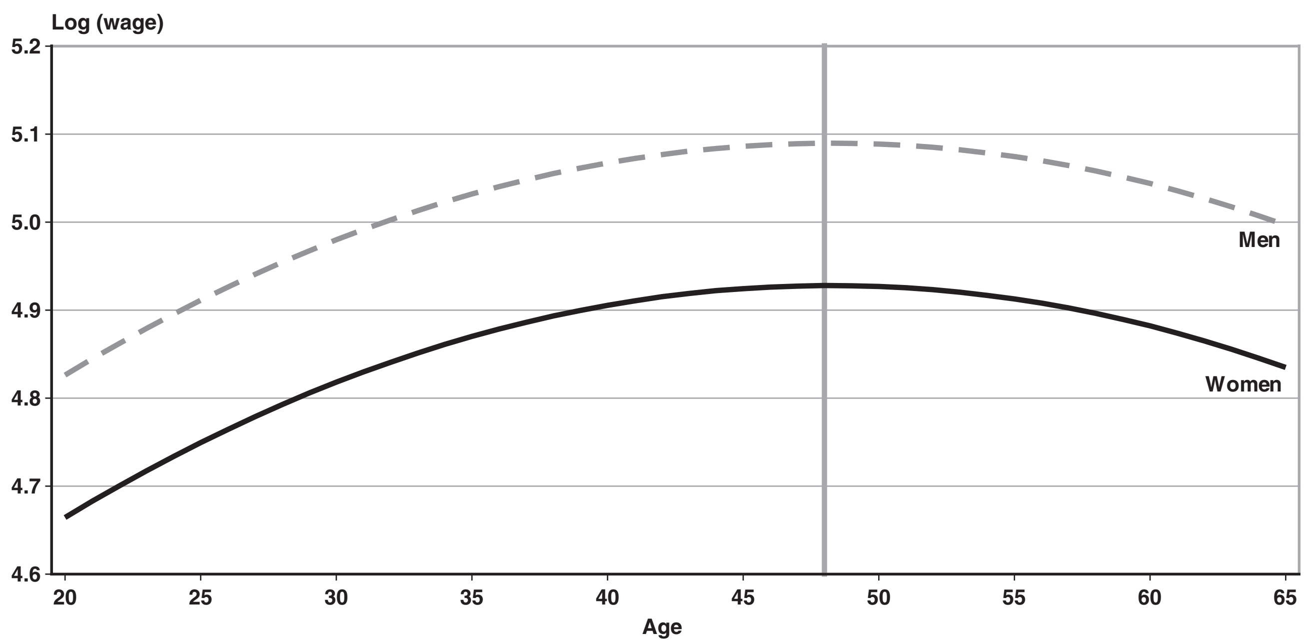
SOURCE: ILO (2002).

overall lower wages means that women accumulate significantly less capital in their accounts than do men. Wage differentials have a serious impact; for example, Sinha (2009) examined the income patterns of a random sample of men and women in Mexico who made regular, uninterrupted contributions to their AFORE (pension fund savings accounts). For the whole population in the data set, the author found that women earn on average 17 percent less than men and would accumulate commensurately fewer funds in their retirement accounts (Chart 8).

Sinha (2009) also found, in comparing trends in income inequality among men and women in Mexico, that inequality is actually growing worse for younger workers. The author grouped men and women between ages 18 and 25 and noted the ratio of their average income from August 1997 through February 2005 (see the w20/m20 graph in Chart 9). Then he examined the same for men and women between ages 55 and 65 (see the w50/m50 graph). For the older generation, the income ratio did not show any trend. However, for the younger generation, the income ratio has been declining over time, meaning that inequality between men and women has been rising over time.

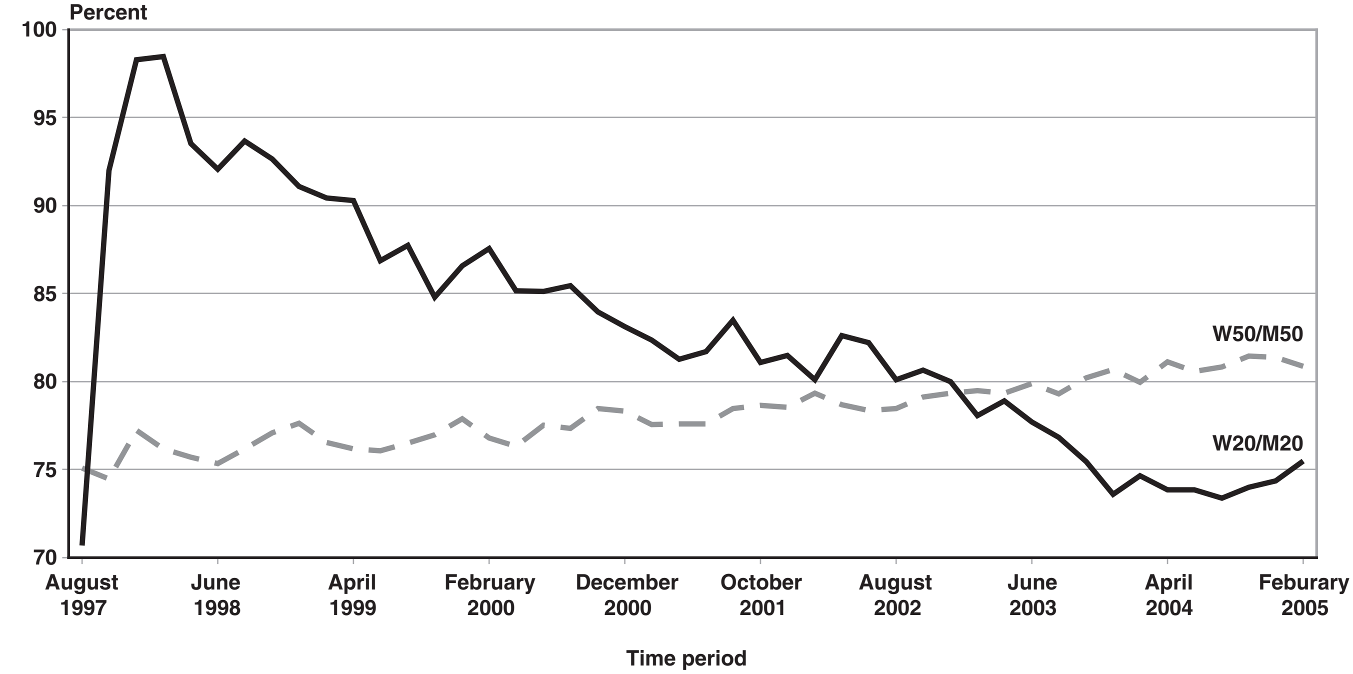
Reforms that introduced individual accounts also raised the number of years of contributions required for a pension, which meant that fewer women qualified for pensions given years spent out of the labor force (Dion 2008). Berstein, Larrain, and Pino (2006) showed that women are inactive in the labor force for an average of 35 percent of their potential working lives, compared with 10 percent for men. Furthermore, Arenas de Mesa and others (2008) found that in Chile, an average man's contribution density is 60 percent, while contribution density for a woman is 43 percent. By age 40, working women will have

Chart 8.
Estimates of wage equation in Mexico, by sex and age



SOURCE: Authors' calculations using data from CONSAR.

Chart 9.
Evolution of income ratio of men and women in Mexico, by selected time period



SOURCE: Authors' calculations using data from CONSAR, based on a random sample of about 500,000 affiliates of the system.

NOTE: W50/M50 stands for the ratio of income of women and men in their fifties. W20/M20 stands for the ratio of income of women and men in their twenties.

made contributions in less than half as many years as working men.

Earlier retirement ages also mean that women have fewer years to accumulate capital in their accounts (Peru, the Dominican Republic, Mexico, and Uruguay have equalized retirement ages, ameliorating this problem). These gender differences are further widened by the fact that pensions for men and women are determined by separate actuarial tables, which increases the gap even more so because women tend to live longer than men.

Projections for the Chilean pension system before the 2008 reform showed clear disparities in pension levels between men and women. Based on their projected contribution patterns, 61 percent of women were not likely to qualify for a minimum pension, compared with 32 percent of men, although the numbers were nearly reversed with respect to workers expecting to receive a benefit above the minimum pension (Table 19). The overall numbers were not encouraging, with nearly half of all workers not expected to get a minimum pension.

Marco (2004) assessed gender inequality in the region's pension systems and made several policy recommendations. These included using single mortality tables to calculate pensions for both men and women, gradually equalizing the retirement age for men and women, setting up unemployment subsidies that replace the monthly contribution to an individual account (or to social security), and reducing the number of years required for a pension in recognition of women's time spent in child rearing (out of the paid labor force).

A competing perspective on gender inequality and pension reform is reflected in James, Edwards, and Wong (2008), which stresses actuarial fairness. They emphasized lifetime benefits as a metric for measuring

Table 19.
Chile's projected pension levels from 2020 through 2025, before the 2008 reform (in percent)

Projected pension level	All	Men	Women
Above the minimum	52	67	37
At the minimum	2	1	2
Below the minimum	46	32	61
Total	100	100	100

SOURCE: Chile, Presidential Advisory Council on Pension Reform (2006).

fairness, which would mean that if women live longer than men, then their contributions to the pension system (beyond the requirement for the minimum pension) should reflect this. Furthermore, the authors argued that because women are also recipients of net public transfers and private intra-household transfers, then they have gained more from the region's pension reforms than men.

The conclusions of Marco (2004) and of James, Edwards, and Wong (2008) represent competing views of the role of pensions; in the latter, the principle of actuarial fairness comes first, while in the former, the link between contributions and benefits is loosened to account for social and labor market inequalities. As Fornero and Monticone (2010) noted, reforms that emphasize actuarial fairness are "at odds with measures that tend to compensate, at the pension level, inequalities originating from the labour market." Chile's 1981 reform placed more emphasis on actuarial fairness, and the 2008 reform sought to improve equity, as policymakers sought to reduce the gender gap.

The gender gap was a primary motivation for the 2008 pension reform in Chile, as President Bachelet stated bluntly when the Marcel Commission report was released (Mensaje 558-354, 2006) that the pension system discriminates against women. The report noted that women receive annuity benefits equivalent to just 42 percent of what men receive because women spend less time in the formal labor market, have lower income than men, have an earlier retirement age (60 years for women and 65 for men), and yet live longer than men. Also, insurance companies use gender-specific mortality tables to calculate annuities, which result in lower benefits for women as well (Chile, Presidential Advisory Council on Pension Reform 2006).

Consequently, the 2008 pension reform included several measures designed to ameliorate gender inequality. Recognizing time spent out of the labor force to care for children, the government pays women a bonus for each child born—from the child's birth until the mother reaches age 65—equivalent to 18 monthly contributions based on the minimum wage at the time each child was born, plus Fund C's net return. For the first time, assets in an individual retirement account may now be divided between the spouses in the case of divorce or annulment, and widowers (in addition to widows) are now eligible for a survivorship pension. With respect to survivors and disability insurance, women had been paying the same rates as men, even though costs were lower given greater expected longevity. Since the reform, the difference in costs will now be refunded into women's retirement accounts (Mensaje 588-354, 2006).

Other countries also initiated measures to compensate women for time spent out of the paid labor force because of caregiving. Uruguay now has a credit for child rearing, and a similar measure was adopted recently in Bolivia.

In sum, with defined contribution accounts, women will receive lower pensions than men based on the structure of labor markets, as lower wages, employment in lower paid professions, higher rates of participation in the informal sector, and fewer years in the paid labor force will lead to lower capital accumulation. Separate actuarial tables and a lower retirement age can deepen these inequalities. Chile's 2008 reform directly addressed labor market inequalities that lead to pension benefit inequalities by including the measures described earlier and through el Sistema de Pensiones Solidarias (System of Solidarity Pensions), which benefits women more than men (described earlier in the Measures to Extend Coverage section). Other measures, such as unifying actuarial tables and having a single retirement age for men and women, would further minimize pension differentials.

Financial Literacy

Financial illiteracy is a universal problem. Lusardi and Mitchell (2007) found in a US survey that less than 18 percent of those who had successfully done a simple interest calculation and a simple division problem could do a simple compound interest calculation. (Respondents were asked the total balance of a US$200 account that earned 10 percent interest over 2 years.) Furthermore, evidence of lower levels of financial literacy among the poor, less-educated, and minority households puts these groups at a further disadvantage economically (Hung, Mahaly, and Yoong 2010). This widespread financial illiteracy and a demonstrated link between financial literacy and household decision making are especially problematic for pension systems where individuals are required to make investment decisions by choosing among a range of competing pension plans (Lusardi 2009).[33]

In Latin America, governments have increasingly required pension fund managers to provide more transparent information to members about their individual accounts. For example, individual account statements in Chile must indicate the rate of return after deducting administrative fees. In Uruguay, the Central Bank has to publish the net real rate of return for each AFAP and the average fees for all AFAPs. Also, the Mexican regulator, CONSAR, is required to report the gross and net rates of return separately, as well as administrative fees for each AFORE. However, despite these efforts, it is evident that in general, workers do not have sufficient understanding of individual account systems.

Chile

According to Chile's EPS survey,[34] most respondents did not know how their pensions were calculated, did not understand the relationship between contributions to an individual account and their pensions, and were not familiar with the basic facts about the guaranteed minimum pension and its requirements.

EPS findings included the following:

- Fewer than 35 percent of those surveyed reported that they knew the percentage of their taxable income that was directed to the pension system every month, and less than half of those respondents provided accurate answers.
- Of the 50 percent who reported that they were aware of how much they had in their individual account, the amount that two-thirds of them reported was more than 20 percent different from the actual amount.
- Only about 8 percent of those surveyed knew how pensions were calculated.
- Even though half of the respondents stated that they knew about the multifunds, only 20 percent knew how many fund options existed. About 40 percent correctly identified Fund A as the highest risk, and about 33 percent knew the fund with the highest rate of return (in the medium term).
- Those with less education and the poor were less likely to have knowledge about the system.
- The majority of those surveyed knew the correct normal retirement age.
- About 66 percent of the pensioners surveyed were aware of what kind of benefit they received, but the amount they reported receiving ranged from 20 percent less to 20 percent more than the actual benefit amount (Arenas de Mesa and others 2008; Bravo and others 2008).
- The percent of respondents who calculated how much they needed for retirement rose from 1 percent in 2006 to 6 percent in 2009 (Reyes B. 2010).

Since 2005, AFPs in Chile have been required to send out an annual personalized pension projection (PPP) to each member based on the individual account balance and some conservative assumptions regarding rates of return. The PPP is based on the member's age—the effect of making additional voluntary contributions (continuing compared with stopping these contributions) for younger workers, of retiring at the normal retirement age, or of postponing retirement for 3 years. A 2009 study found that this new information changed some behaviors. Some workers aged 40 to 50 who received the projections did increase their voluntary contributions, while younger workers did not (Fajnzylber, Plaza, and Reyes 2009).

To improve financial literacy in Chile, the 2008 pension reform included a provision to set up a social security education fund—financed by contributions from the state and private donations—to develop a series of financial education programs through a competitive process. The program is supervised by the Ministry of Labor and Undersecretary of Social Security (Law 20.255; see Chile (2008)).

The first initiative, which began at the end of December 2008, focused on establishing a dialogue on social security between workers and employers and creating "a new social security culture" in the workplace. The government hoped to reach some 300,000 workers through trade unions and other labor groups, with 34 separate projects for a total cost of US$ 2.7 million. The 2010 initiative had US$2.9 million in funding (Berstein 2010).

The 2008 reform also requires the government to set up an accreditation system for pension advisors to create a network of advisors that provide professional and independent financial advice to account holders, overseen by both the Superintendents of Pensions and of Securities and Insurance. As of April 2010, there were 480 authorized advisors (Berstein 2010).[35] The law (20.255) also limits fees to 2 percent of the worker's individual account balance, up to a maximum of 60 UF (US$2,714); see Chile (2008).

Mexico

Hastings and Tejeda-Ashton (2008) examined consumer behavior in Mexico in making choices among pension fund managers (AFOREs) from September 2004 through December 2006. They found that the amount of the administrative fee generally had no influence on the decision to switch from one AFORE to another, and workers did not switch companies frequently even though fees increased. A change in employment was the most likely reason to switch. For lower-income workers, peer influence, advertising, and name recognition were the most important factors; for higher- income workers, past rates of return were key factors.

The authors also used a sample of Mexican workers to ask a number of questions relating to their level of financial literacy in general. Several of the results follow.

- About 33 percent of respondents correctly answered the question on compound interest.
- Over 65 percent correctly answered the inflation question.
- Close to 25 percent demonstrated knowledge of investment returns terminology by selecting "past returns do not predict future performance."
- More financially literate workers tended to choose funds with lower fees.

A survey commissioned by CONSAR evaluated the effect of certain changes to the system on the account holders' level of understanding since 2003. For example, the survey, conducted in 2006, found that since 2005—when AFOREs were required to send out account balance statements twice a year, instead of just once, and when the heading "Estado de Cuenta" (account statement) had to be more prominent on the page—the percentage of individuals that recognized the account statement rose from 12 percent to 62 percent. Also, the percentage of account holders who found the information in their statement to be confusing dropped from 41 percent to 27 percent, while those who considered the information complete rose from 64 percent to 79 percent (Consulta Mitofsky 2006).

Calderón-Colín, Domínguez, and Schwartz (2008) conducted a survey of about 1,000 individuals (a stratified sample of people in Mexico City) to see if the affiliates made the "optimal" choice if data were presented clearly in a table. The results showed that with proper information, people were able to choose the "optimal" AFORE. Armed with this evidence, CONSAR has now included a section, in the quarterly statements that AFOREs send out to their affiliates, with a table that lists the rates of return for all the AFOREs in operation. It also points out where the AFORE in which the affiliate is enrolled stands with respect to the others.[36] This is one instance where a financial education experiment has resulted directly in a policy change by the regulatory body.

Calderón-Colín, Domínguez, and Schwartz (2008, Figure 3) also examined fund switching in Mexico. Using administrative data from the CONSAR, the authors divided the switches based on the difference in the administrative fees and the difference in the rates of return (between the old and the new AFORE). They found that of the 3.87 million affiliates in 2006 who switched from one AFORE to another, 39.9 percent moved to a new AFORE with a *higher* fee and a *lower* return. The authors also used CONSAR's calculator—which produces a comparative table of AFOREs including income, account balance, age, and other specific characteristics for those same affiliates—and found that 95.7 percent of them did not switch to the best AFORE (called "optimal" by the authors; see Figure 6).

CONSAR has also taken steps to control the AFOREs sales agents who help workers make decisions regarding their individual accounts. In July 2009, the agency published rules (Circular CONSAR 2009) for AFOREs sales agents. The key responsibilities include the following:

- Familiarize oneself with and inform workers about financial mechanisms that generate retirement savings, and present truthful information about the products that the AFOREs offer.
- Offer workers products and services that meet their needs.
- Have full knowledge of the information provided to workers so that they can make an informed decision about enrolling in or transferring to an AFORE.
- Keep workers' personal information strictly confidential.

The rules for selecting sales agents require AFOREs to have a rigorous selection process and periodic exams to test their knowledge.[37] As of December 2010, these measures had not been fully implemented, nor had an evaluation of their impact taken place.

Peru

The Inter-American Development Bank (IADB) conducted a survey in Metropolitan Lima of 6,000 heads of household between ages 25 and 55 in paid positions (either as an employee or self-employed). Results of the portion of the survey regarding knowledge of the country's pension system include the following:

- Some 40 percent knew the correct retirement age for men, while only 8 percent were aware of the retirement age for women.
- Only 12.2 percent were aware of the monthly contribution rate, and 16.5 percent knew who paid the administrative fees.
- Only 3.2 percent knew how pensions were calculated in the system of individual accounts, while

8.2 percent knew how pensions were calculated for the public PAYG system.

- Older workers (aged 50–55) had the highest percentage of correct answers for the retirement age and pension calculation questions, while younger workers (aged 25–34) had the highest percentage for the contribution rate and administrative fees questions.
- Generally, women knew less than men except for the retirement age for women.
- Almost half of the group could not answer any of the questions correctly, and less than 1 percent answered all the questions correctly.

In addition, close to 50 percent of those surveyed never thought about how to finance their old age, and only 16 percent thought about it "a lot." Of the 43 percent who had taken concrete measures to save for retirement, 41 percent contributed to either pension system, almost 28 percent owned their own business (more women than men), 14 percent had a savings account in a bank, and almost 12 percent had bought a house. As in the rest of the world, Peru has relatively low levels of financial literacy, and knowledge of pensions and financial markets is extremely low (Pagés and others 2009).

Other Countries in the Region

In the past few years, El Salvador has set up an interagency financial education program, which involves government organizations such as the Superintendent of Pensions, the Central Reserve Bank, and the Superintendent of the Financial System. Each agency focuses on the aspects of their mission relating to financial literacy. The materials relating to pensions on the financial education website include a coloring book, brochures on the basic features of the program, a video entitled "Your Money in the Future," and a manual for employers (SPES 2009).

Colombia's 2009 financial reform bill created multifunds (in 2011) and required the government to set up regulations that include incentives for various groups (such as labor unions and consumer organizations) to establish low-cost financial education programs in conjunction with institutions such as universities (SSA 2006–2010). An April 2010 draft law requires each AFP to implement a permanent financial education plan for its members on the risks associated with each investment alternative. The plan could involve training, conferences, talks, or "entertainment." Members could also ask their AFP for some form of pension calculator (*Portafolio* 2010).

In addition, Uruguay intends to set up a Social Protection Survey similar to the one conducted in Chile. An IADB project to train professionals to administer an EPS survey was approved in 2008 and was scheduled for 2010 (IADB 2008).

In recent years, the challenge of improving financial literacy has become widely recognized throughout the globe.[38] As described earlier, policymakers in Latin America have undertaken a range of initiatives that seek to improve financial education. Because the region's pension systems are based on a model that assumes that well-informed and financially literate workers will respond to incentives in a competitive marketplace, improving financial literacy in the region is of vital importance.

Voluntary Savings for Retirement

Latin American pension systems offer a range of options for voluntary savings. Within the framework of individual account systems, voluntary contributions are often allowed and are under the same regulatory framework as the mandated contribution. In many countries, participation is encouraged through tax incentives. Some countries also have private pension plans sponsored by the employer and are subject to different regulations.[39] Mexico is the only country in the region where the supervisory authority (CONSAR) is now regulating the AFORES (both mandatory and voluntary), as well as separate employer-sponsored pension plans for workers. The focus of this section is voluntary contributions to an individual account (CONSAR 2006, 2007).

Most of the Latin American countries with individual account systems allow voluntary retirement contributions in addition to the mandatory contribution. The method of saving varies: Workers can make additional contributions to either the same mandatory individual account or to a separate voluntary account. The government often provides some form of tax incentive to the employee to encourage additional saving for retirement. However, Uruguay offers tax incentives only to employers. Table 20 gives an overview of those provisions in nine countries. To illustrate examples of voluntary savings, the next two sections contain a brief description of the voluntary programs in Chile and Mexico.

Chile

Since 1987, Chile has permitted various options to supplement the mandatory individual account.

- A separate savings account with the same AFP as the mandatory account.

Table 20.
Voluntary contributions to individual accounts

Country	Additional contribution [a]	Separate account	Employer	Tax incentives [b]
Bolivia	Yes	No	Yes	No
Chile	Yes	Yes	Yes	Yes
Colombia	No	Yes	No	Yes
Costa Rica	Yes	No	No	Yes
Dominican Republic	Yes	No	No	[c] Yes
El Salvador	Yes	No	Yes	Yes
Mexico	No	Yes	Yes	Yes
Peru	No	Yes	No	Yes
Uruguay	Yes	No	Yes	[d] Yes

SOURCES: FIAP (2006) and SPES (2009).

a. To the mandatory individual account.

b. For employees.

c. For those older than age 45.

d. For employers only.

- Additional contributions above the mandatory 10 percent of earnings.[40] These contributions may be regular or periodic, but withdrawals are limited to four per year.
- Employers' contributions to employees' mandatory accounts. These are agreements (called "fixed deposits") between employees and employers that allow employers to deposit either a lump-sum or a periodic payment.

It was not until 2002 when tax incentives for these voluntary contributions were established. These tax incentives benefited mainly higher-income workers (Berstein, Larrain, and Pino 2006); by February 2010, about 16 percent of the 8.6 million AFP members had voluntary accounts, but 45 percent of those accounts had a zero balance (Chile, SP 2010c, 2010d).

In October 2008, the government introduced employer-sponsored, voluntary pension plans, known as Ahorro Previsional Voluntario Colectivo (APVC), which target the middle class and supplement the existing voluntary retirement savings accounts.[41] Both employers and employees can contribute to an APVC. In addition, workers enrolled in an APVC plan who contribute up to about (US$3,150) a year to a voluntary account (and regularly contribute to a mandatory retirement account) are eligible for an annual government subsidy of 15 percent of the amount that the worker has voluntarily saved for retirement.[42] If the worker withdraws any of the funds from an APVC account before retirement, the entire government subsidy must be returned to the General Treasury (Chile, SP 2008). The take-up rate for the APVC has been very low since the inception of the program. By the end of February 2010, there were a total of 126 APVC accounts, mainly in utility supply companies (Chile, SP 2010c).

Mexico

A voluntary savings option with a given AFORE, called complementary contributions, has been permitted in Mexico since the inception of the system in 1997. In addition, the affiliate now gets a tax break on complementary contributions of up to 10 percent of income with a maximum of five times the minimum salary (around US$7,700) in 2010. Since 2003, CONSAR, the system regulator, has implemented some other measures to encourage voluntary savings. Any worker (not just affiliates of AFOREs) is permitted to open a voluntary retirement account with any AFORE. In addition, workers are allowed to borrow money from this voluntary account to buy a house, for weddings, or during periods of unemployment. CONDUSEF, the consumer protection agency of the federal government (and the organization that handles disputes concerning AFOREs), reported in 2008 that 1.4 percent of the affiliates opted for voluntary accounts (CONDUSEF 2008). By 2009, 0.45 percent of the total savings in the AFOREs were voluntary savings (CONSAR 2009).

Overall, the individual account systems in both Chile and Mexico have not been successful in encouraging workers to save more for retirement. Unlike in Chile, in Mexico there is a sizeable number of employer-sponsored pension plans, which cover approximately 1 million workers. These plans have existed for many decades without any regulation; since 2006, they have been supervised by CONSAR. These plans offer benefits over and above what is legally required by the Mexican government, and contribution requirements vary: Only the employer contributes in 40 percent of these plans; the employer and employee in 53 percent; and both employer and employee in 4 percent. More than 60 percent of the plans are defined contribution systems, 13 percent are defined benefit systems, and an additional 25 percent are hybrid plans. Large banks manage almost half of the funds, while more than one-quarter are run by casas de bolsa (investment firms). Total assets under management accounted for 2.8 percent of gross domestic product (GDP) in 2009, compared with 9.6 percent of GDP for the AFOREs (CONSAR 2009).

Private companies offer these plans to encourage workers to stay with their company. To be vested, typically a worker will need at least 15 years of service. However, if a worker leaves before retirement, at best, most of these funds will pay a benefit based on only the workers portion of the contribution. These plans offer a good test case for measuring the cost of fund management because they are privately operated for the private sector. Sinha (2010) and Hamden (2010) provided some evidence on the cost of managing these employer-sponsored private pension funds. Based on a sample of around 30 funds from 2000 through 2006, both authors noted that on average, these companies charged an annual fee of 0.41 percent of the value of the fund at the beginning of the year. This figure can be contrasted with the AFORES average charges of more than double, estimated by Impavido, Lasagabaster, and García-Huitrón (2010).

As is apparent from the discussion earlier, although these countries have implemented systems to encourage voluntary pension savings, the take-up rates have been extremely low, despite the incentives. This suggests that additional steps are necessary to encourage voluntary savings beyond the institutional and incentive frameworks that have recently been established.

Payout Phase

Much of the literature on pension reform focuses on the risks and costs of individual account systems during the accumulation phase when workers are contributing to their individual accounts. Yet, there is increasing attention being paid to the policy challenges of the payout phase and its associated risks. Even though Chile's system of individual accounts was established in 1981, it has not matured—as 30 percent of pensioners receive benefits from the old PAYG system—and recognition bonds for contributions made to the old system still figure prominently (Corripio 2010).

As Rocha and Vittas (2010) noted, the payout phase has not received much attention in the literature. The authors point out that pensioners face longevity and bequest risks, as well as investment and liquidity risks, while the retirement products that they may choose carry their own specific risks. Purchasing an annuity can protect against longevity, but reduces the possibility for a bequest, while investments that bring higher returns may bring liquidity risks. As Rocha and Thorburn (2007) noted in their Executive Summary, "longevity risk remains one of the most difficult issues to be addressed by regulators and participants in annuities markets, requiring a constant effort to track mortality improvements and reflect these improvements in capital and product regulation."

Meanwhile, there is a range of types of payouts, including phased withdrawals, lump-sum, and self-annuitization; and a range of real, nominal, and variable life annuities—all of which offer differing degrees of protection against the aforementioned risks. As Antolin (2008, 16) noted, given different levels of risks and guarantees of differing annuity products, "in situations where a stable retirement income is already provided by the public PAYG pension, it may be appropriate to allow individuals to purchase annuity products that entail greater risks."[43] In fact, selecting the default risk level and payout requires an analysis of the level and security of other retirement income sources, wage and employment profiles, bequest motives, and liquidity preferences (Antolin, Payet, and Yermo 2010). Further complicating the creation of a default option is the fact that the relative performance of investment strategies depend on the payout phase. As Antolin, Payet, and Yermo (2010) argued, life-cycle investment strategies do best when benefits are paid as life annuities, and are less valuable when benefits are paid as programmed withdrawals. Given the complexity of payout decisions and low levels of financial literacy, the default options for payouts are of critical importance (Rocha and Vittas 2010, 35), especially because there is evidence that workers may view default options as being a recommended option (Beshears and others 2008, 76). Also critical is the presence of an effective regulatory and supervisory authority.

As Table 21 demonstrates, there is a range of payout options in Latin America. For example, every country except for Panama offers an annuity; all but Uruguay and Bolivia offer programmed withdrawals; while Costa Rica, the Dominican Republic, and Panama do not offer programmed withdrawals combined with a deferred annuity. Mexico has a small annuities market in part because it has a very small insurance market overall and because private-sector annuities are only available for individuals with workers' compensation or disability claims (Impavido 2007, 34). Before 2004 in Chile, workers could choose between phased withdrawals, indexed life annuities, or a combination of the two. Since 2004, workers can use a combination of a minimum pension fixed real annuity with either a phased withdrawal or a variable annuity.

Chile has high rates of annuitization with nearly 66 percent of retired persons choosing annuities and 60 percent of pensioners retiring early (of whom 85 percent annuitize, compared with 34 percent among people retiring at normal retirement age). Two separate studies attribute different causes for these high rates: (1) detailed rules that encourage annuitization, such as the prohibition on lump-sum withdrawals (James, Edwards, and Iglesias 2010), and (2) marketing of annuities by insurance companies, which is directed at higher-income workers (Rocha and Thorburn 2007, 138). The lower rate of annuitization for those retiring at the normal retirement age is due to the minimum pension guarantee, which provides a form of longevity insurance, as well as rules prohibiting annuities for low-value accounts (James, Edwards, and Iglesias 2010). Given concerns about high commission costs, illegal marketing practices, and high levels of early retirement, regulations implemented in Chile in 2004 and 2008 placed a 2 percent cap on annuity commissions, promoted competition by allowing banks entry into the market, and introduced an electronic quotation system designed to reduce the influence of individual brokers (Rocha and Vittas 2010, 23). The latter was structured to provide unbiased advice given that insurance brokers were especially aggressive in marketing annuities because they received commissions on premiums. In contrast, insurance brokers received no commissions for programmed withdrawals from pension funds, and the funds were not allowed to charge a front-end fee to workers who kept their funds in their accounts, giving brokers little incentive to promote programmed withdrawals. Furthermore, the electronic quotation system was also designed to discourage early retirement, given

Table 21.
Payout options for Latin American individual account systems

Country	Retirement age: Men	Retirement age: Women	Type of retirement payout options: Early retirement	Annuity	Programmed withdrawals	Programmed withdrawals with deferred annuity	Guaranteed minimum benefit
Bolivia	65	65	No	Yes	No	No	Yes
Chile	65	60	Yes	Yes	Yes	[a] Yes	Yes
Colombia	b	b	No	Yes	Yes	Yes	Yes
Costa Rica	[c] 62/65	[c] 62/65	No	Yes	Yes	No	d
Dominican Republic	60	60	Yes	Yes	Yes	No	Yes
El Salvador	60	55	Yes	Yes	Yes	Yes	Yes
Mexico	65	65	Yes	Yes	Yes	Yes	Yes
Panama	62	57	Yes	No	Yes	No	e
Peru	65	65	Yes	Yes	Yes	Yes	Yes
Uruguay	[f] 60/65	[f] 60/65	No	Yes	No	No	No

SOURCE: SSA (2009).

a. Temporary income with a deferred life annuity and an immediate life annuity with programmed withdrawals.

b. Paid if the accumulated capital in the individual account is sufficient to purchase an annuity greater than 110 percent of the minimum wage.

c. Depending on the number of monthly contributions.

d. For the first-pillar PAYG system.

e. If the pensioner lives beyond the estimated life expectancy and the individual account is depleted, collective insurance tops up the accumulated capital in the individual account to finance the old-age pension.

f. Age 65 has no coverage requirement.

the close link between early retirement and annuitization discussed earlier. Mitchell and Ruiz (2009) suggested that the 2008 reform, which expands access to a minimum benefit and raises its level, would reduce the high level of annuitization in Chile.

In short, the complex set of policy challenges associated with the payout phase listed by Rocha and Vittas (2010) require close attention from policymakers. The appropriate mix of products needs to be available (and oftentimes must be created in markets where they do not yet exist), and they must be effectively regulated and supervised. Chile has a head start in managing the payout phase, given the greater longevity of its system of personal accounts, but every country using such a system will need an effective set of policies. Deciding among a mix of product options is a complex decision even for the most sophisticated workers. However, given the low levels of financial literacy (see Arenas de Mesa and others (2008) and Rocha and Vittas (2010)), the call for appropriate default options is especially urgent.

Survey of Other Reforms

Risk-based supervision (RBS), now being developed in Chile, offers a new approach to the supervision of pension funds. Beginning in July, 2010, Chile began implementing a transition to risk-based supervision of pension funds rather than rules-based supervision, with the goal of improving transparency and efficiency in the supervisory process. Under RBS, the supervisory authority assesses the capacity of pension funds to appropriately measure and manage risk with adequate levels of controls at all levels of the firm (Chile, SP 2010b). Specifically, it means the quantitative restrictions (such as limits on investment in equities and default age designations) are being phased out and are being replaced with limits in terms of total risk assumed by the funds. RBS remains a challenge because there is no universally accepted measure of risk (Artzner and others 1999). Chile's innovations with RBS will no doubt be closely monitored by other countries in the region.

Since Chile's comprehensive reform of its pension system in 2008, other countries have also considered measures intended to reform the reforms that they implemented in the 1990s. In Uruguay, the labor ministry initiated a social dialogue in May 2010, with the intention of proposing reforms in the second half of 2010. A 2009 Peruvian government study considered measures to incorporate independent workers and noncontributory social pensions, but at the present time there is no legislative effort underway to reform the pension system. Both Uruguay and Peru allowed certain workers who switched to systems of individual accounts to switch back to the public PAYG system.[44]

Meanwhile, in December 2010, a new law passed in Bolivia that allows a state takeover of the two private pension funds that had been created in 1996. This provision is part of a larger reform that lowers the retirement age for both men and women from 65 to 58 (even lower for miners and mothers) and creates a solidarity fund to help increase the benefit level for lower earners. This fund is financed by an employer's 3 percent of payroll contribution, 0.5 percent of earnings for workers, and an additional contribution for higher earners.

Bolivia's nationalization of its private pension funds is following in the footsteps of Argentina, which became the first country to reverse the switch to individual savings accounts when it placed the US$24 billion in assets managed by the 10 pension funds under government control and incorporated all workers into the public PAYG defined benefit system.

The 2008 presidential decree (Argentina, National Executive Power 2008 (Poder Ejecutivo Nacional)) announcing the takeover cited the private system's low rates of coverage and high commission costs and argued that the private system would leave workers at the mercy of the markets during a time of financial crisis.[45] Furthermore, the new law stated that under the new Integrated Argentine Pension System (Sistema Integrado Previsional Argentino—SIPA), benefits would be equal to or better than benefits under the private system (Boletín Oficial de la República Argentina 2008).

Fiscal concerns were an important consideration during the 2008 renationalization of pension funds in Argentina, given government financing needs in the wake of a sharp fall in revenue that was due to lower export taxes and commodity prices during the financial crisis in the second half of 2008 (Reuters 2008). Taking over the pension funds provided fiscal support for the government, and because 55 percent of pension fund assets were invested in government bonds, the government was essentially taking control of around US$13 billion of its own debt. Workers were promised benefits that would be equal to or better than the benefits that were provided by the private system. Legislative approval was no doubt aided by the lack of widespread political support for the private system. The legislative opposition, realizing it was not going to be able to block the measure, demanded that the funds be prudently managed and not used for political ends.

Mesa-Lago (2009) argued that the system's problems did not merit its complete dismantling: The funds' historic 6.6 percent real returns were far better than characterized by the government; pension funds were in relatively strong shape and underexposed to equities in the face of the economic crisis; despite a short-term financial boost from the takeover, the long-term pension burden would increase for the government; and that the reforms did not adequately safeguard how the newly acquired funds would be invested, which could further undermine confidence in (and compliance with) the public pension system.

The 2008 pension renationalization in Argentina can be contrasted to Chile's 2008 pension reform (Kay 2009). The performance of Chile's privatized pension system also faced its share of criticism with respect to efficiency and equity (Gill, Packard, and Yermo 2005), and both presidential candidates in the 2006 Chilean election pledged to initiate a reform. President Bachelet created a reform commission that held public hearings, solicited input from stakeholders, and ultimately presented a package of measures aimed at improving coverage, increasing competition, lowering costs, and reducing gender inequity (Chile, Presidential Advisory Council on Pension Reform 2006). In Argentina, there was no public debate or any hint that a core social program would be reformed before the legislation was introduced and quickly approved.

In short, recent events suggest great divergence in the direction of policy in the region. In some cases, like Chile's, the new system of individual accounts was strengthened by measures to improve competition and lower costs; at the same time, a significant public benefit was added to include the majority of workers who were not likely to have sufficient savings. Meanwhile other countries, including Argentina, ended their systems of individual accounts, while other countries, like Bolivia, are moving in that direction.[46]

Conclusion

During the past decade, there has been a new generation of reform measures designed to address some of the principle policy challenges of Latin America's systems of individual accounts. Kay and Kritzer (2001) described how high administrative fees, limited competition, investment rules that discouraged diversification, evasion and low density of contributions, the need to extend pension coverage, and the role of gender were policy challenges that confronted the region's pensions systems. Since that time, policymakers in the region have taken significant steps to address those very issues, and in this article we have described this "reform of the reform" in some detail, with particular emphasis on countries that have taken significant steps, including Chile, Mexico, Peru, and Colombia.

In the case of Argentina, the government chose an alternative path—rather than a next-generation reform, the system of individual accounts was ended, and workers were placed back into the state-run PAYG system. The Argentine path remains the exception in Latin America. For example, even though the state has taken over the private pension fund administrators, the individual accounts appear set to continue.

Expanding coverage remains the most significant policy challenge. Coverage is a key indicator of how well a reformed system is functioning, and improving coverage rates was a core objective of the reforms that led to individual accounts. With the exception of Bolivia, coverage rates for workers in the region did not improve.[47] Low density of contributions (the proportion of months that a worker makes contributions compared with the maximum number of months the worker could have contributed) is a persistent problem in the region, and workers who do not contribute regularly may find themselves receiving low benefits, or no benefits at all. Although a 2000 law would have led to the creation of individual accounts in Nicaragua, high transition costs and anticipated low rates of coverage led to a 2004 government decision (supported by the World Bank) not to introduce the new system. Economy Minister Eduardo Montiel noted that only one in seven workers would have benefited from individual accounts (Enríquez and Bow 2004).

Although reforms in the 1990s focused on the creation of individual savings accounts, a number of recent reforms have emphasized poverty prevention. As Gill, Packard, and Yermo (2005) argued, the poverty-prevention pillar of pension systems did not receive the attention it deserved under the original pension reforms in Latin America, and in recent years, "closing the coverage gap" (as Holzmann, Robalito, and Takayama (2009) titled their study) to incorporate lower-income and informal-sector workers has become a top priority. With only 20 percent of the world's elderly receiving pensions and 25 percent of the labor force contributing, it is clear that expanding basic antipoverty pension coverage will continue to be a top priority. Given these challenges, improving pension coverage remains a critical component of the next generation of pension reforms. For example, Chile's Sistema de Pensiones Solidarias (System of Solidarity

Pensions) is one such model that will no doubt continue to receive attention from other countries seeking to expand coverage to their poorest citizens.

Administrative fees and limited competition have also been an issue of concern for many years (Shah 1997; Queisser 1998), and the 2008 Chilean reform includes measures with incentives for pension funds to compete for an entire cohort of workers, while allowing firms to lower their cost structures through outsourcing administrative functions. Although pension funds in Chile, Peru, Mexico, and Colombia once offered only one investment portfolio, workers can now choose among the "multifondos," and limits on foreign investment have been liberalized, allowing for greater diversification of risk. The new Chilean system offers workers greater incentives to participate; some workers once had little incentive to contribute beyond what was required for the minimum pension, but the recent reform provides an array of incentives and subsidies for young and lower-income workers to contribute. The reform also seeks to bring the self-employed into the system, which remains a problem that is widespread throughout Latin America. Finally, recent reforms in Chile contain incentives for women, including subsidies for having had children, to ameliorate the gender gap.

We have also described policy challenges that were not widely discussed 10 years ago, but are now on the frontier of policy reform, including financial education, default options for payouts, and the creation or improvement of the basic universal pensions to cover the lowest-income workers. Because workers are being asked to make critical choices about their financial future despite, as surveys demonstrate, very low levels of knowledge about finance, financial education is prominent in policy discussions throughout the hemisphere. Translating this concern to concrete results continues to be an extraordinarily difficult task.

Developing appropriate default options is another key challenge. Low levels of financial education make default options critical to the functioning of the pension system (Beshears and others 2008), not only during the accumulation phase, but also during the payout phase, when workers often must make an irreversible choice in the face of an array of complex options (Rocha and Vittas 2010).

Risk-based supervision is another emerging trend, and Chile is the first country to implement RBS for the pension system. In 2005, the Pension Superintendent began a multiyear implementation process designed to integrate all relevant risks into supervision (fiduciary, financial, operational, technological, and so forth) that will take a preventative approach, focusing on firms' risk management and internal controls. Chile's experience with RBS, which is part of a broader global move toward RBS in the financial sector, will no doubt be closely watched in the coming years.

While this study is by no means exhaustive, it has covered a wide range of next-generation reforms of systems of individual accounts in Latin America. As countries throughout the world continue to face similar policy challenges, these reforms will continue to provide lessons for policymakers.

Appendix: Survivors and Disability Insurance

All of the countries in the region with individual account systems provide some form of survivors insurance based on a percentage of the workers' prior earnings or pension. Generally, the deceased worker must have had a minimum number of years of contributions. The amount of the survivor benefit depends on the number and type of survivors, and usually all survivors benefits combined may not exceed 100 percent of the deceased's old-age pension (if he or she was a pensioner at the time of death, or the pension the deceased worker would have been entitled to receive). In most of the countries, the benefit is linked to the individual account balance and life insurance. Life insurance tops up the accumulated capital in the individual account if the balance is less than the required minimum to finance a benefit.

Eligible survivors include the spouse and children generally younger than age 18, unless a student or disabled. Although most of the countries provide similar benefits to both widows and widowers, in some instances, a wife is eligible for a benefit as a widow when the husband is ineligible as a widower, or a widowed husband must be disabled or financially dependent on the deceased wife to receive a benefit (SSA 2009).

Most of the countries in the region with individual account systems offer permanent and partial disability benefits based on prior earnings. The main qualifying condition for total disability is at least 50 percent loss of working capacity in Mexico and Colombia, 60 percent in Bolivia, and 66 percent in the other countries' programs. Only three out of nine countries provide a temporary disability benefit. Chile's 2008 reform eliminated the 3-year waiting period to be assessed as permanently disabled; only partial disability benefits require a final assessment after 3 years. Other countries such as Mexico and El Salvador have a waiting period before a worker may be assessed as disabled, while others including Bolivia and Costa Rica may review the assessment at any time. The regulator of the individual account system generally supervises the disability program except in Mexico and Costa Rica, where the social security agency administers the program (Ferro 2009).

In most of the countries, the benefit is linked to the individual account and disability insurance. Disability insurance tops up the accumulated capital in the individual account if the balance is less than the required minimum to finance a permanent disability pension. However, in Bolivia and the Dominican Republic, the insurance company pays a disability benefit and also contributes to the insured's individual account until the pensionable age. At that point, the insured worker uses the individual account balance for some type of old-age benefit, to purchase an annuity, or make programmed withdrawals. (Bolivia allows only annuities.) In Costa Rica, disabled workers receive a social insurance benefit directly from the social security agency and may withdraw the balance from the individual account when assessed as disabled. In Mexico, if the insured worker is eligible for a disability pension and the pension (based on the value of the accumulated capital plus accrued interest) is higher than the minimum pension, the person may withdraw the sum exceeding the amount needed for the minimum pension (Ferro 2009; SSA 2009).

Notes

[1] For a comprehensive account of pension reform in the region, see Mesa-Lago (2008).

[2] The Latin American countries are Argentina (1994), Bolivia (1997), Colombia (1993), Costa Rica (1995), the Dominican Republic (2003), El Salvador (1998), Mexico (1997), Panama (2008), Peru (1993), and Uruguay (1996). Countries in Central and Eastern Europe and Asia that have introduced individual accounts include Hungary (1998), Kazakhstan (1998), Poland (1999), Bulgaria (2000), Croatia (2001), Latvia (2001), Estonia (2002), Kosovo (2002), Russia (2002), Slovakia (2005), and Romania (2008). For more information, see Kritzer (2005) and SSA (2008).

[3] Although many countries in the region use the acronym AFP, others have different names (see Table 2). Throughout this article, we will use AFP as the generic term.

[4] More specific information on fees and insurance can be found in the Fees, Profitability, and Competition section.

[5] A December 2010 law nationalized the two privately managed pension funds (SSA 2006–2010).

[6] Before the government closed the second-pillar individual accounts, Argentina had a mixed system where all insured workers were in the first-pillar public PAYG system. For the second pillar, those workers had a choice between contributing to an individual account or the PAYG defined benefit system.

[7] See the World Bank (1994, 320) and Mitchell (1997, 15).

[8] Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, Ecuador, El Salvador, Guatemala, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, and Venezuela.

[9] An affiliate is a person with an individual account. A contributor is an affiliate that regularly contributes to an individual account.

[10] Gruber (1997) showed that the reduction in payroll tax in Chile in the early 1980s did not increase employment in the formal sector.

[11] Chile's reform included phasing out the PAYG system. Colombia has a "mixed" system with a choice between the PAYG and individual account systems.

[12] Coverage and gender are strongly related issues and are discussed at greater length in the Gender Equity section. In general, because women spend less time in the formal labor force than men, earn lower wages, and have greater periods of inactivity and lower density of contributions, their rates of coverage will be lower.

[13] A noncontributory pension program for persons aged 70 or older is being rolled out across Mexico. It pays the recipients living in rural areas with less than 30,000 people 500 pesos (US$41) a month. For more information, see http://www.sedesol.gob.mx/index/index.php?sec=15.

[14] The problem is more acute among women. For more details, see the Gender Equity section later in the article.

[15] For a detailed description of the 2008 Chilean reform, see Kritzer (2008).

[16] Argentina, Brazil, the Dominican Republic, Colombia, and Uruguay require the self-employed to participate.

[17] See Table 5 below for the range of administrative fees and Table 9 for premiums for survivors and disability insurance.

[18] For example, AFP income in Chile is largely derived from fees. In 2005, administrative fees represented 91 percent of an AFP's income, and the yield on investments from the reserve fund was about 8 percent (Chile, Presidential Advisory Council on Pension Reform 2006).

[19] Peru, Chile, and Uruguay also used to charge a flat fee that was proportionately higher for lower earners than higher earners. Peru eliminated this fee in 1997, and the other two countries abolished their flat fees about 10 years later.

[20] According to the December 2010 pension reform law, account holders in Bolivia will continue to pay the same

administrative fee to the government that they paid to the privately managed AFPs. The government will review the fee every 3 years (*La Razón* 2010; SSA 2006–2010).

[21] This refers to Argentina's system before the 2008 law that closed the second-pillar individual accounts and transferred all the workers back to the PAYG system.

[22] Since 2006, the cost of survivors and disability insurance has shifted to the employer in El Salvador and Chile. In Chile the process has been in two stages: Since July 1 2009, employers with at least 100 employees are required to pay for this insurance; this will be extended to include all employers beginning June 2011.

[23] The median age in Mexico is 26.7, compared with 31.7 in Chile and 33.7 in Uruguay (CIA 2010). Thus, as the population is younger in Mexico, the premium charged for death and disability should be *lower* than in Chile or Uruguay. But, in fact, it is exactly the opposite.

[24] IMSS also administers the sickness and maternity, work injury, unemployment, and family allowance programs (SSA 2009).

[25] Because most workers have not yet retired under the individual account system, these were mainly survivors and disability annuities.

[26] This process led to a sudden rise in one-time payments by the IMSS because earlier that agency was paying a stream of smaller benefits over many years. In order to lower the costs, IMSS adopted a new policy: All disability pensions were treated as "provisional pension benefits" rather than "definitive pension benefits." A definitive pension meant that the IMSS would be responsible for a 900,000 pesos up-front payment because it was obligated to buy an annuity on behalf of the widow/disabled worker. To avoid the strain on the IMSS budget, it made the benefit "provisional," which essentially pushed the cost into the future. In terms of present value, they are the same. But it was easier on the budget process, as the IMSS does not consider long-term budgets; it only had to fund the pensions on an annual basis. In addition, definitive pension criteria were tightened. This abrupt change in regulation in 2000 led to the collapse of the annuities market in Mexico.

[27] For example, governments have granted monopoly power to firms through patent protection. The argument for granting patents is that it is necessary for inventions and innovations.

[28] Cuenta concentradora (consolidated account) was created for affiliates who did not sign up for any AFORE. Those affiliates were automatically assigned to this account, managed by the Mexican Central Bank, which paid a fixed interest rate of 2 percent on these accounts.

[29] From the Superintendent of Pensions' published-fees tables, accessed on December 22, 2010 (http://www.safp.cl/573/article-6014.html), we note that Modelo is charging 48 percent of what is being charged by the most expensive fund, Planvital. So far, there has been no movement toward reducing the fees by other AFPs. Also, an October 2010 report found "stronger competition to improve customer service, as well as an increase in advertising, but not lower commissions in real terms" (*Business News Americas* 2010).

[30] Beginning in December 2010, the limit on assets invested abroad in Chile is rising by 5 percentage points every 3 months until it reaches 80 percent by September 2011 (SSA 2006–2010).

[31] However, only 625 affiliates signed up for this fund (Homedes 2002). In 2001, Mexico allowed each AFORE to offer its affiliates a choice between two subfunds (discussed shortly).

[32] As of August 2010, the Costa Rican Superintendent of Pensions expected to have multifund regulations ready by the end of 2011 (Arias 2010).

[33] Hastings and Mitchell (2010) found that level of impatience is also a key factor in decision making.

[34] The 2002 survey was called the History of Labor and Social Security Survey. After the 2004 EPS was conducted, to simplify the terminology, researchers began to refer to the 2002 survey as an EPS as well. The EPS was also conducted for 2006 and 2009. To date, only preliminary findings have been released for the 2009 survey. For more information on the EPS, see http://www.proteccionsocial.cl/.

[35] In October 2009, the first qualifying exam was given and only 30 percent of the 193 applicants passed. The test given at the end of May 2010 had better results: 48 percent of the 113 applicants passed. The test consists of multiple choice and true/false questions (Chile, SP and SVS 2010).

For the topics covered in the test, see http://www.safp.cl/573/articles-6049_comunicado010410.pdf.

[36] For a sample statement, see http://www.consar.gob.mx/principal/info_gral_trabajadores-estado_cuenta-imss.shtml.

[37] For part of a Mexican qualifying test for AFORE sales agents, see http://www.segurosinbursa.com.mx/gestor/cursos/afore2008/aforevoz_v2/modulo1/autoevaluacion_m1.html.

[38] The OECD has a Financial Education Project, http://www.oecd.org/department/0,3355,en_2649_15251491_1_1_1_1_1,00.html. For information on the US government's program, see http://www.treasury.gov/resource-center/financial-education/Pages/commission-index.aspx. Also, in 2009 SSA established the Financial Literacy Research Consortium, http://www.socialsecurity.gov/retirementpolicy/financial-literacy.html.

[39] For example, assets for Brazil's occupational pension funds are the seventh largest in the world (Pugh 2009).

[40] The ceiling for the mandatory contribution is currently at 66 unidades de fomento (UF). The UF is a monetary unit adjusted daily to reflect changes in the consumer price

index. (As of December 19, 2010, the UF was equal to approximately US$45.) Since 2010, the ceiling on contributions is adjusted annually according to changes in the real wage index for the previous year.

[41] Before the new law was implemented, very few Chilean companies offered occupational pension plans.

[42] Up to a ceiling of about US$2,800 as of December 23, 2010.

[43] Antolin (2008, 23) recommended that to manage longevity risk, policymakers should mandate deferred life annuities that start paying at very old ages (85 or older) with the remaining assets distributed as programmed withdrawals.

[44] In both cases, the rules apply to older workers who voluntarily switched to individual accounts and would not have enough time to accumulate a significant account balance before retirement. In Peru, the ability to switch is ongoing, while in Uruguay the time period was limited.

[45] For a comprehensive assessment of the Argentine experience with privatization, see Arza (2008).

[46] In October 2010, the Hungarian government, facing ongoing challenges from the financial crisis, moved toward taking over its system of individual accounts by freezing government payments to the private system and hinting that workers would be encouraged to return to the state-run system (Reuters 2010). Then in November 2010, the government went one step further. Those account holders who did not switch their account balances back to the state, would lose their public pension benefits (Simon and Balazs 2010).

[47] Recent reforms to the public system expanded coverage for aged individuals who had been without coverage in Argentina and Chile.

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[SPES] *See* El Salvador, Superintendencia de Pensiones.

[SSA] *See* US Social Security Administration.

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