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Chile's Private Pension System at 18: Its Current State and Future Challenges

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Executive Summary

In May 1981 Chile replaced its government-run pay-as-you-go retirement system with an investment-based private system of individual retirement accounts. The new system has allowed Chile and other Latin American countries that have followed the Chilean example to defuse the fiscal time bomb that is ticking for countries with pay-as-you-go systems, as fewer and fewer workers have to pay for the retirement benefits of more and more retirees. More important, Chile has created a retirement system that, by giving workers clearly defined property rights in their pension contributions, offers proper work and investment incentives; acts as an engine of, not an impediment to, economic growth; and enhances personal freedom and dignity.

In the 18 years since the Chilean system was implemented, labor force participation, pension fund assets, and benefits have all grown. Today, more than 95 percent of Chilean workers have their own pension savings accounts; assets have grown to over $34 billion, or about 42 percent of gross domestic product; and the average real rate of return has been approximately 11.3 percent per year, which has allowed workers to retire with better and more secure pensions.

Its success notwithstanding, the Chilean system has found many critics, who often point to high administrative costs, lack of portfolio choice, and the large number of transfers from one fund to another as evidence that the system is inherently flawed and inappropriate for other countries, including the United States. Some of those criticisms are misinformed. Many other criticisms reflect real problems, but they are largely the result of excessive government regulation.

The spirit of the reform has been to relax regulations as the system has matured and as the fund managers have gained experience. All the ingredients of success—individual choice, clearly defined property rights in contributions, and private administration of accounts—have been present since 1981. If Chilean authorities address the remaining shortcomings with boldness, we should expect Chile's private pension system to be even more successful in its adulthood than it has been during its first 18 years.

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Introduction

Chile's private pension system, implemented on May 1, 1981, has become the model for countries interested in finding a fiscally viable and enduring solution to the problem of paying for the retirement benefits of aging populations.[1] By completely replacing its pay-as-you-go government-run social security system with an investment-based private system of individual retirement accounts, Chile has managed to defuse the fiscal time bomb that faces countries with pay-as-you-go social security systems, as fewer and fewer workers have to pay for the retirement benefits of more and more retirees. More important, Chile has created a retirement system that, by giving workers clearly defined property rights in their pension contributions, offers proper work and investment incentives; acts as an engine of, not an impediment to, economic growth; and enhances personal freedom and dignity.

That retirement programs financed on a pay-as-you-go basis are on the verge of collapse should come as no surprise. Such programs, which in essence are intergenerational transfers of wealth, have made old-age financial security dependent on the political process. The substitution of political action for private action has severed the link between individual efforts and rewards. In other words, individuals try to minimize their contributions to the system while they are active workers and to maximize their retirement benefits.

In a pay-as-you-go system, the government taxes active workers to pay for the benefits of retired workers. Under such systems, retirement benefits are a function of the rate of growth of the tax base, which in turn depends on the rate of growth of the labor force and the rate of growth of real wages per worker (i.e., increases in labor productivity). But payroll taxes artificially increase the cost of labor and thus have a negative effect on employment and distort the allocation of resources.[2]

That precarious and unsustainable situation no longer exists in Chile, where a worker's retirement benefits depend on his own work and the functioning of the economy, rather than on the government's ability to tax future generations of workers. In recent years, seven other Latin American countries—Peru (1993), Colombia (1994), Argentina (1994), Uruguay (1996), Bolivia (1997), Mexico (1997), and El Salvador (1998)—have also privatized their retirement systems, following, to varying degrees, the lines of the successful Chilean model.[3] In March 1999 Poland became the first country in Eastern Europe to implement a partial privatization reform based on the Chilean system. Chile's experience, however, remains the most successful example of social security privatization. Notwithstanding its success, the Chilean system has received many criticisms—some valid, others not—that the present study will address. Furthermore, enough time has passed since the Chilean system was implemented that its results can be evaluated in a systematic way.

Chile's Pay-As-You-Go Retirement System

In 1924 Chile became the first country in the Western Hemisphere to introduce a state-run retirement system when it established a retirement fund for manual workers. That fund was the predecessor of the Servicio de Seguro Social, or the social security service, which was to become the main retirement system for the majority of Chilean workers until 1981.[4] In 1925 two more funds were created: one, Caja de Empleados Particulares, for (nonmanual) private-sector workers and the other, Caja Nacional de Empleados Públicos y Periodistas, for public-sector workers and journalists. Soon those state-run collective capitalization funds evolved into a pay-as-you-go system in which the benefits of retirees were paid from the contributions of active workers.[5] In addition, special-interest legislation led to the creation of more than 100 different pension regimes with widely different benefits that were not related to the level of contributions and different retirement ages for different groups of workers. In 1968 then-president Eduardo Frei Montalva summed up the chaotic nature of Chile's retirement program:

> There are two thousand social security laws in Chile. Think what this means. Two thousand social security laws, together with the regulations and the agreements of the social security institutions; in other words, a growing monstrosity. In the readjustment law of 1966, 46 new social security rules were introduced, followed by 44 in 1967 and 1,238 in 1968. However, the Executive has no means of stopping this

> monstrosity. Each group of social security contributors has many laws . . . some are very small groups, very respectable, naturally. . . . There are some fabulous cases: the racetracks have nice social security institutions. . . . What is worse is that the country is spending 18.1% of gross national product on social security. . . . What fiscal budget can survive this?[6]

By the early 1970s the system had clearly gotten out of hand. Contribution rates had increased from 16 to 26 percent of total payroll; the government's contribution to the pension system had increased to about 38 percent of the system's total revenues, or about 4 percent of gross domestic product; and the implicit debt of the system was over 100 percent of GDP. In addition, demographic changes worked against the pay-as-you-go system in Chile. The ratio of workers to retirees had declined from 10.8 in 1960 to 4.4 in 1970, to 3.2 in 1975, and to 2.2 in 1980, when the pension reform law was adopted.[7]

In 1978 the government introduced a number of changes to the pay-as-you-go system—such as standardizing retirement ages at 65 for men and 60 for women, eliminating special regimes, and rationalizing indexing—that preceded the implementation of the new private system.

Chile's Private Retirement System

On November 4, 1980, the Chilean government approved the law that established a new private pension system based on freedom of choice and clearly defined property rights in retirement accounts.[8] This system is a fully funded, defined-contribution scheme, mandatory for all dependent workers and administered by specialized, single-purpose private companies called administradoras de fondos de pensiones (AFPs), which are pension fund administrators. The aim of the reform was, in the words of José Piñera, who was then secretary of labor and social security and architect of the system, to create "a social security system based on individual freedom and, at the same time, solidarity; a fair social security system, but yet an efficient one; a social security system for all . . . for the benefit of all Chileans and always to the service of freedom, progress and justice."[9]

Main Features of the New System

Coverage. The system is mandatory for all dependent workers who entered the labor force after January 1, 1983, and optional for self-employed workers, just like the government system was. Workers who were already in the labor force before January 1983 had the option of staying in the old, government-run system or moving to the new system. Workers who moved received from the government recognition bonds that acknowledged the contributions they had already made to the old system; and those who stayed in the government-run system had their pension rights guaranteed under the new law.

Contribution Rates. Each month workers deposit 10 percent of their wages in their own individual pension savings accounts. That percentage applies only to the equivalent of the first $22,300 of earnings.[10] (Since that level remained unchanged in real terms during the first 18 years of the private system, the "mandatory content" of the private system went down automatically as economic growth increased real wages.) Those contributions and the returns earned on them belong to the workers and are deductible from taxable income. Any worker may contribute up to an additional 10 percent of wages, which is also deductible for income tax purposes.[11] In addition, since 1987 workers have been able to maintain Voluntary Savings Accounts, also administered by the AFPs but completely separate from the pension savings accounts, where they can deposit additional savings.[12] It is worth noting that Voluntary Savings Accounts benefit mostly low-income workers, since those accounts allow workers access to sophisticated tools of investment at little or no cost (AFPs usually waive their fees and commissions on those accounts).[13] Employers may also make contributions, called contracted deposits (depósitos convenidos), to their employees' accounts and count those contributions as a business expense, which makes them deductible for tax purposes for the employer.

Freedom of Choice. Workers are free to select the AFP of their choice. They are also free to transfer from one AFP to another as often as twice a year. There is a minimum stay requirement of six months, implemented in late 1997 in an effort to bring down administrative costs and prevent frequent rotation of workers among AFPs.[14]

By the early 1970s the Chilean pay-as-you-go system had clearly gotten out of hand.

If an AFP goes bankrupt, the retirement fund is not affected.

Administration. As stated above, the system is administered by single-purpose private AFPs. Each company manages an investment fund of bonds, stocks, and other financial instruments. The AFPs and the retirement funds they administer are two completely separate legal entities, so that if an AFP goes bankrupt, the retirement fund is not affected. There is free entry and exit into the industry, even for foreign companies, provided that certain capital requirements are met.[15] AFPs are required to maintain a legal reserve, a cash reserve, and a profitability reserve. In addition, they are required to provide at least one statement of account every four months to their customers free of charge, as well as a pension savings passbook (la libreta), where workers can keep track of contributions made and of how well their investment funds have performed.[16]

Fees and Commissions. For the services they provide, AFPs may charge monthly a fixed commission, which currently ranges from $0 to $2.11, and a variable commission expressed as a percentage of the worker's taxable income, which currently ranges from 2.49 to 2.95 percent of that income (Table 1). The variable commission includes the premiums for the term life and disability insurance the AFPs take out on behalf of their customers. Since 1987, however, AFPs have not been allowed to charge a fixed or percentage commission on assets under management or on inactive accounts (i.e., accounts that did not receive a contribution in the month before the commissions are assessed). That change has created distortions in the AFP industry. AFPs are not allowed to offer discounts for groups, for voluntary contributions, for permanence, or for maintaining a certain balance in the account.

Retirement Benefits. The new private system provides workers with three different types of retirement benefits:

1. Old-Age Pensions: Male workers must reach the age of 65 and female workers the age of 60 to qualify for this pension. However, it is not necessary for men and women who reach those ages to retire, nor are they penalized if they choose to remain in the labor force. There are no other requirements.
2. Early-Retirement Pensions: To qualify for this option, a worker must have enough capital accumulated in his account to purchase an annuity that is (1) equal to at least 50 percent of his average salary during the last 10 years of his working life and (2) at least 110 percent of the minimum pension guaranteed by the state.[17]
3. Disability and Survivor's Benefits: To qualify for a full disability pension, a worker must have lost at least two-thirds of his working ability; to qualify for a partial disability pension, a worker must have lost between half and two-thirds of his working ability. Survivor benefits are awarded to a worker's dependents after the death of the worker. If he did not have any dependents, whatever funds remain in his pension savings account belong to the beneficiaries of his estate.

Table 1
Commission Structure for Dependent Workers (as of December 1998)

AFP	Fixed Commission (in dollars)[a]	Variable Commission[b]
Aporta	$1.01	2.95
Cuprum	0	2.69
Habitat	1.03	2.49
Magister	0.95	2.85
Planvital	2.11	2.55
Protección	0.82	2.61
Provida	0.41	2.62
Santa María	1.03	2.59
Summa Bansander	0.83	2.72

Source: Superintendencia de Administradoras de Fondos de Pensiones, *Boletín Estadístico*, no. 146 (1998): 41.

[a] $1 = 474 Chilean pesos in December 1998.

[b] The variable commission is expressed as a percentage of taxable salary.

Types of Pensions. There are three retirement options:

1. Lifetime Annuity: Workers may use the money accumulated in their accounts to purchase lifetime annuities from insurance companies. Those annuities provide a constant income in real terms.
2. Programmed Withdrawals: A second option is to leave the money in the account and make programmed withdrawals, the amount of which depends on the worker's life expectancy and those of his dependents. If a worker choosing this option dies before the funds in his account are depleted, the remaining balance belongs to the beneficiaries of his estate, since workers now have property rights in their contributions.
3. Temporary Programmed Withdrawals with a Deferred Lifetime Annuity: This pension option is basically a combination of the first two. A worker who chooses this option contracts with an insurance company for a life-

time annuity scheduled to begin at a future date. Between the start of retirement and the day the worker starts receiving the annuity payments, the worker makes programmed withdrawals from his account.[18]

In all three cases a worker may withdraw in a lump sum (and use for any purpose) any funds accumulated in his account over and above the money necessary to obtain a pension equal to at least 120 percent of the minimum pension and to 70 percent of his average salary over the last 10 years of his working life.

The Government's Role

The government's role in the private system is twofold: first, it acts as a regulator of the system; second, it is the financial guarantor of last resort. The pension reform established an independent and highly technical government agency, the Superintendencia de Administradoras de Fondos de Pensiones (Superintendency of Pension Fund Administrators), to oversee the private retirement system. As a regulator, then, the main functions of the SAFP are

1. to approve or reject proposals for the creation of AFPs, approve their by-laws, and authorize their existence;
2. to supervise the operations of the AFPs in legal, financial, and administrative matters once they are in existence;
3. to ensure compliance by the AFPs with minimum capital and cash reserve requirements;
4. within the framework of the law, to set general investment rules in conjunction with the Central Bank of Chile and make sure that the investments made by the AFPs comply with those rules;
5. to enforce present regulations and enact new ones, if necessary;
6. to levy fines on those participants in the system who violate regulations and, when applicable, enforce the dissolution of an AFP as set forth by law; and
7. to serve as an arbitrator should disputes arise between an AFP and its customers.

Second, the government provides a safety net for those workers in need of it. The benefits guaranteed by the government are as follows.

1. For workers with fewer than 20 years of contributions, the government provides a welfare-type pension funded from general revenues.
2. For workers with at least 20 years of contributions but without enough capital accumulated in their accounts to fund a pension that meets the legally defined minimum pension, the government adds the money necessary to provide that pension. Similarly, if the funds in the retirement account of a worker are depleted before the worker dies, the government will give that worker the minimum pension.

To reduce the moral hazard inherent in the government's guarantee, the SAFP sets maximum percentage limits both for specific types of instruments and for the overall mix of the investment portfolio that each AFP manages (Table 2) and has imposed on the AFPs a minimum return guarantee.

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Minimum Return

Each year each AFP must guarantee that the real return of the AFP is not lower than the lesser of (1) the average real return of all AFPs in the last 12 months minus 2 percentage points and (2) 50 percent of the average real return of all AFPs in the last 12 months. If the returns are higher than 2 percentage points above the average return of all AFPs over the last 12 months, or higher than 50 percent of the average return of all AFPs over the preceding 12 months, whichever is greater, the "excess returns" are placed in a profitability fluctuation reserve, from which funds are drawn in the event that the returns fall below the minimum return required.[19] Should an AFP not have enough funds in the profitability reserve, funds are drawn from a cash reserve, which is equivalent to 1 percent of total assets under management. If that reserve does not have enough funds, then the government makes up the difference and the AFP is liquidated.

Table 3 summarizes the main characteristics of Chile's private pension system.

Evolution and Results of the Private Pension System

Enough time has passed since the private system was implemented that a systematic analysis of its results can be made today. Labor force participation, pension fund assets, and benefits obtained under the new system have all grown. The number of Chilean workers with a pension savings account (affiliates) increased from 1.4 million workers at the end of 1981 to 5.9 million workers at the end of 1998, an increase of 421.4 percent. The number of workers who kept their

Table 2
AFP Investment Limits
(as a percentage of fund asset value)

Instruments	Limits Set by the Central Bank of Chile[a]
Government securities	50 percent
Time deposits and financial institutions' securities	50 percent
Securities guaranteed by financial institutions	50 percent
Letters of credit issued by financial institutions	50 percent
Public and private corporate bonds[b]	—
Convertible bonds	10 percent
Stocks of publicly traded corporations	37 percent
Stocks of real estate companies[c]	—
Shares in real estate investment funds[c]	—
Shares in corporate development investment funds	5 percent
Shares in personalty investment funds	5 percent
Shares in securitized-debt investment funds	5 percent
Commercial paper	10 percent
Foreign instruments:	20 percent
Fixed income	10 percent
Variable income[d]	10 percent
Hedging instruments	20 percent
Other publicly traded instruments	1 percent

Source: Superintendencia de Administradoras de Fondos de Pensiones, *El Sistema Chileno de Pensiones*, 4th ed. (Santiago: SAFP, 1998): pp. 78–79.

[a]Although the upper limit has a range set by the SAFP, the effective limit is the limit set by the Central Bank of Chile, an institution that has been constitutionally independent since 1990 and thus insulated from political pressures. It is crucial to note that the lower limit is, of course, zero—that is, the AFPs are under *no* obligation to buy government securities or any other type of financial instruments.

[b]There is no specific limit on the amount of bonds in the fund, although the aggregate limit on corporate and convertible bonds is 45 percent.

[c]The aggregate limit on real estate stock and shares in real estate investment funds is 10 percent.

[d]Foreign instruments of variable income include (but are not limited to) equity of foreign corporations publicly traded on the New York Stock Exchange, NASDAQ, the London Stock Exchange, the Tokyo Stock Exchange, the Frankfurt Stock Exchange, and the Paris Stock Exchange.

Table 3
Basic Characteristics of Chile's Private Pension System

Inception date	1981
Mandatory/optional	Mandatory
Parallel public system[a]	No
Contribution rate as a percentage of salary[b]	10 percent
Voluntary contributions	Yes
Government contribution	No
Additional savings	Yes
Fixed commission	Yes
Variable commission on assets under management	No
Variable commission on contributions	Yes
Discount allowed	No
Old-age pension	Yes
Disability and survivors' pension	Yes
Early retirement	Yes
Number of funds per AFP	1
Investment limits	Yes
Guaranteed minimum return	Yes
Profitability fluctuation reserve	Yes
Legal reserve	Yes
Number of AFPs	8 (as of May 1999)
Number of contributors	2,619,616 (as of Dec. 1998)
Number of affiliates	5,966,143 (as of Dec. 1998)
Assets under management (AUM)	$34.1 billion (as of May 1999)
Rate of return (real annual average, 1981–98)	11 percent
AUM/GDP	Approx. 42 percent

[a] The parallel public system exists for those workers who had contributed to it before January 1, 1983, and chose to remain in the old system. When the last of those workers retires, that system will automatically disappear.

[b] This rate applies to only the first $22,300 of salary.

accounts active by making contributions to them in the previous month (contributors) went from 1 million workers at the end of 1982 to 2.6 million workers by the end of 1998, an increase of 260 percent (Table 4).

Assets have grown to over 40 percent of GDP in the 18 years since the system was implemented, an unusually high percentage for a small developing country where capital markets were very underdeveloped at the time of the reform (Table 5). According to Chilean economist Roberto Fuentes, assets are projected to grow to 134 percent of GDP by 2020.[20] This has contributed to the development and deepening of Chilean capital markets, which are by far the most advanced in Latin America today, as well as to the development of a risk-rating industry.

The most notable feature of Table 6 is the increasing number of workers choosing early retirement, which is a sign of the success of the new system for two reasons: first, it is an indication that workers are accumulating enough funds in their accounts to choose this option; second, it allows workers to make individual decisions about their work and leisure preferences. As José Piñera has stated, "Some people want to work forever; others cannot wait to cease working and to indulge in their true vocations or hobbies, like writing or fishing. . . . [The private pension system] allows for individual preferences to be translated into individual decisions that will produce the desired outcome."[21]

Table 7 shows the average amount of monthly pensions paid by the new private retirement system. The most interesting feature of Table 7

Table 4
AFP Affiliates and Contributors, 1981–98

Year	Affiliates	Contributors	Ratio of Contributors to Affiliates (%)
1981	1,400,000	NA	NA
1982	1,440,000	1,060,000	73.61
1983	1,620,000	1,229,877	75.92
1984	1,930,353	1,360,000	70.45
1985	2,283,830	1,558,194	68.23
1986	2,591,484	1,774,057	68.46
1987	2,890,680	2,023,739	70.01
1988	3,183,002	2,167,568	68.10
1989	3,470,845	2,267,622	65.33
1990	3,739,542	2,289,254	61.22
1991	4,109,184	2,486,813	60.52
1992	4,434,795	2,695,580	60.78
1993	4,708,840	2,792,118	59.30
1994	5,014,444	2,879,637	57.43
1995	5,320,913	2,961,928	55.67
1996	5,571,482	3,121,139	56.02
1997	5,780,400	3,296,361	57.03
1998	5,966,143	2,619,616	43.91

Sources: Superintendencia de Administradoras de Fondos de Pensiones, *Evolución del Sistema Chileno de Pensiones*, no. 3 (1998): 33; and Superintendencia de Administradoras de Fondos de Pensiones, *Boletín Estadístico*, no. 148 (1999): 57, 73.
Notes: NA = not available.
The figures are for the month of December of each year, with the exception of 1990, for which the figures are for November.

Table 5
Pension Fund Assets, 1981–99

Year	Pension Fund Assets (millions of U.S. dollars)	Annual Growth Rate (%)	Assets/GDP (%)
1981	305.74		0.84
1982	970.63	217.47	3.29
1983	1,757.02	81.02	5.86
1984	2,324.01	32.27	7.73
1985	3,200.60	37.72	10.03
1986	4,184.05	30.79	12.67
1987	5,129.52	22.54	14.20
1988	6,279.28	22.41	14.97
1989	7,742.67	23.31	17.65
1990	10,254.75	32.44	24.21
1991	14,503.29	41.43	31.37
1992	16,160.43	11.43	30.56
1993	20,770.47	28.53	37.02
1994	25,066.68	20.68	40.99
1995	26,646.02	6.30	38.76
1996	28,235.80	5.97	39.45
1997	30,862.90	9.30	40.60
1998	31,145.57	4.20	42.00[a]
1999[b]	34,192.93	9.78	NA

Sources: Superintendencia de Administradoras de Fondos de Pensiones, *Evolución del Sistema Chileno de Pensiones*, no. 3 (1998): 51; Superintendencia de Administradoras de Fondos de Pensiones, Press release, December 1998, http://www.safp.cl/prensa/1998/dic/pag1.html; and Superintendencia de Administradoras de Fondos de Pensiones, Press release, May 1999, http://www.safp.cl/prensa/1999/may/pag1.html.
Notes: NA = not available.
[a] Estimate.
[b] From January to May 1999.

is the pension amount received by workers choosing the early-retirement option. Between 1988 and 1998 those pensions ranged between $258 (in 1989) and $318 (in 1994). By comparison, the representative worker in the United States retiring at age 62 is getting monthly benefits that range from $506 to $743 under Social Security.[22] This is an indication of the efficiency of the private system in Chile, not just in comparison with the old Chilean government-run social security system, but also in comparison with the government-run system in the United States, a country where per capita income is more than five times that in Chile.[23] Old-age pension benefits in Chile are also higher relative to per capita income than they are in the United States.

Some Objections to the Private Pension System

As the global crisis in public retirement systems has grown, so has interest in the Chilean reform. Advocates of Social Security privatization in the United States and other industrialized countries often cite the success of the Chilean reform, while opponents of privatization point to high administrative costs, lack of portfolio choice, and the high number of switchovers from one fund to another in the Chilean system as evidence that that system is inherently flawed and inappropriate for other countries, including the United States.[24] Those and other criticisms are addressed below.

AFPs compete against one another for workers' savings by offering lower prices for a given product, products of a higher quality, better service, or a combination of the three. The prices or commissions workers pay the AFPs are heavily regulated by the government. As a result, not much competition exists in this area. The product that the AFPs provide—that is, the return on investments made—is also heavily regulated by the government because the existence of a minimum return guarantee forces the AFPs to make

The increasing number of workers choosing early retirement is a sign of the success of the new system.

Table 6
Number of Pensions Paid under the New System, 1982–97
(data through December of each year)

Year	Old Age	Early Retirement	Full Disability	Partial Disability	Widows	Orphans	Others	Total
1982			791		1,108	2,566		4,465
1983	393		2,272		2,521	5,821	164	11,171
1984	1,730		4,058		4,340	9,665	292	20,085
1985	2,647		5,729		5,872	11,768	410	26,426
1986	4,835		7,979		7,740	14,539	572	35,665
1987	7,980		10,620		9,797	16,847	671	45,915
1988	11,819	772	12,786		11,506	18,669	814	56,366
1989	17,129	2,824	14,388		14,245	19,798	1,051	69,435
1990	23,876	5,790	15,777		17,214	23,079	1,325	87,061
1991	30,141	15,673	15,479		20,472	29,414	1,621	112,800
1992	35,763	26,054	15,404	32	22,810	29,262	1,805	131,130
1993	43,089	37,521	15,189	107	25,848	31,450	2,122	155,326
1994	51,440	53,355	15,265	800	29,965	34,616	2,544	187,985
1995	55,591	69,537	16,760	1,216	32,279	36,107	2,863	214,353
1996	61,374	80,576	17,864	1,441	35,516	38,468	3,252	238,491
1997	67,405	94,116	18,917	1,626	38,792	41,097	3,648	265,601

Source: Superintendencia de Administradoras de Fondos de Pensiones, *Evolución del Sistema Chileno de Pensiones,* no. 3 (1998): 51.

very similar investments and, consequently, have very similar returns. Again, competition in this area is heavily curtailed by the government.

Table 7
Average Amount of Monthly Pensions Paid by the Chilean Private Pension System, 1982–98
(through December of each year, in 1998 dollars)

Year	Old Age	Early Retirement	Full Disability	Partial Disability	Widows	Orphans	Others
1982			436.41		158.44	45.45	99.30
1983	90.89		369.49		143.19	40.15	84.98
1984	100.54		305.99		124.20	34.86	69.73
1985	96.50		282.95		118.91	33.31	64.12
1986	112.99		279.22		119.22	34.86	64.12
1987	118.91		275.17		115.48	33.62	72.22
1988	134.47	294.78	287.93		121.09	35.18	67.55
1989	150.04	258.98	287.93		125.76	40.47	69.73
1990	150.97	268.32	282.33		122.64	42.02	74.08
1991	171.82	292.29	294.16		131.67	42.02	70.97
1992	179.61	302.25	293.54	172.45	140.39	47.62	74.39
1993	175.56	301.01	287.31	251.51	146.92	47.94	80.00
1994	185.83	318.44	293.99	262.41	147.86	53.54	79.69
1995	189.57	313.77	297.58	289.49	152.53	54.78	79.40
1996	187.75	312.07	284.27	242.45	148.00	54.08	73.69
1997	189.99	303.35	273.54	231.08	146.51	53.08	71.85
1998	185.66	285.97	270.37	194.24	150.84	53.73	76.47

Source: Superintendencia de Adminstradoras de Fondos de Pensiones, *Boletín Estadístico,* no. 148 (1999): 381.
Note: $1 = 474 Chilean pesos in December 1998.

Thus, the easiest way for an AFP to differentiate itself from the competition is by offering better customer service, which explains why marketing costs and sales representatives are such an integral part of the funds managers' overall strategy and why workers switch so often from one company to another.[25] I will examine each of those three criticisms in turn.

The Investments of the AFPs Are Very Similar

The "return band," or minimum return guarantee, encourages all AFPs to invest workers' savings pretty much the same way, because fund managers who deviate too far from the industry's average performance get severely penalized if that deviation is a downward one and are not appropriately rewarded if the deviation is an upward one. One of the reasons for implementing that band was to prevent investment product differentiation at the beginning of the system to reduce the variance in the return rates of the different AFPs and, thus, avoid the negative political implications of having a brand new retirement system with wide disparities in the results it provided. However, those regulations were meant to be temporary and the reformers should have included sunset clauses in the reform law.[26]

Another problem with the minimum return guarantee is that it can lead to a misallocation of capital if the AFPs are forced to invest in some companies more heavily than they otherwise would to stay within the return band. Chilean authorities have recognized some of the problems that the minimum return guarantee has posed, and in June 1997 a bill was introduced before the Chilean congress that would lengthen the period used to calculate the minimum return from 12 months to 36 months.[27] Although that measure would give the AFPs more flexibility in their investments—and, thus, allow them to have greater diversity in their portfolios—only the elimination of the return band will allow the AFPs to offer consumers portfolios with the desired mix of risk and return.[28] Table 8 shows portfolio diversification among the different AFPs at the end of 1998.

Two things stand out in Table 8. First, there is very little variance among the different AFPs, which means that they all have similar portfolios. Second, the investment ceilings set by the SAFP and the Central Bank of Chile are high enough now that they do not appear to affect the investment strategies of the AFPs.[29] (By comparison, those rules would produce huge distortions in the investment decisions of the 10 largest mutual funds in the United States, which invest most of their assets in stocks.)

The System Has High Administrative Costs

The often-cited figure of 20–22 percent represents administrative costs as a percentage of current contributions, which is not how administrative costs are usually measured. This figure is usually obtained by dividing the commission fee—which currently ranges between 2.49 and 2.95 percent of taxable wages (see Table 1) and is on average equivalent to 2.7 percent of taxable wages—by the total contribution (10 percent plus the commission).[30] This calculation fails to take into account that the 2.7 percent includes the worker-paid life and disability insurance premiums (about 0.5 percent of taxable wages on average), which are deducted from the variable commission, and thus overstates administrative costs as a percentage of total contributions.[31] Also, if, for instance, the mandatory contribution were lowered to 5 percent of total wages instead of 10 percent, then administrative costs measured as a percentage of the total contribution would increase from 21.26 percent to 35.06 percent (2.7/[2.7 + 5]),

Table 8
Investment Portfolio Diversification by Type of Instrument and AFP, 1998
(as a percentage of total portfolio assets)

	Total Portfolio								
	Stocks			Bonds and Other Fixed-Income Securities					
AFP	Chilean	Non-Chilean	Total Stocks	Government	Corporate	Non-Chilean	Total Bonds	Others	Cash and Equivalents
Aporta Fomenta	12.89	0.00	12.89	38.90	41.58	1.35	81.83	5.25	0.03
Cuprum	15.40	0.00	15.40	44.88	31.25	5.50	81.63	2.89	0.08
Habitat	14.91	0.01	14.92	43.87	34.46	4.48	82.81	1.74	0.53
Magister	17.03	0.00	17.03	33.54	41.97	1.56	77.07	5.52	0.38
Planvital	15.61	0.00	15.61	40.26	36.28	4.46	81.00	3.07	0.32
Protección	14.68	0.00	14.68	34.18	42.34	5.97	82.49	2.81	0.02
Provida	14.72	0.00	14.72	38.31	36.62	6.82	81.75	3.37	0.16
Santa María	14.73	0.00	14.73	39.81	36.01	6.12	81.94	3.29	0.04
Summa Bansander	14.68	0.00	14.68	43.29	33.03	6.00	82.32	2.98	0.02
Mean	14.90	0.00	14.90	40.96	35.44	5.63	82.03	2.88	0.19
Variance	1.18	0.00	1.18	16.05	16.38	3.96	2.95	1.45	0.04

Source: Superintendencia de Administradoras de Fondos de Pensiones, *Boletín Estadístico,* no. 148 (1999): 221–23.
Note: Percentages may not add to 100 due to rounding.

In comparison with those of the old system, the administrative costs of the new system are not high.

even if those costs measured in absolute terms or as a percentage of assets under management remained the same.

In comparison with those of the old government-run system, administrative costs of the new system are not high. Chilean economist Raúl Bustos Castillo has estimated the costs of the new system to be 42 percent lower than the average costs of the old system.[32] However, comparing the administrative costs of the old system with those of the new one is inappropriate, because the underlying assumption when making that comparison is that the quality of the product (or the product itself) is similar under both systems, which is certainly not the case in Chile.

Furthermore, in a recent study, the Congressional Budget Office reported that "in Chile, the country with the longest experience with private retirement accounts, [administrative costs] can be equivalently expressed as 1 percent of assets, which is similar to costs of mutual funds in the United States."[33] The CBO report goes on to say that "it is difficult to convert a charge on contributions to a charge on assets (typical for a U.S. mutual fund). The calculation depends on the rate of return and the length of the investment horizon and therefore does not yield a single figure."[34] More recently, Chilean economist Salvador Valdés has estimated the average annual cost of the AFP system to be equivalent to 0.84 percent of total assets under management over the life of a worker, which is lower than the average cost of the mutual fund industry in Chile but higher than the cost of other savings alternatives.[35]

To the extent that such administrative costs are still considered too high, that is the result of government regulation of the commissions the AFPs can charge and the investments those companies can make. The existence of a "return band" prevents investment product differentiation by the different AFPs. As a result, the way an individual AFP tries to distinguish itself from the competition is by offering better service to its customers. One way to provide better service would be to offer a discount on the commission fee to workers who fit a certain profile (e.g., workers who have maintained their accounts for an extended period of time or who contribute a certain amount of money to their accounts); however, government regulations do not allow that. Those regulations state that the AFPs may charge only a commission based on the worker's taxable income and expressed as a percentage of that income.

Another reason administrative costs are not as low as they could be is that AFPs have a monopoly on the administration of pension savings accounts. Mutual funds, banks, insurance companies, and individuals themselves are not allowed to manage those accounts. The existence of this monopoly (which is part of the fragmentation of the financial services industry in Chile) prevents the establishment of one-stop financial supermarkets, where consumers can obtain all their financial services if they so choose.[36] Such supermarkets would substantially reduce administrative costs by eliminating the duplication of commercial and operational infrastructure.[37]

The Commission Structure Is Too Rigid

When the system began, AFPs were allowed to charge fixed and variable commissions on assets under management and fixed and variable commissions on contributions, or any combination thereof. AFPs were not allowed to offer discounts for permanence, for groups, for making voluntary contributions, or for maintaining a specific balance in the account. In 1987 the commission structure was changed by eliminating all commissions on assets under management.[38] That change had the effect of providing a cross-subsidy to (1) workers who do not contribute to their accounts regularly, because the fund manager is still providing a service (administering the accounts of those workers) for which he is not receiving compensation and (2) to low-income workers, because the administrative costs of managing the accounts of wealthier workers are not proportionally higher than the administrative costs of managing the accounts of low-income workers, although the commissions paid by high-income workers are proportionally higher than those paid by low-income workers. In that sense, it cannot be said that the commission structure is fair, because some workers are paying more than others for the same type of service.[39]

The rigidity in the commission structure prevents the AFPs from adapting the quality of their service to the ability to pay for that service of each segment of the population[40] and also explains why the AFPs have an incentive to capture the accounts of high-income workers and attempt to do so by offering them better customer service.[41] AFPs will continue to spend money until the marginal cost of trying to capture new accounts is equal to the marginal revenue derived from those accounts. In addition, the AFPs generally do not charge entry fees, even though the law allows them to do so, which means that consumers do not pay a penalty for changing from one AFP to another.[42]

Another problem with the commission structure, one that has been present since the beginning of the system, is that AFPs are not allowed to offer discounts for permanence, for making voluntary contributions, for groups, or for maintaining a specific balance in an account. For instance, if workers were able to negotiate group discounts, then their bargaining power would significantly increase. That would allow them to negotiate lower commissions. Again, Chilean authorities have realized that the commission structure has created some problems, and, consequently, they are seeking to eliminate some of the restrictions AFPs now face in this area. In June 1997 a bill was introduced in the Chilean congress that would allow the AFPs to offer discounts, both for individuals and groups and for time commitments.[43]

Workers Change AFPs Frequently

Because of investment regulations and rules on fees and commissions, product differentiation is low. Thus companies compete by offering gifts or other incentives for workers to switch companies. As Table 9 shows, switchovers have increased dramatically since 1988, when the requirement to request in person the change from one AFP to another was eliminated. In 1997 the government reintroduced some restrictions to make it more difficult for workers to transfer from one AFP to another. Indeed, the number of transfers in 1998 decreased to fewer than 700,000 from an all-time high of almost 1.6 million in 1997.[44] The number of switchovers is likely to remain high so long as the current rules on investment and commissions remain unchanged.[45] Although there are some entry fees, which may serve as a deterrent to workers who want to switch AFPs, those fees are sometimes waived and sometimes offered to the worker who switches as a rebate by the sales agent responsible for the switch.

Table 9
AFP Transfers, 1983–98

Year	Number of Transfers
1983	14,380
1984	134,720
1985	189,163
1986	174,237
1987	181,048
1988	306,819
1989	316,763
1990	387,955
1991	500,176
1992	621,919
1993	875,874
1994	972,482
1995	1,328,411
1996	1,569,185
1997	1,577,709
1998	696,789

Sources: Superintendencia de Administradoras de Fondos de Pensiones, *El Sistema Chileno de Pensiones*, 4th ed. (Santiago: SAFP, 1998), p. 219; and Superintendencia de Administradoras de Fondos de Pensiones, *Boletín Estadístico*, no. 148 (1999): 99.

Administrative costs are not as low as they could be because AFPs have a monopoly on the administration of pension savings accounts.

Transition Costs Are Too High

The true net economic costs of moving from an unfunded pay-as-you-go system to a fully funded system are zero. That is to say, the total funded and unfunded debt of a country does not change by moving from an unfunded system to a funded one.[46] There is, however, a cash flow problem when moving toward a fully funded retirement system. In the case of Chile, transition costs can be broken down into three different parts: First, there is the cost of paying for the retirement benefits of those workers who were already retired when the reform was implemented and of those workers who chose to remain in the old system. As Table 10 shows, those costs make up by far the largest share of the transition costs at present. Those costs, of course, will decline as time goes by. Second, there is the cost of redeeming the recognition bonds given to workers who moved from the old system to the new in acknowledgement of the contributions they had already made to the old system.[47] Since those bonds will be redeemed when the recipients retire, the cost to the government will gradually increase as transition workers retire and then will eventually disappear.[48] It is worth stressing that these are new expenditures only if we assume that the government would renege on its past promises. The third cost to the government is that of providing a safety net to the system, a cost that is not new in the sense that the government also provided a safety net under

The true net costs of moving from an unfunded pay-as-you-go system to a fully funded system are zero.

the old pay-as-you-go system.[49] Because the new private system is much more efficient than the old government-run program and because, as stated above, to qualify for the minimum pension under the new system, a worker must have at least 20 years of contributions, this cost has so far been very close to zero.[50] The size of this expenditure will, of course, depend on the success of the private system.

Table 10
Fiscal Requirements of the Reform, 1981–96
(as a percentage of GDP)

Year	Recognition Bonds	Expenditure on Pensions of Workers Retired under the Old System	Total Fiscal Cost
1981	0.00	1.45	1.45
1982	0.09	1.85	1.93
1983	0.17	2.36	2.52
1984	0.22	3.22	3.43
1985	0.24	4.22	4.46
1986	0.33	3.94	4.27
1987	0.41	3.32	3.74
1988	0.42	3.40	3.82
1989	0.41	2.55	2.96
1990	0.50	3.23	3.73
1991	0.44	3.30	3.75
1992	0.49	3.10	3.59
1993	0.60	3.07	3.68
1994	0.65	2.97	3.63
1995	0.67	2.77	3.44
1996	0.69	2.60	3.29

Source: Superintendencia de Administradoras de Fondos de Pensiones, *El Sistema Chileno de Pensiones*, 4th ed. (Santiago: SAFP, 1998), p. 44.

To finance the transition, Chile used five methods: First, it issued new government bonds to acknowledge part of the unfunded liability of the old pay-as-you-go system. Second, it sold state-owned enterprises. Third, a fraction of the old payroll tax was maintained as a temporary transition tax. That tax had a sunset date and is now zero.[51] Fourth, Chile cut government expenditures. And, fifth, pension privatization and other market reforms have contributed to the extraordinary growth of the Chilean economy in the last 13 years, which has increased government revenues, especially those coming from the value-added tax.[52]

In sum, the transition to the new system has not been an added burden on Chile because the country was already committed to paying retirement benefits. On the contrary, the transition—the fiscal requirements of which have varied between 1.4 and 4.4 percent of GDP per year—has actually reduced the economic and fiscal burden of maintaining an unsustainable system.

Too Few Members of the Workforce Are Covered

Contrary to what is often claimed, coverage under the new system is about the same as it was under the old system, and arguably higher. According to Chilean economist Hernán Cheyre, coverage under the old system ranged between 74 percent of the workforce in 1976 and 64 percent in 1980, with a clearly decreasing trend.[53] In contrast, total coverage was about 70 percent at the end of 1997, according to Julio Bustamante, superintendent of AFPs.[54] Perhaps the main reason why analyzing the degree of coverage under the new system is such a difficult task is that several factors must be taken into account. It is not enough to look at the ratio of contributors to affiliates (as Table 4 does), because this ratio underestimates the system's coverage. For example, many Chileans, especially women, have left the workforce after participating in it for some time.[55] Second, like the old government-run program, the system is mandatory *only* for dependent workers, although self-employed workers are not prevented from participating in it.[56] In addition, unemployed workers are not required by law to contribute to their accounts (although they may do so). Fourth, we must account for the percentage of the Chilean labor force that is covered by some government-run program, including the police and armed forces, which have their own retirement program,[57] and those workers who chose to remain in the government-run pay-as-you-go system.

At the end of 1998, 25.4 percent of the workforce were self-employed and 2.3 percent were unpaid relatives working in family-owned businesses (Table 11). In addition, the unemployment rate in December 1998 was 7.5 percent of the labor force, which means that those workers were not required to contribute to any retirement system, but many of them still have pension savings accounts. About 4.2 percent of the labor force remained in the old system and about 1.8

percent of the labor force were covered by the retirement systems for the armed and police forces. Thus, approximately 6 percent of Chile's labor force were covered by state-run retirement systems. If 6 percent of the labor force were covered by state-run retirement programs, 25.4 percent were not forced to participate in the private system because they are self-employed, 2.3 percent were unpaid relatives, and 5.6 percent were not required to contribute to their accounts because they were unemployed dependent workers,[58] then only 60.7 percent of the labor force were actually required to contribute to their accounts in December 1998. If Chile had a labor force of 5,795,860 in December 1998, then 3,518,087 workers should have contributed to their accounts. The number of dependent workers who contributed to their accounts in December 1998 was 2,897,957, or 82.37 percent of those who were supposed to contribute.[59] Klaus Schmidt-Hebbel, an economist at the Central Bank of Chile, puts the ratio of contributors to dependent workers at 90 percent and attributes the disparity between the number of contributors and the number of dependent workers to "evasion of contributions, large and time-varying degrees of labor informality, and large variations in the composition of the officially-measured labor force and people moving in and out of the labor force."[60] Approximately 61.15 percent of the employed workforce were covered by some kind of retirement plan at the end of 1998.[61]

Another issue of concern is whether the percentage of low-income workers covered is lower than that of high-income workers. It is. The unemployment rate for younger workers is higher than for older workers. If we assume that, on average, younger workers get paid lower wages than older workers, then the percentage of low-income workers covered is lower than that of wealthier workers. Table 12 shows contributors and their average monthly salary by type and gender.

The Government Will Face Large Future Costs

There is an element of moral hazard in the system that comes from the government's guarantee of a minimum pension to all workers with at least 20 years of contributions. Low-income workers have an incentive to make sporadic contributions (provided they contribute to their accounts for at least 20 years) if they know that the minimum pension will be higher than any pension they may obtain on their own. An easy way to reduce, if not eliminate, that moral hazard would be for the government to establish a link between the minimum guarantee and the years of contributions to the system, as University of California at Los Angeles economist Sebastian Edwards has suggested.[62] This reform would basically make the minimum pension guarantee a function of years of contributions. In other words, instead of having a single minimum pension guarantee, the system could have a guaranteed minimum pension "band."

The Minimum Guaranteed Pension Is Too Low

"As compared to what?" one might ask. The minimum pension is about $121–$133 per month. Although the dollar amount may seem

Table 11
Chile's Labor Force

Type of Worker	Number	Percentage of Labor Force
Unemployed	434,450	7.50
Employed	5,361,410	92.50
Self-employed	1,309,180	22.59
Salaried	3,493,020	60.27
Domestic	265,940	4.59
Unpaid relatives	133,500	2.30
Employers	159,760	2.76

Source: Instituto Nacional de Estadística, National Labor Survey, http://www.ine.cl/int91.htm.
Note: Chile has a population of 14,930,490 and a labor force of 5,795,860.

Table 12
Contributors and Average Monthly Salary by Type and Gender (as of December 1998)

Type and Gender	Number of Contributors	Average Monthly Salary[a]
Dependent	2,560,158	$556.51
Male	1,645,334	594.15
Female	907,837	490.30
NA	6,987	294.54
Self-Employed	59,458	315.07
Male	36,471	338.22
Female	22,887	277.76
NA	100	413.08
Total	2,619,616	551.03
Male	1,681,805	588.60
Female	930,724	485.08
NA	7,087	296.21

Source: Superintendencia de Administradoras de Fondos de Pensiones, *Boletín Estadístico*, no. 148 (1999): 75.
Notes: NA = not available.
[a] $1 = 474 Chilean pesos.

While the stock market in Chile was down 25 percent in 1998, the pension funds were down only 1.1 percent.

low by U.S. standards, we have to keep in mind that per capita income in Chile, while high by Latin American standards, is not even a fifth of what it is in the United States.[63] In relative terms, that amount as a percentage of the minimum wage in Chile (71–78 percent) is about the same as the benefits a low earner is obtaining under the U.S. Social Security system, which are equivalent to 76 percent of the minimum wage in the United States.[64] Measured as a percentage of the average wage in Chile, that amount is equivalent to about 25 percent of that wage. By comparison, the benefits that a low earner is obtaining under the U.S. Social Security system are equivalent to about 30 percent of average earnings in the United States.[65] Furthermore, this minimum pension is set by congress and is independent of the structural characteristics of the private system. The level of the minimum pension is automatically adjusted every time the cumulative increase in the consumer price index reaches 15 percent.

Frequently Asked Questions

Critics—and perhaps supporters, too—of privatization are concerned about a number of other issues as well, such as the rates of return under the new system, whether workers can be trusted to invest their money wisely, and whether the new system enjoys widespread support. These are legitimate questions and satisfactory answers to them might help to convince opponents—and reassure supporters—that privatization can be politically and economically feasible.

What Have Been the Actual Rates of Return on Chilean Pension Savings Accounts?

Table 13 shows the real rates of return for the whole system from its inception until May 1999. Those rates ranged from 29.7 percent in 1991 to –2.5 percent in 1995, the year of the Mexican peso crisis. In 1998 the pension funds experienced a negative return for the second time, as they felt the effects of the Asian crisis, lower commodity prices, and an economic downturn in Chile. Nevertheless, it is worth noting that while the stock market in Chile was down 25 percent in 1998, the pension funds were down only 1.1 percent, which was probably due to the conservative (and regulated) nature of the funds. In the first five months of 1999 the pension funds have obtained a return of 9.7 percent, as the Chilean economy and the stock market have recovered from the lows they hit in 1998.[66]

Table 13
Real Annual Rate of Return of Chile's Private Pension System

Year	Rate of Return (percent)
1981	12.6
1982	28.8
1983	21.3
1984	3.5
1985	13.4
1986	12.3
1987	5.4
1988	6.4
1989	6.9
1990	15.5
1991	29.7
1992	3.1
1993	16.2
1994	18.2
1995	–2.5
1996	3.5
1997	4.7
1998	–1.1
1999[a]	9.7
Annual Average:	11.3

Sources: Superintendencia de Administradoras de Fondos de Pensiones, *Boletín Estadístico*, no. 148 (1999): 339; and Superintendencia de Administradoras de Fondos de Pensiones, Press release, May 1999, http://www.safp.cl/prensa/may/pag2.html.
[a] From January to May of 1999.

Chilean authorities report that the average annual yield has been 11 percent since the inception of the system. The SAFP does not take into account the commissions workers pay to the AFPs for the management of their savings and uses an arithmetic average (the sum of the returns divided by the number of years) rather than a geometric average (the *n*th root of the product of *n* wealth relatives),[67] which would determine the internal rate of return.[68] When I computed the geometric average, I obtained an annual average rate of return of 10.62 percent, a figure similar to the one given by the SAFP.[69]

Can the AFPs' Historic Rates of Return Be Expected to Continue?

The level of returns will depend on the investment decisions made by the fund managers and the performance of the market. Of course, those decisions will be shaped to a large degree by the institutional framework under which the AFPs operate. Therefore, the policies that the Chilean government follows with regard to both the private pension system and other sectors of the economy will heavily influence the performance of the private pension system. If the government follows market-friendly policies, then there is no reason to believe that the AFPs cannot continue to obtain high rates of return, even if interest rates, stock market returns, and growth rates in Chile approach (lower) international levels.[70]

Can People Be Trusted to Know How or in What to Invest?

One of the greatest objections to a private system of individual retirement accounts is that poorer workers lack the knowledge and skills to invest wisely and that, as a result, that system will only benefit those who are already well off. The Chilean experience shows that that objection is wrongheaded. While it is probably true that low-income workers lack vast knowledge of financial markets and investment strategies (and may lack the time to learn about those subjects, given that their time is occupied with making ends meet), the advantage of the free-enterprise system is that they do not have to be financial experts to benefit from investing in the financial markets. Indeed, workers can hire firms that have expertise in the management of retirement portfolios (in the case of Chile that expertise is provided by the AFPs) in the same way millions of Americans hire investment firms to manage their mutual funds.[71] The claim that one has to be a financial expert to profit from a system of individual retirement accounts is as farfetched as saying that one has to be a gourmet cook to enjoy a good meal or even avoid going hungry.

What Are Employers' Responsibilities, and Is There Fraud in the New System?

The law establishes very clearly defined responsibilities for each and all of the players involved in the private pension system. The responsibility of employers is to withhold contributions from their employees' salaries and send those contributions to the AFP with which those employees are affiliated. If those contributions are not deposited in the worker's account within a month, the employer is subject to penalties and interest equal to at least the AFP industry's real average return over the previous 12 months plus 20 percent of that average.[72] It is perhaps for that reason that contributions in arrears are not common. In fact, in 1997, the last year for which such figures appear to be available, those contributions amounted to 0.53 percent of total assets.

The penalties imposed by the Superintendency of AFPs on AFPs that violate the rules of the game are severe. The nature of the violation and the amount of the penalty are listed in the SAFP's bimonthly statistical bulletin. Again, the system's transparency may help explain why violations are rare. For instance, in all of 1998 there were only 19 violations in the whole AFP industry, fewer than 2 per month on average. The most common violation was exceeding the investment limits set by the Central Bank of Chile (4 instances), followed by delays in the adjudication of pension benefits due to "administrative disorder" (3 instances). The only case of fraud was one in which 17 workers were granted early retirement without meeting the criteria for that type of pension.[73]

Why Does the Employee Pay the Entire Contribution and the Employer Nothing?

When the new system was implemented in Chile, gross wages were redefined to include most of the employer's contribution to social security. For those workers who moved to the new system, net wages increased by an average of 12.6 percent.[74] (At the same time, total labor costs for employers decreased because contribution rates under the new system were significantly lower than under the old one.) Gross wages were redefined because, from an economic perspective, the worker is likely to bear the full burden of the payroll tax because the aggregate supply of labor is highly inelastic. Therefore, employers take into account the costs of labor, including payroll taxes, when setting salaries. Breaking down the contribution into an employer part and an employee part would have allowed the political manipulation of those rates and would have made the new system less transparent and more politicized.

How Many AFPs Are There?

As of May 1999 there were 8 AFPs. The system began with 12, reached a high of 23, and has gradually consolidated over the last five years to the present number. Most of the consolidation

If the government follows market-friendly policies, there is no reason to believe that the AFPs cannot continue to obtain high rates of return.

has occurred through mergers. There have been, however, three AFPs closed down by the government for not meeting the minimum capital requirements (Table 14). In terms of concentration, the three largest AFPs controlled almost 74 percent of all accounts, 70 percent of active accounts, and about 62 percent of total assets at the end of 1998.

Are the AFPs Forced to Buy Government Bonds?

No. There has never been a requirement to invest in government bonds of any kind since the system started in 1981. In other countries that have followed the Chilean example, such as Mexico, the government requires that the pension fund managers invest a minimum percentage of workers' savings in government instruments.[75] That has never been the case in Chile, because the requirement to invest in government instruments is not consistent with the notion of pension privatization. However, it is true that in Chile the AFPs were not allowed to invest in equity until 1985, when the AFPs were allowed to invest up to 30 percent of workers' savings in shares of formerly state-owned enterprises that had been recently privatized. Further liberalization of the investment rules occurred in 1990, when the AFPs were allowed to invest abroad and in common stock of corporations. The general tendency has been to relax the investment rules and to raise the investment ceilings (so as to make those ceilings unimportant) as the AFPs have gained experience. Table 15 shows how the AFPs have invested workers' savings over the years.

Table 14
History of Chile's AFP Industry, 1981–99

Year	Event
1981	Chile's private pension system is launched. Twelve AFPs begin operations: Alameda, San Cristobal, Cuprum, El Libertador, Habitat, Invierta, Magister, Planvital, Provida, Concordia, Santa María, and Summa.
1985	Alameda and San Cristobal merge creating Unión.
1986	Protección is created.
1988	Futuro is created.
1990	Bannuestra is created.
1991	Bannuestra is liquidated for not meeting the minimum capital requirements.
1992	Six more AFPs are created: Banguardia, Bansander, Fomenta, Laboral, Previpan, and Qualitas.
1993	Three more AFPs are created: Aporta, Genera, and Valora. In addition, Invierta and Planvital merge creating Planvital.
1994	Armoniza is created. Laboral is liquidated for not meeting the minimum capital requirements.
1995	Provida and El Libertador merge creating Provida; Santa María and Banguardia also merge creating Santa María; and Valora, Qualitas, and Previpan merge creating Valora. Finally, Genera is liquidated for not meeting the minimum capital requirements.
1996	Magister and Futuro merge to create Magister; Planvital and Concordia merge to create Planvital; and Armoniza and Valora merge to create Qualitas.
1998	Fomenta and Aporta merge to create Aporta; Magister and Qualitas merge to create Magister; Provida and Unión merge to create Provida; and Summa and Bansander merge to create Summa Bansander.
1999	Provida and Protección merge to create Provida.
1999	As of May 1999, there are eight AFPs: Aporta, Cuprum, Habitat, Magister, Planvital, Provida, Santa María, and Summa Bansander.

Source: Superintendencia de Administradoras de Fondos de Pensiones, various publications and Web site postings.

Why Is Each AFP Allowed to Manage Only One Fund?

In a country with no experience in the management of long-term savings, those in charge of the reform thought that it would be best both for the regulatory agency and for the fund managers if each AFP managed only one fund. Again, this regulation was meant to be transitory. There are now bills in the Chilean congress to change the law and allow the AFPs to manage a second fund, although the second fund would have to be a fixed-income fund. Ideally, it would be best if the AFPs were allowed to offer funds with different combinations of risk and return, so as to accommodate individuals' different tolerances for risk.

What Kind of Support Does the Private System Enjoy among Workers?

The biggest indication of support for the new system is the fact that more than 95 percent of Chilean workers have left the old government system since the inception of the private system; one-fourth of the labor force switched in the first month of operation of the new system.

Critics of the new system may argue that the low participation rates of self-employed workers are an indication of the system's lack of popularity. That criticism, however, fails to take into account several factors. First, by participating in the private pension system, a self-employed worker is revealing information to the government about his income that he may want to keep private for income-tax reasons. Second, wealthy self-employed workers have other means of providing for their own retirement, including self-insurance and access to financial instruments that may offer a better combination of risk and return. Finally, some self-employed workers have an incentive to make only enough contributions to qualify for the minimum guarantee provided by the state to those with at least 20 years of contributions, but not to contribute regularly.

It is also worth noting that in the 1990s there have been two center-left democratically elected governments in Chile that have not considered going back to the old system or moving away from the principles on which the private system was founded, not even in 1995 when the private system experienced negative returns for the first time.[76]

How Do Average Retirement Benefits of the New System Compare with Those of the Old?

Ultimately, the success of the Chilean private pension system will be measured more by the results it provides than by more abstract issues such as equity, fairness, or whether it is more consistent with the principles of a free society than a government-run pay-as-you-go system. For that reason it is important to determine whether pensions under the new system have been higher than under the old system. We must also keep in mind that the goal of the reform was to provide pensions that were equivalent to 70 percent of a worker's final salary. Has the new system been successful on both counts? In 1995 Chilean economists Sergio Baeza and Raúl Bürger conducted the most extensive study to date of the quality of pensions under the new private system.[77] Baeza and Bürger looked at over 4,000 new retirees and the amounts of their pensions. On average, those pensions were

Table 15
Pension Funds Portfolio Diversification, 1981–98
(as a percentage of total assets, December of each year)

	Total Portfolio								
	Stocks			Bonds and Other Fixed-Income Securities					
Year	Chilean	Non-Chilean	Total Stocks	Government	Corporate	Non-Chilean	Total Bonds	Others[a]	Cash and Equivalents
1981	0.00	0.00	0.00	28.10	71.90	0.00	100.00	0.00	0.00
1982	0.00	0.00	0.00	26.00	74.00	0.00	100.00	0.00	0.00
1983	0.00	0.00	0.00	44.50	55.60	0.00	100.00	0.00	0.00
1984	0.00	0.00	0.00	42.10	57.50	0.00	99.60	0.00	0.50
1985	0.00	0.00	0.00	42.40	57.10	0.00	99.50	0.00	0.50
1986	3.80	0.00	3.80	46.60	49.50	0.00	96.10	0.00	0.10
1987	6.20	0.00	6.20	41.40	52.00	0.00	93.40	0.00	0.40
1988	8.10	0.00	8.10	35.40	56.50	0.00	91.90	0.00	0.00
1989	10.10	0.00	10.10	41.60	48.30	0.00	89.90	0.00	0.00
1990	11.30	0.00	11.30	44.10	44.60	0.00	88.70	0.00	0.10
1991	23.80	0.00	23.80	38.30	37.70	0.00	76.00	0.00	0.10
1992	24.00	0.00	24.00	40.90	34.80	0.00	75.70	0.20	0.10
1993	31.80	0.00	31.80	39.30	27.90	0.60	67.80	0.30	0.10
1994	32.10	0.00	32.10	39.70	26.40	0.90	67.00	0.90	0.00
1995	29.40	0.00	29.40	39.40	28.40	0.20	68.00	2.60	0.10
1996	26.00	0.01	26.01	42.10	28.32	0.53	70.95	3.00	0.00
1997	23.40	0.03	23.43	39.60	32.64	1.22	73.46	3.10	0.10
1998	14.90	0.00	14.90	40.96	35.44	5.63	82.03	2.88	0.19

Sources: Superintendencia de Administradoras de Fondos de Pensiones, *Evolución del Sistema Chileno de Pensiones,* no. 3 (1998): 63; and Superintendencia de Administradoras de Fondos de Pensiones, Press release, December 1998, http://www.safp.cl/prensa/dic/pag4.html.

Note: Percentages may not add to 100 due to rounding.

[a] Shares of closed-end mutual funds.

Between 1993 and 1995, old-age pensions were between 51 and 57 percent higher than pensions under the old system.

equivalent to 78 percent of the retirees' average salary over the last 10 years of their working lives. For those workers choosing early retirement, the average pension was equivalent to 81 percent of their average salary. If the lump-sum benefits are taken into account, the average pension of retirees in the Baeza and Bürger sample increases to 84 percent of salary.

Another good indication that pensions under the new system are adequate is the number of workers who are choosing early retirement. As stated above, to qualify for early retirement, a worker must have enough funds accumulated in his account to obtain a pension that is at least equal to 50 percent of his average salary during the last 10 years of his working life and at least 110 percent of the minimum pension guaranteed by the government. As shown on Table 6, since 1994 more workers have been choosing the early-retirement option than the old-age retirement option.

The Genesis Investment Management study found that, between 1993 and 1995, old-age pensions under the new system were between 51 percent and 57 percent higher than pensions paid under the old system.[78] Disability pensions were between 69 percent and 82 percent higher than under the old system. Of course, the Genesis comparison does not include early retirement pensions, which usually provide the highest benefits, because the government-run system does not give workers that choice. And, in all cases, contributions under the private system are much lower than they were under the old one, which shows beyond any doubt that the new system is on the whole much more efficient than the old one.

Challenges for the Future

Chile's private pension system has been very successful since it was implemented 18 years ago. The reform was revolutionary in nature but very prudent in implementation. Some restrictions that the architects of the new system believed made sense at the beginning in a country with little experience with the private management of long-term savings have clearly become outdated and may negatively affect the performance of the system in the future. Chilean authorities should act with the same boldness they exhibited 18 years ago. They should take specific steps:

- Approve the commission-liberalization bill introduced in June 1997, which would allow managers to offer different combinations of price and quality of service, introduce greater price competition, and possibly reduce administrative costs to the benefit of all workers. Beyond that, the restrictions introduced in 1987 should be lifted as well so that AFPs may charge commissions on inactive accounts as well as a percentage of assets under management.
- Let other financial institutions enter the AFP industry. The resulting synergies would lower the prices of the services being provided and, thus, benefit consumers.
- Eliminate the minimum return guarantee, or, at the very least, lengthen the investment period over which it is computed.
- Further liberalize the investment rules, so that workers with different tolerances for risk can choose funds that are suited to their preferences.
- Let AFPs manage more than one fund.[79] One simple way to do that would be to allow the AFPs to offer a short menu of funds that range from very low risk to high risk.[80] That could reduce administrative costs if workers were allowed to invest in more than one fund within the same AFP. This adjustment would also allow workers to make prudent changes to the risk profile of their portfolios as they get older. For instance, they could invest all the mandatory savings in a low-risk fund and the voluntary savings in a riskier fund. Or they could invest in higher-risk funds in their early working years and then transfer their savings to more conservative funds as they approached retirement. Allowing the AFPs to manage more than one fund would contribute to lower administrative costs, if rotation of workers among the AFPs were less frequent (as should be expected).
- As Latin American markets become more integrated, expand consumer sovereignty by allowing workers to choose among the systems in Latin America that have been privatized, which would put an immediate (and very effective) check on excessive regulations.[81]
- Give workers the option of personally administering their pension savings accounts.[82]
- Reduce the moral hazard created by the government safety net by linking the minimum pension to the number of years (months) workers contribute.
- Adjust contribution rates in such a way that workers have to contribute only that percentage of their incomes that will allow them to

purchase an annuity equal to the minimum pension.[83] In other words, if a high-income worker can obtain an annuity equal to the minimum pension by contributing only 1 percent of his income, he should be able to do so and decide for himself how to allocate the rest of his resources between present and future consumption.

Conclusion

After 18 years, Chile's private pension system has been, by any measure, an astounding success. Chilean workers are retiring with better and more secure pensions. This reform—along with other free-market reforms, such as privatization of state-owned enterprises, trade liberalization, labor reform, and tax reduction—has contributed to the extraordinary performance of the Chilean economy over the last 14 years, a period during which it has been growing at an average annual rate of almost 7 percent. The savings rate has increased from about 10 percent in the late 1970s to over 25 percent today.[84]

The Chilean pension reform has also contributed positively to the functioning of the labor market. As Edwards has stated, "By reducing the total rate of payroll taxes, it has reduced the cost of labor and, thus, has encouraged job creation . . . [and] by relying on a capitalization system, it has greatly reduced—if not eliminated—the labor tax component of the retirement system."[85] Indeed, the unemployment rate in Chile has decreased from about 15 percent in the mid-1970s to approximately 5 percent, on average, in the 1990s.

More important, however, are the cultural effects the reform has had on Chilean society. Chilean workers, through their pension accounts, have become owners of the means of production in Chile and, consequently, have grown much more attached to the free market and to a free society.[86] This has had the effect of reducing class conflicts, which in turn has promoted political stability and helped to depoliticize the Chilean economy. Pensions today do not depend on the government's ability to tax future generations of workers, nor are they a source of election-time demagoguery. To the contrary, pensions depend on a worker's own efforts, with the satisfaction and dignity that that produces. As political analyst Mark Klugmann stated in testimony to the U.S. Senate in 1997, "Touching the pension savings accounts of the workers is, indeed, the third rail of Chilean politics."[87]

All the ingredients for success—individual choice, clearly defined property rights in contributions, and private administration of accounts—are already present in the Chilean system. If Chilean authorities address the system's shortcomings with boldness, we should expect Chile's private pension system to be even more successful in its adulthood than it has been during its infancy and adolescence. And unlike a pay-as-you-go system, a fully funded individual capitalization system can anticipate *fewer* problems as it matures.

The Chilean pension reform has contributed positively to the functioning of the labor market.

Notes

[1] Comprehensive studies of the Chilean reform include Superintendencia de Administradoras de Fondos de Pensiones, *El Sistema Chileno de Pensiones,* 4th ed. (Santiago: SAFP, 1998); Sebastian Edwards, "The Chilean Pension Reform: A Pioneering Program," in *Privatizing Social Security*, ed. M. Feldstein (Chicago: University of Chicago Press, 1998), pp. 33–62; José Piñera, "Empowering Workers: The Privatization of Social Security in Chile," Cato's Letter no. 10, Cato Institute, Washington, 1996; Sergio Baeza and Francisco Margozzini, eds., *Quince Años Después: Una Mirada al Sistema Privado de Pensiones* (Santiago: Centro de Estudios Públicos, 1995); Dimitri Vittas, *Strengths and Weaknesses of the Chilean Pension System* (Washington: World Bank, 1995); Peter Diamond and Salvador Valdés-Prieto, "Social Security Reforms," in *The Chilean Economy: Policy Lessons and Challenges*, ed. B. Bosworth, R. Dornbusch, and R. Labán (Washington: Brookings Institution, 1994), pp. 257–328; and Genesis Investment Management Limited, *AFP: The Chilean Private Pension System 1980–2010* (London: Genesis Investment Management, 1996).

[2] By artificially increasing the price of labor, payroll taxes lead to the substitution of capital for labor.

[3] For general overviews of those reforms and the similarities and differences between the new systems, see, for instance, Monika Queisser, "The Second-Generation Pension Reforms in Latin America," Ageing Working Paper 5.4, Organization for Economic Co-Operation and Development, Paris, 1998; and Salomon Smith Barney, *Private Pension Funds in Latin America: 1997 Update* (New York: Salomon Smith Barney, December 1997). Feldstein contains case studies of the Mexican and Argentinean reforms, in addition to the study by Edwards on the Chilean reform. L. Jacobo Rodríguez, "In Praise and Criticism of Mexico's Pension Reform," Cato Institute Policy Analysis no. 340, April 14, 1999, contains a list of comprehensive studies of the Mexican reform.

[4] As is the case in most Latin American and West European nations, in addition to pensions, the Chilean social security system covered health care services, disability and unemployment insurance, and other so-called social services. Thus, when talking about contribution rates for social security, it is important to distinguish between rates for the whole system and rates for the pension portion of the system. In this paper, "contribution rates" under the old system refer to the pension portion only.

[5] In reality those funds were never capitalized, because capital markets did not exist in Chile at the time.

[6] Quoted in Genesis Investment Management, p. 6.

[7] See Superintendencia de Administradoras de Fondos de Pensiones, *El Sistema Chileno de Pensiones,* p. 27.

[8] The complete text of D.L. 3,500 can be found at http://www.safp.cl. Article 34 of the reform law states that contributions and the returns earned on them are the workers' property and cannot be confiscated under any circumstances.

[9] See José Piñera, *El Cascabel al Gato* (Santiago: Editorial Zig-Zag, 1991), p. 172.

[10] The actual cap is 60 Unidades de Fomento per month. The UF is Chile's indexed unit of account. At the end of December 1998, 1 UF was equivalent to 14,685.39 Chilean pesos. $1 = 474 Chilean pesos. Thus, UF 1 = $30.98, and UF 60 = $1,858.80. Yearly income to which the contribution rate of 10 percent is applicable is then equivalent to $22,305.60.

[11] This option is especially beneficial to workers who want to retire early (i.e., before the age of 65 for men and 60 for women) or with higher pensions.

[12] Workers are free to withdraw money from those accounts up to four times per year. If the money withdrawn is not transferred to a pension savings account, the worker has to pay taxes on the amount withdrawn. At the end of August 1998, there were 978,022 Voluntary Savings Accounts with an accumulated balance of 74.3 million Chilean pesos.

[13] No data are available on the average number of low-income workers who have voluntary accounts.

[14] Other changes introduced in 1997 included the requirement to produce an ID card and the most recent statement of account. An indirect effect of those changes has been to increase sales agents' commissions, since transfers are now less frequent and more valuable to the AFPs.

[15] The minimum capital required to create an AFP is 5,000 UF. If an AFP has 5,000 affiliates, the minimum increases to 10,000 UF; if it has 7,500 affiliates, the minimum increases to 15,000 UF; and when an AFP reaches 10,000 affiliates, the minimum capital requirement increases to 20,000 UF.

[16] Although the passbook may have become obsolete in the information age, it has been one of the powerful symbols of the new system. The passbook has been the equivalent of a property title, which has made it easier for workers to understand that the money in those accounts is their property.

[17] There is now a bill before the Chilean congress that would increase the percentage from 110 percent of the minimum pension to 150 percent.

[18] This option is ideal for workers who are about to retire at a time when the value of their accounts is down.

[19] For instance, if the industry's average return for the preceding 12 months is 10 percent and an AFP has a return of 17 percent, then the "excess returns" are 2 percentage points (10 percent plus 50 percent of the average return, which is 5 percent, equals 15 percent, which is the threshold in this case). If, on the other hand, the industry's average return is 2 percent and an AFP has a return of 4.5 percent, then the "excess returns" are .5 percentage points (2 percent plus two percentage points equals 4 percent, which is the threshold in this case, since it is higher than 2 percent plus 50 percent of the average, 1 percent, which would be equal to 3 percent).

[20] Roberto Fuentes, "Evolución y Resultados del Sistema," in Baeza and Margozzini, p. 95.

[21] Piñera, "Empowering Workers," p. 5.

[22] Information from the Office of the Chief Actuary, Social Security Administration, http://www.ssa.gov/OACT/COLA/IllusAvg.html.

[23] Per capita GNP was $4,860 in Chile and $28,020 in the United States in 1996. World Bank, *World Development Indicators 1998*, CD-ROM (Washington: World Bank, 1998).

[24] Advocates include Nobel laureates Milton Friedman and Gary Becker, Harvard economist Robert Barro, and Federal Reserve Board chairman Alan Greenspan. Opponents include former Social Security commissioner Robert Ball, Brookings Institution economists Henry Aaron and Robert Reischauer, and MIT professor Peter Diamond.

[25] Presumably, workers would also switch often from one company to another if there were greater variance in administrative costs or, more important, returns.

[26] In a letter to Harvard economist Martin Feldstein, José Piñera stated that his only regret with respect to the way the reform was implemented was that some restrictions that were meant to be temporary have no sunset provisions and that, because of the success of the new system, politicians today are afraid to eliminate such restrictions. The letter is dated February 10, 1998. I thank Piñera for giving me access to his letter file.

[27] As of the writing of this paper, no legislative action had been taken on this bill.

[28] José Piñera recently proposed the elimination of the return band along with a series of other measures intended to increase the control each worker has over his account and reduce government regulation of commissions and investments as a way to celebrate the 18th anniversary of the system. See José Piñera, "Private Pensions in Chile: New Frontiers," http://www.pensionreform.org/articles/new_frontiers.html.

[29] Those strategies appear to be affected by the minimum return guarantee.

[30] $2.7/(10 + 2.7) = 0.2126$, or 21.26 percent.

[31] Commissions are also overstated in the case of workers who receive gifts or outright lump sums from sales agents as an enticement to transfer from one AFP to another.

[32] Raúl Bustos Castillo, "Reforma a los Sistemas de Pensiones: Peligros de los Programas Opcionales en América Latina," in Baeza and Margozzini, pp. 230–31.

[33] Congressional Budget Office, "Social Security Privatization: Experiences Abroad," January 1999, sec. 2, p. 7.

[34] Ibid., sec. 3, p. 11.

[35] Salvador Valdés, "Las Comisiones de las AFPs ¿Caras o Baratas?" *Estudios Públicos* 73 (Summer 1999): 255–91.

[36] Allowing banks and other financial institutions to enter the AFP industry might present potential conflicts of interest. In principle, so long as those institutions compete under the same rules as other market participants, they should be allowed to administer the pension savings accounts of Chilean workers. It is likely that in a market environment banks would have to develop effective separations between their bank functions and their administrative functions to attract and protect workers' investments. Furthermore, the banks might invest in instruments of a higher quality to allay any fears about the safety of the investments.

[37] See, for instance, CB Capitales, "Reforma al Sistema Previsional," *Informe Económico,* no. 8 (December 1997), http://www.cb.cl/trust/informes/economico/inf8/indice.htm. See also Piñera, "Private Pensions in Chile."

[38] The issue of the commission structure has generated a vast literature in Chile. See, for instance, Salvador Valdés, "Comisiones de AFPs: Más Libertad y Menos Regulaciones," *Economía y Sociedad,* January–March 1997, pp. 24–26; Salvador Valdés, "Libertad de Precios para las AFP: Aún Insuficiente," *Estudios Públicos* 68 (Spring 1997): 127–47; José de Gregorio, "Propuesta de Flexibilización de las Comisiones de las AFP: Un Avance para Corregir las Ineficiencias," *Estudios Públicos* 68 (Spring 1997): 97–110; and Alvaro Donoso, "Los Riesgos para la Economía Chilena del Proyecto que Modifica la Estructura de las Comisiones de las AFP," *Estudios Públicos* 68 (Spring 1997): 111–26.

[39] The unfairness does not come from the fact that some workers are paying more than others for the same type of service. In a free-market economy sellers should be able to price discriminate if they wish to in order to capture the consumer's surplus. The problem here is that the government is mandating price discrimination.

[40] See Valdés, "Comisiones de AFPs," p. 25.

[41] Critics of privatization often point to the giving of toasters and other consumer goods as incentives to switch from one AFP to another as proof of the excesses of the Chilean system. Retail banks in the United States engage in similar practices on college campuses without any negative effects on the banking system or consumers. Of course, those practices have decreased as the banking industry has been deregulated and banks in the United States have found other ways of competing with each other, such as offering better interest rates or lower fees.

[42] Entry fees (or a part thereof) are usually given back by sales agents as a rebate to their customers as an enticement to switch from one AFP to another. Exit fees are not allowed by law in an effort to promote competition.

[43] The bill also includes other measures that relate to the way commissions are charged. By "time commitment," I mean an agreement between a worker and an AFP whereby the worker would agree to stay with the AFP for a number of months (not to exceed 36 months) and the AFP would agree to maintain the same commission structure for the duration of the agreement. Again, as of the writing of this paper, no legislative action had been taken.

[44] There has been a corresponding decrease in the number of sales agents. There were almost 18,000 sales agents at the end of 1997 and 6,380 at the end of 1998.

[45] Before the U.S. airline industry was deregulated, airlines competed on service, rather than on price. That service

might be thought of as the equivalent of "wasteful administrative costs" in the absence of price competition.

[46] See Milton Friedman, "Social Security Chimeras," *New York Times,* January 9, 1999. See also Milton and Rose Friedman, *Free to Choose* (New York: Harcourt Brace Jovanovich, 1990), p. 124.

[47] The value of the recognition bonds was computed by multiplying 80 percent of the worker's average salary (indexed for inflation) in the 12 months before mid-1979 by the number of years the worker had contributed to the system (up to a maximum of 35 years) and multiplying that result by an annuity factor of 10.35 for men and 11.36 for women.

[48] This cost is projected to reach a peak of 1.06 percent of GDP in 2005.

[49] As of January 1999, the government had supplemented 19,715 pensions, including 6,050 old-age pensions, in its role as financial guarantor of last resort in the new private system. Superintendency of Pension Funds Administrators, http://www.safp.cl.

[50] Since the system is only 18 years old, the only workers who are eligible for the government safety net are those who contributed to the old system as well. Today, they are the only workers who could have made contributions for more than 20 years.

[51] That tax was still lower than the payroll tax of the old system. In fact, the total contribution to the new system plus the tax was also lower than payroll taxes under the old system.

[52] The financing of a transition from a pay-as-you-go system to a fully funded individual capitalization one is a complex issue, and the fiscal resources of each country have to be taken into account.

[53] Hernán Cheyre, *La Previsión Ayer y Hoy*, 2d ed. (Santiago: Centro de Estudios Públicos, 1991).

[54] See "El 44,17% de los Afiliados al Sistema de Pensiones No Cotiza Regularmente," *El Diario* (Santiago), June 4, 1998.

[55] At the end of 1998 the number of females with a pension savings account was close to 2.5 million and the number of females in the workforce was only about 2 million, which means that about 500,000 females have left the workforce in recent years. Those women, however, have pension savings accounts and their accumulated savings are earning returns.

[56] At the end of 1998, there were 156,782 self-employed workers with pension savings accounts, and 59,458 of them contributed to their accounts in December 1998.

[57] Critics of the Chilean reform often refer to the fact that the armed forces, which ruled Chile at the time the reform was implemented, are not required to participate in the private system. In Chile the armed forces and police forces are covered by a separate government-run retirement program, as they are in most countries. That system is performing poorly in comparison with the private pension system.

[58] I assumed that unemployed workers were evenly distributed between the dependent and self-employed sectors. So, if the total unemployment rate was 7.5 percent, then 74.6 percent of those unemployed workers (or 5.6 percent of the total labor force) were dependent workers.

[59] The AFPs identified 2,560,158 of those contributors, and their contributions were promptly credited to their respective pension savings accounts. In addition, 236,024 contributions were made in that month on behalf of workers whom the AFPs were unable to identify. The AFPs invested those contributions in the pension funds they manage but did not credit them to the accounts of individual workers. Once those workers are identified, the AFPs will credit their accounts. There were also 42,317 "passive" contributions. See Superintendencia de Administradoras de Fondos de Pensiones, *Boletín Estadístico,* no. 148 (1999): 71.

[60] Klaus Schmidt-Hebbel, "Latin America's Pension Revolution: A Review of Approaches and Experience," Paper presented at the World Bank's ABCDE Conference, April 28–30, 1999, Washington, pp. 10–11.

[61] The calculation was as follows: 2,897,957/5,361,410 = 54.05 percent. To that figure, we must add the number of self-employed workers who were contributing to the system (59,458, or 1.1 percent of the total employed labor force) and the percentage covered by state-run systems, 6 percent. When those figures are added up, we obtain a total coverage of 61.15 percent of the total employed labor force.

[62] See Edwards, p. 47.

[63] Per capita GNP was $4,860 in Chile and $28,020 in the United States in 1996. World Bank.

[64] Benefits under Social Security for a low earner are, on average, $565 per month, or $6,780 per year. The minimum wage is $5.15, or $8,910 per year (using a 34.6-hour workweek, the average weekly hours for a U.S. worker according to the Bureau of Labor Statistics, and 50 weeks of work per year), and $6,780/$8,910 = 76.09 percent. See Bureau of Labor Statistics, http://www.bls.gov.eag.table.html.

[65] In December 1998 average earnings in the United States were $12.98 per hour. Assuming that the average worker works 1,730 hours per year, that comes to $22,455 per year, and $6,780/$22,455 = 30.19 percent. See Bureau of Labor Statistics, http://www.bls.gov.eag.table.html.

[66] See Superintendencia de Administradoras de Fondos de Pensiones, Press release, hhttp://www.safp.cl/prensa/1999/may/page2.html.

[67] A wealth relative can be defined as a value equal to one plus the periodic rate of return of an investment. That value is used to link returns in computing the geometric average.

[68] The internal rate of return can be defined as a compound interest rate at which the net present value of cash inflows from a project is equal to the net present value of cash outlays.

[69] My calculation is not entirely correct, because I assume that the composition of the portfolio does not change throughout the investment period (which is not true) and I do not take into account the administrative costs net of the life and disability insurance premiums because of the difficulties of converting a charge on contributions to a charge on assets under management (see the section on administrative costs above).

[70] The reform was undertaken assuming that if the real return on investments was 4 percent, on average, the replacement rate—or pension benefits—would be 70 percent of the average salary during the last 10 years of a working life.

[71] This is basically an application of the principle of the division of labor. As Adam Smith showed more than 200 years ago, the division of labor, which is determined by the extent of the market, allows individuals to specialize in those activities at which they enjoy a comparative advantage and pay someone else who has a comparative advantage in other activities to perform those activities for them. See Adam Smith, *An Inquiry into the Causes and Nature of the Wealth of Nations* (New York: Modern Library, 1937), pp. 17–21.

[72] See Superintendencia de Administradoras de Fondos de Pensiones, *El Sistema Chileno de Pensiones,* p. 103.

[73] See Superintendencia de Administradoras de Fondos de Pensiones, *Boletín Estadístico,* no. 146 (1998): 12–15.

[74] See Superintendencia de Administradoras de Fondos de Pensiones, *El Sistema Chileno de Pensiones,* p. 38, n.13.

[75] For a criticism of this measure, see Rodríguez, p. 8.

[76] In an interview with *The Economist*, José Piñera complained about the reluctance of the present government to introduce changes to the pension system. "The paradox," Piñera said, "is that all those who designed the system want it liberalized, whereas those who originally opposed it won't touch it. They have become more Catholic than the Pope." "From Chile, with a Pinch of Salt." *The Economist*, October 24, 1998.

[77] Sergio Baeza and Raúl Bürger, "Calidad de las Pensiones del Sistema Privado Chileno," in Baeza and Margozzini, pp. 165–75.

[78] Genesis Investment Management, p. 22.

[79] Chilean authorities are now contemplating the possibility of allowing each AFP to manage a second fund made up of fixed-income instruments only.

[80] The City of San Diego, which allows its workers to opt out of Social Security and participate instead in fully funded privately managed retirement plans, introduced in 1996 the option of putting savings into five different plans that offer different combinations of risk and return. For more information on this issue, see, for instance, Carrie Lips, "State and Local Government Retirement Programs: Lessons in Alternatives to Social Security," Cato Institute Social Security Paper no. 16, March 17, 1999, pp. 6–8.

[81] The biggest question about this proposal is which regulatory agency would be responsible for providing the minimum pension guarantee, the one in the worker's country of origin or the one in the country in which the pension fund administration company is based. One easy solution would be to disqualify workers from other countries for the minimum pension guarantee. If those workers still wanted *private* pension fund administration companies from other countries to manage their retirement savings, they should not be prevented from doing so. Of course, this is a proposal that could not be implemented in the short term. However, it merits consideration and could possibly be implemented in the medium to long term (5–15 years), once all the technical aspects have been discussed thoroughly. The proposal would also put a check on the concentration of decisionmaking about the allocation of resources in Chile. Because the AFPs have become the largest institutional investors in Chile, there is a growing concern that the minimum return guarantees will lead the AFPs to favor investments that make it easier for them to comply with those regulations even if more profitable or sound investment opportunities are available.

[82] See Piñera, "Private Pensions in Chile."

[83] See CB Capitales.

[84] It is not clear that the reform has actually increased the private savings rate. What is clear is that public savings have increased since the 1970s and stand at about 5 percent of GDP today. If the transition to a fully funded system is tax financed, as Chile's was, there can be a significant increase in savings. Klaus Schmidt-Hebbel, has estimated the effect of the pension reform on the aggregate increase in the savings rate to be 3.8 percent of GDP. See Schmidt-Hebbel, p. 20.

[85] See Edwards, p. 54.

[86] See Carlos Alberto Montaner, "Accionistas del Mundo Uníos!" *Newsweek en Español,* May 13, 1998.

[87] Mark Klugmann, "Political and Social Effects in Chile of That Country's Pension System," Testimony before the Subcommittee on Securities of the Senate Committee on Banking, Housing and Urban Affairs, June 25, 1997.