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Pension Fund Reform

Comparative Case Studies of Chile and Peru

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COMPARATIVE CASE STUDIES ON PENSION FUND REFORM

I. INTRODUCTION

Pension fund systems in many countries around the world are facing challenges due to aging of the population, overly generous benefits, contribution evasion, inflation, and weak management. As a result, these systems frequently are not meeting their objective of providing adequate income for old age. At the same time, pension payments are consuming increasingly larger portions of government spending. To address the impending crisis of pension fund insolvency, policy makers may choose from a number of options. This document looks at two cases of pension fund reform in Latin America: Chile and Peru. From these cases, policy makers can gain a better understanding of the issues to be addressed and options for reforming old-age pensions.

II. ANALYTICAL FRAMEWORK

Policy debate often centers around a number of critical issues. The cases of Chile and Peru illustrate that how these issues are resolved and communicated affects the reform's acceptance. In this section of the study we outline the key policy issues involved in the reform process. This will establish a framework to understand the discussion of the two case studies that follow.

A. Issues

1. Mandatory vs. Voluntary

Should all workers be required to participate in the pension fund system? Mandatory pension fund systems may overcome the natural tendency of people to be myopic. Yet compulsory systems require compliance, which can be difficult to enforce. And some governments may not have the resources to ensure all participants make required contributions. On the other hand, voluntary systems allow people to make their own long-term savings decisions. What are other advantages of mandatory participation? Of voluntary participation?

2. Funding

Old age retirement systems, which are typically financed by a payroll deduction or tax, can be operated on a funded or an unfunded basis. In funded systems, pension fund assets are equal to or greater than pension liabilities, whereas the liabilities exceed the assets for unfunded schemes. Whether or not the system is funded or unfunded is often related to the decision to use a *defined benefit* or *defined contribution* scheme. The former can be funded or unfunded. Briefly, defined benefit scheme specify pension benefits, typically as a function of salary and years of service. Under the defined contribution scheme, a recipient's pension depends on the amount of contributions and investment earnings accumulated for retirement, and is therefore fully funded.

Workers often find defined benefit pension plans appealing because retirement income is known in advance. However, because the work force and salaries change over time, defined benefit pension liabilities are a moving target. Maintaining adequate reserves to funds these schemes is an ongoing exercise.

Prior to pension reform in Chile and Peru, both countries used a specific type of public defined benefit program known as *pay as you go* (PAYG). Under PAYG programs, payroll deductions from active workers are used to pay pension benefits. The payroll deduction or contribution rate needed from workers depends on the benefit levels provided to recipients and the relationship between active and retired workers, or the *dependency ratio*. Higher benefits require higher contribution rates. Similarly, younger populations require lower contribution rates to meet benefits obligations than do older ones. The evolution of these elements over time, as seen in both Chile and Peru, is important for the sustainability of old age retirement systems.

The funding decision relates closely to the question of income redistribution. PAYG and unfunded defined benefit plans transfer income from the young to the old. Under defined contribution plans, individuals shift income from younger to retirement years. Policy makers must consider the benefits and drawbacks of income transfers across generations and those within generations.

3. Benefits

Pension fund benefits typically consist of financial remuneration triggered by a recipient's retirement, disability, or death. The funding issue, which affects pension fund contributions, is related to the question of benefits. Contributions and benefits may be strongly linked, as in defined contribution plans. On the other hand, there may be virtually no tie between the two, such as in pre-reform Chile and Peru. In those countries, benefits were based on salary and years of service, not how much was paid into the social security system.

The type and level of benefits, along with a few other demographic and investment return assumptions, determine the level of contributions needed to maintain the system. Target pension benefits range from replacing a certain percentage of final salary, at the high end, to a flat-rate basic pension. Policy makers undertaking pension fund reform need to be aware of the perceived relationship between benefits and contributions since this will be a primary concern of participants during the transition from one system to another.

Another important benefits issue in pension fund reform is past service liability. By contributing to the pension fund system, participants acquire rights. This question is more relevant for defined benefit pension schemes wherein the amount of the pension depends on the level of benefits existing at the time of a participant's retirement, disability, or death. For reasons of equity and pension adequacy, conversion of a defined benefit program to a defined contribution requires transferring some of this accumulated pension credit to the new system. If the existing system is bankrupt, to what extent, if at all, should participants bear that cost?

4. Coverage

This issue relates to the portion of the working population who participate in the pension fund system. Coverage varies in developing countries and is often related to formal sector employment. The pension fund systems of developing countries with a lower proportion of formal sector employment are likely to include a smaller percentage of the population than in countries where formal sector employment predominates. Chile and Peru are good examples of this tendency. Prior to their respective reforms, Chile had a coverage rate more than double that of neighboring Peru.

Within the formal sector, policy makers face decisions regarding whether or not the system should apply to self-employed workers. Are there any special terms or conditions for the participation of the self-employed? For example, in some countries with both employer and employee contributions, the self-employed must pay both contributions. If these independent workers do participate in the system, what are the means to assure compliance? In addition, can or should the informal sector participate in the system? Clearly, then, coverage also affects operational and administrative requirements for the system. Policy makers will want to consider this issue in pension funds system design.

5. Minimum Guarantees vs. Moral Hazard

Due to periods of unemployment, low lifetime income, or inflation, to name a few examples, the pension earned may be below the poverty level. Minimum guarantees are designed to assure that pension incomes are adequate, thus serving as a social safety net. Because they are often financed by general government revenues, minimum guarantees redistribute income.

Policy makers face choices regarding whether or not to offer minimum pension guarantees, what the guarantee is, how to fund it, and whether or not there should be any conditions attached to it. If the minimum guarantee is overly generous or too easy to obtain, workers may be tempted not to contribute to the pension system. Similarly, if workers with low wages cannot contribute enough to obtain this minimum pension, they are likely to evade the system. A guarantee creating a possible incentive to defraud the system invites what is called ***moral hazard***. The Chilean case offers an interesting approach to this issue.

6. Management and Supervision

Pension fund management, including administration and investments, may be public or private Public management often accompanies government-sponsored pension fund or social security programs, as in pre-reform Chile and Peru. Programs such as these have historically experienced poor investment performance and inefficient administration. Even when a government has a surplus of cash reserves, administrators often make poor investment decisions or divert cash reserves to fund other government programs such as health care, public works, or the fiscal budget deficit. Although private management tends to be more efficient and effective, safeguards may be needed for investments, use of pension funds, benefits, and many other areas. When designing these safeguards, policy makers also need to contemplate how to assure compliance. A supervisory body may need to be established to enforce compliance to pension fund laws and regulations.

B. Reform Alternatives

1. Quick Hits

Policy makers may choose one or more relatively simple measures to reform pension fund systems. Most of these options apply to the finances of defined benefit systems because their very nature leaves them open to funding problems. These measures increase inflows to the pension fund system, decrease outflows from the system, or both. Because of their relative ease and speed of implementation, these steps may be referred to as "quick hits."

Policy options to increase inflows to the pension system include raising the contribution rate, improving collections or reducing evasion, and, under some circumstances, expanding coverage of the system. Options to limit pension fund outflows range from limiting benefits increases to changing the benefits formula. For example, a formula using final pay to calculate pension benefits might be modified to use average salary over the last five years. Such changes may also reduce fraud in the system. Finally, raising the retirement age affects both pension fund inflows and outflows by requiring workers to contribute for more years and postponing when they can receive a pension.

2. Intermediate Steps

Intermediate steps open to policy makers are more difficult to design and implement. Such steps include performance improvement measures for pension fund administration and investments. Computerization of administration, automation of benefits payments, consolidation of fragmented pension systems, and standardization of benefits are examples of intermediate steps to reform pension fund systems. Options such as means-testing of benefits also fall into this category because of difficult design and implementation issues. Contracting out services such as administration and investment management may also improve efficiency.

3. New System

The third set of pension reform alternatives are to adopt a new system, either in place of, or in addition to, the existing pension fund system. This alternative is the most difficult to put in place because people often fear they will lose benefits under a new old age retirement system. In developing the new pension program, policy makers need to bear in mind the issues highlighted earlier. Questions regarding mandatory or voluntary participation, coverage, insurance, funding, redistribution, guarantees, management, and supervision all need to be considered as part of the development of the new plan.

III. OPTIONS

A. Background

Both Chile and Peru operated pay-as-you-go pension fund systems prior to their reforms. Chile's pre-reform social security system was introduced in 1924. Prior to reform, the system operated 32 different schemes, each with separate rules and administration. Old age and disability pensions comprised a significant portion of the system. Although Peru's pension system was first adopted in 1850, coverage was not expanded to significant portions of the population until the first two decades of the 20th century.

In both countries the population was young when the PAYG systems were adopted. As a result, pension payments were small so the initial contribution rate could be low. Over time, the populations of both countries aged and longevity increased, causing the ratio of active contributors to pensioners to deteriorate, as shown in Exhibit A. However, gradual increases in the contribution rates and retirement ages were not sufficient to compensate for benefits requirements and adverse demography.

The very nature of the Chilean and Peruvian social security systems left them vulnerable to financial problems. One reason was because pension benefits were at best weakly tied to contributions. Evasion and fraud, which were facilitated by poor record-keeping and administration, aggravated the financial problems. If significant reserves had accumulated during the years when Chile and Peru had fewer pensions to pay, these might have mitigated later financial difficulties. However, rampant inflation and poor investment returns eroded the value of any pension fund reserves. Government policies also played a role through the investment of pension reserves in assets with low or negative real rates of return.

In summary, aging of the population, overly generous benefits, evasion, inflation, and other problems created unsustainable financial situations for the governments of Chile and Peru. To continue to pay promised benefits would have required higher payroll taxes and increased subsidies from general government revenues. By 1980, the Chilean government was already paying 29% of the benefits for the pension system with transfers from the general budget. In Peru, although contributions and benefits were more closely aligned historically, a crisis situation developed nevertheless. Prior to reform, the number of pensioners grew while difficult economic conditions sharply decreased the formal labor force. In addition, inflation and poor investments eroded pension fund reserves. Form the perspective of participants in both countries, a pension fund system in which inflation eroded the purchasing power of benefits, contribution rates were high, and administration was poor, became increasingly unacceptable and was considered to be failing to meet their needs.

B. Analysis of the Alternatives

1. Chile

Chilean policy makers felt that they had few options aside from a total reform of the pension system. Quick hits had been successfully used in past, but these measures only brought temporary relief from demographic and financial pressures. Further increases in the contribution rate were not practical as the combined employer and employee contribution rate was nearly 25% for many workers. Such high rates tended be seen as confiscatory and provided an incentive to evade the pension fund system. The government recognized that increasing the contribution rate would set off a vicious cycle as high rates encouraged more evasion which, in turn, would require greater contributions. In addition, increases in the contribution rate would also be regressive, taking a bigger bite out of the paycheck of those least able to afford it. Finally, high rates would inhibit new job creation in the formal sector, which was exactly the opposite of what policy makers in Chile wanted to achieve.

Increasing the retirement age was also viewed as politically infeasible. Workers would oppose the change, even though improvements in life expectancy supported it. Similarly, reducing benefits, either by cutting them or by not indexing them for inflation was viewed as poor policy.

As a result, Chile opted for a combination of total reform and improvement to the existing system. The much-touted Chilean reform introduced a private pension fund system. Workers had the option to switch from the old system to the new, under which pension funds would be portable and contribution rates would be lower. Pension fund administrators were authorized to manage the funds and compete with each other to attract participants. The new system also contained a strong incentive to attract workers to switch: an increase in take home pay. The reform eliminated the payroll tax, increasing workers gross wages by the amount of the tax. Because the contribution rate under the new system was lower than the old, net wages increased for workers who switched to the new system.

In addition, the pay as you go pension fund system was reformed. Administration was centralized and streamlined. To the extent possible, benefits and contributions were standardized. Operational improvements such as improving contribution collections, i.e, decreasing evasion, were also made.

2. Peru

In Peru, growing deficits in the social security system needed to be addressed. Public consensus tended to support reform as an attempt to improve the abysmal service and as part of a larger economic reform package. Simple alternatives like the quick hits mentioned earlier appear to have been dismissed as insufficient. Peruvian policy makers opted for a Chilean style reform with privately managed defined contribution pension funds and the government as regulator of the system.

However, there are a few key differences in the two pension fund reforms. One prominent difference is that in Peru, the private pension system is an alternative to the state system. That is to say, not only active participants, but also those newly entering the labor force may opt to enter the state system. The old social security system will continue to exist along side the new one. In Chile, by contrast, the old pension fund system eventually will disappear because new employees to the labor force must join the private pension fund system.

Another difference between the two systems has been the number of pension fund administrators that have sought and gained authorization to operate in each country. While the number of AFPs in Chile has grown to 24 since the inception of the private system, in Peru mergers between the original eight AFPs have decreased the total number to six.

Lastly, the Peruvian government seemed plagued with more problems during the implementation phase than Chile. In Peru, the government was unable to issue recognition bonds in a timely manner to compensate active workers for their contributions under the old system, and the criteria for entitlement in certain categories was not realistic. Another problem was the curtailing of public employees' right to use the system in order to avoid the net result of mandatory one-time pay increases to those employees switching to the new system.

IV. IMPLEMENTATION ISSUES

A. Building Consensus

Implementation issues for pension fund reform start with building support for change. In Chile public relations and advertising raised the people's awareness of the problems in the old system and the need for change. Television, radio, and other advertising, in addition to articles and letters to the editor, informed the public of the advantages of the new system. The new pension fund administrators (AFPs) were key players in this process after the reform was introduced. The AFPs aggressively used advertising and marketing to try to attract participants to their firm. Peru's experience was similar, except that they could refer to the Chilean trailblazers of pension fund reform to help build consensus.

B. Transfer to the New System/Past Service Recognition

For pension fund reforms in which a new system is implemented, mechanisms and conditions for transferring to the new system must be designed and implemented to ensure a smooth transition for the participants. In both Chile and Peru, the transfer mechanism centered around the granting of recognition bonds, payable when a participant's pension payments are activated, which represented contributions paid under the old system. In both countries, the bond calculation combined with time to retirement made the new system less attractive to older workers.

C. Financing of the Reform

Quick hits and intermediate improvements to an existing pension fund system have modest financing requirements. But a reform effort on the scale of a Chilean model has significant financial requirements. Reform creates these financial requirements in two ways: first, active contributors switch from the old PAYG system to the new defined contribution system, but pensioners remain in the old system. As a result, the old system still must make payments to retirees, but has less money with which to do so. The second financing requirement is attributed to past service liability or the *acquired rights* of participants who switch to the new system. The recognition bonds in Chile and Peru reflect this concept. Because both PAYG systems lacked reserves, the governments are faced with financing these obligations from budget surpluses.

D. Regulation and Supervision

Effective government regulation and supervision of the pension fund system assures equitable treatment of participants and promotes public confidence in the system. The government's role is important when pension funds accumulate reserves, particularly in private systems, to prevent fraud or misuse of funds. Areas of government pension fund regulation may include minimum requirements for participating in the industry, uses of funds, allowed investments, investment limits, accounting, disclosure, and reporting requirements. In addition, rules regarding reporting, contributions, and benefits may be established to protect the interests of pension fund participants.

Establishment of a sound legal and regulatory framework is only part of the equation. Enforcement of compliance with the law and regulations by a strong governmental unit is also essential. In addition, laws and regulations may need to be updated to reflect changing market conditions or to correct oversights in original legislation. For example, Chile recently relaxed restrictions on pension fund investments overseas to allow further diversification of these assets.

E. Financial Sector Development

Pension fund reform is often coordinated with development of the capital markets, insurance, and banking sectors. These sectors may be strengthened, if necessary, prior to or at the same time as pension fund reform. Pension funds are held in trust which calls for definitions of *fiduciary* responsibility. Because this money is often invested in the capital markets, regulation to promote transparency and prevent fraud in these markets is essential to support pension fund reform. Mechanisms for market operations, such as clearing, settlement, and delivery of securities facilitate the new pension fund system's investment function.

The insurance market is closely tied to the pension market. Insurers offer annuities, one approved form of pension in both Chile and Peru, as well in other countries in the world. Appropriate regulation is important to protect consumers by assuring adequate disclosure of prices and risks as well as promoting solvency of insurers.

Finally, the banking sector plays two important roles. As a key part of the national payments system, the banking sector transfers both contributions and benefits. In addition, bank certificates of deposit (CDs) are potential pension fund investments. In fact, in some countries, bank CDs may be one of very few investment alternatives at the onset of pension fund reform. As such, a strong, well-regulated banking sector is necessary to support pension fund reform.

V. RESULTS

A. Chile

The new Chilean pension fund system began operation in 1981. Most participants under the age of 45 chose to switch from the old to the new pension fund system. By 1994 pension fund assets had grown to over US$ 20 billion, nearly half of Chile's gross domestic product of US$ 44 billion. Exhibit B depicts the Chilean pension fund market since reform. The growth rate of funds has consistently exceeded 20% after the first few years of the system. Real rates of return have averaged 13% in the first decade of the new system, a rate much higher than the anticipated 5.5% projected at the beginning of the plan, which should result in higher pensions in the future.

Coverage of the labor force also demonstrates acceptance of the reform. By the end of 1990 79% of the labor force participated in the new system. However, there is a difference between the number of active participants and those affiliated with the private pension fund administrators (AFPs) due to gaps in employment and the fact that contributions are voluntary for the self-employed.

The pension fund industry is dominated by the three largest AFPs who have a 65% market share. Currently more than 15 AFPs compete for participants, largely through marketing and advertising. While competition has improved management and costs have declined since the system was founded, critics observe that administrative costs are high, especially for low income affiliates.

Under the old pension fund system, which continued to operate in parallel with the new, the loss of active contributors has caused deficits to widen. General revenues are being transferred to the old pension fund system to meet current liabilities. In addition, the government is required to transfer general revenues to support minimum pension guarantees under the new system, although expenditures for the minimum guaranteed pension have been limited to date for two reasons. First, the new system is still young, so not many people have retired under it. Second, Chilean policy makers established a low level of benefits and stringent eligibility requirements for the minimum guaranteed pension.

Pension funds have played a significant role in the growth and development of capital markets in Chile. By stimulating demand for long term instruments, pension funds have contributed to the development of the bond market. Pension funds have also invested in privatization. However, pension fund investments are tightly regulated due to the mandatory nature of the system and the need to manage risks properly. Investment limits by type of security, issuer, and risk classification are monitored by the Superintendency of Pension Fund Administrators. Investment limits have been relaxed slightly in recent years as some limits, such as those on foreign investments, have proved too stringent.

B. Peru

The Peruvian pension fund industry was established in June 1993 when 8 AFPs opened their doors. By the end of 1994, two of these merged so that only 6 AFPs were in operation. The new private pension fund system is an alternative, parallel system to the government social security system. Nearly 1 million contributors had joined the new system by year-end 1994, with younger, private sector workers comprising the majority of participants. Transfer issues, particularly regarding credit for past contributions to social security, were not clear for public sector workers, unlike for those in the private sector. As in Chile, recognition bonds for contributions to the old system have slowly been transferred to the new pension funds.

By year-end 1994, total pension fund administrators managed 567 million soles, or approximately US$ 260 million. These funds are invested according to strict limits, as in Chile, and are monitored by the Superintendency of Pension Fund Administrators. As of December 1994, time deposits are the most popular pension fund investment representing 33% of the industry total, exceeding the 25% limit. Central bank debt and financial system bonds accounted for another 30% of investments. This limited portfolio diversification is largely due to the lack of investment alternatives in Peru. Over time, the Peruvians expect new investment securities to develop in the capital markets in response to demand by pension funds.

VI. CONCLUSIONS

The pension fund reforms in both Chile and Peru were implemented under essentially autocratic governments. Because of the political controversy associated with the reform process, such reforms are likely to be more difficult to achieve under democratic governments. Difficult, but not impossible. Argentina, for example, carried out a modest Chilean style pension fund reform at the same time as Peru.

Policy makers face a number of choices to implement pension fund reform. As such, it is important to understand the issues and possible linkages between many of the design features. More stringent supervision and some guarantees may be necessary for a mandatory pension system. Experience under the pay as you go pension systems in Chile and Peru suggest the importance of linking benefits and contributions. In addition, the Chilean and Peruvian experiences suggest that high pension contribution rates tend to be perceived as a tax, causing evasion and constraining employment growth.

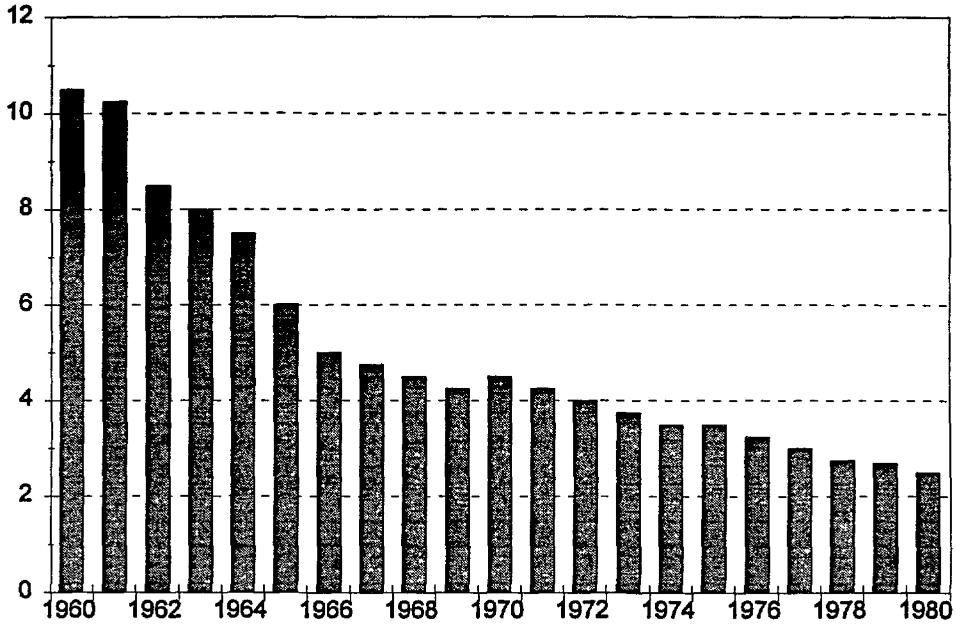
Appropriate system design and implementation, combined with sound macroeconomic management, allow pension fund systems to provide adequate pensions. Equitable and adequate benefits are the true test of any pension fund system. Because the Chilean and

Peruvian pension fund reforms are relatively recent, few people have retired under the new systems. In Chile pensions to date under the new pension fund system have been larger than under the pay as you go system. In 1994, the average retirement benefit under the new system was slightly more than 85,000 pesos compared to approximately 49,000 pesos under the old system. However, it would be premature to draw conclusions until the system has been in operation for at least a few decades.

EXHIBIT A

RELATIONSHIP BETWEEN ACTIVES AND RETIREES IN THE SOCIAL SECURITY SYSTEM (SSS) 1960 - 1980

CHILE



PERU

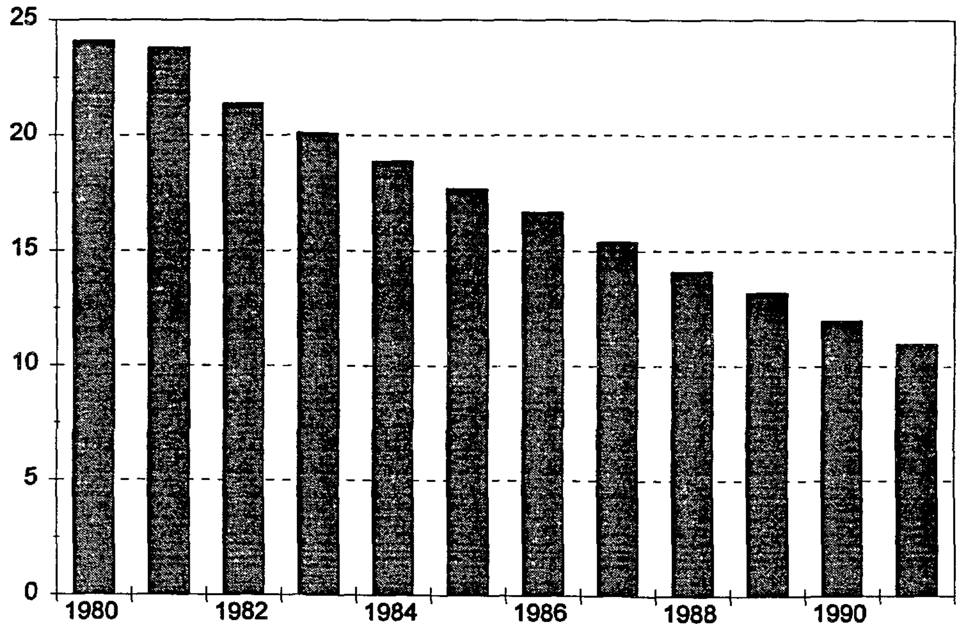


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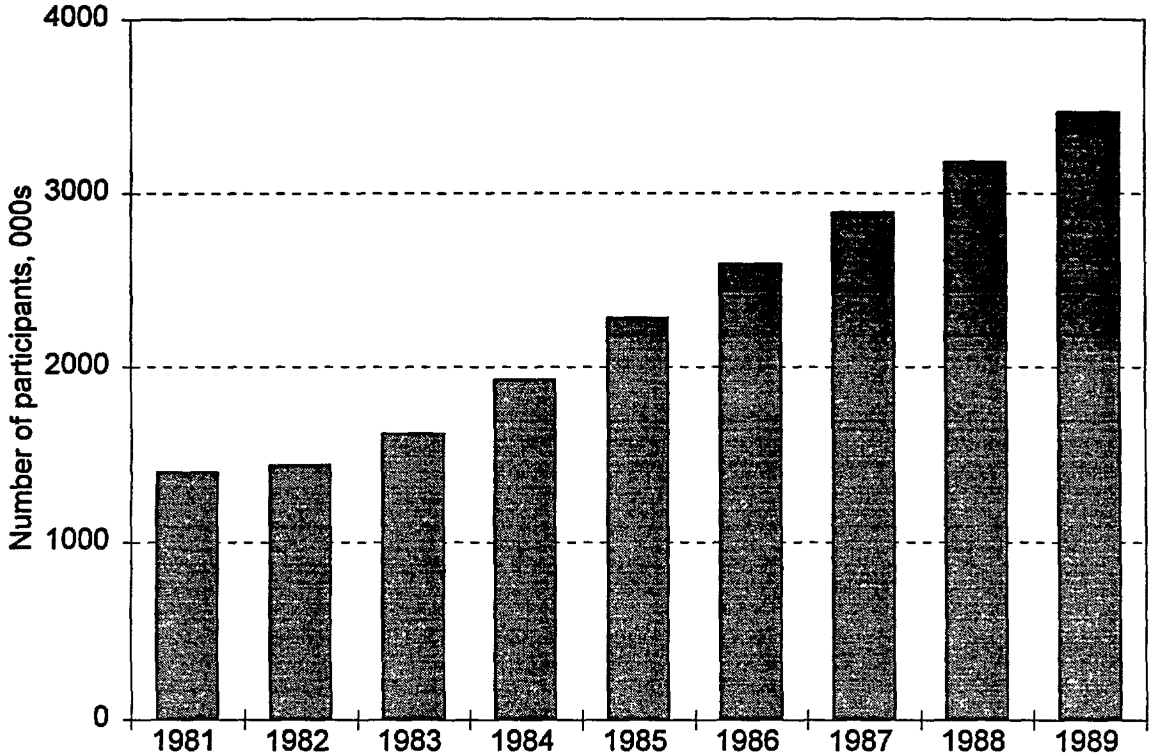
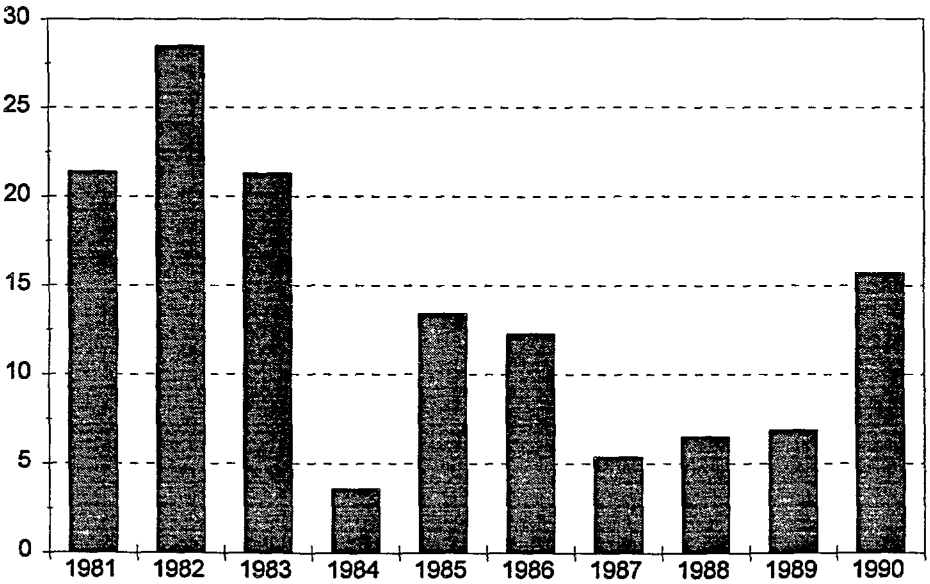
EXHIBIT B: CHILE

Development of Participation in the
New Social Security System



PROFITABILITY OF THE PENSION FUNDS*
Percent Gain in Value



* Adjusted for inflation.
Source: Superintendencia de AFP.

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PRIVATIZATION OF PENSION FUNDS: The Case of Chile

Chile has a long tradition of public social insurance. Its state-managed social security system, implemented in 1924, was one of the first in the Western Hemisphere and succeeded in providing millions of Chileans with retirement benefits. Although one of the most advanced in Latin America in terms of benefits, by the late 1970s Chile's pension system was regarded as inequitable and inadequate. Not only was the social security system burdened by substantial inefficiencies, rampant fraud and adverse demographics, but expenditures exceeded revenues, requiring heavy government subsidies. In light of these problems, the Pinochet government implemented radical reforms in 1981, creating a new system of private pension funds.

Background Prior to Reform

Demography

Although the state-managed pension system prior to reform was inefficient, coverage was broad. As shown in Exhibit 1, in 1979 Chile had 32 separate *cajas*, or recognized social security programs. Three major funds covered 94% of the workforce, as seen in Exhibit 2, with the largest of these covering 65% of Chilean workers.[1] The growth of the three largest programs during the twenty years prior to the reform of the system is shown in Exhibit 3.

In the late 1970s, aging of the population and a declining birth rate had a significant impact on the ratio of social security contributors to beneficiaries. This ratio, called the *dependency ratio*, declined from 8:1 in 1960 to 2:1 by 1980 as seen in Exhibit 4. In addition, although the system generated positive fund balances in early years when contributions exceeded benefits, high inflation in the mid-1970s caused the pension system's funds to decline in real terms.

Weak supervision compounded this problem by allowing widespread evasion of social security taxes. Because pension fund benefits were based on the employee's earnings during the five years prior to retirement, employers and employees would often under-report wages until the employee reached five years to retirement, resulting in lower social security payments for both parties. Through this scheme, many employees received pensions based upon the higher level of earnings reported for the last five years of employment, although they had contributed to the system at a much lower level throughout their working lives. As a result of these problems, the pension fund system required heavy government subsidies to meet benefit obligations. This created an unsustainable situation that was a factor in the decision to reform the system.

[1]Prior to and after the reform, the military and the police have separate pension programs with independent funding mechanisms. The military budget makes up any deficit in contributions. Because 10% of income from sales of CODELCO, the copper company, were provided to the military, a revenue source was available to meet shortfalls between pension contributions and benefits payments.

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Benefits of the State-Managed System

Chile's state-managed social security system was a *defined benefit* scheme which operated on a pay as you go (PAYG) basis, meaning that contributions from active participants were used to pay benefits to retirees and other beneficiaries. Pensions were calculated using a formula which included the worker's salary and years of contribution. Benefits and eligibility requirements, including the retirement age, varied among the 32 programs. As such, pension benefits were not linked with contributions to the system. Portability was limited, but possible within an industry. For example, workers contributing to the *Caja Bancaria* could switch employment to another bank without affecting their pension benefits.

In the early 1970s, the Chilean social security system was one of the most advanced in Latin America in terms of benefits. Social security covered contingencies ranging from retirement to disability, included nearly all of the population, and offered extensive benefits. Monthly pension benefits were adjusted when cumulative inflation reached 15%. However, the system was also legally complex and extremely fragmented, with each of the pension programs operating according to different rules. As such the social security program lacked effective administration and coordination.

The social security program permitted inequalities and granted special privileges. The length of service required for different workers varied from one group to another. Manual laborers could not retire with full benefits until age 65, whereas other groups could retire regardless of age after a specified number of years, i.e., 35 years for private sector white-collar workers, 30 years for public sector white-collar workers, 24 years for banking sector employees, and only 15 years for parliamentarians. Some workers, notably government employees, collected benefits from more than one pension plan because they held more than one job. In part, the wide discrepancy between eligibility requirements and pensions was a function of the strength of the relevant union representing the worker group, a problem which was compounded by the existence of multiple plans covering different categories of workers.

The normal laborer's retirement pension was 70% of final pay, provided that amount was at least 85% of the legal minimum wage. The final pay figure was based on an unindexed average of the worker's wage for the last five years. Because inflation was high in the 1970s, the nominal value eroded to the extent that in real terms most laborers received the minimum benefit of 85% of the minimum wage.

For white collar workers, pension benefits were 100% of final salary, creating an inequitable situation that was further exacerbated by the fact that the final pay was calculated by indexing the first two of the last five years of employment. Benefits were indexed to adjusted salary levels of the last five years, while social security taxes were paid over the whole working life of the employee. Despite the fact that the retirement benefits for a white collar worker were clearly superior to that of a laborer, fully two-thirds of all social security benefits paid shortly before the reform were at the minimum benefit rate due primarily to the deleterious effects of inflation.

Benefits were not tied to contributions, and in fact, most pensions exceeded the actuarial value of participants' contributions to the plan. According to a study conducted in 1980 for the Social Security program, approximately 30% of the workforce, representing the lowest income bracket, made net gains from the program. In the late 1970s, this group contributed 9.4% of the system's income but received 14.9% of its benefits. This redistribution of income was at least partly a result of evasion of pension contributions by employers and employees.

Prior to 1973, several attempts were made to restructure the system, without any meaningful success. In 1974, a uniform minimum pension was established, as well as a uniform system of unemployment benefits. Indexing and qualifications for old-age pensions were standardized in 1981 as part of the reform, however individual pensions under the old system continued to have no real relationship to historic contributions.

Financing

While the PAYG defined benefits system had generated cash reserves in the early years, high inflation eroded the value of invested reserves. In addition, the government had reallocated reserves for other purposes such as public works projects and social security health care expenses. During the years directly preceding reform, the Chilean government was forced to cover substantial deficits when cash flow inflows were insufficient to meet benefits requirements.

Other factors also contributed to the cash flow deficit that existed under the PAYG plan. Increasing birth rates and longevity contributed to the pension system's decline in the dependency ratio from 8:1 to 2:1. High contribution rates discouraged hiring and new job creation. Contributions on average had risen to 26% of wages, with employers paying more than half of that amount. While a blue collar worker paid 8% of gross earnings in social security taxes, the employer paid a 34% social security tax. A white collar worker paid 18% of gross earnings, while the employer paid 29% in taxes. Exhibit 5 shows a sample of pension contribution rates for the three major pension programs between 1968 and 1980.

By the late 1970s, Chile's system faced two major problems: large deficits and low, inequitable benefits. It was an extremely heavy economic burden. As early as 1971, payroll tax revenues necessary to finance social security constituted 65% of the government's total tax revenues, and total benefits expended amounted to 17% of the gross domestic product. High inflation led to increased benefits, while high unemployment resulted in reduced payroll tax revenues. By 1980 the payroll tax shortfall had grown to such proportions that approximately 29% of benefits had to be subsidized by federal budget revenues.

Management/Administration

The Chilean government deposited revenues from social security payments in a social security account, which was separate from its general fiscal account. Payments were made from the special account to the beneficiary recipients. The various pension funds under the former

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system were primarily state-managed, while only a few funds were privately managed. Administration was inefficient, the quality of service was poor, operating costs were high, and supervision of the system was weak.

The Reform Initiative

Impetus for Reform

By 1980, the accumulation of problems inherent in the social security system, including cash flow deficits, inflation, poor management, evasion, and low or inequitable payments, led to the decision by the Pinochet government that a radical change to the system was necessary. Projections showed that if existing revenue and expenditure patterns were to continue, subsidies would have to increase tenfold over the next 20 years. Government leaders felt this would become an untenable burden on the national budget in the future.

Although a change in the system was urgently needed, the government was initially uncertain about how to proceed. More successful models were not available, for as in Chile, social security programs in most other countries were inefficient, state-managed systems contributing heavily to budget deficits. However, Jose Piñera, Minister of Labor and Social Welfare in the Pinochet government, rose to the challenge of designing and implementing a reformed social security system.

Piñera was supported in his efforts by other Chilean policy-makers, including a group of free market economists who had done their postgraduate studies at the University of Chicago in the 1950s and 1960s. Dubbed the *Chicago Boys*, this group had unsuccessfully offered their recommendations to the previous Allende government, advocating privatization and a reformed social security system. While rejected by the Allende government, Pinochet found the Chicago Boys proposals consistent with the government's desire to dramatically restructure the Chilean economy. As a result of this cooperation, three basic options to reform the PAYG pension fund system were considered: modify, restructure or replace.[2] These options are summarized below.

- *Modify the existing system*: Contribution rates or retirement ages could be raised, benefits formulas could be changed, and/or benefits could be cut. In extreme cases, retirees could be required to pay contributions. This option would bring only temporary relief and was politically unpalatable.
- *Restructure the existing system*: Various pension funds could be merged, and standardization could be imposed in areas such as benefits, administration, and contribution rates. Such changes would reduce operating costs, but restructuring would entail certain upfront costs. While restructuring alone

[2]A discussion of the policy options and strategies considered by the Government of Chile can be found in Piñera's book, El Cascabel al Gato, La Batalla por la Reforma Previsional.

would be insufficient to address the large deficit, it was judged to be necessary in any case.

- *Change the entire system*: This alternative would entail radical reform, changing the system from a defined benefit to defined contribution basis, from an unfunded to a funded scheme, from public to privately managed, and from voluntary to mandatory system.

Reviewing these alternatives, Piñera determined that the third option would be most effective in addressing the problems inherent to Chile's pension fund system. He became the prime mover in the development and implementation of a radical new plan that would require each of the country's 4.8 million workers to put a portion of their pre-tax salaries into a private pension fund. The plan would require no employer contributions. Participants could choose from among private investment houses which would manage the pension funds. Moreover, they could transfer their pensions between these funds on a quarterly basis to obtain the best returns and services at the lowest cost.

The Reform Process

Before such sweeping reforms could be legalized or implemented, all of the stakeholders in the social security system had to be persuaded that the new system was superior to the old, and that the transition would involve a minimum of adverse side-effects. Lawmakers, the public, and especially the president and his economic ministers had to be convinced that only a completely new system would ensure adequate future compensation to participants in the system. Public and private debate centered not only around reform of the social security system, but also broader economic reform which included privatization.

Lawmakers, having been confronted with proposed changes to the system in the past, felt that the basic social security legislation needed to be flexible and broad, whether the outcome the existing system was modified or a new system adopted. Discussions focused on transitional arrangements which might be necessary to reduce the cost of compliance with new laws and regulations. Effective means of carrying the costs of the old system and their future budget impact, were considered and debated. The need to reform the regulation and administration of social security was also discussed.

Public opposition to reforming the system and, to a certain extent, to privatization in general existed, particularly from organized labor. The Public Service Employees Union (PSUE), which had the most to lose, considered the government's privatization program a failure. From the PSUE perspective, many of workers' fringe benefits, which had been negotiated over many years, were sacrificed in the process. The union was skeptical of the government's claim that the public sector was heavily overstaffed, which it used to justify workforce and wage reductions in order to achieve profitability. Piñera, however, convinced Chilean workers that the plan had merits. For six months Piñera made weekly television appearances explaining the new system. This persuasive public relations campaign mitigated the labor unions' opposition to privatizing the system and was a key factor in the success of reform.

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While the merits and shortcomings of the various proposals were being publicly debated, the Pinochet government held internal discussions and debates. Piñera first had to convince Pinochet, and his economic advisors, of the merits of the radical change he proposed. Presidential officials wanted to know where such a plan was already in place, and what the actual results were. At the time, there were no precedents of social security privatization anywhere in the world. On one occasion, Piñera responded that his proposed new system was more easily understood by the average Chilean mother than by social security experts.[3]

The New System

The new social security system, as designed by Jose Piñera, was established by Decree Law No. 3500, promulgated by the government in 1980. The system has three principals: a minimum pension for all Chileans who contributed to it, benefits based on individual capital accumulation, and private administration. The new system is designed to operate on a defined contribution basis. Each participating worker places 10% of pre-tax salary into a private pension fund. These contributions are tax-advantaged. No employer contributions are required. Participants choose from among a number of private investment houses to manage their funds, and may switch from one to another on a quarterly basis to maximize capital appreciation.

Switching to the new system was optional for those participating in social security. To compensate for the fact that contributions to the new system were to be made from salaries, a worker received a one-time pay hike upon joining the new system. In real terms, this gave workers a strong incentive to switch to the new system and undoubtedly swayed popular acceptance of the reform. By 1983, all new employees entering the workforce were required to join the new AFP system. For approximately forty years, the government is required to cover the benefits liabilities of those workers who elected to remain under the old plan, after which the old system will cease to exist.[4]

Private administration was the most novel aspect of the new pension system. Decree Law No. 3500 authorized the creation of profit-seeking private pension fund administrators called *Administradoras de Fondos de Pensiones* (AFPs). These firms compete for the right to manage individual funds on the basis of commissions and quality of service.

The new law also established a legal and regulatory framework for the system. A separate government entity, the Superintendency of AFPs (SAFP), was created to protect contributors to the system and guard against the possibility of theft, fraud, or mismanagement. The SAFP regulates, supervises, and audits the AFPs. The Superintendent of AFPs is appointed by the president of Chile. The regulatory structure is complex, and close management of it is vital to the success of the new system.

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[3] Ibid., Piñera.

[4] These pension obligations will continue till the last retiree from the old system dies. As a result, both systems will coexist till the middle of the 21st century.

Demography

The new pension system was inaugurated in May 1981 and represented a radical departure from the previous, state-managed system. By tying benefits to contributions, the new pension system should not face the financial problems that the PAYG system did when the population aged significantly. Under the AFP system, the working population does not subsidize the retired population. The Chilean social security system includes both private sector and government employees, except for the police and the armed forces, which continue to have their own separate retirement systems.

When the new system was introduced, a substantial number of workers elected to switch from the old system to the AFP plan, and the new system grew rapidly. Within one year of its introduction, 75% of the workforce who had been affiliated with the old system were enrolled in private pension plans. As of June 1984, 80% of all employees had joined the new system. By June 1994, there were 4.7 million participants in the new system, primarily in younger age groups. Growth of the new system is presented in Exhibits 6 and 7.

Many workers near retirement age chose to remain in the old system, since they would not be able to accumulate sufficient funds for an adequate pension. This situation was true despite the recognition bond granted by the government for historic contributions to the old social security system.[5] A recognition bond, maturing when the individual retires, was granted to each worker who transferred from the public to the private pension system.

Benefits

Under the new pension system, the pension amount depends on the value of the individual account at the time of retirement. As such, investment returns are particularly important. The AFP system anticipated a real rate of return of about 5.5% a year. At this rate, a retiree with 40 years of contributions would receive 70% of the average of the last five years' salary, or about $260 per month for the average worker. With a 6.5 % return, the payout would rise to 100% of salary. However, private pension funds surpassed that goal, averaging about 13% real growth annually between 1981-1991. Exhibit 8 provides a comparison of the average amount of benefits paid in pesos in October 1994 under the old and new plans for the various types of coverage.

Contributions accumulated in an individual's capitalization account may only be used for pension benefits. Funds that remain in the worker's investment account after his or her death become a part of the worker's estate. Withdrawals from the account are not permitted. In

[5] The recognition bond is calculated on the basis of the capital required to pay a pension equal to 80 per cent of the contributor's earnings in 1978-1979, multiplied by the proportion of the person's working life spent contributing to the old system, accumulated at an interest rate of 4 per cent per annum between 1978-1979 and the date of retirement, and adjusted for changes in the cost of living. This transitional settlement is considered quite generous by some and is the subject of continuing debate in Chile, although no changes have been made to date.

1994, the government considered permitting emergency withdrawals for education, health, or other specific purposes, but the proposal was defeated.

At retirement a participant has three options: a life annuity, a programmed retirement pension, or a programmed pension with a deferred annuity. Under the **annuity** option, the participant uses all funds in his or her individual account to buy an irrevocable annuity from an insurance company. The annuity pays a monthly pension and has survivorship benefits. Calculations are based on mortality tables, investment assumptions, and the insurer's expenses.

According to the **programmed pension** option, the pension amount is calculated according to a formula established by the state supervisory authority. The formula considers the age, life expectancy, current rates of returns on investments, and the size of the fund, and then spreads the depletion of the fund, including interest, over the expected life of the worker. This calculation is repeated annually taking into account certain economic considerations, and the pension amount is accordingly adjusted.

The **programmed pension with a deferred annuity** option combines the first two options. The retiree receives an annuity at a later date agreed upon with an insurer. Until that time, the retiree receives a programmed pension from his or her individual account. Pension payments are subject to income tax in the same manner as other income.

All benefits, annuities, and programmed pensions are denominated in *Unidades de Fomento* (UF), a reference unit whose value is adjusted daily according to the consumer price index. These units are used extensively in Chile in commercial transactions and in indexing all types of financial instruments and obligations. In November 1994, 1 UF had an equivalent value in pesos of 11,300, or US$27.23 at the prevailing exchange rate of 415 pesos per U.S. dollar.

The new Chilean pension system features a **minimum pension guarantee** by the government. This guarantee has strict eligibility requirements and the minimum pension level of about 23% of the average salary, or about US$60 per month is low. Consequently, government subsidies to the new system are expected to be small, but only time will tell. As yet, few people have retired under the new system. The total number of beneficiaries receiving payments under the new system between 1982 and 1990 is shown in Exhibit 9.

Financing

The new system is funded by the 10% deduction from pre-tax wages up to a salary ceiling of approximately US$ 20,000. In addition, each participant contributes approximately 3% of salary to cover survivorship and disability insurance. Contributions are portable, which means that when a worker changes jobs, his or her pension fund participation and account balances are unaffected. The new employer merely takes over contributions to the AFP.

Each participant must contribute to the pension plan until retirement at age 65 for men, or 60 for women, or until the payable annual pension reaches 70% of the worker's average indexed wage during the last 10 years of employment. The new system is completely indexed. These

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funds are capitalized with the returns obtained from the investment of the funds and are paid out at the end of the participant's active working life.

Benefits are directly related to contributions, relaxing the former incentive to under-report salary and evade both employer and employee contributions. Evasion under the new program is estimated to be at about 2%. Companies have less to gain from under-reporting salaries because they make social security contributions only for those employees who chose to remain in the old system, most of whom are already near retirement. At the same time, employees' retirement benefits are based entirely on the accumulated contributions to their own accounts, plus capital appreciation. It is therefore in their best interests to contribute as much as they can afford during their working lives if they wish to maximize benefits when they retire.[6]

Management/Administration

An underlying strength of the new, decentralized pension system was the introduction of competition fund management and administration. Profit-seeking, private pension funds (AFPs) are authorized to manage participants' funds. The AFPs compete for the right to manage individual retirement accounts on the basis of rates of return, commissions charged, and overall quality of service. Each contributor can choose from among a wide range of AFPs and can transfer his or her account to another AFP on a quarterly basis by simply writing a letter.

At the time the new system was implemented in 1981, there were only about ten AFPs, with most business concentrated in two of these. However, the number of funds increased over time, with 24 AFPs operating as of November 1994. The AFPs operating in Chile in June 1994 and the market value of investments managed by each are provided as Exhibit 10.

The AFPs are a diverse group of entities. Some are related to insurance or banking groups. Others are worker-owned or controlled by labor unions or specific industry trade associations. As a result of debt-swap transactions, shares of some AFPs are held by international financial companies, such as Aetna, CIGNA, and Banco Santander. Several of the larger AFPs are publicly owned and are traded on the Santiago Stock Exchange. Exhibit 16 shows the 16 AFPs operating at year-end 1989 and their relative market share.

Technically and legally, an AFP and the pension fund it manages are two entirely separate entities. This division means that if an AFP fails, participants' pension savings will not be affected. The system has successfully dealt with the bankruptcy of a couple of AFPs without financially harming participants.

[6] However, compliance with the new system is not full. Some workers and employers still prefer to remain in the informal market.

Administrative costs paid to the AFPs are one area of criticism of the Chilean reform. At the onset of the system, these costs were perceived to be high, although they decreased substantially in subsequent years. New criticism arose in 1994, when retirees objected to having to pay management fees to the AFP after retirement. It was their view that if the government were managing their account, they would not pay a management fee in retirement. The debate had not been resolved as of November 1994.

In 1994, the total funds had grown to over US$20 billion, which represented nearly half of Chile's GNP of about US$44 billion. The average return on investment from 1981 through November 1994 been between 13 and 14 percent per year. The AFPs have become competitive and profitable, as shown in Exhibit 12. Competition is focused primarily on the basis of returns on investments and on service. In 1990, one AFP, Provida, had a 25% share of the market and earned $18 million. The size and growth rate of the pension fund system has been impressive by any standard, as shown in Exhibit 13.

Investments

Since 1981, funds generated through the AFP system in Chile have been managed by private institutions. Each AFP operates one pension fund, investing within the limits established by government. While each AFP makes its own investment decisions, government regulations establish the general types and kinds of debt and equity issues which are deemed suitable for investment.

The regulations on pension fund investments specify portfolio diversification limits by type of asset, issuer, percent of portfolio, and risk classification. The Risk Classification Commission determines into what category of risk a particular asset falls. The classification of the asset determines the extent to which, if at all, a pension fund may invest in a particular asset, assuming other constraints do not apply.[7] The government continuously reviews, and periodically revises, the investment limits. In late 1992, when the investment constraints proved to be too restrictive, they were relaxed in revised regulations.

The Superintendency of AFPs regulates pension fund investments and fixes investment limits for each type of financial asset. The categories for investment by the AFPs established by the SAFP, and the current maximum limits for each, are as follows: government securities (45%), Central Bank paper (50%), mortgage bonds (80%), corporate bonds (50%), corporate notes (10%), common stock (30%), investment funds (5%), real estate fund (40%), and foreign investment (6%). The reason for establishing a wide range of categories is to provide a margin of safety, through diversification of the portfolio.

[7] A Risk Classification Commission was established for the purpose of ensuring that retirement portfolios of individual contributors are composed of prudent investment instruments. The commission has four private and three public sector members.

Exhibit 14 illustrates the AFPs' portfolio diversification between June, 1993 and September, 1994. The September 30, 1994 chart displays a common stock position for the AFPs of 33%, while the maximum limit is 30%. The three percent excess was the result of appreciation of common stock securities held in the portfolios. In this situation, the AFPs are not authorized to purchase more common stock until the outstanding market value is reduced to a level within the 30% limitation. The SAFP grants a 5-year period in which to reduce holdings to the allowed limit.

Pension fund investment limits and risk classifications have been adjusted over time in response to the needs of the market. The latest revision was made on November 12, 1994, when limits on foreign investment were increased from 3% to 6%. The pension investment system must be managed so that it is sufficiently flexible to permit healthy competition and still retain sufficient safeguards to avoid excessive risks and major failures. The system must also allow sufficient investment alternatives to meet the pension fund growth. Thus far, regulators have been active and responsive to the changing requirements of the system.

The majority of the AFPs' outstanding investments continue to be placed in government obligations, such as Treasury and Central Bank bills. This could be perceived as a means to finance the national budget, including the cost of retirement benefits still being paid from the old pension system. It is worth noting, however, that the Treasury has been retiring its domestic debt and reducing its external debt. The growth of the Central Bank debt is mostly due to the success of the debt-equity swap program, in which investors exchange Chile's foreign debt purchased in the international secondary market for peso- or dollar-denominated Central Bank notes. The foreign investors then sell their Central Bank bills in the local secondary market to obtain funds for equity investments. The AFPs are the primary purchasers of the Central Bank bills from foreign investors. In this way, the AFPs and the local capital market have contributed in an important way to the success of Chile's debt-equity swap program.

Exhibit 15 illustrates the changes in the portfolio mix of the AFPs between 1981 and 1990. The success of the Chilean pension fund system, coupled with exceptional economic growth rates of 10% in recent years, have caused the capital markets in Chile to broaden and deepen dramatically. The changed AFP portfolio mix over time reflects this increasing breadth and depth.

Impact on Capital Markets Development

The privatization of the social security system in Chile was perhaps the single most important factor in the development of a viable capital market in the country, although other factors also assisted in the process. The fact that no more than 3% of pension funds could be invested abroad till 1994 allowed significant domestic savings to accumulated.

Quoting the majority of financial instruments in terms of UFs was important for capital market development as well. This indexation guaranteed real returns on investments, devoid of effects of inflation. The abandonment of interest rate controls was another strong contributing factor to the growth of the capital market, as it provided a mechanism for readjusting medium and long-term financial instruments. The transfer of major assets, especially the state-owned-enterprises, from government to private sector ownership also contributed to the growth of the capital market and provided potential investments for AFPs. In addition, the insistence upon accurate and open information helped to improve transparency of the market, thereby attracting additional investors.

However, while all of these factors were important to the development in Chile of the only long-term capital market in Latin America, this achievement could not have taken place without massive amounts of capital flowing into the markets from individual workers through the pension funds. The divestiture of the social security system has been cited as the single most important privatization effort of the military government, and arguably the most significant advance in the development of the Chilean capital market in the 20th century.[8] The net effects of pension fund privatization on the development of Chile's capital market include, at a minimum: an increase in the levels of savings and investments; an increase in the number, maturities, and types of financial instruments available to individual and institutional investors; a broadening and deepening of the Santiago Stock Exchange; the development of new markets; a reduction in the cost of intermediation; a reduction in the cost of capital; the creation of a long-term local currency market; and a decreased dependence on foreign capital.

Linkage with the Privatization Program

The relationship between the AFPs and the privatization of other Chilean enterprises has been mutually beneficial, particularly during the "second round" of privatization (1984-1990). In 1984-1985, Chile reprivatized approximately 50 of the country's largest companies insurance companies, mutual fund administrators, AFPs, trading companies, and other entities which had been taken over by the government during a financial crisis in 1982-1983. In addition, the second round included the privatized a number of "traditional" SOEs, including large public service and infrastructure companies.

Prior to 1985, the AFPs had invested primarily in government obligations. Diversification of their portfolios was required in order to improve profitability, strengthen their status as a separate, private sector system, and to reduce the extent to which the AFPs were seen as an automatic source of funds for public sector deficits. This was difficult, however, for a number of reasons. In the wake of the 1982-1983 financial crisis, private instruments were considered to be risky, and the AFPs were governed by strict controls regarding risk and property distribution. In addition, because many owners were reluctant to relinquish control of their firms, there were few private equity offerings. Thus, the shares of SOEs being privatized represented a significant new source of instruments in which the AFPs could invest. By the end of 1989, shares of private and privatized firms represented 10% of AFP assets, compared with 6% in 1987.

[8] Dominique Hatchette and Rolf Lüders, Privatization in Chile, 1993.

As a result, the social security reform aided the government's privatization policies. The dramatic flow of funds pouring into the private investment accounts expanded the capacity of the capital markets to absorb shares of state enterprises being sold to the public. Moreover, the existence of the private pension system facilitated employee ownership of privatized entities. Some SOEs, such as the steel and mining conglomerate, Compañía de Acero del Pacífico (CAP), offered loans at little or no interest to workers and executives based on salary and number of years with the company, using their individual retirement funds as collateral.

In addition, through the AFPs, many workers came to participate indirectly in the ownership and control of a number of large privatized traditional SOEs. In several of these entities, particularly the main public utilities, worker representatives are a majority of the board of directors. Since most of these worker representatives are highly qualified professionals committed to maximizing financial returns for the enterprises they direct, to date there have been few conflicts of interest between their roles as workers and as capitalists.

Perceived Weaknesses of the System

Overall, the privatization of Chile's social security system has been extremely successful, and the model is in demand around the world. However, it is not without its weaknesses. A partial list of the shortcomings of the system perceived by informed observers includes the absence of an alternative plan if the current high rates of investment returns should decline significantly, the need for an expanded aggregate size of the safety-net pension program for destitute elderly, an unnecessarily heavy allocation in AFP portfolios to government debt, the need to expand the listing of acceptable prudent investment instruments issued by entities outside of Chile, and a lack of focus on the health and education sectors in the country.

One critic of the Chilean private pension system concluded that it is a compulsory saving scheme rather than a complete pension system. Some perceive that the system fails to cover the risk of personal misfortune, such as extended illness, disability, or unemployment. Others see a shortcoming in risks associated with general economic declines and negative interest rates relative to rapid inflation. A weakness in the system for some low income workers is that the income from their accumulated contributions may provide fall below the poverty line in retirement.

Conclusion

The net effect of the privatization of the social security system in Chile, as well as that of other state-owned-entities, has contributed strongly to the notable accomplishments of this small country, with its population of only 13 million. Chile is arguably the best managed economy in Latin America, and among the newly industrialized countries, it was ranked fifth-most competitive, behind Singapore, Hong Kong, Taiwan, and Malaysia, by Switzerland's World Economic Forum in 1993. It has eliminated price controls on 3200 items since 1973. It turned an autocratic, state-dominated system into a market economy. Its budget is in surplus. The country now has fewer non-tariff barriers than either the U.S. or Canada. Exports, which were 12% of GDP 21 years ago, are now approximately 35%. Annual

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inflation, which exceeded 500% in 1974, was approximately 8% in 1994. Investment, including significant funds from abroad, has been running at almost 20% of GDP in the last few years. And many new industries have been created in Chile since 1973, not the least of which is the active business of advising many other, often much larger, countries on the mechanisms for successfully privatizing their industries and, especially, their social security systems.

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APPENDIX A: PRE-REFORM PENSION BENEFITS

The following overview of benefits paid under the three largest social security programs offering pensions demonstrates some program differences.

•**Servicio de Seguro Social (SSS):** Women became eligible to receive a retirement pension at age 55, and men at age 65. The plan required a minimum of 800 weeks of participation, or approximately 15 years, and a density factor of 0.5 for the period of affiliation. The density factor was a function of the number of weeks of participation in the program and the total number of weeks of the determined period. Pension benefits were determined by a monthly salary base, which was calculated from the employee's reported salary for the last five years of work. The pension payment was 50% of the monthly salary base, plus 1 % of the salary for each 50 weeks of employment over the first 500 weeks, to a maximum of 70% of the monthly salary base. There was no age requirement for disability pensions. A total disability pension was equivalent to a normal retirement benefit, while a partial disability pension was 50% of that amount. Surviving widow pensions were 50% of the amount of the original pension. Pensions were also paid to orphans, if the employee had participated in the program for at least 50 weeks. The amount paid was up to 20% of the retiree's pension for each child.

•**Private employees program (EMPART):** Both men and women became eligible to receive a retirement pension at age 65. This age limit could be reduced by one year for each five-year period of participation, to a maximum reduction of five years. The amount of the pension was calculated from a salary base multiplied by the number of years of participation in the program, divided by 35. The pension, however, could not exceed the salary base. In general, the upper limit for pensions in the various programs were established at a common level, expressed as "sueldos vitales," or vital salaries, with a variable scale depending upon the time of focus. This limit was established at 8 times vital salaries in 1963, reaching 50 times vital salaries in 1980. This program had a seniority pension for men with 35 years of service and for women with 30 years of service. Of the 30 years of service, the employee had to have participated in the program for at least 25 years, or 20 years if the person was over 55 years old. This program had a pension benefit for invalids less than 65 years of age, which required at least 3 years of participation in the program. The amount of the pension was 70% of the salary base, plus 2% of the same for each year of service over 20 years. Widows' pensions were calculated at 50% of the retiree's pension. Orphans' pensions were 15% of the retiree's pension, for each child.

•**Public employees social security program (CANAEMPU):** Retirement pensions were based on a minimum of 10 years of participation in the program and a retirement age of 65. The amount of the pension was calculated by multiplying the salary base by the number of years of participation in the program and dividing this number by 30. The pension could not exceed the salary base. A seniority pension was established with 30 years of service and was paid the participant's salary base. An emergency pension fund for beneficiaries of deceased employees was established provided that the employee had participated in the program for at least 10 years. Those first in line to receive this pension were the employee's wife and children. The employee's legitimate mother and natural children were second in line, followed by sisters and brothers of the deceased.

- **Bankers' pension fund (Caja Bancaria de Pensiones)**: Employees were required to be 55 years old and had to have participated in the program for at least 3 years in order to receive a retirement pension. The amount of the pension was calculated by multiplying the salary base by the number of years in the program and dividing this number by 35. A seniority pension was available to persons with 24 or more years of service in the program, or a person asked to leave employment of the bank by the management, or having had at least 13 years of employment in the program. The amount of the pension was calculated by multiplying the number of years of participation by the salary base and dividing by 35. The bankers program had a benefit for invalids, but the cause had to be related to work in the bank. The bankers' program also had an emergency pension benefit similar to those mentioned above.

As these descriptions illustrate, there were significant differences among the various social security programs in both the age at which one was eligible to receive retirement benefits and the amount of those benefits. Other major differences in terms of the minimum number of years of participation and the methods of calculations of final pension payments were widespread.

Privatization of Pension Funds: The Case of Chile

LIST OF EXHIBITS

EXHIBIT 1
RECOGNIZED SOCIAL SECURITY PROGRAMS IN CHILE AS OF 1979

1. Servicio de Seguro Social (SSS)
2. Caja de Prevision de Empleados Particulares (EMPART)
3. Caja Nacional de Empleados Publicos y Periodistas: Sector Emps. Publicos (CANAEMPU)
4. Caja Nacional de Empleados Publicos y Periodistas: Sector Emps. Periodistas (Periodistas)
5. Caja Bancaria de Pensiones (Bancaria)
6. Caja de Prevision y Estimulo de los Empleados del Banco de Chile (Banco de Chile)
7. Seccion Prevision Social del Banco Central (Banco Central)
8. Caja de Prevision y Estimulo de los Empleados del Banco del Estado (Banco del Estado)
9. Caja de Prevision de la Defensa Nacional (Defensa)
10. Direccion de Prevision de Carabineros de Chile (Carabineros)
11. Caja de Prev. de la Mar. Mercante Nac.: Sector Tripulantes de Naves y O. M. (TRIOMAR)
12. Caja de Prev. de la Mar. Mercante Nac.: Sector Empleados y Oficiales (CAPREMER)
13. Caja de Prevision de Empleados del Hipodromo Chile (Hipodromo Chile)
14. Caja de Retiro y Prev. Soc. de Emps. del Club Hipico de Santiago (Club Hipico de Santiago)
15. Caja de Retiro y Prevision Social del Valparaiso Sporting Club (Sporting Club)
16. Caja de Ret. y Prev. Soc. de Emps. del Club Hipico de Antofagasta (Club Hipico Antofagasta)
17. Caja de Ahorro y Retirp de Emps. del Club Hipico de Concepcion (Club Hipico Concepcion)
18. Caja de Prev. Soc. de los Profs. Hipicos de los Hipodromos Centrales (Hipodromos Centrales)
19. Caja de Ahor. y Ret. de Prepars. y Jinetes de Antofagasta (Preparadores y Jinetes Antofagasta)
20. Caja de Ret. y Prev. de Prepars. y Jinetes de Concepcion (Preparadores y Jinetes Concepcion)
21. Caja de Previson para Empleados del Salitre (Salitre)
22. Caja de Prevision Gildemeister (Gildemeister)
23. Seccion Especial de Prevision para los Empleados de la Compania Cervecerias Unidas (CCU)
24. Sec. de Prev. Soc. de los Emps. de Cia. Consumidores de Gas de Santiago (Compania de Gas)
25. Seccion de Retiro de los Empleados de Mauricio Hochschild y Cia. Ltda. (Hochschild)
26. Caja de Retiro y Prevision de Social de los Ferrocarriles del Estado (FF. CC.)
27. Caja de Retiro y Prev. de los Emploeados Municipales de la Republica (EE. MM. Republica)
28. Caja de Prevision Social de los Empleados Municipales de Santiago (EE. MM. Santiago)
29. Caja de Prevision Social de los Empleados Municipales de Valparaiso (EE. MM. Valparaiso)
30. Caja de Prev. Emps. y Obreros de Empresa Metropolit. Obras Sanitarias:Emps. (EE. EMOS)
31. Caja de Prev. de Emps. y Obreros de Empresa Metropolitana de Obras Sanitarias (OO. EMOS)
32. Caja de Prevision Social de los Obreros Municipales de la Republica (OO. MM. Republica)

EXHIBIT 2

ACTIVE PARTICIPANTS IN EACH SOCIAL SECURITY PROGRAM (1979)

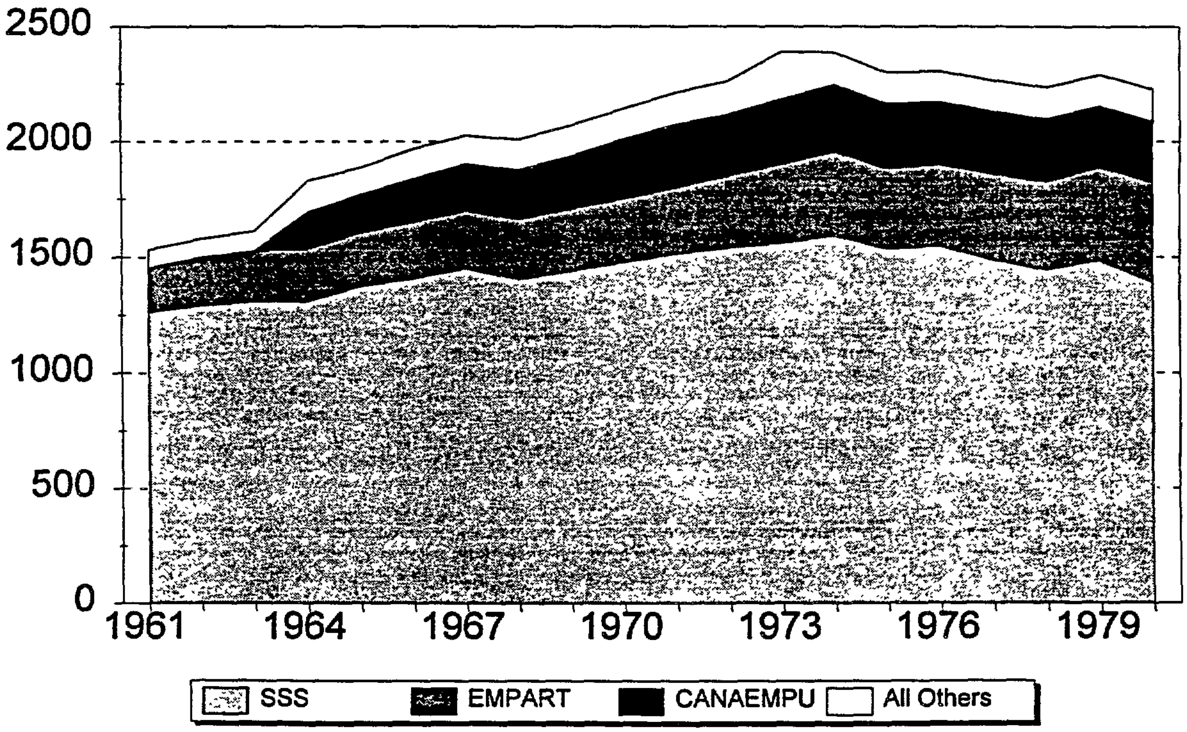
Social Security Program	Number of Participants	% of Total Participants
SSS	1,486,400	64.87
EMPART	403,000	17.59
CANAEMPU	266,298	11.62
Periodistas	15,368	0.67
Bancaria	13,269	0.58
Banco de Chile	2,648	0.12
Banco Central	1,077	0.05
Banco del Estado	7,432	0.32
TRIOMAR	28,312	1.24
CAPREMER	23,599	1.03
Hipodromo Chile	493	0.02
Club Hipico de Santiago	566	0.02
Sporting Club	352	0.02
Club Hipico Antofagasta	61	*
Club Hipico Concepcion	81	*
Hipodromos Centrales	1,170	0.05
PP. y JJ. Antofagasta	23	*
PP. y JJ. Concepcion	46	*
Salitre	3,379	0.15
Gildemeister	957	0.04
CCU	934	0.04
Compania de Gas	765	0.03
Hoschild	114	*
FF. CC.	12,671	0.55
EE. MM. Republica	5,489	0.24
EE. MM. Santiago	1,842	0.08
EE. MM. Valparaiso	280	0.01
EE. Emos	1,132	0.05
OO. Emos	884	0.04
OO. MM. Republica	12,541	0.55
TOTAL	**2,291,183**	**100.00**

* Insignificant percentage
Note: The social security programs of the police and military are not included in this table.
Source: Superintendencia de Seguridad Social, La Prevision en Chile Ayer y Hoy, by Hernan Cheyre V.

EXHIBIT 3

NUMBER OF PARTICIPANTS IN THE THREE LARGEST SOCIAL SECURITY PROGRAMS VS. TOTAL PARTICIPANTS IN SYSTEM (Thousands of Persons)

YEAR	SSS	EMPART	CANAEMPU	TOTAL
1961	1264.0	189.3	-	1531.3
1962	1291.0	210.0	-	1581.0
1963	1310.0	218.0	-	1612.6
1964	1310.0	225.0	160.0	1828.2
1965	1375.0	230.0	167.0	1887.9
1966	1410.0	240.0	188.1	1968.8
1967	1450.0	248.0	205.5	2025.2
1968	1406.0	257.0	214.5	2008.5
1969	1440.0	266.0	231.9	2068.6
1970	1476.0	275.0	261.3	2141.0
1971	1513.0	287.0	275.5	2212.9
1972	1540.0	310.0	269.2	2263.5
1973	1561.0	340.0	284.3	2390.9
1974	1594.0	361.0	291.6	2387.5
1975	1537.0	345.0	284.0	2299.2
1976	1550.0	350.0	273.4	2304.9
1977	1490.0	370.0	273.0	2266.9
1978	1447.0	378.0	275.4	2235.2
1979	1486.0	403.0	266.3	2291.2
1980	1394.0	430.0	264.2	2226.9



Note: The social security programs of the police and military are not included in this exhibit.
Source: Superintendencia de Seguridad Soci La Prevision en Chile Ayer y Hoy. by Hernan Cheyre V.

EXHIBIT 4

NUMBER OF ACTIVE WORKERS FOR EACH RETIREE, 1955 - 1979

Year	SSS	CANAEMPU	EMPART	BANCARIA	TOTAL
1955	16.6	6.2	51.0	7.1	12.2
1960	10.8	7.4	16.9	3.2	8.6
1965	5.9	4.1	9.5	3.0	5.3
1970	4.5	8.0	13.1	3.0	4.4
1975	3.2	6.3	5.0	2.6	3.3
1979	2.3	3.6	4.3	3.1	2.5

Source: Estudio de la Reforma Previsional: Prevision Social Chilena. Antiguo Systema 1925-1980.

RELATIONSHIP BETWEEN ACTIVE WORKERS AND RETIREES IN THE SOCIAL SECURITY SYSTEM (SSS) 1960 - 1980

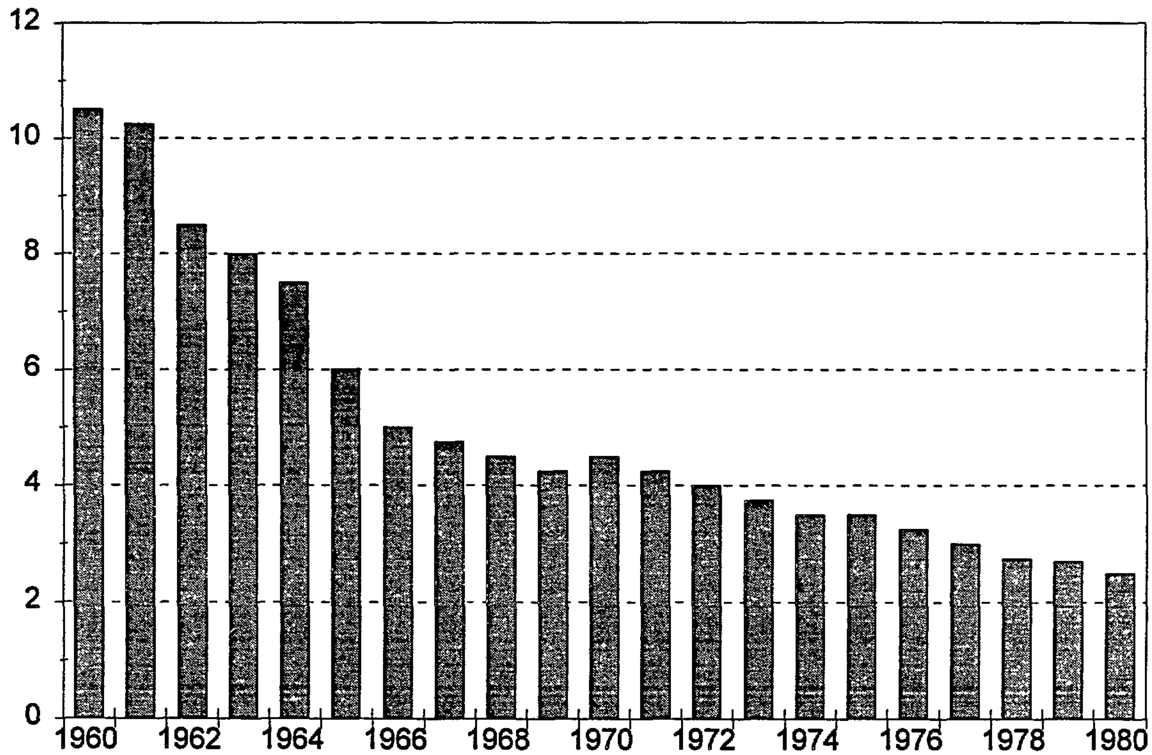


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EXHIBIT 5

CONTRIBUTION LEVELS OF THE THREE LARGEST SOCIAL SECURITY PROGRAMS UNDER THE OLD SYSTEM

	SSS			EMPART			CANAEMPU		
Year	Worker	Employer	TOTAL	Worker	Employer	TOTAL	Worker	Employer	TOTAL
1968	7.25	14.25	21.50	9.00	17.00	26.00	11.00	5.00	16.00
1969	7.25	14.25	21.50	9.00	17.00	26.00	11.00	5.00	16.00
1970	7.25	14.25	21.50	9.00	17.00	26.00	11.00	5.00	16.00
1971	7.25	14.25	21.50	9.00	17.00	26.00	11.00	5.00	16.00
1972	7.25	14.25	21.50	9.00	17.00	26.00	11.00	5.00	16.00
1973	7.25	14.25	21.50	9.00	17.00	26.00	11.00	5.00	16.00
1974	7.25	15.95	23.20	9.00	17.00	26.00	11.00	5.00	16.00
1975	7.25	15.95	23.20	9.00	17.00	26.00	11.00	5.00	16.00
1976	7.25	15.95	23.20	9.00	17.00	26.00	11.00	5.00	16.00
1977	7.25	15.95	23.20	9.00	17.00	26.00	11.00	5.00	16.00
1978	7.25	15.95	23.20	10.16	15.00	25.16	11.00	5.00	16.00
1979	7.25	15.95	23.20	10.16	14.75	24.91	11.00	4.75	15.75
1980	7.25	15.95	23.20	10.16	14.75	24.91	11.00	4.75	15.75

Source: Superintendencia de Seguridad Social

EXHIBIT 6

Development of Participation in the New Social Security System

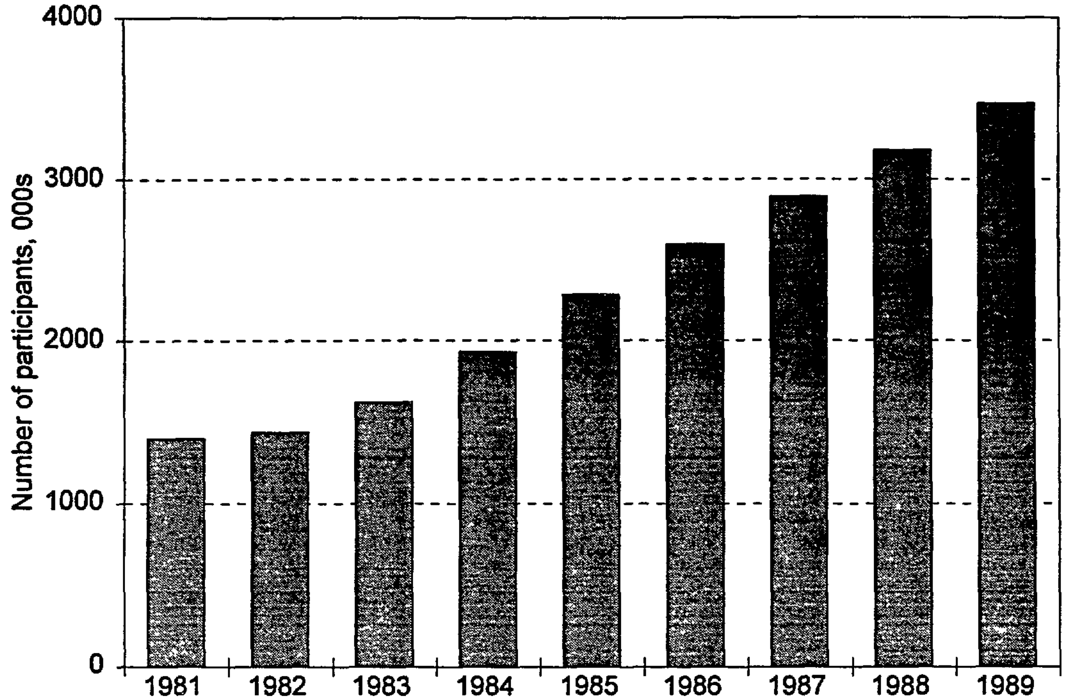
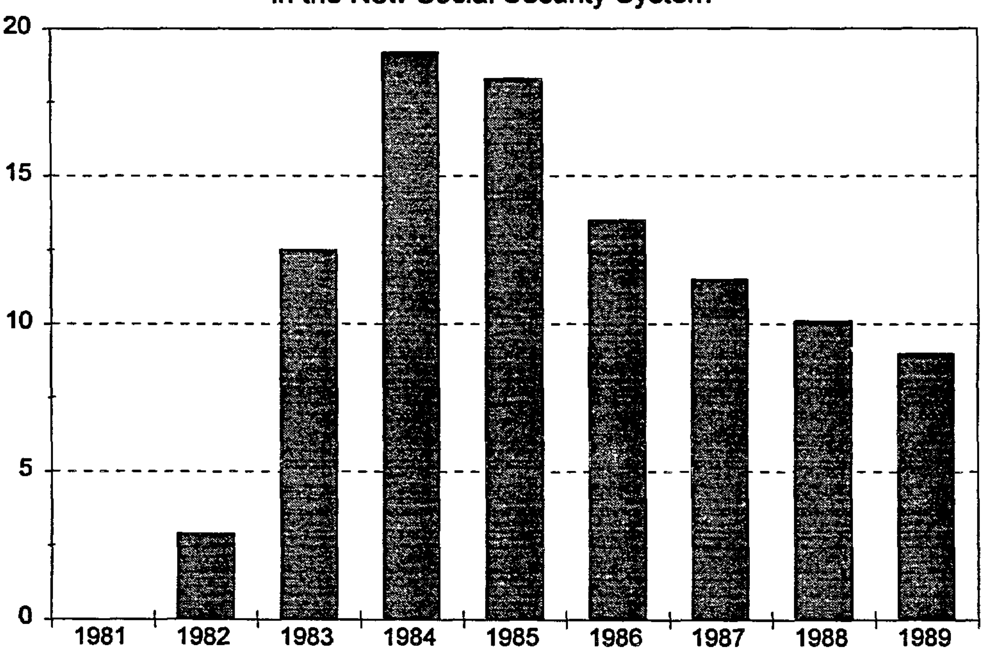


EXHIBIT 7

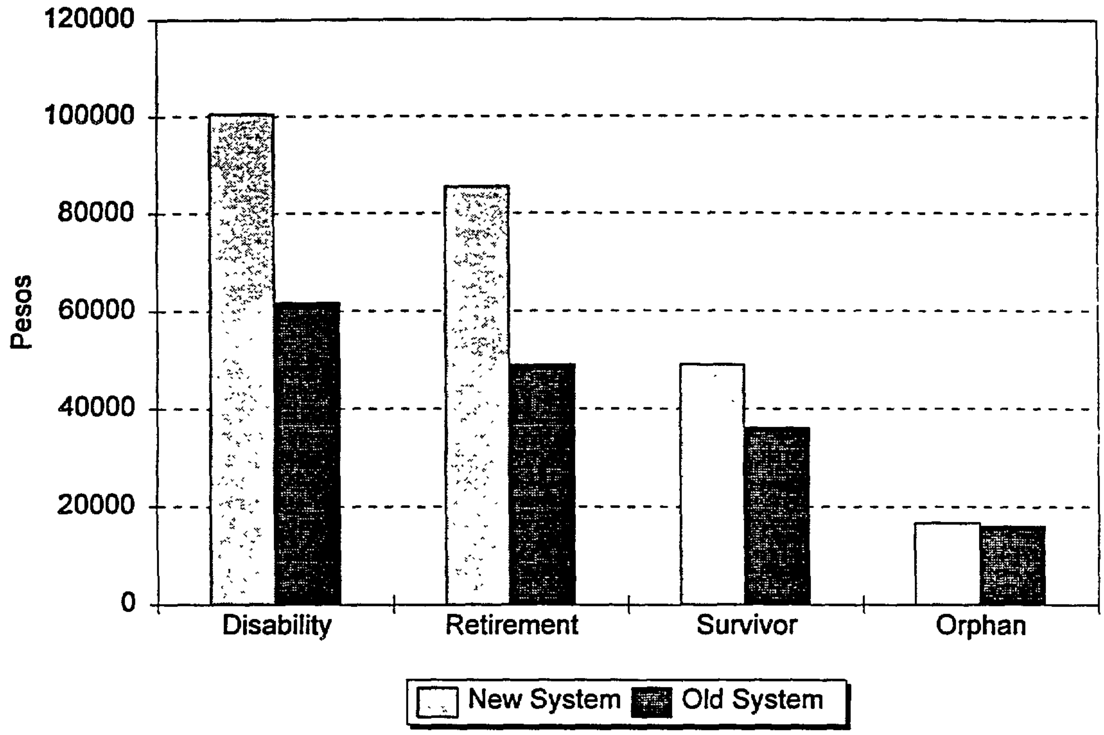
Percentage Increase of Participation in the New Social Security System



Source: Boletin Estadistico Mensual S.A.F.P.

EXHIBIT 8

Average Pension Benefits Paid by the New and Old System in October 1994



Source: Boletin Estadisticos del SAFP

EXHIBIT 9

BENEFICIARIES UNDER THE NEW SYSTEM

BENEFIT	1982	1983	1984	1985	1986	1987	1988	1989	1990
Retirement		393	1,730	2,647	4,835	7,980	12,980	19,952	24,168
Disability	791	2,272	4,058	5,729	7,979	10,620	12,786	14,388	15,025
Widow	1,108	2,521	4,340	5,872	7,740	9,797	11,506	13,512	15,545
Orphan	2,566	5,821	9,665	11,768	14,539	16,847	18,669	20,547	20,724
TOTAL	4,465	11,007	19,793	26,016	35,093	45,244	55,941	68,399	75,462

Source: Superintendencia de AFP

EXHIBIT 10

TOTAL MARKET VALUE OF PENSION FUND INVESTMENTS
(in millions of U.S. dollars*)

A.F.P.	September 1993	December 1993	March 1994	June 1994
APORTA	-	0.00	63.15	91.56
ARMONIZA	-	-	0.00	39.28
BANGUARDIA	132.71	183.33	215.66	210.60
BANSANDER	360.74	431.57	530.09	615.20
CONCORDIA	163.75	173.73	182.35	204.69
CUPRUM	1408.39	1600.66	1736.95	1896.52
EL LIBERTADOR	353.04	374.67	388.81	414.64
FOMENTA	74.69	88.77	104.56	125.49
FUTURO	100.80	113.57	121.52	126.85
GENERA	4.57	12.57	16.77	21.62
HABITAT	2472.20	2745.22	2973.18	3300.70
INVIERTA	217.21	**	**	**
LABORAL	3.97	6.65	9.92	3.57
MAGISTER	273.83	290.42	310.75	345.68
PLANVITAL	212.58	**	**	**
PLANVITAL, S.A.	**	428.70	426.75	453.53
PREVIPAN	23.57	29.08	36.37	50.04
PROTECCION	828.00	986.41	1064.12	1221.10
PROVIDA	3065.69	3394.71	3634.04	3994.10
QUALITAS	43.55	54.83	63.20	66.02
SANTA MARIA	2318.40	2530.70	2726.89	3025.52
SUMMA	1380.55	1530.71	1707.57	1909.11
UNION	949.42	962.27	993.44	1090.79
VALORA ***	0.00	3.71	7.96	9.65

NOTES:
* Exchange rate as of each quarter-end.
** A.F.P. Planvital bought A.F.P. Invierta in December 1993 and was renamed A.F.P. Planvital, S.A.
*** A.F.P. Norprevision changed its name to A.F.P. Valora S.A. on March 30, 1994.
SOURCE: Boletin Estadistico No. 122 and Haines Point Associates

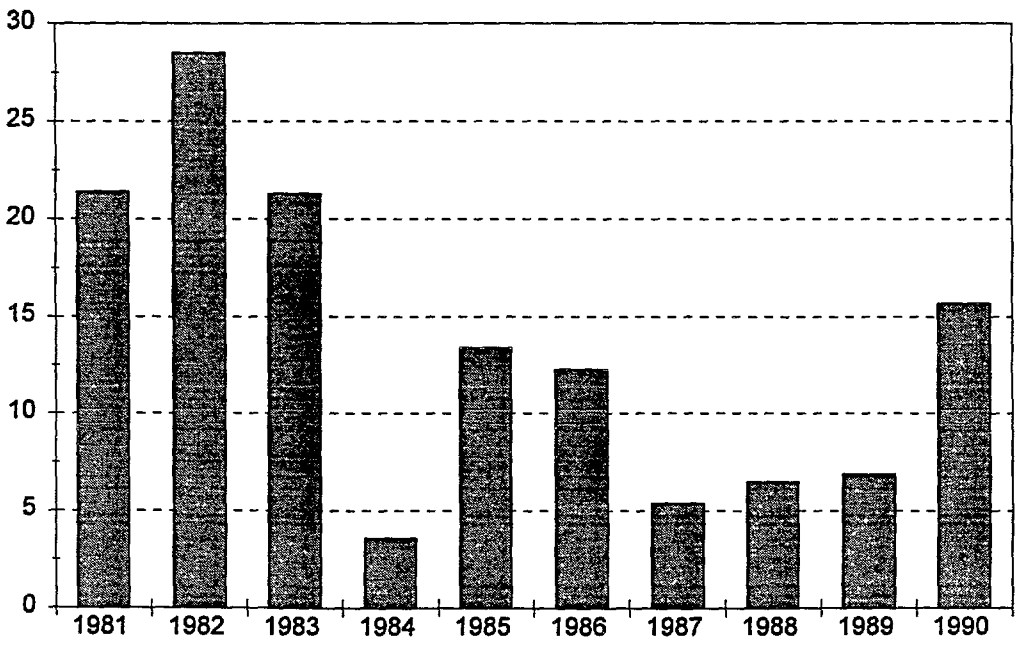
EXHIBIT 11

PARTICIPATION IN THE MARKET OF EACH AFP, 1981 - 1989
(by percentage of the total market)

AFP	1981	1982	1983	1984	1985	1986	1987	1988	1989
Alameda	5.7	8.7	7.1	7.3	0.0	0.0	0.0	0.0	0.0
Bannuestra	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Concordia	1.3	1.9	2.2	2.3	2.3	2.8	3.1	3.3	3.5
Cuprum	0.7	1.3	1.2	1.3	1.1	1.0	1.1	1.2	1.4
El Libertador	2.1	1.5	2.2	2.4	2.5	2.2	2.2	2.4	2.3
Futuro	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2
Habitat	5.7	6.8	10.0	10.5	11.8	12.7	13.9	15.7	16.7
Invierta	9.1	8.3	7.4	7.2	6.7	6.1	5.4	4.5	4.1
Magister	0.5	0.9	1.6	1.6	1.7	1.7	1.8	1.7	1.7
Planvital	3.5	4.1	3.4	3.2	3.0	2.7	2.6	2.7	2.7
Proteccion	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.6	0.8
Provida	32.9	31.5	30.7	30.3	29.9	29.2	28.5	28.3	28.9
San Cristobal	13.7	9.5	7.5	7.3	0.0	0.0	0.0	0.0	0.0
Santa Maria	20.4	19.2	18.7	18.5	18.8	19.7	20.9	20.5	19.8
Summa	4.4	6.2	8.0	8.2	8.7	9.3	9.2	8.9	8.4
Union	0.0	0.0	0.0	0.0	13.6	12.5	11.5	10.4	9.7
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

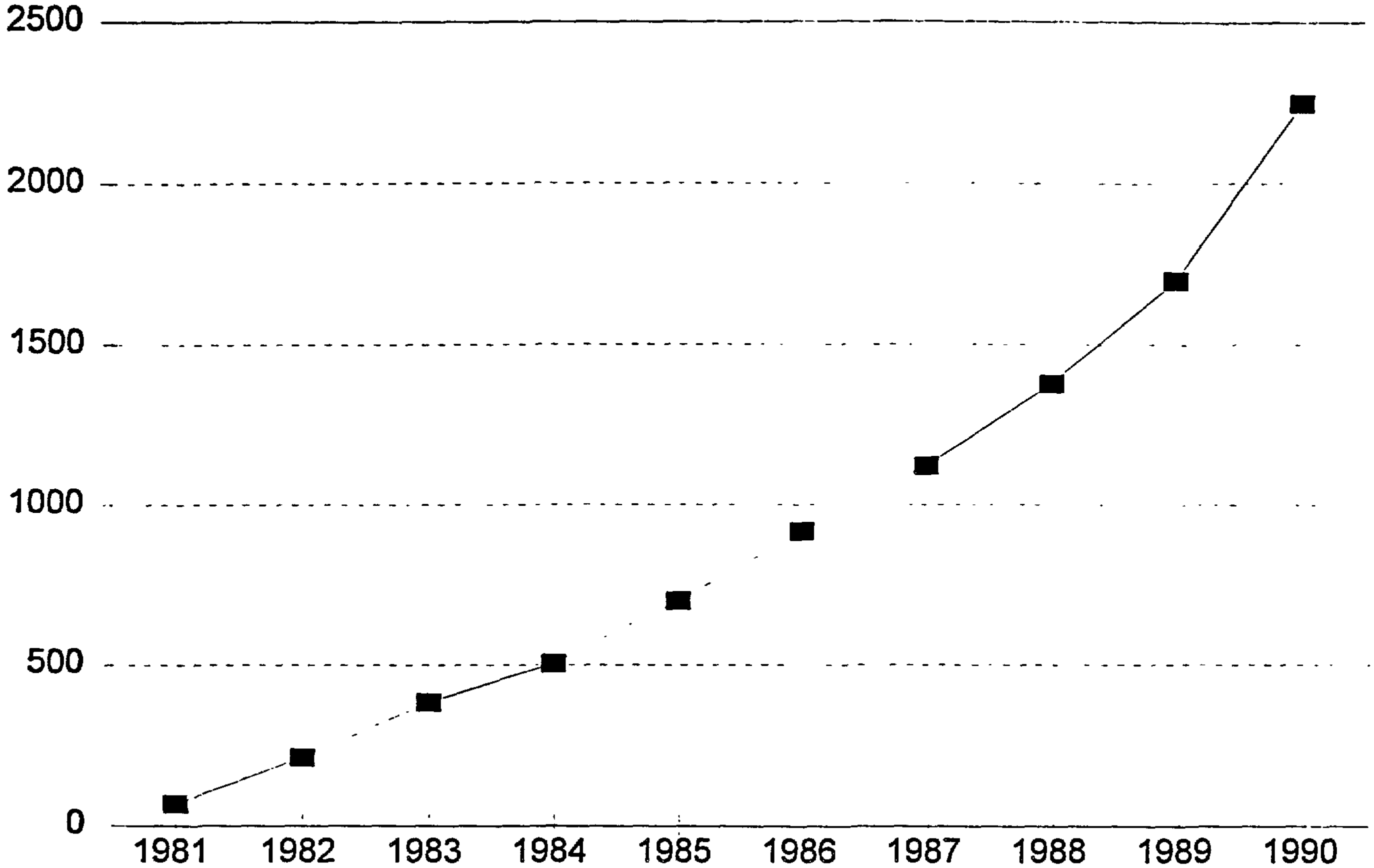
Source: Superintendencia de AFP.

EXHIBIT 12
PROFITABILITY OF THE PENSION FUNDS*



* Adjusted for inflation.
Source: Superintendencia de AFP.

EXHIBIT 13
SIZE OF THE AFP MARKET



	Billions of Pesos* December 1990	Growth Rate Percentage
1981	68.24	- -
1982	212.73	211.7
1983	385.18	81.1
1984	507.12	31.7
1985	698.58	37.8
1986	916.31	31.2
1987	1,121.11	22.4
1988	1,377.91	22.9
1989	1,699.32	23.3
1990	2,249.44	32.4

Source: Boletin de Estadistico de SAFP
* Amounts are presented in December 1990 pesos to correct for inflation.

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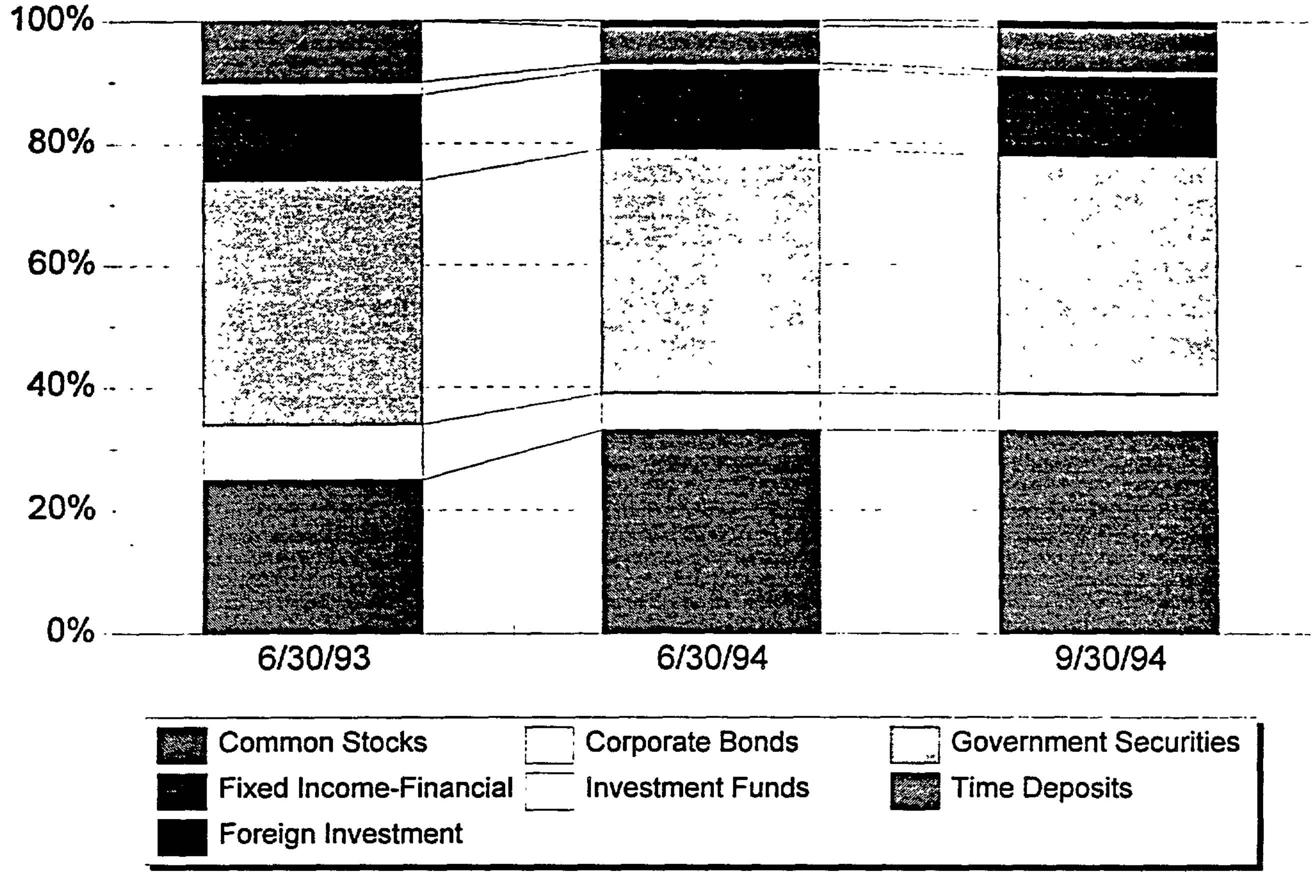
EXHIBIT 14

DIVERSIFICATION OF PENSION FUND INVESTMENTS



Source: Superintendencia del AFP

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EXHIBIT 15

PORTFOLIO DEVELOPMENT OF DIVERSIFIED INVESTMENTS

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Government Securities	28.1	26.0	44.5	42.1	42.6	46.6	41.5	35.4	41.8	41.1
Mortgage Bonds	9.4	46.8	50.7	42.9	35.2	25.5	21.4	20.6	19.6	16.1
Deposits	61.9	26.6	2.7	12.8	20.8	23.2	28.3	29.5	17.6	17.4
Bonds/Debentures	0.6	0.6	2.1	2.2	1.5	0.9	2.6	6.4	10.0	11.1
Common Stocks	--	--	--	--	--	3.8	6.2	8.1	11.0	11.3
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: Superintendencia de AFP.

PRIVATIZATION OF PENSION FUNDS:
The Case of Peru

It was during the Peruvian economic liberalization program which began in the second half of 1990 that the government decided to reform the problematic public pension system. A significant part of this reform was the authorization of private investment firms, called Administradoras de Fondos de Pensiones (AFPs), to participate in the running of the pension system. In addition to transferring management of most of the pension system to private hands, the reform changed the way in which contributions and benefits were calculated.

Background Prior to Reform

The Peruvian pension system can be traced back to 1850, when the government promulgated the *Ley General de Goces*, which created a pension fund for public workers based on years of service. During the first two decades of the twentieth century, the social security system was expanded through the formation of several public and private institutions and the addition of health services, personal insurance, maternity leave, care for the elderly, and other social services.

In 1973, the military government intended to integrate the various aspects of the social security program to improve control and achieve universality. Hence, in May of that year, the government created the National Pension System (SNP) through the promulgation of Law 19990. Subsequently, Law 20212 established the Peruvian Social Security Institute (IPSS) to administer the SNP.

The SNP incorporated the same concepts as existing programs previously established by law, including the mandatory blue-collar pension fund program established in 1962, the white-collar special pension fund established in 1968, and a fund for independent professional drivers established in 1966. The SNP incorporated the pension provisions of these programs and allowed their beneficiaries to continue to participate in them. Retirement beneficiaries under these programs are shown in Exhibit 1.

<u>Demography</u>

The SNP incorporated all contributors to the pension fund system. Contributions were mandatory for all employees and voluntary for self-employed workers and housewives. While the objective of the SNP was to achieve universal coverage, statistics indicate that SNP fell short of this goal. In the twelve years prior to reform, only 67 to 72 percent of the labor force was legally covered by the SNP. Part of this shortfall was attributable to parallel pension systems for university professors, diplomats, fishermen, Lima's electric company workers, and other specific groups which were not convinced that the benefits of joining the SNP justified switching from their current pension system.

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The coverage rate was further reduced by contribution evasion, due to the public perception that contributions were an unfair tax. Although 70 percent of the labor force was covered by the SNP, only 30 to 40 percent actually contributed to the system and were therefore legally entitled to pension benefits. As illustrated in Exhibit 3, evasion of social security contributions in the years prior to reform ranged between 57 and 69 percent of the labor force. Combining information from Exhibits 2 and 3, it appears that only 25 to 31 percent of the employed labor force actually paid their contributions.

Evasion adversely affected both formal sector employment and system collections. A low percentage of the population worked in the formal sector, whereas those in the informal sector could easily avoid the payroll tax. Moreover, the lack of effective control caused a significant degree of evasion within the formal sector by employers as well as employees. Lax supervision by IPSS allowed many employers to skip the required contribution, particularly for domestic help and professional drivers. Since contributions were not mandatory for self-employed workers and housewives, the combination of their relatively low wages and the inefficiencies of the IPSS resulted in negligible voluntary inflows to the system for these occupations.

Benefit Structure of the SNP

Prior to reform, Peru's public pension system was a *defined benefit* scheme operated on a pay-as-you-go basis. In other words, benefits from the system were based on a formula including salary or wages and years of service. Workers were required to remain in the system long enough to qualify for benefits, as stipulated by the plan.

The SNP covered a wide range of risks. Benefits were paid for retirement, disability, and survivorship. As illustrated in Exhibit 4, the majority of the benefits provided by the SNP were retirement-related. The merger of various pension systems when the SNP was established in 1973 made benefits management quite complicated. Consequently, the SNP divided the retirement risk into two specific categories: the General Regime and the Special Regime. Complex rules established eligibility requirements for retirement, disability and early retirement pensions. Minimum and maximum pensions were established.

Many pensions were indexed, particularly after 1984 when the government began making quarterly adjustments to pensions based on the consumer price index (CPI). This indexation exposed the government to financial risk, so it was not implemented until 1987. Nevertheless, the pension adjustments required during hyperinflation in 1988 and 1990, combined with evasion and fraud, caused the social security system to incur significant debt. It is worth noting that despite these adjustments, average pensions were extremely low. Further details on pension benefits are presented in Appendix A.

The composition of pension beneficiaries under the SNP as of June 1992 and their average pensions according to the number of years of contribution are shown in Exhibit 5. Over 38 percent of the beneficiaries had fewer than 15 years of contribution, and as such were covered

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under the Special Regime or the reduced-pension scheme of the General Regime. The average monthly pension as of June 1992 was 107 new soles (US$91). This figure was higher than the 1992 average minimum wage (69 new soles), but lower than either the average wage of general government workers (136 new soles) or the average wage in the formal private sector (609 new soles) for that year.

As of September 1992, 90 percent of the approximately 200,000 beneficiaries received a monthly pension of between 60 and 140 new soles (US$44 to US$102). Only 0.08 percent of the beneficiaries (167 persons) received the minimum monthly pension of 8 new soles. Information was not available to conduct a full analysis of the evolution of pensions over time. It is important to note, however, that pensions were not fully adjusted during the periods of hyper-inflation in September 1988 and August 1990.

Financing

Under PAYG programs like SNP, payroll taxes from active workers fund pensions to retirees and other beneficiaries. A drawback of PAYG programs is that they often become under-funded over time, since benefits payments generally outstrip incoming payroll tax revenues from workers and their employers. Another basic cause of under-funding in PAYG systems is the fact that at the inception of a social insurance program, the government usually recognizes prior work experience of those covered by the new plan and must make immediate benefit payments, when there are few resources in the fund. The government usually meets any deficit if reserves are not sufficient to meet required pension payments.

As illustrated in Exhibit 6, the SNP's contributor/beneficiary ratio had declined in the decade prior to reform. The population of contributors grew at a rate of 49 percent, whereas the number of beneficiaries increased 22-fold. In 1980, there were 24 contributors for each beneficiary; by 1991, this had declined to an average of 11 contributors for each beneficiary.[1]

Monthly contributions were calculated as a percentage of the worker's wage. From January 1980 to November 1984, this rate was 7.5 percent; it was increased to the current level of 9 percent in December 1984. Employers were required to contribute 6 percent of an employee's wages, with the employee paying 3 percent.

PAYG schemes are typically inititated in demographically young countries. Despite the initial outlay of funds during the start-up phase of a PAYG program, when the government is paying benefits to those with prior work experience, the program fund will eventually begin to accumulate significant surpluses, since the number of active contributors outweigh the relatively low number of beneficiaries. While the labor force and contributions grow steadily, the number of beneficiaries increases over time at a faster pace. Therefore, system

[1] This ratio implies that, without considering fund reserves (which indeed were non-existent by that time), the average monthly pension could not feasibly exceed the average wage of those 11 contributors, since the contribution rate is 9 percent.

sustainability depends on an effective management system and an effective investment policy during the years when there is a surplus of funds in order to cover future liabilities.

In Peru, however, the SNP inherited liabilities from previously existing pension systems, and over a period of several years, economic distortions led to a significant reduction in the formal labor force and subsequent reduction in the contribution base. Management further deplete fund reserves by proving incapable of effectively investing surplus funds, failing to establish mechanisms to protect funds against a long period of hyper-inflation, or resisting the temptation to commingle funds with other government programs.

Government control of IPSS investments was non-existent. Presumably, a significant percentage of revenues was invested in certificates of deposit and government papers with low or negative returns. In fact, the financial system had a negative real interest rate for most years between 1973 and 1991, when the need for reform became apparent. Further, significant amounts of SNP revenues were used to cover the health system deficit instead of being invested. Although there are no reliable data, most informed observers believed that the IPSS health system deficit had been financed by the IPSS social security.

Estimates of the contributions and payments, presented in Exhibit 7, show the declining reserves in balance relative to both GDP and government spending, particularly after 1987. These figures imply near equal levels of payments and contributions by the late 1980s, and though official data for 1991 and beyond are not available, IMF statistics show a general trend toward a real fiscal drain. When pension liabilities began to approach the level of SNP revenues, particularly after 1988, profitable investments were non-existent, the system was operating at a deficit, and an imminent crisis seemed inevitable.

Management

Given that IPSS was run by a government-appointed Board of Directors, the ability of the board to act independently was questionable. The most significant administrative problem was commingling finances for the health and social security systems, a common problem among the social security systems in most Latin American countries. Economic and political problems led to a deterioration of IPSS finances, and the various administrations were unable to successfully manage the system. A vicious circle of external problems (economic crises) was thus exacerbated by internal inefficiencies (poor management).

The extent of management difficulties was apparent in the lack of statistical information. IPSS data are not completely reliable and contain significant inconsistencies, particularly for the years prior to 1980. Contributions were not tracked systematically, hence, in most cases, a worker's years of contributions were simply estimated. In addition, administrative cost estimates were unreliable. These factors complicated the transfer of past contributions from the IPSS to private administrators following the 1992 reform.

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Reform Initiative

Impetus for Reform

The critical financial situation of the IPSS, combined with ineffective administration and poor customer service, generated numerous protests from IPSS beneficiaries. In the late 1980s, pension payments were delayed for several months. With monthly inflation running at 30 percent, the purchasing power of those payments that were received became insignificant, despite quarterly indexation. Service problems and the non-indexation of pensions prior to the hyper-inflationary periods of September 1988 and August 1990, caused people to take legal actions against IPSS. Several of these cases are still unresolved. In 1989, the manager of the IPSS was brutally assassinated.

In August 1990, the government of President Fujimori took power and established a basis for broad economic reform. After an initial economic shock that sent prices skyrocketing, a new set of policies was announced and carried out. The package included trade liberalization, tax reform, adequate tariffs on public goods and services, privatization, and a re-evaluation of the role of the state.

One keystone of the economic reform was fiscal equilibrium, a goal that required a remedy to the growing IPSS deficit. In fact, the reform of the IPSS was central to the framework of the government's overall privatization plan. Disastrous service and public discontent only reinforced the call for social security reform. In 1991, the new Minister of Finance, Carlos Bologna, led the reform and initiated work in the application of a private pension system based on the Chilean model.[2]

The Reform Process

The success of the Chilean pension reform initiated in 1981, coupled with Fujimori's emphasis on the new role of the state as a regulator and promoter of private investment, generated a broad consensus that a private pension system would be appropriate for Peru. The positive effects of the Chilean private system on domestic savings and capital markets were broadly acknowledged, as was the efficiency of the fund management itself.

Although the creation of a private system was universally approved by labor unions and political parties, the debate among experts focused on the relevance of maintaining the public system. Ultimately, the government decided to continue offering the SNP as a parallel and alternative system. The decision to preserve the SNP set the Peruvian scheme apart from the Chilean case, where all new entrants to the labor market were required to register in the new private pension system.

[2] Following his resignation in 1993, Bologna became a shareholder in Horizonte, one of the largest private pension administrators.

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The New System

On December 6, 1992, the official newspaper published Law Decree 25897. This law created the Private System of Pension Fund Administration (SPP), formed by the Private Pension Fund Administrators (AFPs). AFPs were put in charge of fund management under the supervision of the Superintendency of Private Pension Funds (SAFP). There was no significant opposition from labor unions or political parties.

Law Decree 25897 also defined the regulatory framework for the creation and operation of AFPs, the role of the Superintendency, and the specific characteristics of the SPP, such as the means of contributions and benefits. Other complementary laws and regulations have subsequently been announced.

Eight AFPs began operations in June 1993. The minimum capital requirement was established at 500,000 new soles (approximately US$500,000); this amount is increased yearly according to the inflation rate. The eight AFPs had a total capital of 52 million new soles at the beginning of operations, 44 percent of which was foreign capital. The role of AFPs is to manage pension funds in order to provide benefits for retirement, disability, survivor, and funeral expenses. The SPP does not cover health services or workman's compensation, which are still under IPSS management.

The Superintendency is a public institution with functional, administrative, and financial autonomy. Its duties include regulation and supervision of the AFPs' operations and investments. It is financed by its own revenues, which come primarily from workers' monthly contributions. The Superintendent has ultimate authority and is appointed by the president for a 5-year period.

Demography

Since June 1993, both employees and self-employed workers have been able to choose between enrolling in the new pension system (SPP), or the IPSS. New entrants to the labor force can participate in the SPP and select any AFP, or they can register in the IPSS and join the SNP. Workers covered by the IPSS prior to the creation of the private system can switch to the SPP at any time. Contributors also have the option to switch back to the IPSS until June 1, 1996 if they are men over 55 or women over 50, or if they believe they were entitled to a recognition bond upon enrollment in the SPP.[3] In any case, an individual who wishes to switch back to the IPSS must have contributed to an AFP for at least 4 consecutive months.

Workers under the SNP who switch to the SPP receive a 10.23 percent wage increase, and are also entitled to an additional 3 percent increase above the already augmented remuneration.

[3]Workers who enroll with an AFP must declare if they are entitled to an IPSS refund for past contributions, the so-called "recognition bond."

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This switch relieves the employer from making the 6 percent contribution of the employee's wages to the SNP, however are required to increase workers' salaries by more than 13 percent. While labor costs may diminish in the long run, the lump-sum raise caused cash problems for some employers. The potential impact of a lump-sum increase for public workers paid from the national budget led to the government's suspension of the right for public workers to enroll in the SPP after December 31, 1993.

Significant confusion among public employees arose out the procedures for enrolling in the new system and subsequent suspension of this alternative by the government. If they had registered in an AFP before the December 1993 deadline, they could remain in the private system. However, regardless of when they enrolled in SPP prior to the deadline, their participation in the new system did not take effect until January 1, 1994, until which time they continued to contribute to the old system. Further, although AFP affiliation and legal wage increases began in January 1994, public workers were not required to contribute to the new system until May 1994. The situation for public workers who had elected to participate in a non-SNP pension fund program was even less clear, as there was not yet a formal way to estimate their years of contribution. These inconveniences resulted in few public workers enrolling in the SPP.

On the other hand, employees in the private sector have been free to evaluate the relative merits of the two systems without being constrained by their employer's view of the matter. In fact, although some interference from employers was reported, firms were penalized if they obstructed voluntary workers' enrollment. Exhibit 8 demonstrates that after factoring in all of the increases to which a worker is entitled under Law 25897, and deducting the required contributions, the average worker would realize a net wage increase of 1.6 percent by enrolling in the SPP. After all required deductions, the net wage would be slightly higher than if the worker remained in the SNP.

Given the minor differences in net wages between the two systems, other factors have also had an effect on the worker's decision to switch. For example, this calculation does not consider income taxes. If the one-time wage increase for switching to the SPP were to put the worker in a higher tax bracket, an additional 5 to 15 percent of wages would be lost to taxes. In that scenario, the worker would be better off in cash terms by remaining in the SNP. Likewise, expected benefits and quality of service have play an important role in the worker's decision.

Workers must also consider that AFP contribution rates and fees will affect every further wage increase. For example, under the old system, a 100 percent wage increase will generate a net wage of 1,820 new soles for an employee, but only a net wage of 1,795 new soles under the SPP. Thus, workers must evaluate their present-versus-future consumption, since the lower net wage is offset by a higher accumulation in the pension fund.

Workers entering the labor force for the first time has faced a different scenario. In this case, the individual is not entitled to the wage increase; therefore the net wages are greater under the SNP. Here, other expected benefits from participating in the SPP would have to surpass the lower net wage in order to convince the worker to affiliate with the new system.

By the end of 1994, after 18 months of operation, nearly one million contributors had enrolled in the SPP, as shown in Exhibit 9. Approximately 65 percent these contributors registered in 1993, during the first seven months of AFP operations. There rate of enrollment subsequently slowed, and only 25,000 people joined during the last four months of 1994.

There was a marked preference for the new system among young workers--67 percent of AFP contributors are younger than 35. This was most likely due to mistrust of the government and bad experiences with the public pension system, combined with the fact that the possibility of fund accumulation is greater for young people. Older workers generally recognized that the guaranteed pension they would receive from the SNP would be greater than what they could accumulate in an AFP before their retirement.

The number of AFP contributors represents approximately 12 percent of the total labor force. This low percentage, and the declining rate of enrollment, is primarily due to the size of the informal sector in Peru. Only about 30 percent of the total labor force of 12.5 million people work in the formal sector or the *adecuadamente empleados*, which is basically the current target for AFP affiliation. Under-employed or informal workers are unlikely to register in the SPP. It is anticipated, however, that the SPP's target population will grow as the economy consolidates and employment levels increase.

Benefits

The private pension system in Peru, like that of Chile, is a defined contribution system in which the amount of the pension benefits depend strictly on workers' contributions. Therefore, the beneficiary can directly affect his or her future pension and can also closely monitor investment risk.

A contribution equal to 10 percent of wages is mandatory for all dependent workers under the SPP. Self-employed workers who choose to join an AFP pay a maximum of 20 percent of their wage. The actual rate is set by a mutual agreement between the worker and the AFP. All mandatory and voluntary contributions are saved in an Individual Capitalization Account. Both dependent and independent workers can contribute more than the mandatory amounts under a Complementary Capitalization.

At the time of retirement, contributors are endowed with a pension funded by the sum of their own mandatory and voluntary contributions throughout their lifetime; the current value of the "recognition bond;" and any capital gains from the investments made by the AFP managing the individual's account.

Contributors can receive their pensions when they reach 65 years of age under one of the four alternatives:

- **Programmed Retirement Pension**: The contributor makes monthly withdrawals against the balance of his or her Individual Capitalization Account. The amount of the monthly pension is agreed upon by the AFP and the beneficiary, following rules established by the Superintendency. Any remaining balance after the contributor's death goes to the survivors. If there are no survivors, the money returns to the AFP fund and is distributed equally among all participants.

- **Individual Annuity**: The beneficiary receives a fixed pension or monthly annuity payment until death. The AFP and the contributor agree on the amount of the pension, based on the individual's fund and life expectancy. In this case, the AFP must purchase insurance, called a Longevity Fund, for the amount of the pension liability; these investments are regulated by the Superintendency.

- **Joint and Survivor Annuity**: This option is similar to the previous alternative, with the addition of a pension for survivors after the contributor's death. The pension is administered through an insurance company, rather than an AFP. The insurance company secures the Individual Capitalization Account.

- **Temporary Pension with Deferred Annuity**: The contributor obtains a family or individual annuity beginning at a predetermined date, but saves some amount to obtain a pension from the time of retirement up to the date at which the deferred annuity becomes effective.

Early retirement pensions are also permitted. To be eligible, the contributor must have accumulated sufficient funds to receive a monthly pension not lower than 50 percent of the average declared income during the last 120 months. Advance pensions are also possible in the case of permanent total disability.

Financing

By definition, a defined contribution pension system is always fully funded because contributions plus investment returns determine the amount of the pension. By December 1994, the contributions of the participants in the SPP had created a fund of 567 million new soles (US$260 million), which was less than 1 percent of GDP. These values imply that by the end of 1994 the size of the average individual fund was 590 new soles (US$270). This figure must be considered in light of the fact that not all participants joined the system at the same time, and some participants--such as some independent workers or individuals who lost their jobs--do not contribute every month.

Exhibit 10 shows the evolution of the new pension fund system over the first 18 months of operations. The trend in the fund's growth rate is consistent with the rate of AFP affiliations: significant growth in the first two months, followed by an overall decrease. In addition to contributions, the delay in issuance of recognition bonds (RBs) by the government has affected the new pension funds. According to Law Decree 25897, the IPSS was required to provide a refund to workers who decide to join the SPP for any contributions they made to systems managed by the IPSS, up to a limit of 60,000 new soles. This refund, called a recognition bond, depends on the number of months of worker contributions up to December 1992. To be entitled to the bond under the General Regime, workers must have been affiliated with the IPSS by December 1992, and must prove contributions to the SNP during the last 6 months prior to their SPP affiliation as well as at least 48 months between December 6, 1982 and December 5, 1992. IPSS is supposed to transfer the corresponding RB to the contributor's AFP, which registers it into the worker's individual account.

The lack of financial resources or a systematic and complete database created delays in the transfer of RBs by the IPSS. On December 30, 1994, the government promulgated Supreme Decree 180-94-EF, approving the issuance of RBs in favor of the 580,000 workers declared to be entitled to such payments. Total liability represented by the RBs is estimated to be 5,800 million new soles (US$2.6 billion), or approximately 6.5 percent of GDP. Given that the RBs cannot be cashed in until the participant retires, this debt will be distributed over 40 years, from 1995 to 2036. Between 1995 and 1996, the government estimates the cash cost from RBs to be no more than 0.05 percent of GDP. The highest disbursement should occur in year 2015, although the amount should not surpass 0.25 percent of that year's projected GDP.

Few of the workers entitled to an RB still have their old paystubs to prove earlier contributions to the IPSS. Therefore, most of the entitled workers will have to opt for the Contributors Regime, which allows workers to use their annual tax form or *declaración jurada* to show that they contributed to the IPSS during the 6 months prior to AFP enrollment. Under either the Contributors Regime or the General Regime, workers must still prove a minimum of 48 months of contributions to the IPSS as well as the value of their monthly wages for the last 12 months.

Under the Contributors Regime, as shown in Exhibit 11, the IPSS RB calculation recognizes a pre-determined number of months according to the worker's date of birth, but the calculation method is not equitable. The Contributors Regime only recognizes 19 years of contributions made by workers born before December 7, 1936, many of whom may have contributed for more than 35 years. Similarly, the IPSS would recognize a maximum of 4 years of contributions made by workers born after December 6, 1961, although some individuals might have contributed to the system for over 10 years. The lack of a complete and reliable database in the IPSS works against the beneficiaries under the Contributors Regime.

The worker must provide all information regarding RB entitlement to the AFP, which revises it and sends it to the IPSS within 60 days. The IPSS then issues a temporary bond within the following 90 days, but it has up to three years to verify the requested information and issue

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the final bond. The issuance of RBs will strengthen SPP funds and encourage new participants, since workers can then count on an explicit value for their past contributions. RBs will automatically increase the workers' individual accounts and, in turn, the value of AFP funds.

Management

AFPs are responsible for the management of SPP funds, while the recently created Pension Normalization Office (ONP) will replace the IPSS as fund administrator for the those who remain in or elect to join the public pension system. The ONP was created in an effort to separate the IPSS pension system from the IPSS health system. Recent distribution of the recognition bonds will encourage more people to leave the SNP. This assumption, combined with the marked preference of younger workers to join the SPP, indicates that the public system may gradually disappear over the long run.

AFPs were permitted to begin operations on June 21, 1993; by September of that year, eight AFPs were legally registered. Affiliations during the first year did not grow as expected, reaching only 60 percent of the AFPs' initial projections. In August 1994, AFP Horizonte officially absorbed AFP Megafondo, and in November 1994 AFP Nueva Vida absorbed AFP Providencia. By December 1994, only six AFPs were in operation. Exhibits 12 and 13 illustrate the distribution of contributors and funds for each AFP; Exhibit 14 provides the number of contributors, total fund amount, and average fund per work for each AFP.

As of December 31, 1994, AFP Profuturo had the highest number of contributors, but it ranks fourth in terms of fund value. Since all AFPs showed similar investment returns during the first year and a half of operations, it may be concluded that AFP Profuturo's contributors are mainly low-wage workers. AFP Integra had the highest fund/contributor ratio and possessed an average fund per worker of 835 new soles (US$380).

Foreign investors own important shares of Peruvian AFPs. Chilean firms such as Provida (AFP), Cuprum (AFP), Cruz Blanca, and Inversiones Latinoamericanas hold significant amounts of shares in Horizonte (20%), Nueva Vida (19.6%), Profuturo (21.25%), and Unión (40%), respectively. In addition, National Nederlanden B.V. of Holland owns 40 percent of AFP Integra while Banco de la Construcción de Venezuela and Banco Ganadero de Colombia hold 18.18 and 12.5 percent of AFP El Roble, respectively.

The establishment of a private system opened the pension market to competition, which has resulted in better service. Within the SPP, the six profit-seeking AFPs also compete in terms of investment yields, fees, and overall service. If workers are dissatisfied with the services, they can easily switch to another AFP without paying any fee.

Besides general advertising through television, newspapers, and other media, the AFPs hired a number of marketing specialists, or promoters, to sell their services through visits to firms. The SPP initially hired 4,166 promoters in June 1993, each of whom enrolled an average of

15 contributors. However, new affiliations dramatically decreased through 1994 due to market saturation and problems with the enrollment of public sector workers. By December 1994, AFPs relied on only 1,033 promoters, with a December enrollment rate of 4.7 contributors per promoter.

All AFPs show negative operating and net balances, which is normal during the first years of operations. As of November 1994, net losses accumulated to 87.9 million new soles (US$ 42 million). It is estimated that the AFPs will not show balance surpluses for 3 to 5 years, a period of "natural maturation" during which the private pension firms merge and achieve a higher level of efficiency.

Investments

The capital market in Peru is still underdeveloped. The demand for investment assets generated by AFPs exceeds the supply and, in general, there are few options for potential investors. In addition, AFPs are not yet able to participate in the privatization process. Although AFPs foster capital market development, the overall effects will show up in the medium term as AFP funds increase and the economy grows and consolidates.

AFPs are subject to certain investment limits. However, the lack of investment alternatives makes it difficult to comply with regulations. Exhibit 15 provides a comparison of legal limits for various types of instruments and actual investments as of December 1994. Although these limits seek to achieve portfolio diversification, the narrow range of instruments available in Peru has forced the SPP fund to concentrate primarily on time deposits and central bank papers, which together comprise more than half of the total industry investments. Corporate bond purchases are well below their legal limit since only a few large companies raise money in the domestic capital markets, although this situation is gradually changing. In addition, the market for subordinated bonds and mortgage notes in Peru is new, which explains the low investment in these instruments.

The regulations also impose certain global limits. For example, government bonds plus central bank papers should not exceed 40 percent of the portfolio, while the sum of time deposits and financial system bonds cannot surpass 30 percent of total investments. In addition, some typical instruments traded in the domestic stock market (social capital and labor shares, preferential certificates, report operations, derivatives, and mutual funds) cannot exceed 30 percent of the portfolio. The Superintendency examines AFP investments every three months on average, or upon request.

Monetary penalties apply when AFPs exceed the legal limits, although they are allowed to surpass these limits if they can prove that it is due to a lack of profitable investments. In the first 18 months of the new system's operation, the SAFP imposed fines equivalent to 124,000 new soles, with the typical penalty equal to 25,000 new soles. As illustrated in Exhibit 15, investments in time deposits were well beyond the legal limit at the end of 1994.

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All investments must be approved by the Superintendency of Pension Fund Administrators (SAFP). Specifically, securities other than government bonds and central bank papers must be classified according to risk in order to qualify for AFP purchase. The SAFP hires private consultants to conduct the investment risk classification. These consultants examine all proposed instruments, and their approval is required before AFPs can invest in them.

The original Law 25897 did not include derivatives, mutual funds, subordinated bonds, or mortgage notes as possible investment instruments, because these instruments did not exist in the Peruvian market in 1992. By early 1995, some banks had begun to issue subordinated bonds while long-term mortgage loans also started to appear. Similarly, the internationalization of financial activities and the prominent returns achieved by the Peruvian stock exchange during the early 1990s have encouraged Peruvian firms to consider other means of capitalization. The natural evolution of the financial market subsequent to the liberalization of the economy, and augmented by the AFPs' demand for new and innovative financial instruments, is establishing the foundation for the development of a promising capital market.

The State does not guarantee minimum returns. The average yield of AFP portfolios is quite high, although lower than Chilean AFP yields during the first years of operation. Between August 1993 and August 1994, the system revealed an average real return of 11.72 percent, with AFP Nueva Vida showing the highest return (14.06%). A similar average return is calculated for 1994. If this rate remains steady in the future, the fund will double in real terms in approximately 6 years. No major changes are foreseen in the near future, and AFPs expect to augment contributors' growth rates as formal employment consolidates.

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APPENDIX B: PENSION BENEFITS UNDER SNP

Pension benefits under the General and Special Regimes were complex. Both minimum and maximum pensions existed, although in the case of minimum pensions the policy was "unofficial". The following presents an overview of the benefits and eligibility requirements for different types of pensions in Peru under the social security system.

General Regime

The General Regime covered all workers who entered the labor force after SNP was established. In addition, SNP covered men born after July 1, 1931, women born after July 1, 1936, and all independent professionals. By definition, the population covered under this system increased over time.

Men became eligible to receive a pension at age 60 , with a minimum of 15 full years of contributions. Women became eligible at age 55, with 13 full years of payments. The initial pension was 50 percent of the referential wage for the first 15 years of contribution (13 years for women), plus an additional 2 percent (2.5 percent for women) for every extra year.[1]

The General Regime also covered two special situations. Under the *first scenario*, a reduced-pension was given to a worker who retired without meeting the minimum requirements. In this case, the worker received an unindexed pension equal to 1/30 of the referential wage for every year of full contribution (1/25 for women). Any future pension increase was determined by the IPSS Board of Directors. The *second scenario* entailed an early retirement indexed pension, for men between 55 and 59 years of age who had contributed for 30 or more years (50 and 54 years of age for women, with 25 or more years of contributions), and also for workers who were fired and who met certain eligibility requirements. In this situation, the pension was calculated on the same basis as normal retirement benefits, with 4 percent subtracted for every year below the minimum retirement age.

After 1984, the government simplified indexation of pensions under the General Regime, introducing quarterly adjustments based on the Consumer Price Index (CPI). This indexation exposed the government to financial risk. In September 1988 and August 1990, when inflation rates soared to 114.1% and 397.0%, respectively, IPSS did not have sufficient funds to adjust all pensions. As a result, IPSS accumulated debt, the amount of which is difficult to gauge.

Special Regime

The Special Regime was created for men born before July 1, 1931 and women born before July 1, 1936 who were active members of any of the pension systems at the time the SNP was

[1] The referential wage is defined as the average of the last 12, 36, or 60 nominal wages, whichever is higher. This method of calculation is disadvantageous for workers, especially when there is high inflation and real wages decrease over time.

established. This scheme was basically closed to new participants. Housewives were later made part of the Special Regime. Considering the age of the original beneficiaries of this system, most workers who retired prior to the 1992 reform probably were covered under the Special Regime.

Under the Special Regime, retirement pensions were paid to men at age 60 and women at age 55 who had contributed for a minimum of 5 years. The initial pension equaled 50 percent of the referential wage for the first 5 years of contribution, plus an additional amount (1.2 percent for men, 1.5 percent for women) for every year thereafter. Pensions were also indexed quarterly using the CPI. Early retirement under this scheme was under similar terms as in the General Regime.

In addition to retirement pensions, the SNP also provided disability and survivors' benefits. *Disability pensions* were paid to workers with a permanent physical or mental impediment. To be eligible for disability benefits, a worker had to have contributed to the system for at least 12 of the 36 six months prior to becoming incapacitated. The pension was equivalent to 50 percent of the worker's wage and increased by 1 percent for each year beyond three years of contribution.

Survivor benefits were paid to the spouse after the death of an insured worker or pensioner, provided that the survivor was at least 60 years of age and could prove economic dependency. The benefit payment was equal to that of the insured worker's retirement pension. Orphans' pensions were paid to surviving children under the age of 18 and were equal to 20 percent of the retirement pension per dependent, up to a maximum payment per family of 50 percent. Orphans were entitled to pension payments until age 21 or enrollment in college.

Pensions under both the General and the Special Regimes were subject to limitations. Although Law 19990 did not specify a minimum pension, preceding systems included such a provision and the SNP honored the policy. In December 1984, the government promulgated Law 23908 which introduced a *minimum pension* equivalent to three times the minimum wage of industrial workers in Lima, which at the time was 400 intis (US$78) per month. Average pensions at the time were well below the new minimum. Almost 40 percent of pensioners would have been entitled to an average pension increase of 150 percent.[2] Given this scenario, the IPSS delayed the application of this measure until mid-1987, when inflation and the minimum wage freeze made the minimum pension almost negligible. Thereafter, the IPSS created an Institutional Minimum Pension, calculated by the IPSS. This minimum pension was set at 8 new soles in February 1990, which was equivalent to US$8 in January 1992, or less than US$4 by January 1995.[3] By that time, pensions were clearly inadequate, signalling a need for change.

[2] High inflation and indexing of wages to the CPI, combined with a fixed exchange rate, would have brought the minimum monthly pension to almost US$1,000 in early 1987.

[3] The new sole is the Peruvian currency introduced in 1990 to replace the inti. When it was introduced, 1 new sole was equivalent to 1 million inti. The exchange rate in January, 1995 was 2.2 new soles to US$1.

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Privatization of Pension Funds:
The Case of Peru

LIST OF EXHIBITS

EXHIBIT 1
STRUCTURE OF PENSION RETIREMENT BENEFICIARIES: SELECTED YEARS (percentages)

Regime	1980	1985	1987	1990	1991
SNP (Law 19990)	73.8	87.3	89.1	91.2	92.2
Blue-collar social security (Law 8433)	9.3	1.3	0.9	0.5	0.4
Drivers social security (Law 16124)	2.4	2.1	2.5	2.9	2.7
White-collar pension fund (Law 17262)	14.5	9.3	7.5	5.4	4.7
Total	100.0	100.0	100.0	100.0	100.0

Source: IPSS

EXHIBIT 2
SNP LEGAL COVERAGE AND LABOR FORCE: SELECTED YEARS (millions of workers)

Years	Labor Force (a)	Employed Labor Force (b)	SNP Legal Coverage 1/ (c)	Coverage Ratio (b) / (c)
1980	5.59	5.19	3.50	67.5%
1985	6.53	5.87	4.19	71.4%
1987	6.93	6.60	4.50	68.2%
1990	7.58	6.95	4.83	69.5%
1990	8.05	7.29	4.93	67.7%

1/ Excludes housewives, who were not covered by the SNP until 1987.
Source: National Institute of Statistics (INEI) for labor force data, and IPSS for SNP data.

EXHIBIT 3
EVASION RATES BY OCCUPATION: SELECTED YEARS (percentages)

Years	Blue-collar	White-collar	Domestic help	Drivers	Independent	House-wives	TOTAL
1980	50.7	39.1	72.1	73.4	92.7	--	60.4
1985	45.8	31.5	74.1	74.7	94.1	--	57.3
1987	45.7	31.6	76.7	75.7	94.5	99.6	68.2
1990	47.1	32.5	77.7	76.4	94.3	99.2	68.9
1992	46.4	29.9	77.3	76.4	92.6	99.0	67.1

Source: IPSS

EXHIBIT 4
PENSION STRUCTURE OF THE SNP BY RISK: SELECTED YEARS (percentages)

Years	Retirement	Disability	Widow	Orphan	TOTAL
1980	75.2	2.4	15.7	6.4	100.0
1985	70.5	2.0	19.7	7.3	100.0
1990	70.8	1.6	20.1	7.0	100.0

Source: IPSS.

EXHIBIT 5
RETIREES AND PENSIONERS BY YEARS OF CONTRIBUTION

Number of years	% of Pensioners	Average Pension (soles per month)	Average Pension (US $ per month)
5	6.2	77	65
6 - 9	15.2	81	69
10 - 14	16.7	91	77
15 - 19	15.4	102	86
20 - 24	14.0	119	101
25 - 29	13.7	138	117
30 - more	11.7	149	126
not specified	7.1	--	--
Total and weighted averages	100.0	107	91

Source: IPSS

EXHIBIT 6
SNP, RATIO OF ACTIVE WORKERS TO RETIREES: 1980-91

Year	Ratio
1980	24.1
1981	23.8
1982	21.4
1983	20.1
1984	18.9
1985	17.7
1986	16.7
1987	15.4
1988	14.1
1989	13.2
1990	12.0
1991	11.0

Source: IPSS.

EXHIBIT 7
IPSS, CONTRIBUTIONS AND PENSION PAYMENTS: 1980-90

Year	Contributions (new soles)	Payments (new soles)	Payments % of Gov't Spending	Ratio (cont/paym)	Balance (new soles)	Balance % of GDP	Balance % of Gov't Spending
1980	116	98	8.4%	1.18	18	0.30%	1.55%
1981	230	179	9.2%	1.28	51	0.48%	2.63%
1982	328	296	9.7%	1.11	32	0.18%	1.05%
1983	638	523	8.6%	1.22	115	0.35%	1.89%
1984	1154	1027	8.1%	1.12	127	0.18%	1.00%
1985	3479	2359	7.2%	1.47	1120	0.57%	3.41%
1986	7564	5675	9.4%	1.33	1889	0.51%	3.14%
1987	15910	13623	12.2%	1.17	2287	0.31%	2.05%
1988	65218	66523	11.9%	0.98	-1305	-0.03%	-0.23%
1989	1345995	1294363	9.6%	1.04	51632	0.04%	0.38%
1990	64056828	59592795	7.2%	1.07	4464033	0.07%	0.54%

Source: National Institute of Statistics, INEI. Government Finance Statistics Yearbook, IMF.

EXHIBIT 8

WORKER'S WAGE UNDER TWO ALTERNATIVES: SNP vs. SPP (in new soles)

National Pension System (SNP)		Private Pension System (SPP)	
Gross Wage	1000.00	**Gross Wage**	1000.00
		Increase (10.23%)	102.30
		Increase (3.00%)	33.07
		New Increased Wage	1135.37
Deductions		**Deductions** (over initial wage)	
IPSS Health (3.00%)	30.00	IPSS Health (3.00%)	30.00
FONAVI 1/ (3.00%)	30.00	FONAVI 1/ (3.00%)	30.00
IPSS Pension (3.00%)	30.00	IPSS solidarity (1.00%)	10.00
		AFP Pension (10.00%)	100.00
		AFP fixed fee	1.88 2/
		AFP variable fee (2.014%)	20.41 2/
		Insurance (disability, survivors, funeral expenses) (1.858%)	18.58 2/
Net Wage	910.00	**Net Wage**	924.50

1/ Fondo Nacional de Vivienda, i.e., mandatory contribution for housing.

2/ Weighted average of AFPs fees as of December 1994.

EXHIBIT 9
CONTRIBUTORS TO AFPs BY AGE GROUP (as of December 31, 1994)

Age Group	Men	Women	Total
< 21	38,919	18,299	57,218
21 - 25	127,385	62,479	189,864
26 - 30	139,066	71,899	210,965
31 - 35	122,742	59,897	182,639
36 - 40	96,218	42,707	138,925
41 - 45	65,312	23,470	88,782
46 - 50	40,078	11,735	51,813
51 - 55	21,235	4,932	26,167
56 - 60	8,708	1,985	10,693
61 - 65	2,623	587	3,210
> 65	825	269	1,094
TOTAL	663,111	298,259	961,370

Source: SAFP.

EXHIBIT 10
VALUE OF THE SPP PENSION FUND

	Total Fund (thous of new soles)	Growth Rate (percentage %)	Monthly Flow (thous of new soles)
Jul-93	1	--	1
Aug-93	3,972	--	3,971
Sep-93	11,967	201.28	7,995
Oct-93	25,101	109.75	13,134
Nov-93	41,338	64.69	16,237
Dec-93	61,699	49.25	20,361
Jan-94	103,237	67.32	41,538
Feb-94	135,492	31.24	32,255
Mar-94	165,623	22.24	30,131
Apr-94	196,927	18.90	31,304
May-94	230,647	17.12	33,720
Jun-94	267,110	15.81	36,463
Jul-94	307,744	15.21	40,634
Aug-94	378,721	23.06	70,977
Sep-94	430,236	13.60	51,515
Oct-94	476,837	10.83	46,601
Nov-94	516,770	8.37	39,933
Dec-94	566,974	9.72	50,204

Source: SAPF

EXHIBIT 11
MAXIMUM NUMBER OF MONTHS RECOGNIZED UNDER THE CONTRIBUTORS REGIME

Birth date	Maximum number of recognized months
Before December 7, 1936	228
Between December 7, 1936 and December 6, 1941	198
Between December 7, 1941 and December 6, 1946	168
Between December 7, 1946 and December 6, 1951	138
Between December 7, 1951 and December 6, 1956	108
Between December 7, 1956 and December 6, 1961	78
After December 6, 1961	48

Source: Supreme Decree 180-94-EF

EXHIBIT 12
DISTRIBUTION OF AFP CONTRIBUTORS

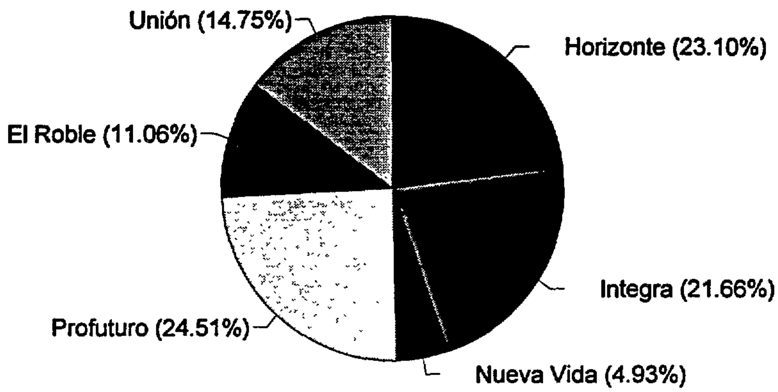

EXHIBIT 13
DISTRIBUTION OF AFP FUNDS

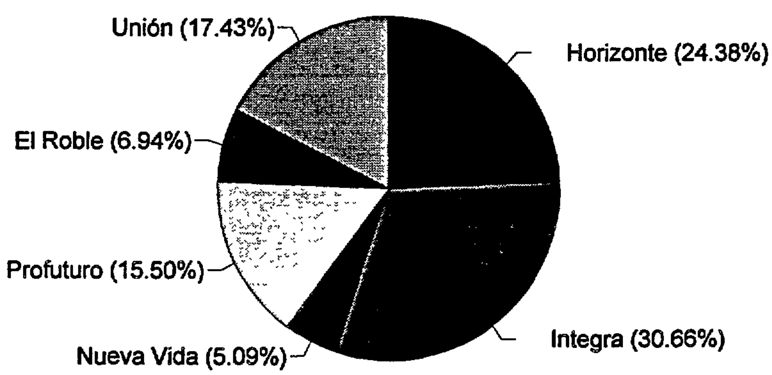

EXHIBIT 14
CONTRIBUTORS AND FUND BY AFP AS OF DECEMBER 1994

AFP	Contributors (number of people)	Fund (new soles)	Ratio Fund/Contributor
Horizonte	222,038	138,221,236	622.5
Integra	208,215	173,850,058	835.0
Nueva Vida	47,356	28,867,284	609.6
Profuturo	235,665	87,871,238	372.9
El Roble	106,298	39,360,408	370.3
Unión	141,798	98,803,643	696.8
TOTAL	961,370	566,973,866	589.8

Source: SAFP

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EXHIBIT 15
LEGAL INVESTMENT LIMITS AND ACTUAL PORTFOLIOS

Instrument	Legal Limit (%)	Portfolio 12/94 (%)
Government Bonds	25.0	6.05
Central Bank Papers	25.0	20.05
Time Deposits	25.0	33.62
Financial System Bonds	25.0	10.55
Short Term Instruments	5.0	1.03
Corporate Bonds	25.0	3.28
Social Capital Shares	10.0	0.36
Labor Shares	10.0	5.72
Preferential Subscription Certificates	3.0	0.00
Report Operations	10.0	0.37
Derivatives	0.1	0.00
Mutual Funds	0.1	0.00
Foreign Instruments	5.0	0.00
Bonds to Finance New Projects	4.0	0.00
Subordinated Bonds	15.0	6.07
Mortgage Notes	40.0	1.28

Source: Law Decree 25897 and subsequent modifying resolutions.