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The Rationale and Performance of Personal Pension Plans in Chile

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The Chilean personal pension plans introduced in 1981 represent a successful reform of a financially insolvent public pension system. They show that radical pension reform is feasible and can overcome adverse initial conditions such as high fiscal costs of transition, the absence of well-developed financial markets, and weak regulation and supervision.

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Many developing countries, especially in Latin America and Eastern Europe, have unfunded pay-as-you-go public pension systems that face growing financial pressures. These emanate from a weak link between contributions and benefits, from widespread evasion, and from an aging population.

Proposals for radical pension reform are often inhibited by concerns about the fiscal cost of transition from an unfunded to a funded system, the absence of well-developed financial systems, and weak regulation and supervision.

Chile successfully reform^{ed} its public pension system in 1981 when it introduced a government mandated and regulated, but privately managed system. Based on individual capitalization accounts operated by specialized financial institutions — known as Administradoras de Fondos de Pensiones or AFPs — the system has provided considerable scope for competition and efficiency within a well-regulated environment.

Vittas and Iglesias analyze the rationale of the Chilean pension system and examine in detail the rules and provisions regarding coverage, contribution rates, pension benefits, and investment regulations.

They also provide a detailed assessment of the structure and performance of the system, its impact on financial sector development, and the role of regulation and supervision.

Vittas and Iglesias emphasize the draconian rules that have been imposed to protect the

interests of pension fund members. These include such rules as “one account per worker” and “one pension fund per AFP,” as well as tight limits on investment assets. The main objective of investment rules has been to ensure that pension funds are invested safely and profitably. As the system has matured, some rules have been relaxed. The rules have also provided for effective supervision and for information disclosure both to the authorities and to members.

Pension funds have proved major sources of long-term finance and have made a significant contribution to the privatization of public utilities. But their role in encouraging a dispersion of corporate ownership has been more limited because of the reluctance of corporations to abide by the strict governance rules that aim to protect the interests of pension funds as minority shareholders.

The Chilean experience shows that there is a positive dynamic interaction between pension funds and securities markets so long as a strong regulatory and supervisory mechanism is in place. It has also shown that it is feasible to finance the costs of transition from an unfunded to a funded system.

But the prospects of personal pension plans in different countries must be assessed case-by-case to ensure that their introduction does not undermine programs of macroeconomic stabilization and is accompanied by extensive regulatory reform.

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**THE RATIONALE AND PERFORMANCE
OF
PERSONAL PENSION PLANS IN CHILE**

Dimitri Vittas and Augusto Iglesias

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I. INTRODUCTION

Chile implemented a revolutionary reform of its social security system in May 1981, when it replaced the pre-existing social pension system with a private system of personal pension plans. The Chilean reform has attracted considerable attention, both because of its early success and because of the growing financial pressures facing the social security systems of many developing countries.

The main ingredient of the Chilean pension reform was the replacement of a mature social pension system, operating on a "pay-as-you-go" (PAYG) basis and facing great financial difficulties, with a fully-funded pension system based on individual capitalization accounts. The new system is government mandated and regulated but privately managed. Its management is entrusted to specialized pension fund management companies, known as Administradoras de Fondos de Pensiones or AFPs.

Participation in the new system is compulsory for all dependent employed workers, including civil servants, but optional for self-employed people. Moreover, members of the armed forces continue to have their own pension scheme. At the time of its introduction, participation was also optional for members of the old system, although special financial incentives were provided to encourage workers to switch to the new system. Thus, the AFP system coexists with the old system for already retired people and those workers who did not transfer to the new system and the system for the armed forces.

The early success of the Chilean AFP system can be seen from a number of key statistics:

- * The total number of affiliates increased from 1.4 million people (or 39% of the Chilean labor force) in 1982 to 3.8 million (or 79% of the labor force) in 1990, although the number of active contributors (defined as workers making contributions in December of each year) rose from 25% to 42% of the labor force over the same period.
- * Annual contributions reached 3.4% of GDP, up from 1.9% in 1982.
- * Pension funds achieved very high real rates of return, averaging 13% per year between 1981 and 1990.
- * Total funds accumulated in the personal pension plans grew at a real rate of 47% per year. In relation to GDP, pension funds increased from less than 1% in 1981 to 26.5% in 1990.
- * Pension funds play a big part in the financial markets. In 1990, they held 20% of all bank deposits, 38% of central bank securities, nearly 100% of treasury securities, 56% each of mortgage and corporate bonds, and 9% of corporate equities.
- * Pension funds played a very significant part in the mid-1980s in the privatization of state-owned companies, mostly public utilities, where their total equity positions vary between 10% and 35% of each firm's equity.

- * Their impact on the dispersion of corporate ownership and the development of the Chilean equity market has been limited, to a large extent because of the strict investment rules applied on their equity investments. Their equity holdings in privatized firms accounted for nearly 90% of their total equity investments.
- * Concentration of the pension fund industry is high, although it has fallen considerably in recent years. The 3-firm concentration ratio fell from 74% of total pension funds in 1981 to 63% in 1990, while the Herfindahl index dropped from 2220 to 1577.
- * The industry is contestable with low cost entry and intense competition among incumbent firms. Net commissions (excluding premiums for disability and term life insurance) fell from 23% of contributions in the early years to 15% in the past couple of years and from 14% of total assets under management to 2.3%.

The very success of the Chilean pension reform raises many questions that are of interest to policymakers of other developing countries. What accounts for its success? How extensive is the coverage of the new system? Is participation compulsory for covered workers? What is the level of contributions? What is the level of pensions? Are pensions guaranteed? What is the role of indexation? Is the treatment of workers equitable? How expensive is private management (an important feature of the new system)? What is the role of regulation? What is the impact of the new system on the financial markets? How was the transition implemented and financed? Last, but by no means least, what are its macroeconomic implications, especially for the level of national savings and the functioning of financial and labor markets?

This is a long list of questions that cannot all be addressed in one paper. Moreover, the more complex macroeconomic issues are still subject to debate and have yet to be properly assessed. The main purpose of this paper is to discuss the rationale of the basic operating characteristics of the Chilean system (section II) and review the performance of the system over the first ten years of its existence (section III). Section IV concludes with a summary of the policy issues and main lessons of the Chilean experience for other developing countries. Although no attempt is made to provide a comprehensive account of the Chilean reform, the paper also addresses briefly some of the wider issues identified above, especially the fiscal implications of the transition and the implications for the development of financial markets.

This paper updates and extends an earlier unpublished World Bank Working Paper on the privatization of the pension system by Lacey (1987). It also draws heavily on the extensive literature on the AFP system by Chilean authors, in particular the papers by Arellano (1984), Ariztia (1991) and Iglesias (1990)¹. The statistical data are mostly drawn from the publication by Habitat (1991) covering the first ten years of operation of the AFP system.

¹ An extensive bibliography on the Chilean pension system is contained in Iglesias (1990).

II. BASIC OPERATING CHARACTERISTICS AND THEIR RATIONALE

This section describes briefly the rules governing the Chilean pension system and analyzes their rationale. The implications of the use of these rules and some alternative suggestions are also discussed.

2.1 Coverage

Coverage of the AFP pension system is far from universal. Participation is compulsory for all dependent employed workers, but is optional for self-employed people. Moreover, people who are temporarily out of work or are covered by special government employment schemes are exempt from making contributions. The scheme covers civil servants and other government employees, except for members of the armed forces.

Compulsory participation is premised on the argument that people behave myopically and will not make adequate provision for their retirement needs under a voluntary system. Compulsory participation is a common feature of most social security systems, at least for major groups of workers. It is also a feature of national provident funds.

Self-employed people do not have to participate in the system for two main reasons: first, because self-employed are presumed to be financially sophisticated and independent and able to make their own provisions for their future; and second, because of the difficulty of ascertaining their annual income and ensuring payment of their contributions. However, this provision leaves a big hole in the Chilean system and is an important factor in the substantially less than universal coverage of the system. Although it is true that many self-employed people, especially professionals, are financially independent and able to provide for their own future needs, others are not only poor but also financially unsophisticated. Without compulsory saving, they are likely to rely on government support in old age. However, making pension saving compulsory for self-employed people is a problem that afflicts most pension systems.

Compulsory participation raises problems of moral hazard and evasion, especially when contribution rates are high and the link between contributions and benefits is weak. In Chile, the strong link between contributions and benefits, the generally low rate of contributions and the offer of the benefits of tax deferral have played a part in reducing evasion. However, compulsory participation imposes an obligation on governments to develop an effective regulatory system to ensure that pension funds are invested prudently and profitably.

Transfer of workers to the new system has been stimulated by an 11% effective increase in net wages to transferring workers (Iglesias, 1990). In addition, the government undertook to issue recognition bonds to transferring workers for their accrued pension benefits under the old system. The value of these bonds is calculated at the time of transfer to the new system. Recognition bonds accumulate real interest at 4% per year but are payable only upon the retirement of individual members. Although this is a reasonable real rate of return for a long-term instrument, it has been substantially less than the real rates of interest that have prevailed in the Chilean financial markets in the 1980s.

2.2 Contributions

Active participants must make contributions equal to 10% of their monthly salary, up to a level equivalent to 60 U.F.². The contributions are paid by employees but employers are required to withhold the relevant amount every month and transfer the collected sums to the pension fund management company concerned³. Participants are also allowed to make voluntary contributions of up to an additional amount equivalent to 60 U.F.

Affiliates are also required to pay premiums for disability and term life insurance. The level of premiums depends on the rates obtainable in the insurance market and they vary from one AFP to another. Furthermore, affiliates are required to pay an additional variable commission fee that, together with the insurance premiums, amounts on average to 3% of pensionable salary. Thus, the effective contribution rate in Chile varies between different AFPs but amounts on average to 13% of pensionable salary⁴.

Both mandatory and voluntary contributions are tax deductible but benefits are subject to income tax as any other type of income. The investment income of pension funds is also free from tax. Thus, the Chilean system confers the benefits of tax deferral on pension savings and avoids the double taxation of savings through pension plans. This provides a tax incentive to stimulate participation in the system, but has negative cashflow implications for the fiscal budget since it implies lower tax revenues initially. Chile was able to adopt this approach because of the budgetary surplus achieved at the time of the introduction of the new system. The alternative approach to the fiscal treatment of pensions is the so-called exemption deferral, whereby contributions are not tax deductible but pensions are tax free. Exemption deferral also avoids the double taxation of savings and encourages saving through pension plans, but does not have the negative cashflow implications of the tax deferral approach⁵.

The relatively low level of mandatory contributions implies the expectation of a high real rate of return, a declining profile of real wage growth and/or targeting relatively modest replacement rates. Under certain assumptions (e.g. workers contribute for 40 years, draw pension for 20 years and pensions are indexed to price inflation), a contribution rate of 10% will pay pensions equal to between 55% and 60% of final gross salary if the real rate of return exceeds the rate of growth of

² U.F. are the so-called Unidades de Fomento that are linked to changes in the consumer price index and are used extensively in Chile for indexing all kinds of financial contracts.

³ In Chile, the nominal and effective contribution rate is the same. In other countries, the effective contribution rate, which takes account of the payments made by employers and the government, is lower than the nominal contribution rate. In Egypt the nominal contribution rate is 26% - 10% by the employee, 15% by the employer and 1% by the government. Thus, contributions equal 26 out of a total payroll cost of 116 or slightly over 22%.

⁴ Affiliates are also charged a flat fee per collection. This varies between AFPs but is deducted from the individual account. Since 1988 the flat fee has been deducted only from active contributors. Although the flat fee affects the rates of return on individual accounts, it does not increase the effective contribution rate.

⁵ For a discussion of the fiscal treatment of pensions see Vittas (1990). A better term for the alternative fiscal treatment of contributions and pensions may be deferred exemption.

real wages by 3 percentage points. On the other hand, if the real rate of return is equal or very close to the rate of growth of real wages, the replacement rate will range between 20% and 30% of final gross salary⁶.

But if real wages rise at a higher rate when workers are young and at a lower rate when they grow older, the early accumulation of pension fund balances will contribute to the achievement of a higher replacement rate than if the rate of real wage growth accelerated over the life of workers. Thus, the adequacy of contributions must be assessed in the context of the time and age profile of wages.

It is worth noting that in Singapore and Malaysia, which have long operated national provident funds, the effective contribution rate is respectively 33% and 18%⁷. In Singapore, the effective rate was set at 40% in the mid-1980s (Vittas and Skully, 1991). The higher contribution rates in these two countries may be explained by the expectation of higher wage growth and, by implication, a narrower (perhaps negative) differential between real rates of return and real wage growth rates.

2.3 Individual Accounts

Participants must affiliate with one AFP of their choice and must have one individual capitalization account. Mandatory and voluntary contributions are used to buy quotas or units of the pension fund of the AFP of their choice, which are then credited to the affiliate's account.

The requirement to place all funds into one individual capitalization account is premised on the need to keep the system simple and transparent. It is also a big factor in fighting evasion. Admittedly, allowing affiliates to maintain accounts with more than one AFP would enable individuals to hedge their bets and reduce their dependence on the performance of the management of a particular AFP, but it would undermine the simplicity and transparency of the system.

Affiliates have the right to transfer their account to another AFP. The time required for processing transfers of accounts implies that transfers are effectively limited to two a year. The right to transfer accounts (and the minimum investment return requirements imposed on AFPs - see below) alleviate the risk of large losses from the imposed lack of diversification of individual accounts.

The right to transfer accounts imparts a strong element of competition among AFPs. Although there is a danger of excessive spending on advertising and marketing to attract affiliates from competing institutions, the right to transfer is a strong safeguard against inefficiency and indifferent investment returns.

⁶ The relation between contribution and pension rates under different assumptions about rates of return and wage growth is discussed in Vittas (1992). These calculations apply to the payment of old age pensions, which depend on the level of contributions and the real rate of investment returns. Disability and survivorship pensions are "defined benefits" financed with the funds accumulated in the individual accounts plus an insurance policy.

⁷ In Singapore, the nominal contribution rate is 40% divided equally between employers and employees, while in Malaysia it is 20%, divided between employers 11% and employees 9%.

Affiliates may also open voluntary savings accounts with AFPs. These do not benefit from tax deferral, i.e. voluntary savings are not tax deductible. However, the investment income of voluntary savings accounts benefits from tax deferral provided total voluntary savings do not exceed a limit that is set each month (at the time of writing the limit is 15 million pesos, equivalent to US\$ 44,000). Voluntary savings accounts must be invested in the same pension fund as the contributions of the individual capitalization accounts.

2.4 Pensions and Other Benefits

System benefits include old age, disability and survivorship pensions. The AFP system is effectively a combination of a defined-contribution system for old age pensions and a defined-benefit system for disability and survivorship pensions (as well as for life annuities bought at the time of retirement or at a later stage)⁸. Defined benefits are covered by appropriate insurance policies.

Old age pensions are financed entirely by the capital accumulated in individual capitalization accounts. They are paid to affiliates reaching retirement age (65 years for men, 60 years for women). Retired members are able to buy a life annuity from an insurance company (which may or may not be related to the same AFP), to make scheduled monthly withdrawals from their accounts, or to combine scheduled withdrawals with the purchase of a deferred annuity.

Scheduled withdrawals are determined each year on the basis of the remaining life expectancy of the family groups of affiliates and the rate of return of the pension fund. They are paid on a monthly basis like life annuities and are fixed in U.F. terms, thus providing protection against inflation during the year. Members who opt initially for scheduled withdrawals may convert to a life annuity at a later stage.

Scheduled withdrawals have two advantages over life annuities: in the event of early death, remaining account balances are inherited by dependents; and, they allow participation in higher returns achieved by pension fund investments. Life annuities offer longer-term protection against inflation and against excessive longevity, but they may be based on more conservative real rates of return and mortality tables.

Affiliates may withdraw in a lump sum any balance in excess of the necessary capital to pay a pension equal to 70% of pensionable salary. Early retirement is allowed if the balances accumulated in an individual capitalization account are sufficient to pay a pension equal to 50% of the average salary over the last 10 years of employment.

Disability pensions are paid to active members that are disabled under circumstances not covered by labor accident and worker compensation insurance. Disability is certified by special medical committees set up by the supervisory agency. Survivorship pensions are paid to the surviving spouse and other dependents of deceased active or passive affiliates.

⁸ In defined-contribution systems, benefits depend on the level of contributions and the investment performance of each pension fund. In contrast, defined-benefit systems promise pensions that are either fixed in nominal or real terms or are related to pensionable salary. In the latter systems if contributions and investment returns are inadequate, the sponsor (which may be the state or individual companies) would be required to make up the difference.

Disability and survivorship pensions are defined benefits. They are financed with the balance of the individual capitalization account of the disabled or deceased affiliate, but AFPs are obligated to make up any difference to reach the required pension. AFPs are required to arrange insurance on a group basis to cover disability and survivorship pensions for the combined life expectancy of family groups.

System benefits enjoy a state guarantee that if they fall below the minimum pension the government will make up the difference. The minimum pension is not set as a constant fraction of the minimum wage and it is adjusted for inflation each time the accumulated CPI exceeds 15%. It is currently equal to 73% of the minimum wage for people of less than 70 year of age and 77% for older people. The guarantee is offered to people who have contributed for at least twenty years and is aimed to protect workers with low wages and unstable working careers.

The offer of the guarantee in conjunction with the option to use scheduled withdrawals from the capitalization account, instead of buying a life annuity, creates a moral hazard problem in that retired workers may opt for scheduled withdrawals on retirement, knowing that in the event that their actual life exceeds their life expectancy at the time of retirement, their reduced pensions in later years would be covered by the minimum state guarantee. As already noted, scheduled withdrawals have the additional benefit that in the event of early death, the remaining balance on the account would be inherited by their dependents. A solution to the moral hazard problem caused by the offer of a state guarantee would be to require all retired workers who opt for scheduled withdrawals to buy a deferred life annuity for at least the minimum pension.

2.5 The Role of Indexation

Indexation plays an important part in the Chilean AFP system, even though as a fundamentally defined-contribution system, balances accumulated in individual capitalization accounts are not legally indexed. Nevertheless, several benefits, including disability and survivorship pensions as well as life annuities bought, either at the time of retirement or at a later stage, are fully indexed. In addition, the monthly value of scheduled withdrawals is indexed during the twelve months until its next review.

The pension funds are effectively mutual funds and their value may rise or fall, not only in real terms but also in nominal terms. In practice, the value of pension funds is protected by the fact that 95% of pension fund assets are invested in indexed assets or in assets that provide effective hedges against inflation, such as corporate equities. However, inflation hedging is not a regulatory requirement imposed on pension fund managers but rather reflects the widespread use of indexed instruments in the Chilean financial markets.

2.6 Management and Operation of the System

Only specialized pension fund management companies, known in Chile as Administradoras de Fondos de Pensiones or AFPs, are authorized to participate in the system. AFPs are regulated and supervised by a specially created agency, known as Superintendencia de AFP or SAFP.

Authorization criteria. AFPs must meet the minimum capital requirements set in the law. The minimum capital was initially set at 20,000 U.F, but in an attempt to encourage new entry and

greater competition, the minimum capital requirement was modified in 1987. Currently the following schedule applies:

| Affiliates | Minimum Capital |
|-----------------|----------------------------|
| 0 - 5,000 | U.F. 5,000 (US\$ 150,000) |
| 5,000 - 7,499 | U.F. 10,000 (US\$ 300,000) |
| 7,500 - 9,999 | U.F. 15,000 (US\$ 450,000) |
| 10,000 and over | U.F. 20,000 (US\$ 600,000) |

AFPs are set up as joint-stock companies and can be established by any group of shareholders, including large corporations, trade associations, labor unions, other financial institutions, and groups of workers. However, banks are not allowed to own shares in AFPs. SAFP is not specifically authorized to vet the management and shareholders of AFPs, although it has to approve the charter of each new AFP.

Each AFP is allowed to operate only one pension fund for all its affiliates. The pension fund is an independent entity and is segregated both legally and financially from the AFP. The assets of the pension fund belong exclusively to the affiliates, are not attachable and are not affected by any financial losses suffered by the AFP.

The requirement that each AFP must operate only one pension fund for all its affiliates, like the similar requirement of one individual account per affiliate, aims to preserve the simplicity and transparency of the whole system. These two operating principles are particularly important for compulsory privately-run pension systems that involve large numbers of people with limited experience of long-term financial products. More sophisticated systems could dispense with these two restrictive requirements, although care would need to be taken to avoid an excessive proliferation of pension funds that might complicate the management and regulation of pension funds and might harm the best long-term interests of pension fund members.

Investment reserves. AFPs are required to maintain investment reserves, known as "encaje", equal to 1% of the total assets of the pension fund under their management. This limit was originally set at 5% of total assets but, as pension funds grew, it was deemed excessive and the requirement was lowered to its present level in 1983.

The investment reserves of each AFP must be invested in the same assets as the pension fund under its management. This measure aims to protect the interests of pension fund members by ensuring that the AFPs will apply the same professionalism in investing the resources of the pension fund as for their own resources.

All transactions of the pension fund must be carried out at officially recognized markets where they can be effectively supervised. AFPs are required to establish custody agreements with custodial institutions for the safekeeping of the securities in which they invest. Custodial institutions are authorized by the central bank but for the time being no such institutions have been authorized and all custodial agreements are held with the central bank.

Minimum profitability requirements. Pension funds are valued daily at market prices. AFPs are subject to maximum and minimum return (or profitability) requirements for the pension fund under their management. These are set in relation to the average performance of all pension funds over any twelve-month period. Thus, if the real investment return is 50% higher than the average for

all pension funds, or exceeds the average by 2 percentage points (whichever yields the higher rate of return), the AFP is required to place the difference in a profitability reserve. This reserve does not belong to the AFP, but is an asset of the pension fund. Similarly, if the real investment return on a pension fund is less than half the average of all pension funds, or if it is lower than the average by 2 percentage points (whichever yields the lower rate of return), the AFP is required to make up the difference, first by transferring funds from the profitability reserve (if such a reserve has been established) and, if this is inadequate, from its investment reserves⁹.

The maximum and minimum limits on pension fund returns aim to protect affiliates from excessive fluctuations in returns and from wide dispersion between different AFPs. The use of a 12-month average may, however, place undue emphasis on short-term performance and is not very satisfactory for long-term contracts that may span 60 years or more. In fact, an AFP that performs persistently at the lower end of the permitted range would over the years produce substantially lower returns than the average.

An alternative approach would be to apply additional and narrower limits on the performance over longer periods, such as 36 or 60 months. Moreover, instead of applying a limit of 50% higher or lower than the average, which may be either unduly permissive or unduly restrictive, the limits could be based on specified multiples of standard deviation from the average. Thus, the 12-month limit could apply on performance that is higher or lower by 2 standard deviations than the average, while the longer 36- or 60-month limit could be based on divergence by one standard deviation from the average.

Revenues. The main revenues of AFPs, apart from the returns on their investment reserves, are the fees they charge for managing individual capitalization accounts. AFPs compete with each other for managing individual accounts and the level of commissions is set freely. However, restrictions apply on the types of fees that may be levied.

Authorized fees include a fixed fee per collection and a pro rata fee on wages on which contributions are based as well as fees for opening new accounts, fees per pension payment and fees for voluntary savings accounts. Although AFPs would not normally levy account opening fees, they may charge such fees if they want to discourage new accounts. Account opening fees may also be used for financing the build-up of the investment reserve requirement (encaje). On the other hand, in order to prevent the setting of high closing fees that might discourage the transfer of accounts, AFPs are not allowed to levy fees for closing accounts.

AFPs were initially also allowed to charge a management fee on the total value of funds under management. This fee created problems for affiliates who were out of work and were unable to make contributions. Their account balance was declining even though there was no movement in it. In September 1987, the regulations were changed and this type of fee was disallowed.

The use of a flat fee per collection has a regressive impact on low income workers. The differences in rates of return caused by this fee may be significant, especially when compounded over 40 years. The flat fee was rather high in the early years of the system, but recently most AFPs have either abolished their flat fees or have allowed their real value to fall by failing to adjust it fully to

⁹ The 2 percentage points limit comes into effect when the average real rate of return is less than 4%.

inflation. As already noted, no commissions, including the flat fee, can be levied on inactive accounts.

Information disclosure. AFPs must meet rigorous information disclosure requirements. They report daily to the supervisory agency their investment transactions and submit monthly reports on their financial position and overall performance. They are also required to provide regular statements (three times a year) to their affiliates disclosing the last four monthly contributions paid by employers, the financial performance of the pension fund and the accumulated balance and rate of return on their individual account.

An issue that is causing some concern regards the advertising policies of AFPs. There is a tendency to publicize performance over short-term periods, especially if it happens to exceed the average by a big margin. This may provide a misleading impression of long-term prospects and may encourage frequent account transfers. These could prove counter-productive in the sense that unsophisticated affiliates may be moving to a high-yielding AFP only to find its performance reverting to the mean for all AFPs. A more accurate comparison of relative performance could be obtained by advertising rates of return based on a range of investment periods (say, 3 months, 1 year, 5 years, etc.). Moreover, both the performance of the whole fund and that of individual accounts of different sizes, including clear information on commission rates, should be included in publicity material.

2.7 Investment Rules

AFPs are subject to very strict, almost draconian, investment regulations. Two operating principles guide these rules: safety and profitability. Safety implies that pension funds are invested in approved assets and are properly diversified, while profitability implies that AFPs must be free to seek the highest returns under these rules.

In compliance with these principles, only maximum limits are imposed on investments. AFPs are not required to meet minimum investment ratios in government securities and other assets (such as housing bonds) that may be safe but may yield below market rates of return. Also pension funds cannot be used in government-sponsored directed credit or investment programs.

In setting investment limits for corporate equities, a clear distinction is drawn between so-called "Chapter 12" and "non-Chapter 12" companies.¹⁰ Limits on pension fund investments are higher for Chapter 12 companies, but to protect the interests of pension funds such companies must have their investment and financial plans approved by the annual general meeting of shareholders and they must also designate their essential assets, the disposal of which require a 90% approval by shareholders. These provisions impose severe restrictions on the independence of management and for this reason only privatized utilities have so far qualified as "Chapter 12" companies.

Since 1985 approved assets are rated by a Risk Classification Committee that is made up of various regulatory bodies and representatives of the AFPs. Debt securities are classified in several risk categories with varying portfolio limits for different classes of instruments. Equities are either

¹⁰ "Chapter 12" companies are companies that abide by the requirements imposed by Chapter 12 of Law 3500 that governs the operations of pension funds.

approved or rejected for pension fund investment purposes, although investment limits are weighted by an ownership concentration factor.

Table 1

Investment Limits per Instrument
(% of value of fund)

| | | | |
|----|-------------------------------------|-----|-----|
| a. | State securities | | 45% |
| b. | Liabilities of banking institutions | | 50% |
| | of which short-term liabilities | 30% | |
| c. | Mortgage bonds | | 80% |
| d. | Corporate bonds | | 50% |
| e. | Commercial paper | | 10% |
| f. | Quotas of other pension funds | | 20% |
| g. | Corporate equities | | 30% |
| | of which | | |
| | "Chapter 12" companies | 30% | |
| | "non-Chapter 12" companies | 10% | |
| | real estate companies | 10% | |
| h. | Shares of investment funds | | 10% |
| | of which venture capital companies | 5% | |
| i. | Foreign securities* | | 2% |

* The limit is set by central bank subject to a maximum 2% until September 1992

Source: Habitat (1991)

Investments are subject to limits by instrument (or class of instruments) and by issuer. Limits on investments by instrument aim to contain pension fund exposure to the risks of particular instruments. Limits by class of instruments are required because some instruments have similar or even identical risks. Failure to group instruments that are subject to similar or identical risks would undermine the objective of risk diversification that these limits aim to achieve.

The limits by instrument in force in 1990 as a proportion of the value of the fund are shown in Table 1.

Limits on investments by issuer are determined by several different formulas, depending on the issuer, with the lowest limit being the binding one. The main objective of limits by issuer is to avoid undue exposure of individual pension funds as well as of the whole pension fund sector to particular issuers or to particular liabilities of different issuers. The following limits are imposed:

- a. Limits expressed as a share of the value of the fund. This applies to investments in the liabilities or equity capital of an issuer as a share of the value of each pension fund. Thus, pension funds are not allowed to invest more than 15% of the value of their funds in the liabilities of an individual financial (banking) institution; or more than 7% of the value of the fund in the securities (bonds, commercial paper and

equity) of a nonfinancial "Chapter 12" corporate issuer; or more than 5% of the fund in quotas of another pension fund; or more than 1% of the value of the fund in securities of "non-Chapter 12" companies; or more than 0.5% of the fund in individual foreign securities.

- b. Limits expressed as a share of particular instruments. The second limit applies to the share of each issue of corporate debt securities (bonds or commercial paper by leasing companies and other enterprises) that can be taken up by an individual pension fund or to the share of the equity capital of an issuer that can be held by individual pension funds. This is set at 20% of each commercial paper or corporate bond issue and 7% of the equity capital of "Chapter 12" companies, 2.5% for banking institutions, 1% for "non-Chapter 12" companies, and 20% for specialized real estate companies.
- c. Limits expressed as a share of each fund in the total resources of all funds. The third limit applies to the permitted total exposure of the pension fund sector as a whole. This takes account of the normal leverage of the issuer concerned. Thus, for liabilities of financial institutions, essentially banking institutions, the total investments of the whole pension fund sector cannot exceed 3 times the total equity capital of all financial institutions. For liabilities of leasing companies and nonfinancial corporations, the limit for the whole pension fund sector is 0.8 times their net capital. The last limit applies to each individual issue of securities by a leasing company or other enterprise.
- d. Limits expressed as a share of each issuer in the total liabilities of all issuers from the same sector. This limit applies to investments in liabilities of banking institutions and aims to prevent a big pension fund from investing in a particular banking institution more than a certain multiple of its share of the total liabilities of all banking institutions. This limit effectively replaces the second limit above, which does not apply on banking liabilities.

The third and fourth limits are weighted by a risk factor set by the Risk Classification Committee for each issue of securities and on a weighted average basis for each issuer. Corporate equities must be approved by the Risk Classification Committee but are not risk rated. The limits on investments in the equities of "Chapter 12" companies are weighted by an ownership concentration factor that is also set by the Risk Classification Committee. Investment limits in individual corporations are a decreasing function of ownership concentration. Tables 2 and 3 summarize the investment limits per issuer currently in force. (The chronology of changes in investment regulations is discussed below.)

For pension fund managers in developed countries, who are generally free to set their own investment guidelines, the application of so many investment limits would appear excessively bureaucratic and inefficient. Limits that are based on the share of an individual pension fund in the total value of all pension funds or in the share of liabilities of an issuer in the total liabilities of all issuers of the same class of instruments may be onerous in practice and difficult both to comply with and to verify. Furthermore, there is a risk that imposing excessively strict investment limits may undermine the concept of private management and may in effect represent a government direction of funds through the back door.

Table 2

PENSION FUNDS: INVESTMENT LIMITS PER ISSUER (*)

| | |
|--|--|
| State securities | - 45% of fund |
| Liabilities of financial institutions | The lesser amount of: - 15% of the fund - 3 x capital x Fi/Ft **** - 2.5 x Pi/Pt **** x risk factor x value of fund |
| Corporate bonds | The lesser amount of: - 20% of issue - (0.8 x issuer's net capital x Fi/Ft x risk factor) less investments in bonds of issuer's subsidiaries. |
| Bonds of leasing companies | The lesser amount of: - 20% of issue - (0.8 x issuer's net capital x Fi/Ft x risk factor) less investments in bonds of issuer's subsidiaries. |
| Commercial paper subsidaries. | The lesser amount of: - 20% of issue - (0.2 x issuer's net capital x Fi/Ft x risk factor) less investments in commercial paper of issuer's |
| Corporate equities** | The lesser amount of: |
| - "Chapter 12" companies ** | - 7% of fund x concentration factor or 7% of shares x concentration factor. |
| - "Non-Chapter 12" companies | - 1% of fund, or 1% of shares. |
| - Real estate companies | - 7% of fund x concentration factor or 20% of shares x concentration factor. |
| Investment in shares, bonds and commercial paper of the same issuer | - 7% of fund |
| Quotas of other pension funds | - 5% of fund |
| Quotas of investment funds *** | - 10% of fund |
| Foreign issuers | - 0.5% of fund |

* Investment limits are reduced by half if there exists a relationship between the issuer and shareholders, executive officers or directors of the A.F.P., or if the issuer is a shareholder with more than 1% of the A.F.P.. In the last case, the investment limit for shares is zero.

** In the case of Banking Corporations or Credit Institutes, the percentage of shares has to be 2.5%.

*** In the case of risk capital investment funds, the limit must not exceed 5% of the fund.

**** Fi/Ft = Investor Fund/Total pension funds.
Pi/Pt = Issuer's capital/Total capital financial institutions.

Source: Habitat (1991)

Table 3

CONCENTRATION FACTORS AND INVESTMENT LIMITS

| Shares | Percentage majority shareholder (C) | Concentration factor | Investment limit (*) |
|--------------------------------------|-------------------------------------|----------------------|-------------------------|
| Shares of "Chapter 12" companies | | | |
| | C < 20% | 1 | 7.0% Shares or Fund |
| | 20% < C < 30% | 0.8 | 5.6% Shares or Fund |
| | 30% < C < 40% | 0.6 | 4.2% Shares or Fund |
| | 40% < C < 45% | 0.4 | 2.8% Shares or Fund |
| | 45% < C < 50% | 0.3 | 2.5% Shares or Fund |
| | 50% < C | 0 | Must not invest |
| Shares of "Non-Chapter 12" companies | | | |
| | | | 1.0% Shares or Fund |
| Shares of real estate companies | | | |
| | C < 20% | 1 | 20% Shares or 7% Fund |
| | 20% < C < 30% | 0.8 | 16% Shares or 5.6% Fund |
| | 30% < C < 40% | 0.6 | 12% Shares or 4.2% Fund |
| | 40% < C < 45% | 0.4 | 8% Shares or 2.8% Fund |
| | 45% < C < 50% | 0.3 | 6% Shares or 2.5% Fund |
| | 50% < C | 0 | Must not invest |

(*) The lesser amount is applied.

Source: Habitat (1991)

However, in the context of the experience of developing countries, the absence of strong and transparent capital markets, the compulsory nature of the pension system and the lack of familiarity of pension members with capital market investments, the detailed investment rules appear justified, provided they are revised in a flexible and timely manner to take account of the growing maturity of the system. Moreover, an approach of gradual liberalization would give the opportunity to pension fund managers to develop their skills as professional investment managers and would also allow the capital markets to modernize. As noted by Lacey (1987), it was fortunate that AFPs were not allowed to invest in corporate equities during the 1982-84 financial crisis.

In Chile, revisions in the investment rules have been effected at regular intervals. Initially, investments were limited to public sector securities (essentially, treasury and central bank liabilities), bank liabilities, mortgage and corporate bonds, and quotas of other pension funds. The initial limits were 100% for state securities, 80% for mortgage bonds, 70% for bank liabilities, 60% for corporate bonds, and 20% for quotas of pension funds¹¹.

The following changes were effected in subsequent years:

1982 The limit on bank liabilities was reduced to 40%.

1985 The limit on state securities was lowered to 50% and that of corporate bonds to 40%.

Investments in equities of privatized state enterprises were allowed up to 30% of the value of the fund. A limit per issuer was also imposed equal to 5% of the value of the fund or of the capital of the issuer.

The Risk Classification Committee was created consisting of 7 members: 3 representatives from the AFPs, a representative of the central bank and the 3 Superintendents of financial institutions (AFP, Securities and Insurance, and Banking and Financial Institutions). The use of risk factors was introduced.

1986 The authorization to invest in equities was extended to corporations set up as joint stock companies, provided no individual shareholder held more than 20% of the equity capital (dispersed ownership).

1988 The ownership concentration limit for investments in corporate equities was raised to 50% and the use of concentration factors was introduced.

¹¹ The provision for investments in the quotas or units of other pension funds aimed to enable small AFPs to benefit from the professional investment management skills of the larger AFPs. It was meant to encourage new entry into the AFP system and stimulate greater competition. However, the provision has not been used by any AFP.

1989 The limit on investments in equities of "Chapter 12" companies was raised to 7% of the value of the fund or the capital of the issuer.

Investments in "Non-Chapter 12" companies was allowed subject to a limit of 1% of the value of the fund or the capital of the issuer.

Investments in real estate companies were authorized subject to an aggregate limit of 10% of the value of the fund and an individual limit of 7% of the fund or 20% of the capital of the issuer (real estate companies were authorized to grant mortgage loans and invest in mortgage bonds or mortgage-backed securities).

The composition of the Risk Classification Committee was changed by replacing the representative of the central bank with a fourth member from the AFPs and thus conferring majority control to the private sector.

1990 Pension funds were authorized to invest:

- in commercial paper up to 10% of the value of the fund;
- in shares of investment funds up to 10%; and
- in foreign securities. For the latter, a 1% limit is to apply initially. This will increase by an additional 1% over the next three years and will jump to 10% on the fifth year. However, the specific regulation governing investments in foreign securities has yet to be issued.

The limit for state securities was lowered further to 45%.

The limit for bank liabilities was raised to 50% with a sublimit of 30% on short-term liabilities (less than 1 year).

The limit on corporate bonds was raised to 50%.

These changes reflect a flexible response to the pressures and opportunities affecting the operations of AFPs. Thus, the authorization to invest in the shares of real estate companies is a response to strong pressures for greater involvement of AFPs in housing and mortgage finance. On the other hand, authorization of foreign securities represents a recognition of the maturity of the system, the large size of the pension funds in relation to the rest of the financial system, and the growing need for country risk diversification.

Pension funds are still prohibited from investing in the shares of AFPs and insurance companies. The prohibition of investments in other AFPs aims to avoid further concentration in the industry, while in the case of insurance companies, it aims to avoid potential conflicts of interest given the contractual and common ownership ties between insurance companies and AFPs. Moreover, because insurance companies and AFPs engage in similar activities, such investments would not provide adequate diversification.

Pension funds were not allowed to invest in mutual funds, but after the 1990 changes in investment rules, they are now authorized to invest in closed end investment trusts. Investments in open end mutual funds are still not permitted, mainly because of the likely duplication of administrative costs, since both types of institutions operate as collective investment institutions and their main income consists of the commissions they charge for their investment services. Moreover, open end mutual funds may be exposed to sharp declines in market value if investors engage in large scale redemptions. Authorization to hold shares of closed end investment trusts will provide scope to pension funds to invest indirectly in a wide range of less liquid investments, while maintaining the transparency, market valuation and liquidity of quoted investments.

The strict investment limits, especially those that apply on the equities of individual companies, tend to put large pension funds at a competitive disadvantage. Small pension funds are able to place a greater proportion of their funds in the equities of individual companies with good prospects since for them the binding limit may be the share of their own funds that can be invested in different instruments. For large pension funds, the binding limit may easily be the share of an issuer's total equity capital. As a result, large pension funds are forced to invest a smaller proportion of their total portfolio in the equities of individual companies and their total returns may suffer in comparison to those of smaller funds.

The pension fund system was effectively used to promote the privatization of public utilities and other state-owned companies in the mid-1980s. Various measures were taken to protect pension fund investments in partially privatized enterprises from risks associated with political decisions. Thus, the privatized firm's investment, financing and pricing policies had to be approved formally both by the Government and by an absolute majority of the private shareholders, while AFPs retained the full right to sell their holdings if any politically motivated actions were thought by the Risk Classification Committee to threaten the profitability of the firm.

Pension fund investments have also been used to encourage greater dispersion of ownership of private companies. A significant strengthening of the rights of minority shareholders has protected the interests of pension funds as well as those of other minority shareholders. AFPs as pension fund agents enjoy full voting rights corresponding to their shareholdings in different companies.

2.8 Control and Supervision

The AFP system is supervised and controlled by the Superintendency of AFPs (SAFP), which is an autonomous agency linked to the Ministry of Labor and Social Security. The Superintendent of AFPs is appointed by the President of the Republic and enjoys considerable independence and authority. The SAFP has the right to authorize and revoke the license of AFPs, to interpret the law and issue detailed regulations for the efficient functioning of the system, and to promote changes in the law as necessary.

The SAFP has a major responsibility in supervising the operations and investments of AFPs. It requires the submission of detailed reports on investment transactions and the financial position of both the pension fund and the AFP, reviews the insurance contracts used by the AFPs with regard to the offer of disability and survivorship pensions, and ensures that they credit contributions received to members' accounts and pay promptly the pension benefits due.

The SAFP also controls the operation of the profitability reserve funds and the investment reserves of AFPs. It imposes fines and supervises the liquidation of AFPs that fail to maintain adequate investment reserves or to comply with regulations for the custody of investment documents.

2.9 State Guarantees

The Chilean pension system involves three types of guarantees offered by the State. First, there is a guarantee for the payment of a minimum pension to affiliates who have made contributions for at least twenty years. If the balance on a member's account is not adequate to buy a life annuity that pays at least an amount equal to the minimum pension, the State undertakes to make up the difference. The State also offers a similar guarantee to members who opt for scheduled withdrawals but find after a number of years that the remaining balance provides them with a monthly payment that is lower than the minimum pension.

Second, the State guarantees the minimum profitability of pension funds. An AFP would first use the profitability reserve of the pension fund, if one already exists, to make up any shortfall in the rate of return and then draw on its investment reserves. An AFP that is unable to make up a shortfall in the rate of return from its investment reserves is forced into liquidation. The balances of individual capitalization accounts are transferred to other AFPs, with the State making up the shortfall in profitability.

Finally, the State guarantees the annuity payments for old age pensions as well as for disability and survivorship pensions of failed insurance companies. The guarantee covers 100% of the minimum pension and 75% of the difference between the minimum pension and the value of the benefit involved up to a limit of U.F. 45.

It should also be noted that although the State does not provide a guarantee of a minimum real return, it does through its regulatory framework ensure that no pension fund will earn a minimum real return in any twelve month period that is below half the average for the industry.

A question that does not appear to have been addressed so far concerns the funding of the guarantees provided by the State. A fully funded system should in principle also provide for the funding of these guarantees. This would increase the confidence of plan participants in the financial solvency of the system. On the other hand, the accumulation of reserves by the State would raise familiar problems about their transparency and utilization. Perhaps, an alternative solution that would be compatible with the general adoption of market-based solutions would be to insure these contingent obligations with private domestic and foreign insurance companies.

III. THE PERFORMANCE OF AFPs

This section reviews the performance of the Chilean pension system over the first ten years of its existence. The first part of the section reviews the record of the industry as a whole, while the second part focusses on the performance of individual AFPs.

3.1 Total Funds

One of the most important indication of the early success of the AFP system in Chile is the accumulation of substantial long-term savings. Total resources of the pension funds increased from less than 1% of GDP in 1981 to 11% in 1985 and 26.5% in 1990 (Table 4). The average annual rate of growth was 47% over the whole period. It was nearly 80% between 1981 and 1985, but decelerated to just over 26% between 1985 and 1990.

Table 4

CHILEAN PENSION FUNDS - TOTAL RESOURCES

| | Amount* | TOTAL FUNDS Growth % p.a. | % GDP | NET CHANGE Amount* | % GDP |
|--------|---------|---------------------------------|-------|-----------------------|-------|
| 1981 | 68.4 | -- | 0.9 | 68.4 | 0.9 |
| 1982 | 213.1 | 211.5 | 3.6 | 144.7 | 2.6 |
| 1983 | 385.7 | 81.0 | 6.4 | 172.6 | 3.5 |
| 1984 | 508.3 | 31.8 | 8.6 | 122.6 | 3.3 |
| 1985 | 699.8 | 37.7 | 10.9 | 191.5 | 4.7 |
| 1986 | 918.0 | 31.2 | 13.4 | 218.2 | 4.7 |
| 1987 | 1122.7 | 22.3 | 15.5 | 204.7 | 5.1 |
| 1988 | 1378.2 | 22.8 | 16.5 | 255.5 | 4.5 |
| 1989 | 1699.4 | 23.3 | 19.7 | 321.2 | 6.5 |
| 1990 | 2249.4 | 32.4 | 26.5 | 550.0 | 10.9 |
| 1991/6 | 2696.5 | 39.7** | n.a. | 894.2** | n.a. |

* billion pesos of December 1990

** annualized

Source: Habitat (1991)

3.2 Coverage

As already noted, coverage in the Chilean pension system is far from universal. Indeed, one of the main criticisms of the new system is that its coverage is smaller than that of the old system in the early 1970s. Since self-employed people were not covered by the old system either and cannot account for the fall in coverage, the most likely explanation is the decline in formal employment in the 1970s and early 1980s.

Despite its optional character for some workers, the total number of affiliates increased steadily from 1.4 million in 1981 to 2.3 million in 1985 and to 3.7 million in 1990. In relation to the

labor force, the number of affiliates rose from 30% in 1981 to 57% in 1985 and 79% in 1990. The number of active contributors rose from 0.9 million in 1982 to 1.3 million in 1985 and 2 million in 1990. As a proportion of total affiliates, the number of active contributors fell from 63% in 1982 to 58% in 1985 and 52% in 1990 but in relation to the labor force, their number increased from 25% in 1981 to 33% in 1985 and 41% in 1990 (Table 5).

The number of active contributors is based on data for December of each year and may understate the total number of contributors. Their number would be much greater if it was based on all affiliates who made at least one payment a year. On the other hand, the number of members who made contributions for the full year would be even smaller. Since pension benefits depend on total contributions made and the investment income earned, the low proportion of full-year contributors suggests that a large number of affiliates may fail to accumulate adequate balances and may thus receive a low pension. However, this problem is due to unstable employment patterns and interrupted contributions and not to the new system. In fact, a well functioning pay-as-you-go system would also pay lower pensions to workers with fewer contributions.

The difference between affiliates and active contributors is mostly made up by inactive accounts, mainly of unemployed workers, and by members who are in temporary employment schemes. But the large discrepancy implies that there may also be problems with evasion. Moreover, the interruptions in contributions that the data indicate suggest the likelihood of extensive future use of the government guarantee for minimum pensions, unless high rate of return make up for the difference.

Table 5

COVERAGE

| | Affiliates (% labor force) | Active Contributors (% labor force) | (% aff.) |
|------|-------------------------------|--|----------|
| 1982 | 39.3 | 24.8 | 63.0 |
| 1983 | 43.0 | 28.0 | 65.1 |
| 1984 | 49.6 | 29.3 | 59.0 |
| 1985 | 56.8 | 32.9 | 57.9 |
| 1986 | 60.7 | 35.0 | 57.6 |
| 1987 | 66.4 | 38.5 | 58.0 |
| 1988 | 69.9 | 38.9 | 55.7 |
| 1989 | 74.3 | 41.0 | 55.3 |
| 1990 | 79.1 | 41.5 | 52.5 |

Source: Habitat (1991)

3.3 Contributions

Annual contributions as a proportion of GDP were relatively stable in the early 1980s at around 1.8%. In 1988 they jumped to 3% and reached 3.4% of GDP in 1990 (Table 6). The continuing increase in the number of contributors and the rise of wages have been significant factors, especially in 1989 and 1990. However, the big jump in 1988 is also partly due to a change in accounting practice. Since 1988 the premiums for disability and term life insurance have been

included with contributions and deducted as commissions paid with no effect on the total assets of the pension fund.

Table 6

ANNUAL CONTRIBUTIONS

| | % of GDP | % of Net Change |
|------|----------|-----------------|
| 1982 | 1.90 | 71.7 |
| 1983 | 1.73 | 49.0 |
| 1984 | 1.80 | 54.7 |
| 1985 | 1.77 | 38.0 |
| 1986 | 1.91 | 40.9 |
| 1987 | 1.92 | 37.8 |
| 1988 | 2.94 | 65.9 |
| 1989 | 3.25 | 49.7 |
| 1990 | 3.41 | 31.4 |

Source: Habitat (1991)

3.4 Recognition Bonds

Apart from annual contributions and investment income, another important inflow into pension funds are the proceeds of recognition bonds paid to retiring workers. Because of the young age of the new system and the fact that few older people opted to transfer, the value of recognition bonds that have been paid so far is relatively small. They reached 0.5% of GDP in 1990 and represented 5% of the increase in the value of pension funds in that year. The proceeds from the payment of recognition bonds is likely to increase faster in the future as more transferees reach retirement age.

3.5 Investment Returns

A significant factor in the rapid increase in the total assets of the Chilean pension funds has been the realization of very high real rates of return. These reflect the high level of real interest rates that prevailed in the Chilean economy for most of the 1980s, but especially the downward trend of real rates that boosted capital values and resulted in very large capital gains.

The average real rate of return on pension funds amounted to 13% over the 10-year period. Annual rates of return experienced large fluctuations, ranging from 28.5% in 1982 down to a low 3.6% in 1984. Real returns exceeded 20% in the first 3 years of the funds' existence, fell to less than 5% in 1984, recovered to over 12% in 1985 and 1986, fluctuated around 6% between 1987 and 1989 and rebounded to over 15% in 1990.

The fluctuation in investment returns has been caused by large fluctuations in the market values of investment assets and concomitant changes in capital gains and losses. Capital gains on most marketable securities increase when interest rates are falling (and decline when they are rising) but returns on bank deposits rise when interest rates are rising. The net impact on investment returns depends on the portfolio composition of different funds. The growing importance of corporate equities in fund portfolios suggests a stronger relationship in future between rates of return and movements in stockmarket prices.

Table 7

Investment Returns

| | Rate of Return (% assets) | Investment Income (% of GNP) | Investment Income (% of Net Change) |
|------|---------------------------------|------------------------------------|---|
| 1982 | 28.5 | 0.71 | 26.8 |
| 1983 | 21.3 | 1.96 | 55.5 |
| 1984 | 3.6 | 1.65 | 50.2 |
| 1985 | 13.4 | 3.04 | 65.2 |
| 1986 | 12.3 | 2.95 | 63.2 |
| 1987 | 5.4 | 3.30 | 65.0 |
| 1988 | 6.5 | 2.29 | 51.3 |
| 1989 | 6.9 | 4.25 | 65.0 |
| 1990 | 15.6 | 7.32 | 67.5 |

Source: Habitat (1991)

In fact, the sharp rise in investment returns in 1990 is attributed to the strong performance of equities, which has been boosted by large capital gains due to the revaluation of assets. Thus, in 1990, investment income amounted to over 7% in relation to GDP and accounted for over 67% of the increase in pension fund assets. The strong performance of the stockmarket caused a further substantial increase in investment returns in the first half of 1991.

3.6 Pensions and Other Benefits

In 1990 pensions paid by AFPs represented 0.2% of GDP or 20% of the net change in total pension fund assets, while transfers to life insurance companies for the purchase of life annuities for old age as well as disability and survivorship pensions amounted to 0.6% of GDP or 6% of the net change in pension fund assets. The latter represent transfers of capital values.

The number of pensioners increased from less than 5,000 in 1982 to over 87,000 in 1990. Initially, all pensions were either disability or survivorship pensions but the number of old age pensions reached nearly 30,000 by 1990. The average value of pensions taken in the form of life annuities is 2.5 times greater than that of pensions based on scheduled withdrawals. There are two reasons, for this. First, because life annuities are not inherited, they can pay a higher pension than scheduled withdrawals. And, second, retired persons cannot use the life annuity option if their account balance is not adequate to cover the minimum pension requirement. Many pensioners have made contributions to the new system for a rather short period and this may explain the number of people with inadequate balances.

3.7 Commissions

AFPs are entitled to levy a number of different commissions. These include: a flat fee per collection; a percentage fee calculated on pensionable salary; a fee for opening new accounts; a fee per pension payment; and fees for voluntary savings accounts. No AFP has used the last two types of fees and only one has imposed fees on new accounts. As noted earlier, AFPs used to charge a management fee calculated on the outstanding account balance, but this was disallowed in September

1987. Apart from the flat fee per collection, which is deducted from member contributions, all other fees are paid in addition to contributions and are deducted from a person's wages.

The average level of commissions, which also include the cost of buying insurance for disability and survivorship pensions, increased from 3.40% of pensionable salary in 1981 to 4.83% in 1983. It has since declined steadily and reached 3.22% in 1990. These calculations refer to contributors with a constant pensionable salary equivalent to 12 U.F. The cost for contributors with lower incomes was much higher because of the impact of the flat fee per collection.

Table 8

Commissions

| | Gross % of wages | Net % of wages | Net % contrib. | Net % assets |
|------|---------------------|-------------------|-------------------|-----------------|
| 1982 | 3.56 | 1.77 | 17.7 | 14.3 |
| 1983 | 4.83 | 2.06 | 20.6 | 7.3 |
| 1984 | 4.63 | 2.32 | 23.2 | 5.6 |
| 1985 | 4.42 | 2.17 | 21.7 | 4.1 |
| 1986 | 4.21 | 2.05 | 20.5 | 3.4 |
| 1987 | 4.06 | 2.06 | 20.6 | 2.9 |
| 1988 | 3.93 | 1.43 | 14.3 | 2.9 |
| 1989 | 3.48 | 1.51 | 15.1 | 2.8 |
| 1990 | 3.22 | 1.54 | 15.4 | 2.3 |

Note: Gross commissions include premiums for disability and survivorship insurance

Source: Habitat (1991), Iglesias (1990)

One of the most persistent criticisms of the new system relates to the level of commissions charged by AFPs, especially on low income affiliates. It is estimated that, after deducting the premium for insuring disability and survivorship pensions, commissions amounted on average to 2.3% of pensionable income or 23% of contributions in the early 1980s, but fell to 1.5% of wages or 15% of contributions in more recent years. Net commissions as a ratio of average pension fund assets fell sharply from 14.3% in 1982 to 3.4% in 1986 and 2.3% in 1990².

The cost for low income workers was, however, much higher, especially in the early years of operation of the system. But, as already noted above, the flat fee per collection has fallen in real terms over the 1980s, while in recent years several AFPs abolished such fees altogether. For instance, four AFPs —Cuprum, Futuro, Proteccion and the ill-fated Bannuestra— did not charge a flat fee in 1990, while Habitat eliminated this fee in 1991, after significantly reducing its real value

¹² Expense ratios equal to 15% of contributions or 2% of assets are rather high for mutual funds but compare very favorably with those of most life insurance companies. Since the services offered by AFPs are a hybrid between those of mutual funds and life insurance companies, their expense ratios, which have declined substantially over time, may not be unreasonable. However, in the light of the very high real rates of return on equity achieved by AFPs in recent years (see Table 14 below), a further lowering of commission charges and expense ratios ought to be expected in the future.

during the 1980s. Moreover, since 1998 the flat fee is deducted from the accounts of active contributors only. Unemployed workers and workers who have retired from the labor force do not pay contributions and do not pay any commissions.

3.8 Account Transfers

A fundamental feature of the Chilean system is the right to transfer accounts between AFPs. This stimulates competition in the system and ensures a high level of operational and investment efficiency. Nevertheless, concern is often expressed that AFPs may incur unduly large expenditures in advertising and marketing their services and in trying to induce affiliates to transfer their accounts. It is estimated that as much as 30% or 40% of operating costs may be absorbed by promotional expenses. Moreover, advertising campaigns appear to place undue emphasis on short-term performance, which is inappropriate for accounts of a long-term nature that may span over 60 years.

Table 9

Account Transfers

| | Account Transfers 000s | Total Accounts 000s | % |
|------|------------------------------|---------------------------|------|
| 1985 | 211 | 2107 | 10.0 |
| 1986 | 178 | 2438 | 7.3 |
| 1987 | 183 | 2741 | 6.7 |
| 1988 | 300 | 3037 | 9.9 |
| 1989 | 310 | 3327 | 9.3 |
| 1990 | 384 | 3624 | 10.6 |

Source: Iglesias (1990)

A related concern refers to the expenses incurred in processing account transfers. In systems that lack sufficient computerization and automation this may imply high costs for employers who have to amend their records every time employees transfer their accounts. At present, administrative delays in processing account transfers result in an effective limitation on transfers of no more than 2 a year. There are, however, suggestions that account transfers should be subject to tighter limits. In addition, consideration may need to be given to imposing some limitations on the promotional activities of AFPs, especially with regard to the transparency of their advertising campaigns.

Account transfers have grown from 178,000 in 1986 to 384,000 in 1990. As a proportion of all accounts, transfers fluctuated between 6.7% in 1987 and 10.6% in 1990. In recent years, AFPs have adopted aggressive competitive strategies to attract high income affiliates and this may explain the increasing mobility of accounts.

3.9 Investment Profiles

Reflecting the strict investment rules imposed on pension funds, their assets were initially mostly invested in bank deposits, mortgage bonds and central bank/treasury securities. Thus, in 1981, 62% of assets were placed in bank deposits, 9% in mortgage bonds and 28% in state securities. Between 1982 and 1984, the share of bank deposits declined sharply. In 1983, following the banking

crisis, bank deposits accounted for only 3% of total pension fund assets, while the share of mortgage bonds rose to 51% and of state securities to 44%. Since then, the share of mortgage bonds declined steadily, reaching 16% in 1990. However, the real value of mortgage bonds in the portfolio of pension funds increased by 85% over this period.

Table 10
Investment Profiles
(%)

| | Bank Deposits | State Securities | Mortgage Bonds | Corporate Bonds | Corporate Equities |
|--------|------------------|---------------------|-------------------|--------------------|-----------------------|
| 1981 | 61.9 | 28.1 | 9.4 | 0.6 | - |
| 1982 | 26.6 | 26.0 | 46.8 | 0.6 | - |
| 1983 | 2.7 | 44.5 | 50.7 | 2.2 | - |
| 1984 | 12.9 | 42.2 | 43.1 | 1.8 | - |
| 1985 | 20.9 | 42.6 | 35.3 | 1.1 | - |
| 1986 | 23.2 | 46.7 | 25.5 | 0.8 | 3.8 |
| 1987 | 28.3 | 41.5 | 21.4 | 2.6 | 6.2 |
| 1988 | 29.5 | 49.7 | 20.6 | 6.4 | 8.1 |
| 1989 | 21.5 | 41.6 | 17.7 | 9.1 | 10.1 |
| 1990 | 17.4 | 44.1 | 16.1 | 11.1 | 11.3 |
| 1991/6 | 14.3 | 39.5 | 14.6 | 11.7 | 19.9 |

Source: Habitat (1991)

The most significant changes in the second half of the 1980s were the continued increase in the share of central bank securities to 42% in 1990, within a more or less constant total for state securities, and the considerable expansion of holdings of corporate bonds and corporate equities, each with 11% of total pension fund assets in 1990. By June 1991, equity holdings reached 20% of pension fund assets, mostly as a result of the large appreciation of equity values in the booming Santiago stockmarket.

The investment profiles of pension funds have been shaped by the tight investment rules that have imposed strict limits on equity investments. The significance of pension funds for each class of instruments, and the potential for further expansion once investment rules become more liberal, is shown by the share of pension fund holdings in the total market for each class of instrument (Table 11). Thus, pension funds held 20% of all bank deposits in 1990, 56% of mortgage bonds, 38% of central bank securities, nearly 100% of treasury securities, 56% of corporate bonds and 9% of corporate equities. Total pension fund assets corresponded to 20% of all liabilities of the Chilean financial system and to 40% of total bank credits.

The growth of pension fund investments in corporate securities since 1986 highlights the impact that pension funds can have on the development and deepening of the Chilean capital markets. But the relatively low share of total corporate equities held by pension funds underscores the large potential that still exists for a much greater impact.

Pension fund resources are expected to continue growing at a fast rate. Even if the rate of return on pension fund assets is equal to the growth rate of GDP, the continuing inflow of net annual contributions equivalent to 3.4% of GDP imply that as a minimum pension fund resources will reach

60% of GDP in another ten years time. With higher real returns, the ratio of pension funds to GDP will be higher and may even reach 100% of GDP by the year 2000. With the continuing tight limits on other investments, it is very likely that investments in corporate equities will be encouraged further by appropriate gradual relaxation of current limits on such investments.

Table 11

Significance of Pension Fund Investments
(% of class of instruments)

| | 1981 | 1985 | 1990 |
|-------------------------|------|------|------|
| Bank deposits | 3.0 | 11.9 | 19.9 |
| Central bank securities | 10.9 | 22.9 | 38.0 |
| Treasury securities | 0.7 | 46.5 | 99.7 |
| Mortgage bonds | 2.2 | 48.2 | 56.1 |
| Corporate bonds | 1.9 | 7.7 | 55.6 |
| Corporate equities | - | - | 8.6 |
| All financial assets | 1.7 | 15.8 | 19.7 |
| Bank credits | 1.6 | 15.6 | 40.1 |

Source: Habitat (1991)

In this respect, it is worth noting that the rule that prohibited investments in overseas assets has probably been instrumental in channeling pension fund investments into corporate securities of Chilean companies and in stimulating the development of the domestic capital markets. Although complete prohibition may be inadvisable as it would prevent a proper diversification of country risk, complete freedom may also be counterproductive as it would deprive the benefits of the increased availability of long-term funds for the domestic capital markets. The Chilean experience suggests that pension funds can be an effective force in stimulating innovation, improving efficiency and inducing desirable fiscal, legal and regulatory changes.

3.10 Privatization and Dispersion of Corporate Ownership

The Chilean pension funds have played a very significant part in the privatization of several state-owned companies, including Chile Metro, Chilgener, Chilquinta, Endesa, Entel, Laboratories Chile, Pilmaiquen, Schwager, Soquimich and Telefonos. The total holdings of all pension funds range from 10% to 35% of the equity capital of these companies. Holdings in privatized companies still represent the lion's share of pension fund equity holdings, accounting in 1990 for nearly 90% of their total investments in corporate equities.

The low level of other equity holdings is due to the combination of strict restrictions on investments in equities of companies with concentrated ownership and the apparent reluctance of Chilean companies to suffer a dilution of control through public listing and sale of equity stakes to pension funds and other investors and especially to submit themselves to the requirements of Chapter 12 of Law 3,500 that governs the operations of pension funds (see above). Thus, the use of pension funds for encouraging greater dispersion of corporate ownership has not produced any significant results as yet. To some extent, this may be due to the strictness of the applied investment rules. In fact, a relaxation of these rules may prove more effective in achieving this objective.

3.11 Structure of AFPs

The Chilean pension fund market has been characterized since its inception by a small number of management companies and a high concentration ratio. When the system was first established, 12 AFPs were authorized. Several of these were established with the participation of large banking groups. Thus, Provida was related to Banco de Santiago, Santa Maria to Banco de Chile, Invierta to Banco de Concepcion, San Cristobal to the B.H.C. Bank, Alameda to the B.H.I.F. Bank and El Libertador to Banco Edwards.

Table 12

Market Shares and Industry Concentration

| | 1981 | 1985 | 1990 |
|----------------------|------|------|------|
| <u>Pension Funds</u> | | | |
| Provida | 33.8 | 28.6 | 26.0 |
| Santa Maria | 27.6 | 22.9 | 19.2 |
| Habitat | 9.9 | 15.2 | 17.5 |
| Union | 12.4 | 10.4 | 8.4 |
| Summa | 4.5 | 10.2 | 9.6 |
| Cuprum | 1.6 | 2.9 | 6.2 |
| C2 | 61.4 | 51.5 | 45.2 |
| C3 | 73.8 | 66.7 | 62.7 |
| C4 | 83.7 | 77.1 | 72.3 |
| HHI | 2220 | 1795 | 1577 |
| <u>Affiliates</u> | | | |
| Provida | 32.9 | 29.9 | 29.0 |
| Santa Maria | 20.4 | 18.8 | 20.1 |
| Habitat | 5.7 | 11.8 | 17.1 |
| Union | 19.4 | 13.6 | 9.1 |
| Summa | 4.4 | 8.7 | 8.0 |
| Invierta | 9.1 | 6.7 | 3.9 |
| C2 | 53.3 | 48.7 | 49.1 |
| C3 | 72.7 | 62.3 | 66.2 |
| C4 | 81.8 | 74.1 | 75.2 |
| HHI | 2028 | 1714 | 1729 |

Source: Habitat (1991)

Following the banking crisis of 1982, these AFPs became temporary wards of the State, although they were swiftly reprivatized. 40% of Provida was sold to Bankers Trust Pacific Ltd and 51% of Santa Maria to Aetna Insurance Company. The remainder of the shares of these 2 AFPs was sold to several thousand individual shareholders as part of the program known as "popular capitalism".

In 1985, two AFPs --Alameda and San Cristobal-- merged to create AFP Union with major participation by American International Group (AIG). Three new AFPs were established in recent years --Proteccion in 1986, Futuro in 1988 and Bannuestra in 1990-- although the last-named was

unsuccessful and is now under liquidation. The French insurance company, AGF, acquired a 40% stake in Proteccion in 1990.

Of the 14 AFPs that were in operation in 1990, 5 were owned by trade associations or labor unions, including Habitat (owned by a trade association from the construction industry), Magister (teachers union) and Cuprum (workers from the copper mining industry), 5 were owned by a few local shareholders, and 4 had major foreign participation combined with a large number of local shareholders.

Concentration in the industry is very high, although it has fallen considerably in recent years. Moreover, market shares have not been constant and relative positions have changed significantly over time. Thus, the largest 3 AFPs have suffered a fall in their share of total pension funds from 74% in 1981 to 63% in 1990. The level of concentration in terms of affiliates has declined less sharply from 73% to 66% (table 12). These changes in concentration are also highlighted by changes in the Herfindahl index (HHI). In terms of total pension funds, the Herfindahl index fell from 2220 in 1981 to 1577 in 1990, while in terms of affiliates it fell less drastically from 2020 to 1729.

In the United States a Herfindahl index of 1800 is considered high and a threshold for initiating antitrust examinations of proposed mergers and acquisitions. However, it is important to note that there is no direct relationship between the degree of concentration of an industry and the level of competition. Oligopolistic markets are not synonymous with uncompetitive markets. In contestable industries subject to low entry and exit costs, the threat of potential competition from new entrants may be as important as the number of actual competitors in influencing the behavior of market participants. In Chile, the high returns achieved by AFPs in recent years have stimulated new entry. One new AFP has already been established in 1991 and 3 more are under formation.

3.12 Investment Returns

A comparison of market shares in total funds and affiliates reveals that the two largest AFPs used to have above average levels of total funds per affiliate but in recent years they fell to below average. This may reflect their inability to earn as high returns as the smaller AFPs, a result that is most probably caused by the adverse impact of the strict investment rules on their overall performance. This particularly applies to investments in corporate equities that have been authorized since 1985. Detailed data on the returns achieved by different AFPs for the pension funds under their management show that Provida and Santa Maria used to earn above average returns prior to 1985 but lagged behind the average for the industry in more recent years. For instance, in 1990, Provida's real rate of return was 13.3% and Santa Maria's 14.6% against an unweighted average of 17.2% (Habitat, 1991).

A more interesting comparison relates to the real rates of return of individual accounts. These differ from overall investment returns because they take account of two commissions charged by different AFPs: the management fee over the total value of the fund, which was eliminated in 1987, and the flat fee¹³. The regressive impact of these commissions in the early years of the system is

¹³ The returns on individual accounts do not reflect differences in the level of commissions on contributions which are paid by affiliates on top of their 10% contribution rate.

clearly shown in Table 13 which reports, for the period between June 1981 and December 1990, the investment returns on the total pension fund for each AFP as well as the average real rates of return for three different sizes of accounts: pensionable income equivalent to 5 UF, 15 UF and 60 UF.

Table 13

Real Rates of Return
(June 1981 - December 1990)

| | U.F. 5 | U.F. 15 | U.F. 60 | Total Fund |
|------------------|-----------|------------|------------|---------------|
| Cuprum | 9.22 | 11.22 | 11.92 | 16.3 |
| Invierta | 7.06 | 10.25 | 11.31 | 13.9 |
| Union | 7.49 | 10.26 | 11.20 | 14.2 |
| Planvital | 7.29 | 10.12 | 11.08 | 13.7 |
| Summa | 7.61 | 10.00 | 10.82 | 13.4 |
| Concordia | 8.48 | 10.20 | 10.80 | 14.3 |
| Habitat | 9.35 | 10.35 | 10.71 | 12.8 |
| El Libertador | 7.38 | 9.80 | 10.63 | 12.4 |
| Magister | 6.83 | 9.21 | 10.03 | 13.1 |
| Santa Maria | 6.87 | 9.11 | 9.89 | 12.6 |
| Provida | 6.48 | 8.94 | 9.78 | 13.1 |
| Weighted average | 7.53 | 9.69 | 10.43 | |

Source: Habitat (1991)

The difference between the return on low income and high income accounts was on average nearly 3%. Compounded over a forty year period this would cause very large differences in the accumulated capital for different groups of affiliates. Thus, 100 pesos compounded at 7.5% per year (the average return for low income accounts) would accumulate 1804 pesos after 40 years, while the same amount compounded at 10.5% per year (the average return for high income accounts) would amass 5426 pesos or slightly over 3 times as much. 100 pesos paid annually over 40 years and compounded at 7.5% would grow into a capital fund of 22,725 pesos, whereas compounded at 10.5% the capital fund would reach 50,725.

It should, however, be stressed that the results reported in Table 13 are based on average performance over the first ten years of the system. As the management fee has been eliminated and the flat fee has declined in real terms, the difference in performance has also become smaller. In fact, since 1988, the gap in investment returns between low and high income accounts has narrowed significantly. On average, it is now less than 1 percentage point.

3.13 High Concentration, Competition, and Corporate Governance

The high concentration of the pension fund sector is causing some concern because of its potentially adverse impact on competition and efficiency. It should, however, be stressed that high concentration need not result in lack of competition or high costs. First, the relaxation of entry criteria has increased the threat of potential competition. Second, large AFPs may benefit from economies of scale that could be reflected in lower commission charges. In fact, the three largest AFPs charge lower commission rates than the average.

As already mentioned above, the underperformance of the large AFPs is the result of the tight investment rules on equity holdings that have penalized large AFPs. Individual accounts have shown a low price and return elasticity, which may reflect high consumer costs in terms of inconvenience of transferring accounts and perhaps also the expectation among affiliates that differences in performance are unlikely to persist for long. Another factor may also be the cost of obtaining good information about prices and returns.

The apparent low price and return elasticity of individual accounts suggests that large AFPs may continue to underperform the market and still suffer relatively modest falls in their market shares, especially in terms of affiliates. To enhance the elasticity of demand, it is important to improve the flow and quality of information to affiliates.

The high concentration of the industry is also related to corporate governance issues and the influence that representatives of a few large AFPs may have on corporate policies, especially in companies where the combined shareholdings of different AFPs give them effective management control. Already, with a relatively low share of corporate equities, there is some concern about the influence of the managers of AFPs in privatized companies, where AFPs have large combined holdings.

It should, however, be noted that the high level of concentration may avoid the "free-rider" problem and emphasis on short-term corporate performance that might result from a fragmentation of the pension fund sector. When institutional investors have small stakes in individual companies, they have weaker incentives to collect and process information about the affairs of individual companies and to take an active interest in their future prospects. There is a risk in a fragmented pension fund sector that no pension fund will take care to strengthen the management and long-term performance of individual companies. Excessive reliance may then be placed on the threat of takeover and other market mechanisms to stimulate corporate efficiency, which may not always be effective. However, close involvement in corporate governance presupposes that pension funds invest in information gathering and processing and develop the required expertise to ensure that their interventions in corporate affairs have beneficial effects. Thus, the high concentration of the pension fund sector may be a blessing in disguise, but only if pension fund managers discharge their corporate duties with responsibility and foresight.

3.14 Financial Results

Despite their successful record in investing members' funds, the financial results of AFPs as profit-making entities were pretty dismal in the first five years of the operation of the new system. They suffered substantial losses in 1981 and 1982, mostly because of large start-up expenses that were amortized within the first four years of operations. Their activities became profitable after 1984 but their cumulative results remained negative until 1986. However, the profitability of AFPs rose considerably over the past few years and reached real rates of return on equity of 50% and 47% in 1989 and 1990, respectively.

The profitability of AFPs can be analyzed in two different ways. One is to treat them as financial service providers with a relatively small asset base and very low leverage. This approach would normally show a high return on assets (ROA) and also a high gross income margin (gross income as a percentage of average assets). The alternative approach is to treat them as financial

intermediaries and compare their profitability and leverage to the total assets of the pension funds under their management. This approach would show much lower ROA and gross income margins. In both approaches, however, the profit ratio (i.e. the net profit as a ratio of gross income) and the return on equity (ROE) would be the same.

Table 14 summarizes the financial results of the AFPs for two sub-periods, 1982-85 and 1986-90, as well as for the whole period 1982-90. As it can be seen, based on their own assets only, AFPs achieved high gross income margins of 85% and 123% of average assets in the two subperiods and 107% for the whole period. Their ROAs were also very high in the more recent period at 26%. However, in relation to the total assets of pension funds, their gross margins were over 7% in the first sub-period but as low as 3.3% in the second subperiod. Moreover, the return on total pension fund assets was less than 1%, which is comparable to the ROAs achieved by banks and insurance companies in developed countries.

Table 14

Financial Results of AFPs

| | PR | GIM | ROA | LEV | ROE |
|--------------------------------------|------|-------|------|------|------|
| <u>Based on AFP assets</u> | | | | | |
| Average 1982-85 | -1.4 | 84.8 | -1.2 | 1.5 | -1.8 |
| Average 1986-90 | 21.4 | 122.7 | 26.3 | 1.4 | 36.8 |
| Average 1982-90 | 13.7 | 106.6 | 14.6 | 1.4 | 20.9 |
| <u>Based on pension funds</u> | | | | | |
| Average 1982-85 | -1.4 | 7.5 | -0.1 | 18.0 | -1.8 |
| Average 1986-90 | 21.4 | 3.3 | 0.7 | 52.6 | 36.8 |
| Average 1982-90 | 13.7 | 4.1 | 0.6 | 34.8 | 20.9 |

Source: Based on data reported in Habitat (1991)

As already noted, the ROE is unaffected by whether the focus of analysis is the asset base of the AFPs or the pension funds under management. After a difficult first subperiod, AFPs have come to earn very high real rates of return. The high returns may attract new entry so that the threat of potential competition may force AFPs to adjust voluntarily their prices. However, if potential competition proves ineffective in lowering prices and ROEs, perhaps because of economies of scale enjoyed by the larger institutions, then regulatory intervention may be justified. This could impose price caps similar to those used in the regulation of electricity and other public utilities in the United Kingdom and other developed countries.

Although AFPs provide a competitive service in a privately-managed system, the pension system is government-mandated and has several features of a public utility that could justify intervention, not only in regulating investment patterns but also in regulating levels of prices and profits. However, such intervention would be advisable only if the threat of entry from potential

competitors fails to keep prices and profits at competitive levels. As already noted, the high returns of AFPs in recent years have stimulated the interest of 4 new competitors.

3.15 Control and Supervision

The control and supervision of AFP operations is entrusted with the SAFF, a specialized supervisory authority that was established by the same law that created the pension system. The SAFF is divided into several divisional units that deal with different aspects of pension fund operations. It employs over 100 qualified staff, including several lawyers and between 30 and 40 financial auditors and examiners.

Three divisions play an important part in supervising the AFPs. These are the Division of Supervision of Institutions, the Division of Benefits and Insurance, and the Division of Finance. The first is responsible for receiving and examining the financial reports of AFPs on their own position and on the pension fund under their management. It verifies their compliance with all existing regulations and undertakes on-site inspections. It also manages the dissolution of AFPs that are subject to liquidation. The second is concerned with ensuring that services to affiliates, especially the collection of contributions, the maintenance of accounts and the payment of benefits, are provided on a timely and satisfactory way. It also controls the insurance contracts used by AFPs for the coverage of disability and survivorship pensions. The third supervises the management of the pension fund and reviews the effect of investment regulations. It has the important role of proposing changes in investment regulations in the light of developments in financial markets.

The supervision of the AFP system is quite effective. It is based on daily reports on investment transactions and monthly reports on their financial position and overall performance. Compliance of investment limits is under constant monitoring. AFPs are given each month their market shares in total pension funds for the calculation of their individual investment limits. If they exceed their limits by more than 3% of the value of the fund as a result of changes in market share or in market valuation, AFPs are allowed up to a year to bring their position within the limits. If the excess is less than 3%, they are not subject to any time limit, but they are prohibited from making new purchases until they fall back within their limits. An indication of the effectiveness of supervision is that whereas 3 AFPs have failed over the past decade, there was no loss to the pension funds managed by these AFPs.

IV. POLICY ISSUES AND LESSONS OF THE CHILEAN EXPERIENCE

4.1 Policy Issues

There can be little doubt that the performance of the Chilean AFP system over its first ten years of operation has not only been highly successful but has exceeded all reasonable expectations at the time of its launching. However, despite its impressive record, it may be too early after only ten years of existence to conclude that the AFP system represents a robust, efficient and equitable solution to the perennial problem of providing adequate and affordable pensions to retired workers and their dependents. As already noted, the financial contracts underlying the AFP system span more than sixty years. Ten years are clearly too short a period to draw definitive conclusions.

The Chilean AFP system has a number of operating characteristics that define its advantages and disadvantages over other types of pension systems. It is a compulsory system for employed workers¹⁴. Compulsory participation is premised on the argument that people behave myopically and will not provide adequately for their financial needs in old age. But compulsory participation imposes an obligation on governments to ensure the integrity and solvency of the pension system. A system with compulsory participation should also aim for modest pension benefits. Individuals who want to achieve higher replacement rates can engage in voluntary saving. In Chile, the contribution rate is fairly modest and the regulatory framework is both robust and effective. Thus, the AFP system meets the basic requirements of a compulsory system.

The AFP system is a fully-funded defined contribution system, at least as far as old age pensions are concerned. As such, it has a strong link between contributions and benefits and avoids the redistributive effects and labor market distortions of defined benefit schemes. But, in defined contribution systems, the allocation of risks is tilted against workers. Affiliates assume the replacement, investment, inflation and solvency risks of pension savings. They clearly run the risk of ending up with low pensions relative to their contributions or relative to their pensionable salaries¹⁵. In Chile, pension funds achieved extremely high real rates of return in the 1980s. Even if real returns fall to more sustainable levels in the future, they will be able to provide adequate benefits to their affiliates. However, the risk of adverse developments in financial markets and investment losses is still there and is largely assumed by affiliates.

Several measures have been taken to protect the interests of affiliates. The use of indexed instruments provides protection against inflation, even though individual account balances are not themselves indexed. However, indexation of financial contracts is really effective only when inflation is constant or falling. If inflation is rising, and especially when it is accelerating at a rapid pace, indexation mechanisms become less effective. The real value of accumulated balances and future benefits may then be seriously eroded. In the mid and late 1980s, the Chilean economy benefitted from growing macroeconomic stability and this has had beneficial effects on the performance of

¹⁴ For a fuller discussion of the operating characteristics of different types of contractual savings institutions, see Vittas and Skully (1991).

¹⁵ For a discussion of pension funds as providers of retirement income insurance, see Bodie (1990).

pension funds. Nevertheless, the future success of the Chilean AFP system, like that of any other pension system, is strongly dependent on the continuing maintenance of macroeconomic stability.

But even if inflation is moderate and stable, members of defined contribution systems are exposed to investment risk. The Chilean regulatory framework has various provisions to ensure that pension funds achieve minimum levels of investment returns by comparison to the average. However, the permissible range still allows for substantial differences in investment returns, especially if these are compounded over forty years or more.

Over the first ten years of its operation, the investments of the AFP system have been protected from the vicissitudes of financial markets by the strict investment rules that limited exposure to corporate equities. But, as the resources mobilized by pension funds have continued to grow and as corporate equities are widely perceived to offer on average and in the long run greater real returns than other financial instruments, the investment rules have been relaxed to allow greater allocation of funds into corporate equities. Although the initial results from the liberalization of investment rules have been impressive, mainly because of the booming conditions in the Santiago stockmarket, the growing proportion of assets held in corporate equities will increase the exposure of pension funds to a possible downturn in market prices with a clear possibility that investment returns may become negative over particular periods. The possibility of greater divergence in investment returns between different management companies will also increase, causing an unintentional redistribution among affiliates and perhaps creating strong pressures for political intervention.

Another policy issue is the exposure to possible political pressure to divert a proportion of the large resources mobilized by the pension funds into socially desirable projects that do not have easy access to market sources of funds. Already, there has been considerable pressure to channel funds into housing, which have been partially overcome by the authorization of investment in real estate companies. More recently, there have been pressures to direct funds into worthwhile economic projects. Although the provision of project finance could be organized in a securitized form that could meet the requirements and objectives of pension funds, there is also a danger that pension funds may be induced into direct involvement in project finance.

A further important policy issue concerns the authorization to invest in overseas assets and thus to diversify country risk. Complete freedom to invest in overseas assets may be counterproductive as it would deprive the benefits of the increased availability of long-term funds for the domestic capital markets, but complete prohibition may also be inadvisable as it would prevent a proper diversification of country risk. As already noted, the Chilean pension funds were not permitted to invest in overseas assets during the first ten years of their existence. The law was changed in 1990 to allow a gradual increase in such investments up to a targeted 10% of all funds, although the regulation that would enable the undertaking of overseas investments has yet to be issued.

The Chilean pension funds have played a very significant part in the privatization of state-owned companies in the second half of the 1980s. On the other hand, their contribution to the dispersion of corporate ownership has been rather limited, mainly because of the unwillingness of Chilean corporations to accept a dilution of control. However, an issue of great importance that is likely to grow in significance in future is the role of pension funds in corporate governance. This is an issue that bedevils the financial systems of most developed countries. There are no easy answers,

although it may be preferable to rely on a strengthening of sanctions in the event of misuse and abuse of corporate power rather than on prohibiting the involvement of pension funds in corporate management issues. Perhaps, the threat of regulation in the event of misuse of corporate power may be more effective in controlling the behavior of managers of AFPs than any actual rules and proscriptions.

Finally, an issue of concern to policymakers and contributing affiliates regards the promotional and administrative expenses incurred by AFPs in seeking to expand their business and attract more affiliates. As a system based on decentralized management, the AFP system is bound to incur higher marketing and operating costs than efficiently-run centralized social security systems and national provident funds. However, decentralized management with its reliance on competition among a number of suppliers provides a guarantee that pension systems will not suffer from excessive bureaucratic processes and inefficient operations. Moreover, decentralized management can make a more important contribution to the development of capital markets and the promotion of financial innovation. The threat of regulation, as well as the threat of potential competition from new entry, may be quite effective in keeping expense ratios within reasonable levels.

It is clear that any decentralized funded pension system, including the Chilean AFP system, is exposed to many potential risks. There is exposure to accelerating inflation and macroeconomic instability; to stockmarket fluctuations; to political pressures to divert funds to socially desirable but uneconomic uses; to excessive and undue influence over corporate affairs; and to high operating and marketing costs. Government has a basic role to play in ensuring that the system operates within a robust regulatory framework and is subject to effective control and supervision. Government also has a role to play in providing guarantees that protect a minimum level of benefits for affiliates that have interrupted and inadequate contributions and for those that suffer from the failure of particular AFPs. However, a most important role of government is to resist pressures to impose restrictions on the operations of pension funds that may undermine their safety and lower their returns.

It is important to remember that most social security systems in Latin American countries were originally established as fully or partially funded systems and were converted, initially de facto and subsequently de jure, into unfunded "pay-as-you-go" systems when inflation eroded the value of accumulated balances and political pressures led to increased benefits without a commensurate increase in contribution rates. However, the Chilean AFP system is based on individual capitalization accounts with a strong link between contributions and benefits. Affiliates may represent a strong constituency against the use of pension funds for short-term political purposes. Although it is hoped that political pressures will be resisted, only time will tell how successful such resistance can be.

4.2 Lessons of the Chilean Experience

The Chilean experience shows that a bold reform of a bankrupt public pension system is feasible, despite the presence of several complex issues that inhibit similar initiatives in other countries. Although the Chilean reform is still confronted with some important issues, such as the high concentration of the industry, the less than universal coverage, the low price elasticity of demand and the role of AFPs in corporate governance, its experience shows that the more fundamental issues confronting a radical pension reform, such as the fiscal impact of the transition to the new system, the equitable treatment of old system pensioners, the absence of well developed financial markets and the

weakness of regulation and supervision, can be overcome if there is strong political will to create a robust, efficient and fair system.

Perhaps the strongest objection, which is inhibiting many governments from adopting similarly bold reforms, concerns the fiscal implications of the transition from a long-standing PAYG public system to a fully-funded private one. It is clear that, as a result of the loss of large numbers of active contributors, the public system would suffer substantial losses in revenues but would continue to be liable for the payment of pensions to people already retired and to those workers who would go into retirement during the transition period. The public system would also have to finance the accrued pension rights of workers who transfer to the new system.

The deficit of the public system following a pension reform would exacerbate fiscal pressures and would make more difficult the achievement of a balanced budget. In Chile, the deficit of the public system amounted to 5% of GDP in the early 1980s. The payment of recognition bonds on retirement has deferred the full fiscal impact of the reform, the future burden of which has been substantially mitigated by the strong performance of the Chilean economy in the late 1980s.

Another complex issue relates to the equitable treatment of different generations of workers. This issue is often complicated further by the absence of good records on the past contributions of individual workers. In Chile, the absence of good records has led to protracted disputes and ad hoc solutions. But encouraged by the effective increase in net wages offered to transferring workers, the transfer of workers to the new system has been quite successful. The offer of financial incentives has clearly alleviated any underlying disputes about the true value of accrued benefits.

A third issue is the absence of well functioning financial markets. A traditional argument against fully funded social security systems has been the concern that in the absence of active securities markets, accumulated funds might be used as captive sources for funding government deficits. Without active and efficient financial markets, privately-managed personal pension plans would be unable to invest wisely and safely their accumulated funds. In Chile, the solution to this problem has been the adoption of strict investment rules that emphasized safety and profitability as the main investment objectives of pension funds. The accumulation of large amounts of funds has stimulated substantial changes in regulation and market practice and has contributed over time to the development of the Chilean financial markets.

The fourth issue relates to the absence of strong and effective regulatory and supervisory mechanisms. In the wake of the extensive problems faced by the banking systems of many developing countries, there is considerable reticence in many countries in promoting new types of long-term contractual savings institutions that presuppose for their success strong and effective systems of regulation and supervision. In Chile, a strong superintendency was created with the authority to supervise effectively the pension funds and take corrective action.

The Chilean experience suggests that advocates of these concerns may overstate their importance. Thus, the deficit of the public system may be financed, partly from general tax revenues and partly by issuing government bonds that, initially at least, would be taken up by the new pension funds. While equitable treatment during the transition period may be difficult to achieve, reform action may still be taken on terms and conditions that avoid excessive inequity.

The argument about the absence of well developed financial markets may also be unduly defensive. It overlooks the dynamic interaction that would evolve between growing pension funds and emerging financial markets and thus underestimates the contribution that private pension funds can make to the development of financial markets. In any way, governments can take positive action to eliminate or reduce legal, regulatory and, above all, fiscal impediments to the development of financial markets.

Finally, although the problems caused by weak regulatory traditions cannot be easily overcome, governments that are firm in their desire to reform their social pension systems can take action to create independent and effective supervisory agencies. Such action may include hiring and training qualified staff, building adequate data processing and information systems, and strengthening enforcement mechanisms.

Admittedly, most of these issues take a long time to resolve. But the long-term nature of some reforms should be an argument for bringing forward rather than delaying action. Faced with the complexity of these issues, many governments prefer to implement limited technical changes in their existing systems, such as reducing benefits by delaying the normal retirement age or lowering pension replacement rates and/or increasing revenues by raising contribution rates or providing supplementary funds through ad hoc "earmarked" taxes on various goods and services. Such changes may, however, do little more than postpone the undertaking of a more fundamental and bolder reform.

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