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**PENSION FUNDS, THE FINANCING OF TRANSITION COSTS
AND FINANCIAL MARKETS DEVELOPMENT.**

LESSONS FROM THE CHILEAN PRIVATIZATION REFORM

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Abstract

Privatization of its pension system in Chile offers an unique experience for the assessment of its effects on financial market development. In order to do so this paper suggest that an integral approach should be followed. One can not examine the effects on financial market of the creation of pension funds by developing a fully funded pillar, without examining the effects on financial markets of the complementary pay as you go publicly run distributive pillar. The latter includes the necessary government effort to honor its liabilities with the former system. These include the financing of pension benefits of those who where retired by the time the reform took place or remained in the old system. Also to cover for the compensation for contribution made to the old system by those who moved to the new one. And it also includes the financing of guarantees for minimum and assistance pension benefits for those eligible.

With this approach, three effects on financial markets are debated here. First, creation of pension funds does not necessarily secure investment capital and the support for equity market, unless a fiscal surplus to cover for transition costs is generated. Second, efficient financial intermediation is constrained by high administrative costs and lack of an educated transparency. It is also limited by the small growth and concentration of financial intermediaries due to prudential regulation needed to avoid risky investments, secure investment in liquid assets and avoid conflicts of interests. Finally, direct effects of the reform on national saving increases and on economic growth are difficult to identify when all contemporaneous economic reforms are taken into account. However, the existence of strong substitution between the public and private savings effects as well as between the compulsory and voluntary saving effects resulting from the pension system reform, can be used to show that the total effect is limited.

Introduction

The environment in which reforms to pension systems in Latin America are being discussed is characterized by four dimensions: Population aging and system maturation leading to high dependency ratios, relatively high labor force growth rates and significant levels of underemployment making it difficult to continue supporting generous welfare states, political and economic restructuring stressing a greater role of the private sector in the financing and management of traditional social programs, inefficiencies and administrative problems with state run systems. From the perspective of social security policy there are several issues at stake when pension systems are reformed. However, this paper will exclusively concentrate on a very specific one. Based on the Chilean experience it will deal with the likely effects on capital accumulation and on the functioning of the capital market.

The 1981 pension reform in Chile was pioneering and is considered as a reference for second generation reforms (Quessier, 1995). It was largely motivated by the need to overcome seven problems which are common to all systems operating throughout Latin America (Uthoff, 1994). These problems are: (1) the contribution of the original system's design and operation to labor market segmentation (i.e. multiple systems and lack of portability); (2) the lack of financing for solidarity schemes; (3) the evasion of contributions; (4) the loss of reserve funds due to inflation and/or political pressures; (5) the low coverage of independent workers; (6) the failures of operating through defined benefits within a pay as you go system, resulting in financial imbalances; and (7) the high administrative costs. The reform attacked the pay as you go system inconsistency between lifetime contributions and benefits at the time of retirement. The philosophy behind the reform was that workers participating in the system needed to learn to perceive a correspondence between efforts and benefits, and managers needed to learn to protect the reserve funds against inflation and political pressures.

The Chilean reform is characterized by a gradual but complete substitution of the pay as you go system by an individual capitalization system. The reform develops a pillar of fully funded saving based on individual pension funds accounts, with investments channeled to a variety of public and private long term instruments selected from a list of authorized ones, and managed by the private sector. Advocates of this reform enhance its role for financial market development. They use three interrelated arguments asserting that professionally managed pension funds can make a significant contribution to a functioning, competitive, and diversified capital market (Guérard and Jenkins, 1993 chapter 1). First, that pension funds will constitute a **source of investment capital and support for equity markets**, because the growth of pension funds would increase the availability of medium and long-term capital, and secure long-term financing for major infrastructure projects and residential construction. Second, that pension funds contribute to the **growth and diversity of financial intermediaries**, because, subject to the incentives and competition of a private investment market, they will allocate its substantial capital to the most rewarding investment opportunities, particularly under low transaction and information costs, and invest within a wide range of assets. Third, because the accumulation of funds in a private-funded pension system may also generate economic growth

through an **increased rate of national saving**, provided that additional contributions to pension funds are not totally offset by holdings of other assets.

The purpose of this paper is to provide some insights into these three arguments. First, it recalls that the complementary state-run pillar involves important fiscal transition costs to cover for contributions to the old system by those who moved to the new one, to cover for the pension benefits of those already retired and of those retiring under the old system, and to cover for minimum pension insurance of the poor. The manner in which the financing of these costs is performed influences financial market development. In practice these costs have resulted in large social security deficits which have required public sector resources to finance important transfers to elderly family members. Second, it argues that prudential regulation, needed to protect pension funds against risky investment and to reduce conflict of interest in financial markets, constrains the range of investment alternatives by instruments and issuers. This, together with high administrative costs have limited an efficient process of financial intermediation. And third, the paper shows that it is not the new capitalization scheme, but rather the high public sector saving and increases in non social security private saving the major factors which explain the relatively high returns to the pension funds and the significant national saving increase in Chile, respectively.

In the next section, the main characteristics of the Chilean pension reform framework are described. In section two, the main outcomes which are relevant to the above three arguments are presented. In section three, these arguments are discussed in greater detail. Finally, the main lesson from, and the current challenges to the reform, are presented in section four.

**1. Main characteristics of the Chilean reform in overcoming
the seven recurring problems**

In order to overcome the seven recurring problems faced by the earlier system organized under a pay as you go regime, the reform in Chile provided a framework in which participants perceived a correspondence between efforts (saving) and benefits, and managers were given incentives to defend pension funds against inflation and political pressures. Participation is compulsory for wage-workers and voluntary for independent workers. Taxes are collected by private independent pension fund management firms (Administradoras de Fondos de Pensiones - AFPs), and invested on financial instruments authorized by the Superintendency of AFPs.

Irrespective of their place of work and occupation, the reformed system treats all participants equally with respect to their rights and obligations (no preferential benefits). Participants actually contributing are called contributors, and their number differ as many of the first have moved into independent jobs, are temporarily unemployed or out of the labor force, and/or have registered more than once in the system. The system is compulsory for wage earners and voluntary for independent workers. Wage earners who were working by the time the reform was put into practice could choose to stay in the old system. New entrants as wage earners are obliged to participate in the new system. Each contributor contributes on a monthly basis 10 % of his taxable income to pension fund and pays an additional proportional fee to the AFP to cover its administrative costs as well as for the purchase of disability and survival insurance. The affiliate can contribute with additional funds into a voluntary account, which are not part of the pension fund. The system assumes that independent workers will be motivated to participate in the system because contribution rates are lower, and the process through which benefits are determined by the returns of the fund, built from their own saving effort, is transparent. However, the fact that affiliates have access to their pension fund exclusively in cases of disability, retirement and death (for the surviving dependents) and cannot use the fund as a collateral, or unemployment insurance has prevented the significant participation of independent workers (see table 1). Differences on the age at retirement by gender are the only discrimination factor with respect to the obligations, and benefits differ in direct response to the individual personal endowments/decisions (taxable income, period of contribution and returns obtained during the capitalization process - the latter as the result of having selected a particular AFP). Freedom to choose between competing pension fund management firms (AFP) on the basis of reported financial results regardless of their place and type of occupation, guarantees portability and contributes to reduced labor market segmentation.

For those persons pertaining to the old system, incentives to move into the new system include the lowering of social security taxes and the recognition of their past contributions, by means of a "recognition bond". The later is computed on the basis of seniority and income, and estimated as the present value of past contributions. These bonds are capitalized at a fixed 4 per cent real rate of return.

The reform provides for a subsidiary role for the government performed outside the system and within the realm of the fiscal budget. The minimum pension scheme guarantees a minimum benefit independent of the funds the members accumulate, with the only requirement being twenty years contributions to social security. The law also guarantees a public assistance pension benefit to cover for the elderly poor. Both these benefits are financed out of general taxes. Thus, solidarity schemes are built out of the system, and their financing covered by fiscal policy. The government performs this role through the Social Security Normalization Institute (Instituto de Normalización Previsional), the Undersecretary of Social Security and the Ministry of Finance.

Affiliates are informed on a quarterly and personal basis on their account status. Monthly reports, providing comparative information about the performance of the AFPs, are provided as a public good, either within journals or by the Superintendency of AFPs. Transparency of this process, and the fact that participants learn that pension benefits have a strong correspondence with saving efforts, is considered an incentive to reduce evasion of social security contributions.

Pension fund management firms (AFPs) are open corporations with the exclusive purpose of managing a single pension fund. They must maintain equity capital in proportion to the number of affiliates. This capital is completely independent and isolated from the pension fund itself. AFPs must guarantee a minimum return to pension fund investment, which is estimated on the basis of the average return obtained by all AFPs. If the affiliate so chooses at the time of retirement, the AFP must pay pension benefits under a monthly withdrawal retirement benefit alternative. Otherwise, the AFP must transfer the accumulated individual pension fund to an insurance company, selected by the affiliate. Returns are reported in real terms, and investment is done in financial instruments approved by the National Risk Evaluation Commission. The latter is an independent organization composed by the three superintendents from the financial sector (banking, securities and insurance, and pension fund managers). They also have four additional members selected from the AFP Association. This Commission is in charge of evaluating risk by issuers and financial instruments, and provides very strict regulations with respect to the portfolio composition of the AFPs according to issuers and instruments. The Commission may subcontract to private risk classification firms for the task of evaluating risks and providing the necessary recommendations. Management of pension funds by private firms which compete for affiliates on the basis of higher returns on their funds is used to secure the protection of these funds against inflation and political pressures.

The reform sets two main pension benefits under the capitalization pillar : those paid for retirement to the affiliate, and those due to disability and/or survival to dependents. The pension benefit for the affiliate is funded from five sources: (i) contributions net of commissions; (ii) pension fund investment returns; (iii) the recognition bond and its fixed real return; (iv) voluntary savings from the affiliate himself; and (v) the government subsidy in order to achieve a minimum pension fixed by law. In the case of disability or payment to survivors, these five sources are complemented by additional funding from the insurance company. All premiums and benefits are regulated and supervised by the State. Given that benefits are the result of the capitalization of contributions, the reform is characterized as moving from a system of defined benefits into one of defined contributions.

The AFPs charge an administration fee and collect an insurance premium in addition to the 10 % tax contribution. The fee was originally composed of fixed and proportional components, but for their distributive implications was later left exclusively with a proportional component (by leaving only the proportional tax there is an implicit subsidy from higher earning workers to lower earning workers). The insurance premium protects the dependents in cases of disability or death of the affiliate. The administrative fee and insurance premiums are set by market forces in the hope that a competitive environment will reduce them significantly.

2. Main outcomes of the reform

Outcomes of the reform can be classified into five topics: Explicit recognition of the Social Security Debt and Transition Costs, Population Coverage, Pension Fund Assets, Pension Fund Annual Revenues and Administrative Costs.

(a) Explication of Social Security Debt and Transition Costs

Undertaking a reform such as the Chilean one, involves a significant effort in public financing in order to meet the obligations with the replaced pension system. Converting from a pay-as-you-go system to a fully funded system requires financing by the government of three components of transition costs: the pension benefit of those already retired by the time the reform took place, the recognition bonds of those moving to the new system after having contributed to the old system, and the pension benefits that are guaranteed in the new system (minimum pension benefits and public assistance pension benefits). Estimates reported for the present value of such debt resulting from the first two components, have been placed at around 126 % of GDP (Holzmann, 1997, p. 31). Indirect estimates performed by ECLAC with a common methodology applied to several Latin American countries arrived, for the case of Chile, at a similar figure of 131 % of GDP (ECLAC, 1998, p. 199). The partial amortization of this debt that took place during the first fifteen years of operation of the system is shown in tables 2 and 3. It was originally estimated to imply a social security deficit starting at close to 4 per cent of GDP and decreasing at a rapid rate to figures slightly above 3 %. ECLAC estimates set this deficit at a constant value of 4 % of GDP, and the actual figures, which also include the amortization for the third component, have exceeded 4 per cent of GDP (ECLAC, 1998, p. 200).

(b) Population Coverage

Reported population coverage figures can be misleading (see table 2 columns (2) and (3) and figure 1). The number of affiliates (persons at least having contributed once) have increased from 1.44 million in 1982 to 5.72 millions in 1997. This would represent a universal coverage by that date. However the number of those actually contributing has risen from 1.06 million in 1982 to 3.22 million in 1997. This represents a coverage of about 60 per cent of the labor force which, although high according to Latin-American standards, is still well below what was expected. What is more striking is the increasing gap between both figures. The ratio of contributors to affiliates peaked to figures

slightly above 70 per cent in 1983 and then gradually fell and reached 57 percent in 1997. The explanation for this phenomena is under research, and authorities fear that it is an important source for future increases in minimum pension insurance needs.

(c) Pension Funds assets and revenues

The value of the pension funds has risen enormously. Figure 2 shows that in 1997 the total value of assets accumulated in the sixteen years of operation of the system was over 30 billion dollars. The pension funds increased in value from under one billion dollars originally, increasing their share in total GDP from 1 to 40 %. This should not come as a surprise because the system is in its maturing stage, and larger values respond to increasing numbers of contributors, as well an appreciation of assets due to the pension fund's demand for them in emerging capital markets.

In fact, annual real revenues of the pension funds are quite impressive. As shown in column (4) from table 2, they have varied within a range of -2.5 % and 28.6 % per year. Except for 1995 they have always been positive. The average real annual return for a person affiliated during all sixteen years of existence of the system is 11.4 %. However that for those who joined the system during the last six years, it is only 6.9 per cent, and only 4.1 % for those who joined in the last two years. Had a worker joined the system in 1995, the average return would be only 1.9 per cent. Hence, annual revenues of pension funds were high during the early years of the system's operation, but there is no guarantee that such revenues will be repeated in the future. Average real revenues close to 5 % are most likely to be observed in the future.

(d) Administrative Costs

Pension fund management firms compete for affiliates in an industry with important economies of scale. Table 4 shows that the number of firms increased from 12 to 22 between 1981 and 1993, and decreased to 13 in 1997. By that date, the three largest managers accumulated 69 % of the affiliates, 65 % of the contributors and 55 % of the fund, whereas the 6 largest accumulate 88 % of the affiliates, 89 % of the contributors and 85 % of the fund. These firms compete by means of securing participant transfers from other AFP to theirs, and, in order to do so, make use of a large sale force. The number of affiliates which have transferred between managers firms has risen enormously, from a number of 160 thousand per year in 1984 to figures close to 1.6 million in 1997. Such transfers represented 7 % of the affiliates in 1984, and 28 % of them in 1997. As an outcome of this process the total number of sales agents rose from 2,300 in 1984 to 18,000 in 1997 and administrative costs have not been reduced as it would have been the case in industries with important economies of scale. In fact, by early 1998 (January and February) the additional contribution to pay for manager fees is still equivalent to 2.23 % of taxable income (see table 2 column (1)) and, including insurance premiums, it rose to 2.98 % of the contributors taxable income (29,8 per cent of the legal contribution) (SAFP, 1998, p. 44).

3. Implications for Financial Markets

On the basis of the above outcomes, this section discusses the three implications for the development of capital markets which are commonly espoused by the advocates of the Chilean pension reform.

(a) Are pension funds a source of investment capital and support for equity markets?

Two factors make this implication of the reform conditional. First, a portfolio approach for investment of pension funds in emerging capital markets may yield unsustainable high returns as the result of large capital gains but poor wealth creation. Second, the outcome depends on the way the transition costs are being financed.

During the maturation period of the system there is an increasing number of new affiliates contributing to their funds, and very few are retiring. Thus, together with high rates of return, pension funds have grown to become an important component of capital market development. In Chile, investments by pension funds represented 1.16 % of GDP in 1981, and increased to 29.6 billion dollars, representing 40.2 % of GDP in 1997 (see table 5 and figure 2). Close to 17 % of the fund is invested in mortgage backed securities, and another 4 % in corporate bonds. Due to regulations, investment in shares is done in the secondary market. Thus, no more than 21 % of the fund contributes to the direct financing of real investment projects (see table 6 and figure 3). The rest is largely invested in financial instruments, most of which were underpriced at the time of their purchase by AFPs and hide uncertain real investment effects. In 1997, 23 % of the fund was invested in equity holdings, and an additional 4 % in saving deposits (which are indexed to inflation in Chile). Close to 40 % are in public debt (mainly for the accumulation of reserves at the Central Bank). As seen in table 5, pension funds have been the most dynamic of all components of investment and capital market development. However, high rates of return and rapid accumulation as discussed earlier are the result of high capital gains, which are unlikely to repeat themselves once underpricing of financial assets is eliminated, and not from particularly astute investment choices by private fund management.

In order to make pension funds totally available to non social security public debt financing, the government needed to make explicit the social security debt and create a fiscal surplus for its payment. Up to the present, the deficit to be financed by public saving is larger than the flow going to pension funds. Figures reported up to 1995, show that the social security deficit remained above 4 % of GDP, on top of predictions made for the last 15 years, and above the social security private saving flow (see table 3).

The relevant issue is the way the government accounted for the social security debt (Diamond 1994). In Chile there was very little issue of new public debt to finance the benefits being paid under the old system; the only exception being the debt received by workers on account of past contributions

in the form of recognition bonds. This decision implied the creation of a primary fiscal surplus on the order of 5.5 % of GDP, most of it to cover for the transition costs. Thus most of the accumulation that can be observed in Chile could not have been done without the buildup of a surplus to finance the transition. Otherwise, there would have been a considerable political incentive to channel the privatized mandatory savings into government debt. And with large government debt holdings by the intermediaries and a large continuing deficit, there is a strong incentive to pay low interest rates on this debt in order to lower the deficit. Had this been the case, the privatization experience would have failed to exhibit such large revenues. As stated by Diamond (op. cit.) rather than privatization being a cure for a chronic deficit, it may be the case that a surplus is an important condition for a successful privatization. In other words, in order for pension funds to be a source of investment capital, and support equity markets, it is necessary to create a fiscal surplus.

In conclusion, pension funds may contribute to support investment financing provided two conditions are met. First, funds' resources should be channeled to a greater extent towards financial instruments directly linked to real investment rather than towards uses in which returns are due mainly to transitory underpriced and already existing financial assets. Second, total resource availability for investment depends critically on a primary fiscal surplus large enough to cover for a significant share, if not all, the transition costs needed to amortize the old pension system debt.

(b) Are these funds efficiently allocated between increasing and diversified financial intermediaries?

Again, this implication is conditioned by two important characteristics of the environment where the reform was implemented. One is the need of regulation of the markets in which the funds are invested, and the other is the choice available to and the cost to be paid by the individual investor (affiliate).

Because the Chilean system is compulsory, the State remains responsible for the outcome of its performance. Prudential regulation of the markets in which these funds are invested restricts the range of investment alternatives where fund managers can allocate savings stemming from social security contributions. On the other side, pension fund managers are intermediaries between the affiliate and their pension benefit. But the only choice made available to the affiliate is that of the fund managed by any of these firms.

There are two sources of inefficiencies linked to these characteristics. The first, is from the point of view of the participants. This alternative has translated into very high administrative costs, in so far as management do not compete via prices but by differentiating their product making use of a large number of sale agents to influence individual choices. But, in turn, prudential regulation of the markets where funds will be invested restrains the diversification of funds available to the participants. Hence, individual choice is limited and very costly for the participant.

The second is precisely from the point of view of the intermediation process. Intermediaries

have not consistently grown in number due to large economies of scale, and have been incentivated not to differ too much from the average fund in the selection of their portfolios. The guarantee structure needed to protect the participant against risky investments does not allow the expansion of the range of alternative funds, and hence of financial intermediaries to grow.

Regulation in Chile seeks at least two forms of guarantees. First, it attempts to reduce conflicts of interest among various players in the financial market and thus authorizes a gradual expansion in the set of allowable assets as the regulatory framework in the capital market is being developed. Second, it tries to ensure that no fund will perform well below the average return on all funds which creates an incentive for fund portfolios not to differ too much from the average fund. As compared to a voluntary system with no guarantee structure the portfolio composition of pension funds reflects to a larger extent the regulatory oversight development rather than their efficient allocation between increasing and diversified financial intermediaries (see boxes 1, 2 and Figure 3).

Box 1

PRUDENTIAL REGULATIONS FOR THE INVESTMENT OF PENSION FUNDS

1. Pension funds can only be invested in financial instruments authorized by law.
2. Pension funds are subject to very strict norms of portfolio diversification both according to financial instruments and by issuers.
3. All financial instruments subject to investment by pension funds must be evaluated and approved by the National Risk Commission.
4. All instruments of pension funds portfolios are valued daily with prices established by the AFPs superintendent. (85 % of portfolios are valued at current stock exchange prices).
5. The financial management of any pension fund is subject to a requisite of minimum returns. This minimum is determinate relative to the performance of the other AFPs competing in the market.
6. At least 90 % of pension fund securities are in custody at the Central Bank.

Box 2

ORGANIZATIONAL REGULATIONS

1. Each AFP is an open corporation with an equity completely independent and isolated from the private pension fund it manages.
2. Each AFP can manage a single fund.
3. The corporation is responsible for warranting minimum returns to the fund and will respond, whenever it is necessary to reach that minimum, with capital reserves kept at the Central Bank.

In conclusion worker's choice of AFP and investment under a guarantee structure have made the system very costly for the affiliate (column (1) table 1) and restricted the range of investment options available to the funds (table 6 and figure 3). Rather than privatization of social security being critical for the allocation of funds into increasing and diversified financial intermediaries, it has become critical to allow for the careful regulation of capital markets. This is a significant benefit of the privatization process. However, the way this process is being guaranteed in Chile, has turned out to be costly, and a different combination of choice and guarantees may be needed to improve this stage of financial market development (Diamond 1994, op, cit).

(c) Does the reform increase national saving?

This implication is also dubious. Between 1980-84 and 1990-94 official figures report an increase of gross national saving of 18.2 points of GDP (see table 7). As discussed earlier, undertaking a reform such as the Chilean, involves two flows which can affect the outcome. First, the social security contributions now feeding private saving; and second, the explicit recognition of the social security debt which in the Chilean case demanded fiscal surpluses to cover for transition costs. How will national saving be affected by these two components depends on how we conceptualize the government organization to take account of such debt.

In order to clarify this issue, national account figures on national saving and its decomposition into public and private saving are combined in table 7 with these two outcomes of the reform: the social security deficit and the private social security saving reported in table 2. Following Arrau (1995) social security deficit (column (1) table 3) is added to the government current account surplus, which shows the actual public saving effort needed to undertake the reform. To be consistent with the above, the deficit is subtracted from the private social security saving (column (4) table 3). The logic behind this, is that the government creates the primary surplus to cover for the transition cost, and these resources are transferred to families' elderly members. As a result, the implementation of the reform required, a large public saving as early as 1980-84 (representing 7.4 % of GDP). The same increased to 9.3 % of GDP in 1990-94, and contributed 1.9 percentage points of GDP to the 18.2 points increase in Gross National Saving in Chile.

In order to explain the total national saving increase during this period it is necessary to understand what happened with private saving. Substitution takes place between social security private saving and other voluntary saving for retirement consumption. It can be estimated that the net effect of the reform on social security private saving went from a negative value of -4.6 % to a negative value of - 1.1% of GDP in 1990-94. A net improvement of 3.5 percentage points of GDP. Thus, most of the increase is explained by the 12.8 point of GDP increase in private non social security saving rather than by social security saving increases.

This increase in non social security private saving could not have materialized had there not been reforms in other areas of the economy which may have played a greater role in its growth. Most of these reforms reinforce each other and affect capital market development and saving promotion.

Particularly important are those reforms which have created adequate macroeconomic and institutional environments required to convert financial savings into real investment. Worth mentioning are the macroeconomic reforms leading to strengthen stabilization and improve efficient pricing (reforms attempting to lower inflation rates, achieve real positive but moderate interest rates and stable and credible real exchange rates). Also important are the reforms implemented to promote incentives for saving and investment. These include efforts at achieving primary surpluses in the fiscal sector, improve the regulation and supervision of the financial and insurance sector, and the privatization of public enterprises (now transformed into privately owned corporations).

The most important single reform affecting private non social security saving (mainly corporate saving) is that which changed the tax incentives to promote the reinvestment of profits. Such reform took place in 1984. With such an objective the reform reduced the tax rate for profits not paid out as dividends in open corporations from 46 to 10 percent. It also created uniform taxes for distributed profits by reducing those of open corporations from 43.3 to 31.5 percent, and at the same time maintaining the tax rate at 31.5 percent for closed corporations.

In sum, the direct effect of pension system reform on national saving is, at most, very weak. The final result depends on policies which on general are aimed at strengthening saving, irrespective of the organization of the pension system. Key among such policies is the generation of public sector solvency and saving, the adoption of macroeconomic policies promoting stability and efficient pricing (regarding the real exchange rate and the real interest rate) and specific policies which reinforce translating financial saving into real investment.

4. Pension reform and financial market development.

Lessons from the Chilean experience

The Chilean pension system reform transformed social security taxes into saving to build up individual retirement saving accounts (pension funds). This is one way to secure that the system will move towards a defined contribution regime, and try to solve some of the recurrent problems of pension systems. There are important lessons for the development of financial markets from the Chilean experience. These are derived from the strong interaction observed between the creation of pension funds (by means of implementing a fully funded pillar), the financing of the government liabilities (that result from this implementation) and the development of financial markets.

The Chilean model followed this approach and required the explicit recognition of a large share of the Social Security Debt. This paper argues that the use of pension funds as a potential source of investment capital and support for the equity market could not have been secured if transition costs to cover for such debt were paid with new issues of government debt. In practice, the actual size of pension funds made available as a potential source for those investments, was largely the result of government efforts to create a surplus to pay for the transition costs. Such an alternative

involved reductions in government expenditures in other sectors, improvements in tax collection and the use of resources from the privatization of former public enterprises. The high political costs of this option are not always bearable in other countries of the region, and other alternatives are being developed to reform the pension system and cope with this interaction (ECLAC, 1998, ps 201-203). In short, fiscal surpluses were important to secure the availability of pension funds as a potential source of investment capital and support for equity markets.

Nevertheless, the availability of pension funds as a source of investment capital and support of equity markets did not guarantee the growth and diversity of financial intermediaries. In this respect the Chilean model provides another lesson with respect to the aforementioned interaction. The number of intermediaries is limited by imperfect competition in an industry subject to large economies of scale, and the range of funds made available to participants is constrained by a very strict twofold structure of guarantees. As a consequence, portfolio compositions responded to development in the regulatory process rather than due to wise decisions by managers over a wide range of investment alternatives. In turn, participants have faced high administrative costs, due to the interest of managers in influencing their choice of pension funds, by hiring a costly and aggressive sales force. At last, pension funds are contributing to the growth and diversity of financial intermediaries, only as the result of development in the regulatory structure of the capital market. To the affiliate this implied his participation in an expensive system, choosing among a very restricted range of funds, and uncertain results.

The Chilean reform also teaches us that a fully funded system does not necessarily generate economic growth by significantly increasing the rate of national saving. Contributions to pension funds are financial saving. For national saving to increase, financial intermediaries need to allocate such resources into real investments, without substitution taking place within other forms of saving. Direct effects of the reform on national saving in Chile can only be explained as the result of the government decision to increase its surplus above that needed to finance the transition costs, and the result of decreasing substitutions between alternative forms of private social security saving. But both these effects hardly explain the 2.1 percentage points of GDP, of the total 18.2 percentage points of GDP increase in national saving in Chile between 1980-84 and 1990-94. Corporate saving stimulated by tax incentives is estimated to have increased 12.8 points of GDP between 1980-84 and 1990-94, explaining a large share of the 18.2 percentage points of GDP increase in national saving. The rest is explained by the 3.3 percentage points of GDP additional increase of public sector saving.

We have argued that, as the result of very strong interactions with the need to recognize important government liabilities and guarantees, the observed effects on capital markets of the Chilean reform are not necessarily replicated elsewhere. Advocates of the reform should be more careful when unconditionally proclaiming important capital market development and using the Chilean reform as a reference. A large part of its relative success is due to active policies to cover for fiscal costs, incentive corporate savings and develop a structure of guarantees with the necessary regulatory frameworks. But, parallel to these achievements, outcomes of the reform as discussed in section 2, show that improvements on population coverage, on the protection of pension benefit against loss of value due to inflation, and on the cure of fiscal budget deficits are not necessarily warranted. Hence, given the high transition fiscal costs and administrative costs of the Chilean pension reform one

wonders if they do not justify a closer look at additional pieces of reform to improve such important instrument of social security policy.

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Annex

Tables and Figures

Table 1

CHILE: POPULATION COVERAGE ACCORDING TO OCCUPATIONAL
CATEGORY AND FIRM SIZE

	Percentage of the Labour Force	Percentage Contributing	Does not contribute	Does not know
Occupational Category	%	%	%	%
Employer	3.5	46.1	49.2	4.7
Self employer worker	21.5	19.6	78.0	2.4
Salaried Employer	66.6	77.2	20.5	2.3
Indoor Domestic Servant	1.8	75.7	19.1	5.2
Outdoor Dom. Servant	4.1	39.1	58.7	2.2
Family member (unpaid)	1.7	19.4	87.9	2.7
Armed Forces	0.8	90.6	4.8	5.6
Does not know	0.0	6.8	81.1	12.1
Firm size	%	%	%	%
0 - 5	41.1	34.4	63.1	2.5
6 - 9	8.0	62.9	34.6	2.5
10 - 49	21.7	77.7	20.5	1.8
50 - 199	12.4	85.4	12.5	2.1
200 y +	12.5	90.9	6.8	2.3
Does not know	4.3	70.8	21.1	8.1
Total	100.0	61.1	36.4	2.5

Source: Estimates obtained from frequencies of responses to the socio economic household survey CASEN 1992.

Table 2

INDICATORS OF PENSION SYSTEM PERFORMANCE

Year	Administrative costs	Population coverage		Return to individual Savings		Transition Fiscal costs
	(1) Share of contribution	Share of labor force		(4) Return Pension Fund	(5) Gross National Disposable Income Growth rate	(6) Percentage of GDP
		(2) Participants	(3) Contributors			
1981	...	39.0	...	12.6	...	4.1
1982	40.3	39.3	24.8	26.5	-19.6	8.3
1983	60.8	43.0	28.0	22.7	0.4	7.5
1984	64.0	49.6	29.3	2.9	6.1	7.7
1985	49.2	56.8	32.9	13.4	-1.9	6.7
1986	45.1	60.7	35.0	12.0	6.4	6.3
1987	41.0	66.4	38.5	6.4	8.9	5.4
1988	29.6	69.9	38.9	4.8	12.3	5.2
1989	26.8	74.4	41.0	6.7	8.5	4.5
1990	24.4	79.1	41.5	17.7	0.8	4.6
1991	24.0	85.6	51.8	28.6	6.0	4.5
1992	23.7	88.9	54.4	4.0	9.2	4.3
1993	23.7	90.2	53.5	16.7	4.8	4.5
1994	22.3	95.6	54.3	17.8	7.5	4.5
1995	22.6	99.0	56.4	-2.5	15.7	4.3
1996	22.9	...	...	3.3	7.9	...
1997	22.7	...	...	4.8	9.0	...
1998	22.7	...	...	...	....	...

Source: Superintendencia de Administradoras de Fondos de Pensiones (several years) *Boletín Estadístico* Santiago de Chile
Banco Central de Chile (several years) *Boletín Mensual* Santiago de Chile.

Table 3

SAVINGS AND FISCAL DEFICITS DURING THE TRANSITION PERIOD

Year	Government			Private
	Social security Deficit			(4) Social Security Savings
	(1) Actual	(2) Projected	(3) ECLACs	
1980	1.7	1.7	1,7	0.0
1981	4.1	1,2	4.0	0.9
1982	8.3	3.2	4.0	1.8
1983	7.5	3.7	4.0	1.7
1984	7.7	3.9	4.0	1.9
1985	6.7	3.6	4.0	2.0
1986	6.3	3.7	4.0	2.2
1987	5.4	3.8	4.0	2.3
1988	5.2	3.4	4.0	2.7
1989	4.5	3.3	4.0	2.9
1990	4.6	3.4	4.0	3.0
1991	4.5	3.4	4.0	2.8
1992	4.3	3.4	4.0	3.3
1993	4.5	3.4	4.0	3.6
1994	4.5	3.4	4.0	3.9
1995	4.3	3.3	4.0	...
1996	...	3.2	4.0	...
Average. 80-84	5.9	2.7	4.0	1.6
Average. 85-89	5.6	3.5	4.0	2.4
Average. 90-94	4.5	3.5	4.0	3.3

Source: Arrau (1995)

(1) 1980 - 1988 Arrau (1992). 1989-1995 Estadísticas de las Finanzas Públicas 1989 - 1994, Dirección de Presupuesto.

(2) Iglesias and Acuña 1991

(3) ECLAC 1998

(4) National Accounts, Total Private minus Corporate saving

Figure 1

NUMBER OF PARTICIPANTS AND CONTRIBUTORS

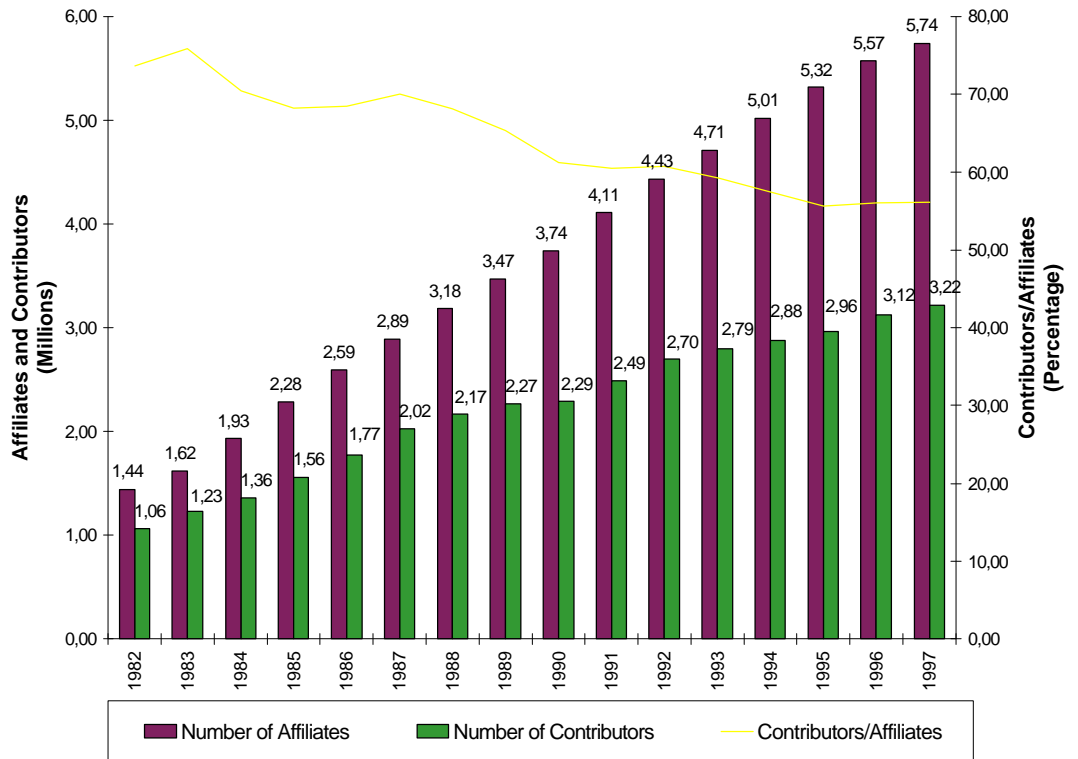


Figure 2

VALUE OF PENSION FUNDS

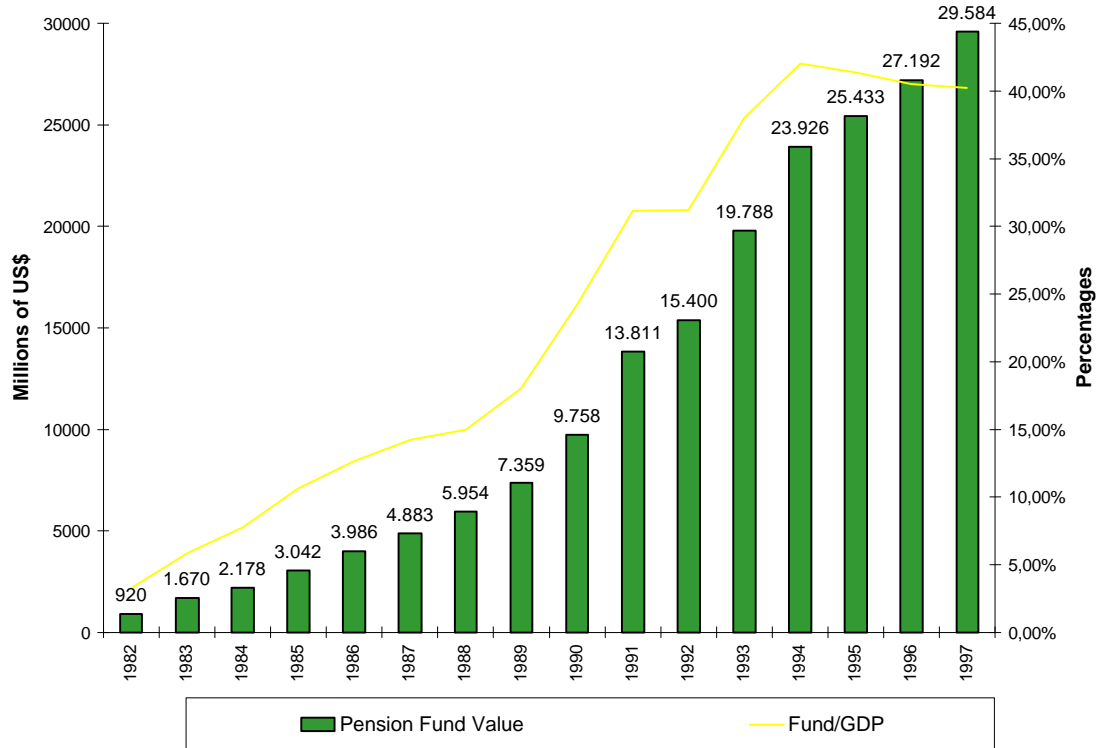


Table 4

CHILE 1981-1995: CONCENTRATION OF THE PENSION FUND, PARTICIPANTS AND CONTRIBUTORS

	1981	1987	1991	1993	1995	1997
	12	12	13	22	18	13
Share of Affiliates within largest three (%)	67	63	67	68	69	69
Share of Contributors within largest three (%)	..	66	69	68	67	65
Share of Fund within largest three (%)	71	67	59	54	54	55
Share of Affiliates within largest six (%)	86	89	87	85	86	88
Share of Contributors within largest six (%)	..	90	87	85	85	89
Share of fund within largest six (%)	91	89	87	80	79	85
Number of affiliates (thousands)	1400	2890	4109	4709	5152	5780
Number of contributors (thousands)	...	2024	2487	2792	2449	2662
Portfolio market value (Millions US \$ Dollars)	300	3570	10078	12395	22296	31000

Source: Monthly bulletins from the AFPs Superintendent.

Table 5 Chile. 1981 1997: Importance of pension funds in Capital market Development

Investment by type					
Date	Pension Fund	Mutual Funds	Foreign Capital Investment Funds	Corporate Bonds Issues	M7 - M1
1980	---	2.68	---	0,19	---
1981	1,16	2,62	---	0,37	27,72
1982	3,50	2,44	---	1,66	32,22
1983	6,43	0,55	---	1,51	31,06
1984	7,58	0,49	---	1,37	31,05
1985	10,63	0,76	---	1,53	37,94
1986	12,67	1,21	---	0,85	39,62
1987	14,20	1,43	---	1,37	43,03
1988	14,97	1,39	---	2,01	42,08
1989	18,01	1,32	0,38	3,37	49,52
1990	24,28	1,58	1,66	4,58	59,09
1991	31,15	2,62	2,95	5,55	60,81
1992	31,19	2,37	2,74	4,97	63,02
1993	38,00	2,93	3,73	4,93	64,29
1994	41,99	3,95	3,95	4,63	64,17
1995	41,34	4,01	3,06	3,79	65,43
1996	40,49	4,19	2,10	3,45	72,14
1997	40,20	5,39	2,16	2,73	77,34

Table 6
PORTFOLIO COMPOSITION OF PENSION FUNDS IN CHILE
(Percentages)

Year	Central Bank and Treasury bonds	Bank deposits and bonds	Mortgage Securities	Firm bonds and debentures	Common Stock	Fund millions US \$ equivalent	As a % of GDP
1981	28	62	9	1	0	219	0.9
1983	44	3	51	2	0	1670	6.4
1985	43	23	32	2	0	3986	10.9
1987	42	28	21	3	6	4883	15.5
1988	35	30	21	6	8	5954	16.5
1989	42	21	18	9	10	7359	19.7
1990	44	17	16	11	12	9758	26.5
1991	38	12	13	13	24	13811	34.4
1992	40	12	14	10	24	15400	31.7*
1993	41	9	14	8	28	19788	34.5*
1994	40	9	13	7	31	23926	41.0*
1995	39	9	15	6	31	25433	40.8
1996	42	7	18	8	25	27192	40.3
1997	40	14	17	6	23	29584	40.2

Source: AFPs Superintendency monthly bulletins.

* National accounts were revised and these figures are not comparable with the ones above.

Figure 3
PORTFOLIO OF PENSION FUNDS

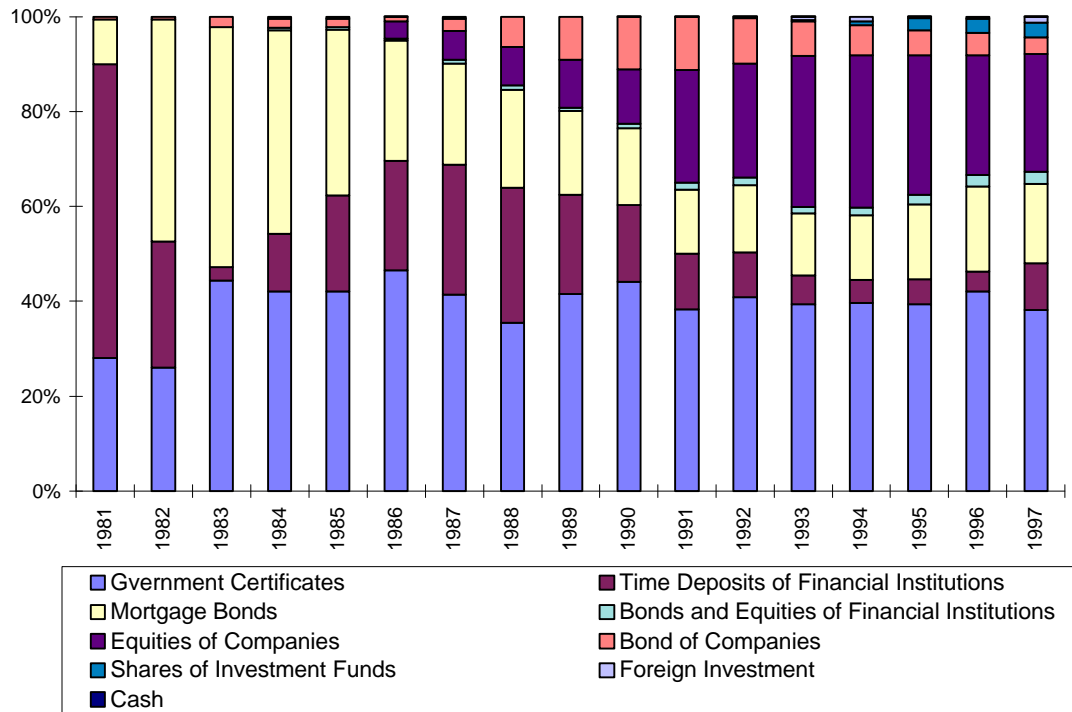


Table 7
NATIONAL SAVING DISAGGREGATION INCLUDING FISCAL SURPLUS TO COVER FOR SOCIAL SECURITY TRANSITION COSTS
 (figures reported as a % of GDP at current prices)

Years	(1) Gross National Saving	Government Saving				Private Saving		
		(2) Social Security Deficit	(3) Current Surplus	(4) Copper Stabilization Fund	(2)+(3)+(4) Total	(5) Social Security	(6) Non Social Security	(7) Total
1980	13.9	1.7	8.5	0.0	10.2	-1.7	5.4	3.7
1981	8.2	4.1	5.8	0.0	9.9	-3.2	1.5	-1.7
1982	2.1	8.3	-2.9	0.0	5.4	-6.5	3.2	-3.3
1983	4.4	7.5	-2.3	0.0	5.2	-5.8	5.0	-0.8
1984	2.9	7.7	-1.2	0.0	6.5	-5.8	2.2	-3.6
1985	7.8	6.7	0.4	0.0	7.1	-4.7	5.4	0.7
1986	11.5	6.3	1.3	0.0	7.6	-4.1	8.0	3.9
1987	17.3	5.4	3.0	0.5	8.9	-3.1	11.5	8.4
1988	22.3	5.2	3.0	3.0	11.2	-2.5	13.6	11.1
1989	23.7	4.5	3.0	3.7	11.2	-1.6	14.1	12.5
1990	24.2	4.6	2.5	2.3	9.4	-1.6	16.4	14.8
1991	24.1	4.5	3.7	0.7	8.9	-1.7	16.9	15.2
1992	24.8	4.3	4.9	0.3	9.5	-1.0	16.3	15.3
1993	23.9	4.5	4.8	-0.2	9.0	-0.9	15.7	14.9
1994	25.4	4.5	4.9	0.2	9.6	-0.6	16.4	15.8
Average 80-84	6.3	5.9	1.6	0.0	7.4	-4.6	3.5	-1.1
Average 85-89	16.5	5.6	2.1	2.4	9.2	-3.2	10.5	7.3
Average 90-94	24.5	4.5	4.2	0.7	9.3	-1.1	16.3	15.2

Source: Arrau (1995)

(1) Up to 1984 figures at constant 1977 prices. From 1985 onwards at constant 1986 prices

(2) 1980-1984 Arrau (1992). 1985-1988, Arrau (1992) adjusting figures with GDP at 1986 constant prices. From 1989 onwards Estadísticas de las Finanzas Públicas 1989-1994, Dirección de Presupuesto.

(3) y (4) Up to 1988 Vial y Marfán (1995). From 1989 Estadísticas de las Finanzas Públicas 1989-1994, Dirección de Presupuesto.

(5) Social Security Saving - Social Security Deficit (6) Private Saving - Social Security Saving (7) National Saving - Public Saving

