

**Preliminary version
for comments**

Reforming successful reforms: the case of the Chilean Pension System

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Working Paper

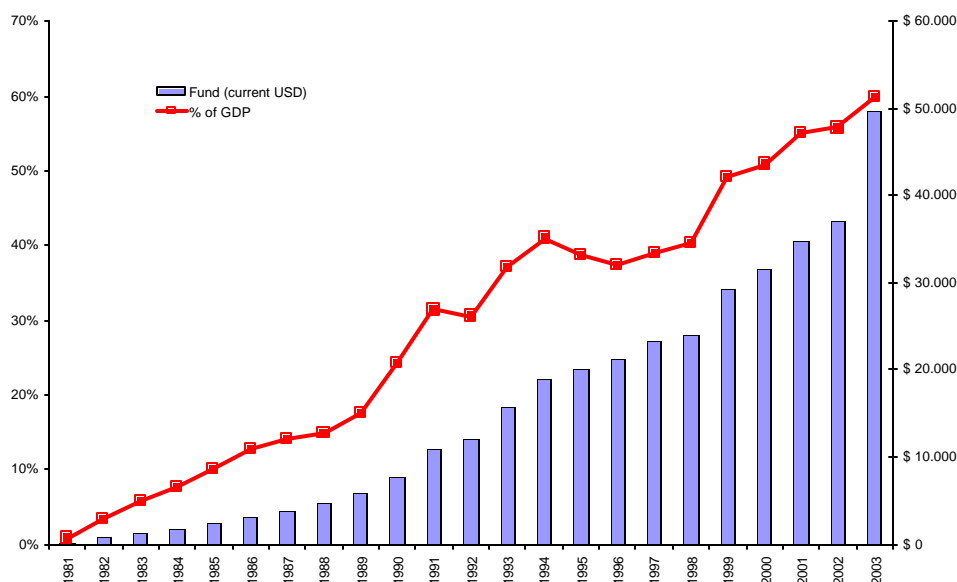
This working paper is being published with the sole objective of contributing to the debate on a topic of importance to the region, and to elicit comments and suggestions from interested parties. This paper has not gone through the Department's peer review process or undergone consideration by the SDS Management Team. As such, it does not reflect the official position of the Inter-American Development Bank.

1. Successes of a model

In many respects, the Chilean pension reform introduced in 1981 has been a success. As of 3rd quarter of 2004, total accumulated assets reached USD 53 billion, that is about 60% of GDP. Measured by this, Chilean pension funds are now fourth in the world after the Netherlands, the UK and the US. But contrary to them, which have several other institutional investors, in Chile pension funds became by far the biggest investors. Those assets have been invested in increasingly diversified portfolios.

In this context, pension funds have pressed the domestic financial market and authorities for improving and updating financial regulation, adopting better corporate governance standards and increasing transparency. They have induced specialization in investment decisions and promote the appearance of new financial instruments while increasing the size, depth and maturities in the financial market with secondary effects over other markets such as banking industry, insurance industry and mortgages.

The importance of being a Pension Fund in Chile



The outcome has been a significant impulse to capital market development and, through this channel, a statistically significant positive effect over total factor productivity and

growth. Corbo and Schmidt-Hebbel (2003) estimate that $\frac{1}{4}$ of the average rate of per capita growth in Chile between 1981 and 2002 is related, directly or indirectly, to the pension reform.

The high rate of GDP growth, partially explained by the pension reform itself, has delivered a high rate of return on capital and in particular on pension assets. After controlling for inflation, the average rate of return between 1981 and 2004 has been 10,2%, with only two years of mildly negative rates of return.

Two aspects deserve special consideration concerning the Chilean model, namely, demographic transition and the fiscal situation. The old Chilean PAYG system was in crisis and there was a growing consensus that a reform was needed. Indeed, the government of Frei Montalva in the sixties sent a reform proposal to Congress but it did not reach approval¹. The nature of the problems that led that reform proposal were basically the irrationality with which pensions were attributed and the chaotic appearance of 32 different regimes, some of them ignoring actuarial criteria and generating regressive benefits. The Chilean model started just before the current demographic transition appeared. There is no evidence that in the design of it there were special consideration to the demographic change. But the fact is that, from an actuarial point of view, DC systems are better prepared to adapt to the new demographic paradigm than DB systems for the simple reason that in the latter benefits are defined according to the dynamic of politics not of demographics and, obviously, they need not coincide.

The second aspect concern the transitional costs. Chile chose the most drastic reform forcing all new entrants into the labour market to choose the new system and putting very strong incentives to older workers to move to it as well. Those incentives affected both workers and employers. Under the old system contributions were mixed (worker / employer) and very high (they reached 50% of the salary by 1974), even though they financed, beyond pensions, health services and labour accidents. When taking only the pension contribution, they reached a maximum of 26%². The incentive to move to the new system were two. Workers obtained a substantial increase in real wage as contributions

¹ See Larrain (2005)

² Superintendencia de AFP (2002)

were cut by half and employers saw their part of the financing of the new system disappear. So there was a big incentive to move to the new system³.

But that left the old system without contributors and a big bunch of pensioners. Hence, the change induced a fiscal deficit which has been persistent, long lasting (it started in 1981 and is forecasted to last until 2025 approximately) and significant (the peak is at around 5% of GDP). This huge deficit was compensated by expenditure cuts in other areas, in order to accommodate it. But this accommodation cannot be understood avoiding to consider the very specific political situation of Chile at the time, namely, a strong dictatorship that was able to do this restructuring of public outlays cutting social expenditures to finance the pension deficit in the middle of the worst macroeconomic crisis since 1930.

Transition from a defined benefit towards a defined contribution system is expensive for the state, at least on a cash basis. Chile has had for two decades fiscal deficits associated to the pension reform by the equivalent of 4-6% of GDP. To balance the budget, a huge fiscal effort must be made in order to cut or to reallocate fiscal expenses. This is not easy to absorb by a democracy, especially in the context of so many urgent needs: education, health, infrastructure, poverty, etc...

On an accrual basis, things are not that clear as implicit public debts associated to defined benefit systems are quite huge as shown in the following table.

	<u>Implicit Public Debt</u>
Brazil	330
Slovenia	298
Poland	261
Ukraine	257
Romania	256
Hungary	203
Argentina	85
Mexico	65
Chile	60
Colombia	<u>56</u>

Source: Holzmann, Robert Palacios, y Asta Zviniene. "Implicit Pension Debt: Issues, Measurement and Scope in International Perspective", The World Bank, 2004

³ Today total affiliation reaches 7 million workers, 1 million more than the current workforce.

Why does the market do not accept the trade off? This talks about the lack of financial integration of Latin American countries to world financial markets, about the weaknesses of the institutions in some countries, about some market failures in world capital markets.

Whatever the reasons are, the fact is that this is one of the main reasons why some Latin American countries now face difficulties in proceeding with their reforms and, to some extent, why in some countries some people, including some authorities are talking about a reversal.

But as in any process in which a country takes the lead, the successes mentioned above coexist with failures in other areas. In the case of pension reform, the Chilean reform introduced a totally new concept with respect to the paradigms of the pay-as-you-go or defined benefit systems (you may have defined benefit with capitalization as in the Netherlands).

2. The problems

Any successful reform must be in accordance with the underlying economy. Over time, the dynamism of the economy and the system itself gradually unveil problems which were probably marginal at the beginning but increase in importance as time passes by.

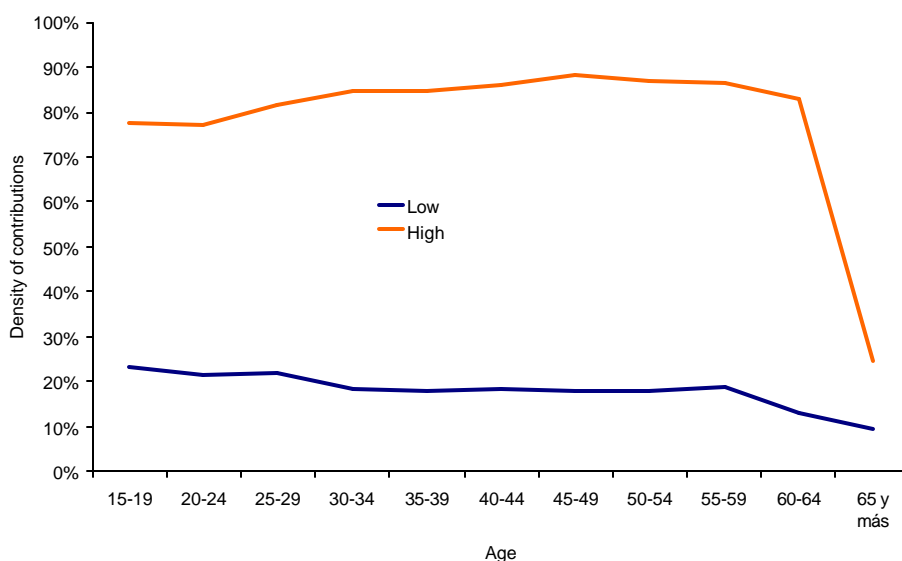
The main problems that have appeared in the Chilean system are based on the dynamics of some exogenous and endogenous factors,. Among the exogenous factors we can identify:

- a) *Labor market*. Lifetime employment is over. Modern labour markets require more flexibility, whose consequence is more job rotation, more frequent unemployment episodes. This does not affect people equally as employability differ according to education, economic sector, family linkages etc... In practice, this suggests that poorer workers are in general more exposed to that uncertainties, even though not all of them. Based on real data of actual workers, the next graph shows two representative lifetime profiles of workers' density of contributions⁴ for low income workers in Chile. This shows one important characteristic of the labor market, its duality.

⁴ The concept of density is defined as the ratio of actual contributions relative to potential contributions in a given period of time.

Two different tales about density of contributions

(Case: low income males)



The point is that gradually significant amounts of workers find themselves working for short periods of time, uncertain with respect to how long will be the next unemployment episode. Hence, face to these risks, there is a natural reluctance of many workers to contribute for pensions. Another development in the labor market is the proliferation of formal self employed workers. Today one out of three workers is an independent worker. Those workers, require savings to be liquid in case of need while pension assets are extremely illiquid.

The way the labour market has evolved has made clear the need to create new imaginative mechanisms for contributions and suggest other directions for public policy, namely, unemployment insurance.

- b) *Women labor market characteristics.* One specific dimension of recent labour market development concerns the situation of women: they start working later, earn less, retire earlier and live longer. It should not surprise anyone, after these considerations, the statement that pensions are particularly low for women.

This is gradually changing, at least for some portions of the population. Chile has one of the lowest female participation rates and it is catching up slowly. But that

requires many other things taking place such as a reevaluation of the role of man at home, the necessary support for working woman, the required flexibility in labor contracts, etc.

- c) *Life expectancy*. As everywhere, thanks partially to progress in medicine, people is living longer. For a given amount of accumulated savings at the end of their lives, this means that it must finance more years. The natural consequences is that pensions are smaller.

Two contradictions make this outcome absurd. First, early retirement. In Chile we allow people to retire before they reach the legal retirement age. The requisites for that were too loose and the outcome was that many people started to retire earlier than they should. So at the same time they lived longer, they retired earlier.

The other side of the coin of living longer is that at any given age, people now feel better. Many retirees in Chile continue working, and they do so both because they are in better health conditions and, thanks to early retirement, their pensions are smaller.

But there are endogenous factors as well, in the sense that they are linked to design problems:

- a) *Interface between the accumulation and disbursement phase of the system*. Originally “the system” was conceived mainly to accumulate and indeed the Chilean model is known worldwide thanks to the AFPs which manage savings in the accumulation phase. But few attention was given to the workings of the disbursement phase and, in particular, the transaction costs between both of them.

Moreover, when the problems linked to the disbursement phase appeared to be clear in Chile significant political opposition was organized against the proposals of the government. It took 10 years to pass the law.

- b) *Competition and concentration*. Two problems of design have had impact on the way competition is undertaken in the Chilean system:
- Inelasticity of demand, mostly explained by the mandatory character of the product sold. The pension market is artificial, there is no spontaneous demand

for it and that's why people do not pay much attention to relevant variables in this market at least while they are young⁵.

- Economies of scale, typical in financial sectors but more present here due to the necessary exclusive nature of the commercial firm that distribute pensions.

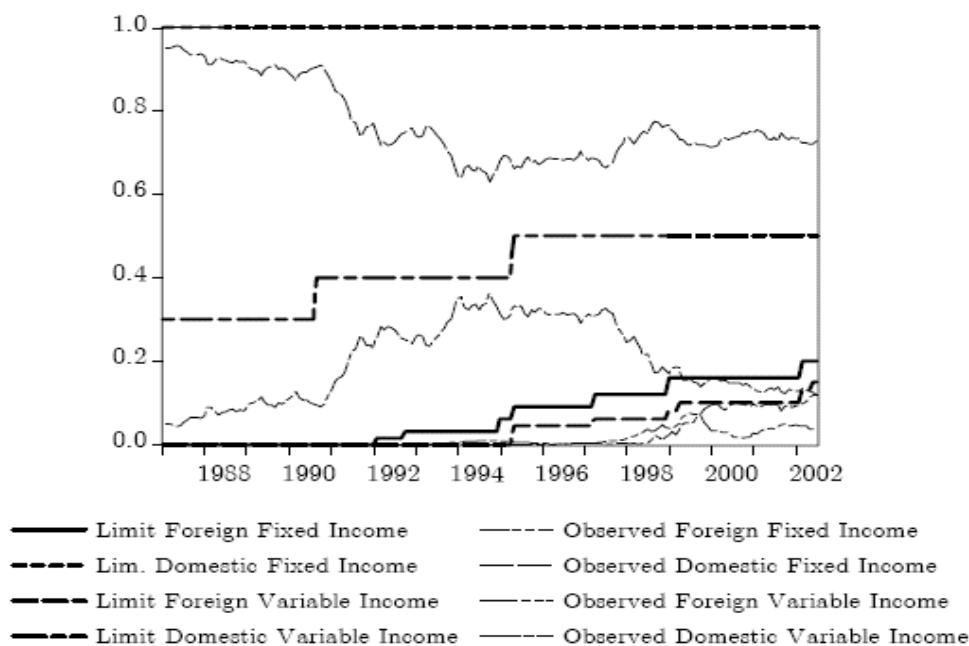
In recent years Chile has implemented two important complementary reforms to the original model, multifondos and the electronic market for annuities called SCOMP. The rest of the paper is devoted to analyse these two reforms.

3. Multifondos: better risk management, more valuable information

At the beginning of the Chilean system, each AFP could offer only one portfolio to their affiliates. That portfolio was the outcome of two forces. On the one hand, the way regulation evolved. The strict regulation that have always faced pension funds has had the virtue of a great deal of dynamism so as to adapt to financial innovation and market conditions. That regulation is, as of today, totally based on the fulfillment of clearly defined quantitative limits on investment. Those limits, even today, are set for issuers, groups of issuers, instruments, groups of instruments (asset classes), related parties and foreign assets. In addition to that, individual limits are corrected according to liquidity factors and other coefficients. The following graph illustrates the evolution of some relevant limits.

⁵ It remains the question of why people does not maximise anyway: switching costs, postponement of difficult decisions particularly if goods are comodities, etc... and other explanations coming from the newly developed branch of behavioral economics, may explain partially this phenomena.

Evolution of investment limits in Chile



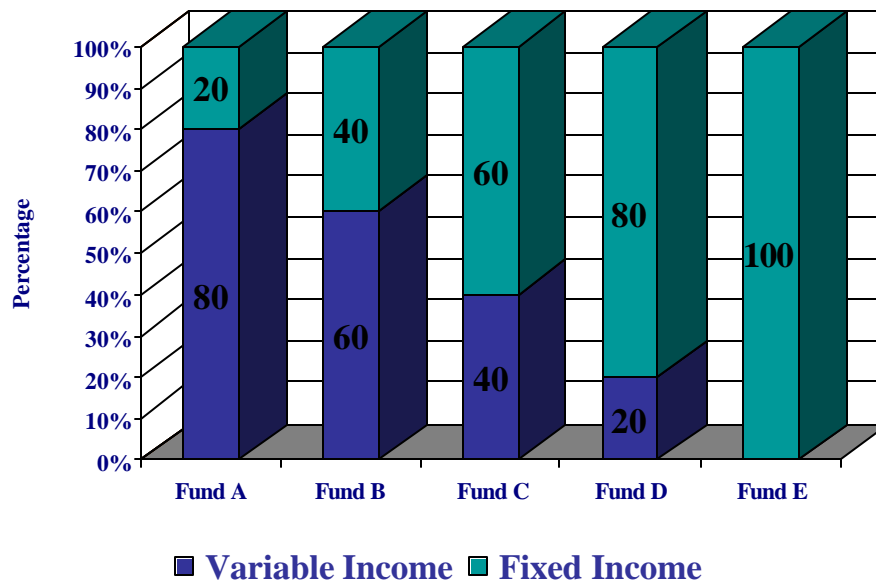
On top of this complex system of limits, there has been a regulation on minimal return relative of average market performance. With its own resources, each AFP is required to grant affiliates that their return will be at least 200bp below the average market performance. This represents a strong incentive not to deviate significantly from the average market portfolio.

This herd behaviour has two opposing lectures. One is that, in this way we minimise the likelihood of individual errors of judgement by AFPs, so this represent another safety element built in the system. The other is that as portfolios do not vary significantly, nor do it returns. Therefore, not only AFPs use to offer only one portfolio but that portfolio was very similar to the one offered by alternative AFPs. Hence, from the perspective of the affiliate, the benefit of being informed was smaller compared to the cost of doing it. If by the nature of the pension market, the demand is inelastic, the management of pension savings started to look more and more as a commodity inducing further indifference. People periodically received their statements but it was totally useless. Rationally, they did not read it, so the outcome was desinformation and further inelasticity: 93% of the people declared they did not know the price of the pension service and 56% of them declared

ignorance of the balance of their personal accounts. Inertia in decisions also characterised the system: 54% of men and 64% of women declared that they have never changed from one AFP to another.

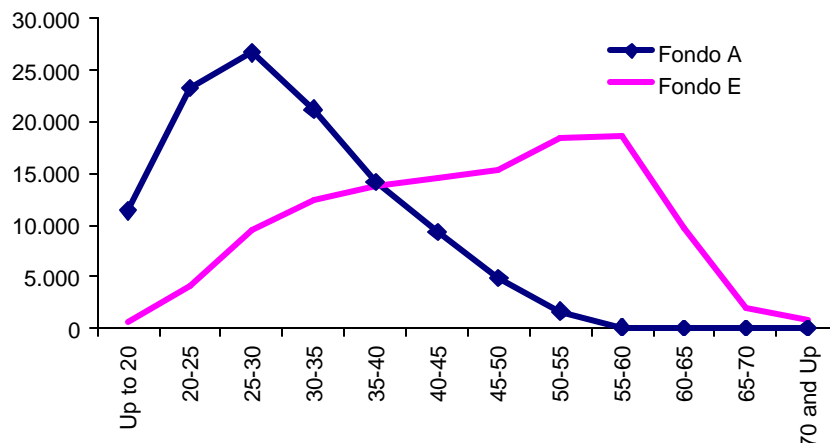
The multifondos reform undertaken in 2002 allowed AFPs to offer 5 differentiated portfolios according the share of variable income instruments present in each one: Fund A may have 80% of the fund in variable income, Fund B 60%, Fund C 40% and Fund D 20%. Fund E was restricted to a purely fixed income instrument. The underlying idea was to allow people to take a life cycle approach to risk in a very simple structure.

Multifondos: basic portfolio limits



The following graph suggest that in general people understood this as younger people chose the riskiest fund while older people opted for more conservative portfolios. It is also important to notice that in the context of the indifference described half of the contributors chose a Fund within six months.

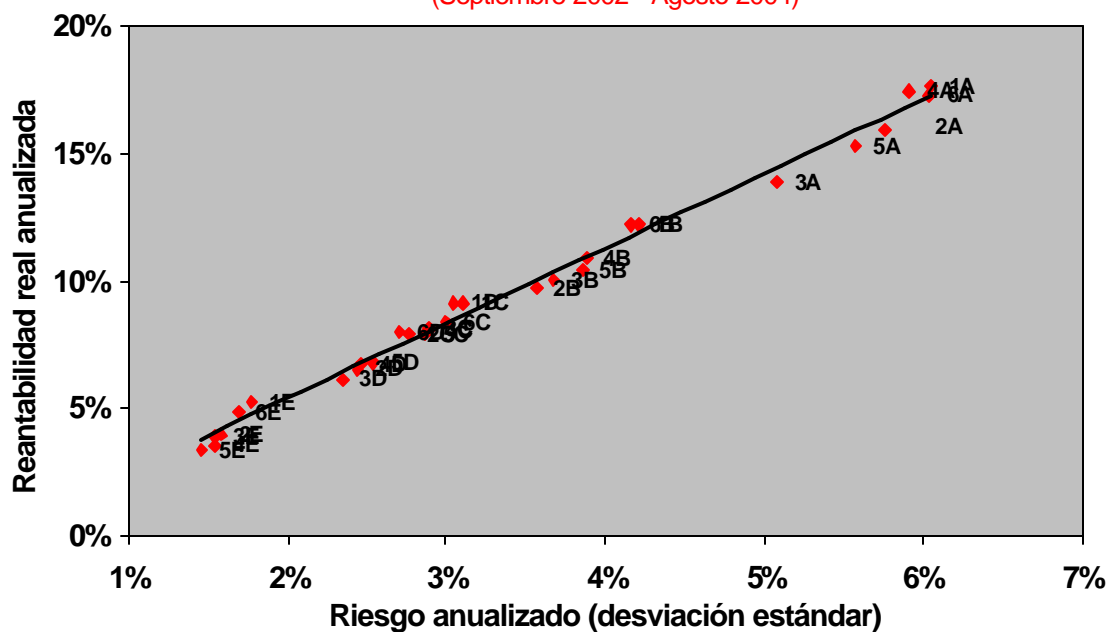
Age distribution by class of Fund in Chile



As far as returns are concerned, it seems that Multifondos could not avoid herd behaviour to take place. Indeed, as shown in the following graph, we passed from one big herd to five different kinds of herds, all differentiated in their preference for return and risk.

Rentabilidad real y Riesgo de cada AFP y Tipo de Fondo

(Septiembre 2002 - Agosto 2004)

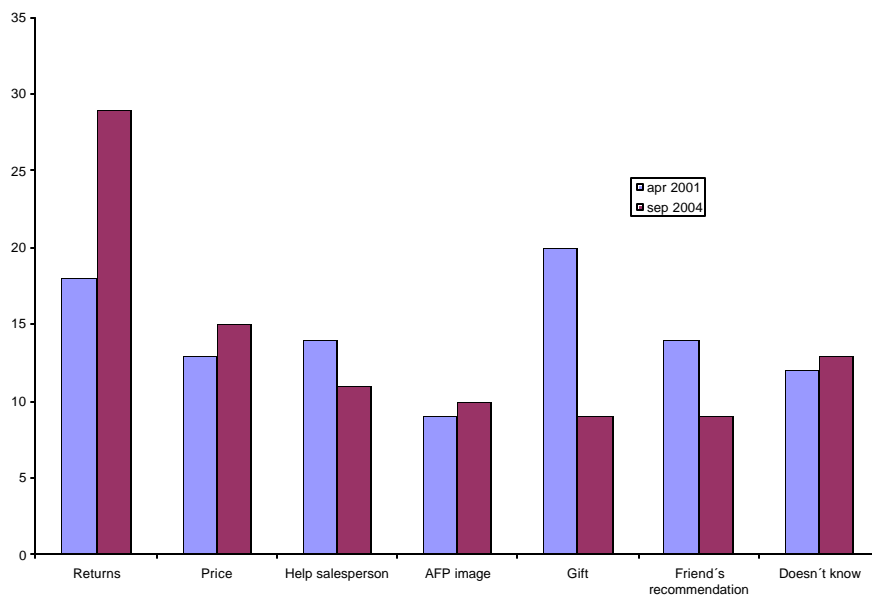


Multifondos has created a link between people whose retirement age is distant in the future and the current asset management. Now it pays to be informed, as at any time people may

change funds. With more informed people, the system as a whole would improve. The following graph shows the results of two surveys, one before and one after the Multifondos reform and, as can be seen, people is considering more return and price as reasons to justify the decisions they take. Notably is the huge drop of influence on gifts given by salespersons.⁶

A system improving?

Reasons affiliates give to explain why did they change AFP



⁶ On the role of gifts and salespersons, see Berstein and Micco (2004)

4. The Annuities Law and the SCOMP

When retirement becomes a possibility, by age or because accumulated savings were enough to ask for early retirement, the Chilean system used to give two way outs: programmed withdrawals or annuities. The next Table show the decomposition between both of them according to the pension level. It is shown that 85% of pensioners whose pension level exceed the minimum pension chose not to face the risk of longevity and therefore bought an annuity. People that opted for programmed withdrawals are forced to do so if they are eligible for the state guarranty. Those who can choose, prefer in general annuities.

Quantity and types of pensions paid in 2003

	Programmed withd.		Annuity		Total	
	Número	%	Número	%	Número	%
P = MP(65)	97.778	26%	221.190	85%	263.983	50%
P < MP(65)	274.178	74%	38.531	15%	245.156	50%
Total	371.956	100%	259.721	100%	509.139	100%

Note: MP stands for Minimum pension

Source: Berstein, Larrain and Pino (2004)

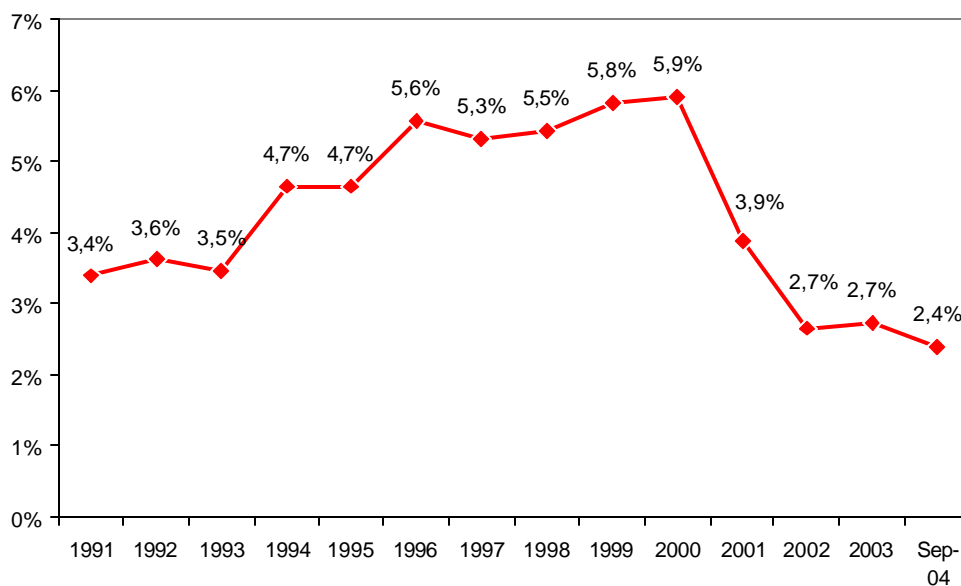
But the functioning of the annuities market was far from being satisfactory from the perspective of social security. Two elements give credit to this statement: age of early retirement and the costs of acquiring annuities.

The previous law required people willing to retire earlier than the legal age of retirement to comply with three criteria concerning the capital saved and the corresponding annuity: to reach a replacement ratio of 50% or higher, to reach a pension 110% of the minimum pension. Eventually, those criteria became too lax and early retirement took increasing importance and each year at earlier ages. By 2003, 18% of women retired earlier than they should and the average age was 54 years old compared with 60 years of legal age. In its turn, 60% of men retired earlier with an average age of 56. Therefore, women were anticipating retirement 6 years and men 9 years. On average, each year of early retirement

costs 7% of pension, so that people have been retiring with significantly smaller pensions than what they could have done. Early retirement is only partially a matter of legal requirements and partially the outcome of the workings of the annuities market.

As stated before, the social security industry is artificial because people do not have the ability to look into the distant future, their rate of discount being disproportionately high. Apparently, this changes with education and wealth on one hand, and with age itself but only apparently. The next graph shows the commissions paid by insurance companies to insurance brokers or to their salesforce. These commissions in principle are paid by the company itself but in practice they are taken out of the retiree's capital.

Commissions paid for annuities
(% of the person's fund, year average)



The graph shows that commissions reached a peak of 5,9% of the accumulated capital by 1999 and then decreased. This is explained because the Law, that was sent to Congress for the first time in 1994, had been frozen until 2000 when a new government took office. The sole announcement that it would restart its discussion, induced commissions to fall.

But, how is it possible that in 1999 someone was willing to pay such a large amount of money for this service? The answer has to do with myopia, the core of the justification of mandatory social security. Even at the verge of retirement, people is sensitive to absurd offers from that perspective. Indeed, those high commissions hide that at least partially, in a very obscure way, salespersons gave the money back to the pensioner. Of course, there is no information about how much of the total cost reached the pensioner in cash or any other form and how much was retained by the intermediary.

Another complex aspect of this market was how the pensioner was contacted by the salesperson or broker. As we said, many people didn't know the balance in their personal accounts, so hardly could they have known nor make the calculations to see whether or not they complied with the requirements for early retirement. This information was somewhat obtained in AFPs and flew to insurance companies's salespersons. Hence, what actually took place was that potential early retirees were contacted by a non-neutral salesperson, not a pension advisor, who convinced her or him to use their right to retire early. That process of persuasion was intensive in arguments not linked to income in old age but in how to solve present problems through instantaneous cash rebates (paid by the pensioner themselves as we saw) and/or with the argument of the second salary.

The Annuities Law passed in 2004, after 10 years of congressional debate, created an electronic market for annuities that drastically improves information. Every potential pensioner is forced to pass through this market. To do so, the pensioner, by its own or induced by a salesperson, asks its AFP to send all the relevant information to make the offers of pensions. That information is spread anonymously among all companies that participate in the market, that is, all life insurance companies (that offer different kinds of annuities) and all AFPs (that offer programmed withdrawals). At a given date, the pensioner will receive back all offers available to her or him in the whole market. All relevant information to take the best possible decision is therefore condensed before the eyes of the pensioner. In Annex we show one SCOMP sheet of a real case. It is worth signalling that pensions (expressed in UF, an measurement unit indexed to consumer prices) are ordered decreasingly in order to help people to take decisions.

Once the person receives the sheet, she has five options. She may

- choose one of the offers in the sheet,
- postpone any decision without time limit,
- bargain with a salesperson for another offer but this one can only be better than the ones appearing in the sheet,
- ask the system for another round of offers
- call for an auction. Only in this case, the person is forced to choose the best offer.

The system started on the 19th of august and so far 86% of people has paid commissions of 2,1% whereas the other 14% of the pensioners did not pay at all. The weighted average of commissions passed from 5,9% before the discussion of the Law, to 2,7% during that period until before the Law was enacted to a mere 1,8% after that. All the difference is passed to higher pensions.

5. The ongoing reform agenda

TO BE ADDED LATER

ANNEX : A real case of SCOMP sheet



Código consulta :24201

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MODALIDAD DE RENTA VITALICIA INMEDIATA

Monto del componente fijo de la Renta Vitalicia: UF 0,00 (1)

Renta Vitalicia Inmediata Simple

Cod. Oferta	Compañía de Seguros de Vida	Pensión Mensual Sin Excedente UF	Con retiro de excedente				Clasif. Riesgo (2)
			ELD=0,00		ELD = Máximo		
			Pensión Mensual UF	Excedente Estimado UF	Pensión Mensual UF	Excedente Estimado UF	
140080		37,87	0,00	0,00	0,00	0,00	AA
140070		37,61	0,00	0,00	0,00	0,00	AA-
140064		37,28	0,00	0,00	0,00	0,00	AA
140071		37,28	0,00	0,00	0,00	0,00	AA-
140065		36,84	0,00	0,00	0,00	0,00	AA
140069		36,31	0,00	0,00	0,00	0,00	AA
140077		36,25	0,00	0,00	0,00	0,00	AA
140074		35,19	0,00	0,00	0,00	0,00	AA-
140072		33,50	0,00	0,00	0,00	0,00	AA+
140073		32,49	0,00	0,00	0,00	0,00	AA-

(1) Corresponde al componente fijo, en UF, de su pensión, el cual deberá sumar a las ofertas en UF, para obtener su monto total.

(2) Las categorías de clasificación de riesgo de las Compañías que venden rentas vitalicias son las siguientes: AAA, AA, A y BBB, de mayor a menor capacidad de pago de sus obligaciones. Cada uno de estas categorías puede tener los subíndices "+" o "-", siendo el subíndice "+" mejor que el "-".

(3) La tasa de descuento período garantizado corresponde a aquella que aplicará la Compañía a las pensiones garantizadas no percibidas, en caso que los beneficiarios señalados en la póliza, sin derecho a pensión al fallecimiento del asegurado, opten por recibir las pensiones de una sola vez. Lo anterior siempre que no existan beneficiarios legales.