Chapter 4.

The Normalisation of Chile's Pension System

Chile replaced its Pay-As-You-Go social insurance pension system in the early 1980s with a private pre-funded system of individual savings accounts which covers old-age, disability and survivor contingencies. Pension reform was successful in many ways: it restored public confidence in pension saving; pre-funding of pensions has contributed to the development of financial markets and economic growth; and projected future public pension outlays in Chile are lower than in many OECD countries (and far less susceptible to the dynamics of ageing populations). However, pension reform failed to achieve its coverage objectives, and many Chilean workers, including many women, youth and low-income workers with low levels of educational attainment, either did not make sufficient contributions to obtain an adequate contributory pension or have no coverage at all.

The coverage problems contributed to a major pension reform in 2008, which introduced a basic solidarity pension as of right, and targeted measures to stimulate coverage among workers with no or little pension saving. Reform also aims to develop a third tier of voluntary private pension saving. In all, Chile's pension system is developing towards the three-pillar pension norm, which is often held as an international benchmark. This chapter discusses the social policy aspects of the reformed pension system and, in particular, the coverage issues which in many ways have proven to be the Achilles heel of Chilean private pension system.

1. Introduction

The bad experience with collective (public) insurance schemes in Chile goes a long way towards explaining the choice of the current system of private-funded *mandatory* individual accounts. Chile was the first Latin American country to set up a social insurance system back in 1924. By the late 1970s, the system had evolved into a pay-as-you-go system (PAYG) with 35 schemes, which was deemed unfair and corrupt as generous (frequently early) retirement benefits were often paid out on the basis of political lobbying to special interest groups (Asher and Vasudevan, 2008; Ben Braham, 2007; and Iglesias, 2009). In 1981, a system of individual accounts was introduced to avoid such practices and establish clear links between contributory records and benefit entitlements. Other arguments in favour of private protection arrangements included making efficiency gains, increasing flexibility and individual choice and increasing pre-funding which deepens financial markets and limits the effect of ageing populations on annual financial flows (Pearson and Martin, 2005).

The 1981 pension reform was successful in many respects, not least since it restored public confidence in pension saving. The investment returns made by Chilean pension fund operators since 1981 have exceeded expectations and the introduction of a capitalised pension system contributed to the development of financial markets and economic growth in Chile (Corbo and Schmidt-Hebbel, 2003). Moreover, future public pension liabilities in Chile are lower than in many OECD countries and far less susceptible to the fiscal pressures associated with an ageing society.

However, the private contributory system has over the years failed to meet some other of its objectives, particularly in terms of coverage. Many low-income workers without formal contract are not at all covered by the private social protection system, while others have paid into the system, but their contributory record is insufficient to procure the minimum pension benefit, leaving public authorities to make up the shortfall and provide a basic pension. In a similar fashion, the arrangements for disability benefits that are also covered in the private pension system involve some cost-shifting by private insurers to public budgets. In all, the private pension system has relied on public authorities to pay for benefits where the private system fails to provide adequate provisions.

Since 1 July 2008, pension reform came into operation to address issues such as coverage among the population, including lower income groups, women, young people and the self-employed. However, the reform addresses a range of issues, including, for example, financial incentives towards early withdrawal of pension wealth (OECD, 2006a), but also

measures to increase market efficiency and regulatory reform (see, for example, Iglesias, 2009).

The Chilean pension reform of the early 1980s attracted a lot of attention and gave rise to a substantial literature (for example, Corsetti and Schmidt-Hebbel, 1995; Diamond, 1993; Edwards, 1996; Queisser, 1998; and World Bank, 1994). This is not repeated here. Instead, this chapter will focus on the social policy aspects of pension policy, and while it does not claim to be comprehensive in its treatment of pension market institutions and investment regulations, it will briefly discuss the key challenges of increasing competition investment regulations and financial risk management. This chapter takes the new pension system and its parameters as in place since 1 July 2008 as the basis for discussion, but the reader should be aware that, while some aspects of the reform have already been put in place, other measures are expected to be introduced over the next four years.

2. The Chilean pension system

With the 1981 pension reform the existing contributory (PAYG) pension schemes were brought together under the Umbrella of the *Instituto de Normalizacion Previsional* (INP), while the individual pension accounts that were introduced at the time are operated by pension fund management companies (*Administradora de Fondo de Pensiones* – AFP). Many clients of the old system changed to the new mandatory private pension system as facilitated by "Recognition Bonds" which acknowledge the value of the entitlement built up under the old system (Box 4.1). In addition, there was a publicly-supported Guaranteed Minimum Pension (*Minima Pension Garantia* – MPG) for those who have contributed for at least 20 years (or 240 monthly contributions), but whose contributory record was nevertheless insufficient to generate a minimum pension (the MPG was an entitlement). Furthermore, those of retirement age without a pension (or a very small one) could apply for a means-tested social assistance pension (*Pensiones Asistenciales* – PASIS), but this benefit was not an entitlement, and budget-rationed (if the budget was exhausted in a given year, no new claims would be awarded). Finally, there are separate pension programmes for the armed forces.

Since reform started to be rolled out in July 2008, Chile's pension system involves:

1. The Basic Solidarity Pension (*Pension Basica Solidaria* – PBS) and a Pension Solidarity Complement (*Aporte Previsional Solidario* – APS) for low-income households without sufficient pension contributions.
2. The mandatory capitalised individual pension saving accounts.
3. Voluntary private pension saving in individual accounts.

The role of private pension saving in Chile has been limited so far, but reform aims to develop a significant *third tier* of *voluntary* private pensions. Since March 2008, employer-sponsored voluntary pension programmes allow employers to make pension contributions on behalf of their employees which are considered as regular expenses for tax purposes (the conditions of such "employer-sponsored voluntary personal pension savings schemes" must be similar for all company-staff). In addition, through new tax incentives the government also tries to stimulate individual private pension saving.[55] With the development of a basic pension entitlement, mandatory second-tier pension saving and fiscally supported voluntary pension saving, Chile's pension system has moved towards the three-pillar pension norm, which is often held as an international benchmark.

Figure 4.1 shows publicly-mandated pension spending across the OECD area (including public spending on pensions and benefits accruing from mandatory contributions to private funds). In Chile, publicly-mandated spending amounted to 5.8% of GDP in 2005, which is just below the OECD average of 6%. Figure 4.1 also illustrates how important the public role is in the current pension set-up: public spending was 4.8% of GDP in 2005, which is high compared with the population age profile (Chapter 1), but this is largely of a transitory nature as related to the pension reform in 1981 (see Box 4.1).

Of all publicly-mandated spending in Chile in 2005, about 1% of GDP concerned pensions paid through pension payments or "Programmed Withdrawals" (see below) and annuity payments derived from the mandatory private pension system (though pay-outs often financed by government contributions).[56] For Chile, the data in Figure 4.1 include spending on pension benefits and outlays by pension funds on annuities for

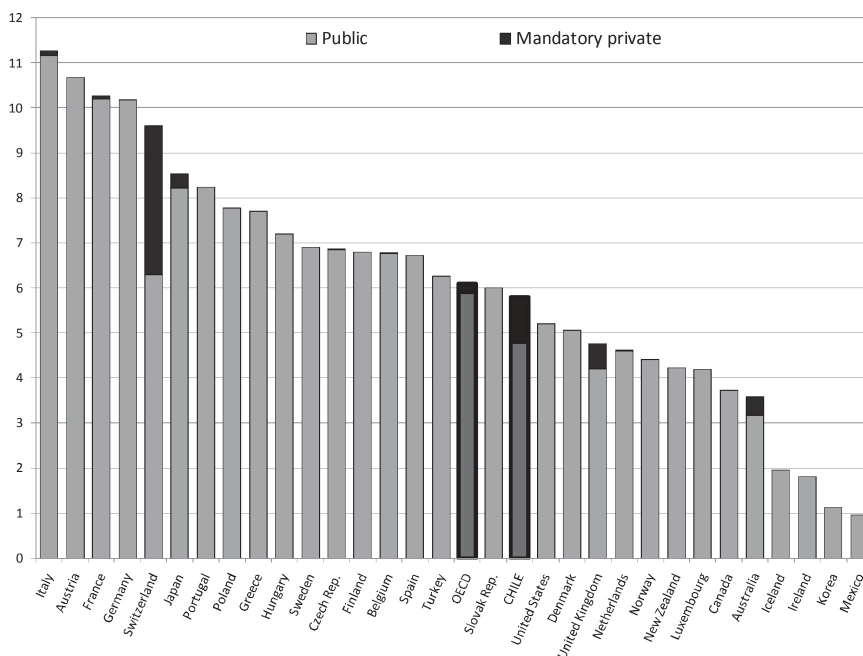
55. Since the 2008 reform the amount of pension savings which can be deducted annually from the income tax base is UF 50 per month (or USD 2 040 as of June 2008). Workers can also choose to pay income tax over pension contributions now or when the pension is paid out. Workers who choose the former option and who engage in voluntary pension saving to top up the mandatory contributions can benefit from a subsidy of about 15% of the amount of voluntary savings up to a maximum of about USD 410, or ten times the amount of mandatory pension savings in a year, whichever is the lowest.

56. Of all old-age pensions paid in 2004 (not including early retirement pensions), 81% were paid by the INP. AFP paid out 19% of the benefits, which were mainly financed out of government contributions to make up the minimum pension payment (*Fundacion Nacional de Superacion de la Pobreza*, 2005).

clients which amounted to about 1% of GDP in 2005 (Table 4.A1.1).[57] If only current outlays on pension benefits and annuity payouts (in a given year) were considered, mandatory private pension spending would have been about 0.1% of GDP in 2005.

Figure 4.1. Publicly-mandated pension spending in Chile is close to the OECD average

Public and mandatory private pension expenditure in percentage of GDP, 2005



Source: OECD (2008), *Social Expenditure database 1980-2005;* and Iglesias (2009).

In 2007, almost 30% (or about 1.2% of GDP) of public spending on pensions was on benefits for the military (CAPRADENA) and police (DIPRECA). Average pension payments under these schemes are well above the average wage and much more generous than those paid by the old or new pension systems (OECD, 2003). The Armed Forces pension systems run a deficit which is almost wholly paid from the government budget. Reform of these pension arrangements is overdue and proposals will be considered after the 2009 presidential elections.

57. This recording practice is consistent with reporting in the *OECD Social Expenditure database* (OECD, 2008a) which includes similar data on spending on pension payments and lump-sums through the "Superannuation programme" in Australia.

Box 4.1. Reforming the pre-1981 PAYG scheme into a private-funded pension system

During the late 1960s and early 1970s, both the Frei and Allende governments, which were of different political persuasions, had come to the conclusion that piecemeal reform of Chile's then PAYG system would be insufficient: a new system had to be put in place. The PAYG system was widely considered as unfair, as it had been captured by special interest groups; it was also expensive to run and not targeted at those most in need of support. Widespread and profound dissatisfaction with how the PAYG system operated was the key driver of reform, *not* financial pressures arising from population ageing (Iglesias, 2009). Nevertheless, it was not until 1981 that pension reform was introduced.

The introduction of the mandatory pensions system in 1981 only covered those who started to work in 1983 and contributors to the previous system were not compelled to sign up to the new scheme. Nevertheless, by the end of 1983, 77% of contributors had switched to the new AFP programme. To some extent, this was related to widespread dissatisfaction with the old system and a vigorous public information campaign carried out at the time. Two financial incentives also played a key role in convincing pension savers to switch regime: *i)* while employees had to cover employer contributions (which were relatively low compared with the contribution rates of the old PAYG programme), they were compensated by a more-than-proportional increase in wages; and *ii)* the government issued a state-guaranteed "recognition bond" for the contributions workers made to the old system (as adjusted for inflation and a real interest rate of 4% per annum). Switching did not always turn out to be an informed decision; decisions disadvantageous to individual savers largely concerned specific groups of workers in the public sector (Iglesias, 2009).

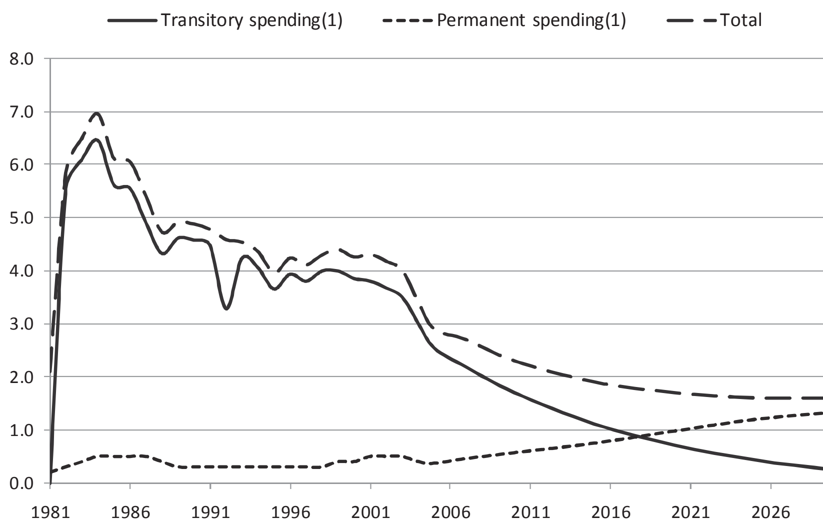
Time-series data on public spending on civilian pensions illustrates how a large part of the cost of pension reform to the public was borne early on in the reform process. From 1981 to 1984, public budgetary allocation towards 'transitory spending commitments' established under the old PAYG pension system increased from 1.9% of GDP in 1981 to 6.5% of GDP in 1984 because of the continued payment of pensions while contributions declined (exacerbated by the economic crisis of the time), and the payment of recognition bonds to those who transferred to the new mandatory pension system). By 2007, this had declined to 2.7% of GDP (Figure below). At the same time social pensions and minimum pensions (see below) are a 'permanent' fixture of the government budget and these outlays increased from 0.2% of GDP in 1981 to just below 0.5% in 2007. The "transitory" part of public pension spending will naturally decline to a quarter of a percentage of GDP in 2030, while the minimum pension commitments to those without sufficient contributions were projected to amount to 1.1% of GDP in 2015 and 1.6% by 2030 prior to the 2008 pension reform (Marcel Commission, 2006). The real cost is likely to be higher in view of the 2008 measures (Iglesias, 2009).

The pre-1981 pension system was not in deficit, but projected future cash flows foreshadowed significant future deficits. Available evidence on the implicit pension deficit (the present value of future pension payments) varies in magnitude (Iglesias, 2009), but all point to a significant reduction of this debt because of the 1981 reform, which has thus improved the long-term fiscal sustainability of the Chilean system. In any case, the fiscal effect of the pension reform does not seem to have been an important obstacle to reform. During the years immediately following reform, the "pension deficit" was largely financed through public savings (by cutting back on general government expenditure) and increased taxation (a temporary tax, 3% of salary paid by employers phased out by 1 percentage point per annum over the 1981-94 period). At the same time treasury bonds were sold to pension funds so that their investment increased from USD 2.2 million in 1981 to USD 864 million in 1986 (Iglesias, 2009).

After 1985, debt–financing became less important, while privatisation (the sale of public assets) became an important source of funding: government assets worth 7% of GDP were sold off over the 1985-89 period twice the amount of privatisations in the United Kingdom (Niemitz, 2007). Pension reform contributed to an increase in national saving, but this was largely driven by government saving. The effect on private savings, though significant, has been relatively small (Iglesias, 2009).

Public spending on civilian pensions will halve over the next 25 years

Public spending on civilian pensions as a percentage of GDP (not accounting for the 2008 reform)



1. Transitory spending refers to spending on pension commitments derived from the pre-1981 PAYG system; permanent spending concerns public spending on minimum pension programmes as forecasted prior to the 2008 pension reform.

Source: Based on data from Iglesias (2009) from the Marcel Commission (2006).

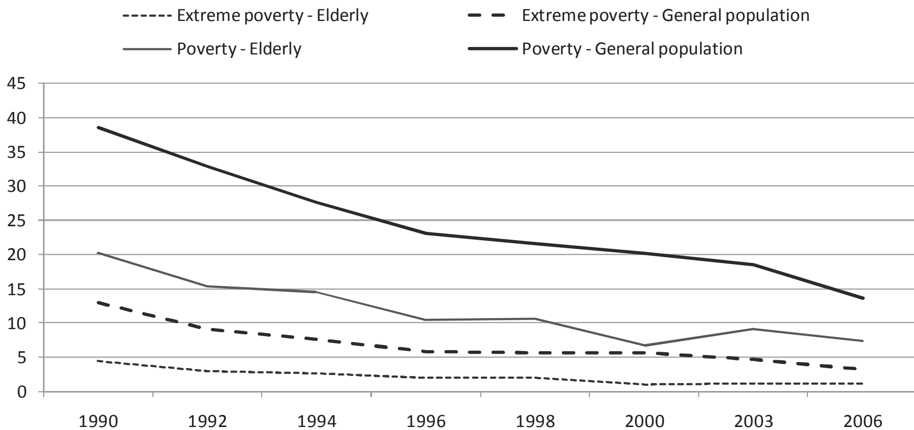
As post-reform contributions were lower than pre-reform contributions, the "tax on labour" was reduced with reform, which contributed to a small increase in employment (*e.g.* Schmidt-Hebbel, 1998). The establishment of funded pension systems, pension funds and the associated life insurance industry has led to the deepening of local capital markets (in 2005 pension fund assets amounted to two-thirds of national Income; Ben Braham, 2007), while an improvement in regulations and reporting requirements generally enhanced capital market transparency and efficiency. Through its effects on, in descending order of importance, national saving, capital productivity and total factor productivity (a more efficient interaction between capital and labour), pension reform is estimated to have been responsible for 25% of economic growth during the 1980s and early 1990s (Schmidt-Hebbel, 1998).

Poverty among elderly and redistribution of pension spending

The increase in prosperity has contributed to the decline in poverty among the population in general, as well as amongst the elderly. Minimum pension payments may not be high, but they compare well against the very low transfer payments to the working-age population (Chapter 3). Households in receipt of a pension are unlikely to be extremely poor (only 1.2% of them), and the poverty rate among the elderly is 7.3% compared with 13.7% of the population in general (Figure 4.2).

Figure 4.2. The income position of the elderly is relatively good in Chile

Poverty rates for the general population and the elderly (65+), 1990-2006



Source: Based on CASEN, various years. For definitions of poverty thresholds, see Chapter 1.

In 2006, about 75% of men and 60% of women aged 65 and over received benefits accruing from contributory pensions (including the MPG),[58] and 70% of these "contributory" pensioners received less than CLP 114 000 (USD 242, about 80% of the minimum wage, Larrañaga, 2009). The 2006 CASEN survey showed that about 14% of men and 17% of women over 65 years of age received the minimum pension, and that in all, public pension payments constituted around 6.2% of household income. However, their distributional impact is low. Public pension payments are still dominated by the entitlements established under the old system (Box 4.1) and relevant amounts are related to contributory records. Hence,

58. Two out of five women who received pension payments in 2006 were widows receiving survivor pensions.

the distribution of pension payments is relatively similar to the earnings distribution in terms of household income quintiles (Chapter 1). The Gini coefficient of the distribution of old-age and widows' pensions paid by the state is 40.7%, only a few points below the Gini coefficient of the wage distribution, and the Gini coefficient of the household income distribution with and without pensions paid out by the state, is 55.9% and 58.1% respectively (Larrañaga, 2007).

Preliminary estimates of the effect of the introduction of the basic solidarity pension suggest reform may lead to an increase of 11.5% in average income of the first household quintile and 9.5% in the first two quintiles, as well as a reduction of around 2 percentage points in the proportion of poor households.

The basic solidarity pension

Since 1 July 2008, the Chilean pension set-up includes the basic solidarity pension (PBS) and its supplementary payment (APS), which superseded the previous system of PASIS and MPG payments. The generosity of the basic pension system has increased significantly:

1. Unlike PASIS which was potentially subject to budgetary rationing, the new PBS system establishes individual entitlements.

2. Coverage of the first-pillar scheme will also increase because the supplementary APS-payment will also cover those who have not contributed for 20 years to the second-tier pension system (a precondition for receiving the MPG), although some women may lose out since there is no "survivor PBS".[59] Currently, about one-third of the 65-year-olds do not have pension coverage, and nearly 70% live in households with a family income below the minimum threshold. By 2012, about 23% of all senior citizens will be eligible for the PBS, and about 70% of the clients will be women, in view of their limited access to contributory pensions (see below) and their longer average life expectancy.

3. In 2007 the MPG was about CLP 96 391 (about USD 180) per month, about twice as high as the PASIS payment (see Figure 4.A1.1 in the annex for a historical overview). The PBS system pays the poorest elderly (65+ for men and women) a minimum pension of CLP 60 000

59. Since the July 2008 reform survivors will only receive a temporary pension financed out of the funds accumulated in the account of the spouse prior to his/her decease. On depletion of these funds survivors will have to wait until age 65 before claiming an "old age PBS".

(or USD 122), which will increase to CLP 75 000 (USD 152) in mid-2009 (Table 4.1). Disabled individuals between 18 and 65 years of age can receive a "disability PBS" payment of the same amount.[60]

Table 4.1. The Basic Solidarity Pension (PBS): evolution of payment rates and expected coverage

Date (1 July)	PBS benefit	Threshold up to which APS-supplement can be paid	Estimated coverage of PBS/APS pensions among the elderly population
2008	CLP 60 000 - USD 122	CLP 70 000 - USD 142	40%
2009	CLP 75 000 - USD 152	CLP 120 000 - USD 243	45%
2010	CLP 75 000 - USD 152	CLP 150 000 - USD 304	50%
2011	CLP 75 000 - USD 152	CLP 200 000 - USD 405	55%
2012	CLP 75 000 - USD 152	CLP 255 000 - USD 517	60%

Source: Based on data from the Chilean government; exchange rate as applicable in June 2008, USD 1 = CLP 493.61.

Eligibility to the basic pension is established with reference to the Social Protection Record (SPR); the 40% poorest elderly households correspond to a SPR score below 11 734 points, while the 45% threshold corresponds to 12 185 points. The system aims to cover the 60% poorest elderly households from 2012 onwards (Table 4.1).

The 2008 reform has improved systemic coherence by establishing clear links between the basic pension and the income-dependent supplement (whereas PASIS and MPG payments were unrelated). Low-income individuals receiving AFP pensions (or a pension paid by the INP) can get a supplement. The amount of this "old age APS" (there is a similar supplement for disabled clients) depends on the "Base Pension" the individual receives from the other (second-tier) pension programme:

Old age APS = PBS – Adjustment Factor * (Base Pension)

Thus, for a client with no income from another pension programme, the APS payment is equal to the PBS. At the other extreme, the Maximum Base Pension threshold has been set at CLP 255 000 per month in 2012 (approximately USD 517, but it will be inflation-indexed), and above this

60. "Disability PBS" payments are made to poor disabled individuals (within 60% of lower income households from 2012 onwards), aged between 18 and 65, who do not receive a pension from another social security programme and who lived in Chile for at least 5 out of six years before being declared disabled.

income threshold no supplements can be received.[61] Table 4.1 shows that the maximum amount to which pensions will be topped up will increase significantly from 2008 to 2012. Also, in 2012 the value of the "adjustment factor" will be 0.294; in other words the implicit effective marginal tax rate on contributory pension will be 29.4% in 2012 (in 2008 it was as high as 85.7%).[62]

In the old system, the MPG involved weak incentives to save for those who had established their 20-years of pension contributions and who had not saved enough to obtain a pension higher than the MPG. These clients faced an implicit tax rate of almost 100% on the contributions they paid towards the MPG threshold (such saving up to MPG level did not help to increase individual entitlements, but only reduced the cost of the MPG for the government). Under the new rules, making new pension contributions always increases the value of the future (second-tier) pension payments, while the implicit marginal effective tax rate on contributions is reduced to 29.4% in 2012 (low-income workers may well face a lower rate after introduction of an in-work benefit, Chapter 3). Nevertheless, the implicit tax rate may prove to be too high a hurdle for many workers to start making contributions to the mandatory pension system (OECD, 2007a).

Until the recent reform, eligibility to means-tested benefits depended on household income as determined by all household members. The PBS is different in that eligibility is determined by the spouse and dependent children up to the age of 24 living in the same household; the authorities have assumed responsibility for senior citizens who do not generate enough income, independently of the resources of relatives other than the spouse, whether they reside in the same household or not. This change in conditions preserves the many extended families that exist in Chile. Often different generations of one family are included in one household and, if the significantly increased (minimum) pension payment were made contingent on the income of all other household members, it would not have been unlikely that many extended households would have split (or not be eligible for payment). The effect of the PBS on household formation is uncertain: the increase in family resources may lead to a break up in households (who now have enough income to do so), while in other cases families may invite grandparents into the household.

61. Design of the APS supplementary payment (see below) will also leave most current MPG recipients better off. However, under certain conditions some part-time workers, of which there are not many in Chile, with a contributory record of 20 years may be worse off (Iglesias, 2009).

62. In 2012, the PBS is scheduled to be CLP 75 000 and the maximum income threshold is CLP 255 000; the adjustment factor will then be 0.294 (75 000/255 000 = 0.294).

The mandatory private pension system

Key characteristics of the mandatory private pension scheme AFP include:

1. The system covers old-age, as well as general (not employment-specific) disability and survivorship contingencies (see below Section “Disability and survivor coverage”).

2. Contributions are deposited (by employers) in personal (individual) accounts operated by the pension management fund (AFP) chosen by the employee.

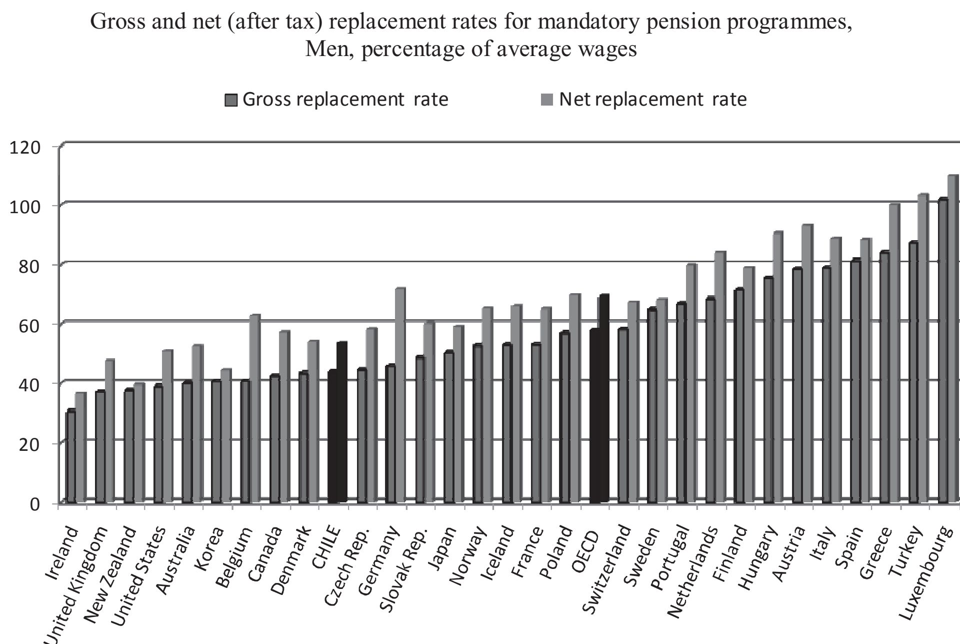
3. The (monthly) contribution rate to old-age benefits is a proportion of the wage and was 10% in 2008 up the maximum monthly contribution of UF 60 per month (about USD 2 448). Pension contributions are deducted from the income tax base, and any pension received at retirement is added to it. The contribution toward the disability and survivor risk amounted to an average 0.95% of the wage in December 2007, with on average another 1.45% being paid in administrative fees (Iglesias, 2009).

4. The “defined-contribution” old-age benefit depends on: *i)* the balance accumulated in the account of each worker at retirement; *ii)* his/her life expectancy and that of his/her family members; and, *iii)* investment returns. By contrast, the disability and survivor pensions are “defined benefits”; their amount is set in proportion to the historical average wage of the contributor.

International comparison on pension replacement rates based on a full contributory record at average wages (World Bank, 2007), show that at a gross replacement rate of about 55% the value of pension benefits in Chile is about 15 percentage points below the OECD average (Figure 4.3).

Figure 4.3. Replacement rates in Chile are relatively close to the OECD average

Gross and net (after tax) replacement rates for mandatory pension programmes, Men, percentage of average wages



Source: OECD (2007b), *Pensions at a Glance*; and World Bank (2007), *Pensions Panorama*.

Pension market characteristics: lack of competition and individual choice in investment

The state plays a regulatory and supervisory role in the private pension set-up and provides guarantees to fund members in case an AFP (or the life insurance company which pays annuities) goes bankrupt. Government regulations also affect market competition as well individual choice in investment options, and financial risk management. The 2008 reform also aims to increase competition by getting agents to compete for rather than in the market, and to allow the use of new forms of financial tools to further increase yields, even though in view of the financial crisis, current markets are not the ideal investment environment (Annex 4.A2 provides an overview of the Chilean pension market with a focus on competition and investment issues in Chile; see Dayoub and Lasagabaster, 2008, for an overview across Latin America).

There is little competition among AFPs in terms of price (user charges) or yields (rates of return on investment). Competition was fierce during the

mid-1990s when AFPs used (expensive) direct sales efforts and marketing campaigns to attract clients, but with a tightening of the rules on switching between funds in October 1997, the number of salesman fell from 17 448 in 1997 to 6 343 in 1998. Entry to the pension market is free except for commercial banks, mutual funds and insurance companies that cannot hold shares in AFPs, which helps shield pension-fund managers from competition by other financial intermediaries. Economies of scale effectively dictate an AFP needs about half a million clients to survive in the market (Iglesias, 2008), and the lack of competition has contributed to a concentration of AFPs in the market from 21 in 1993 to five in 2008.

On the whole, the operation profit margin of AFPs was on average 18% from 1983 to 1998, but with the shake-out of salesmen operating profit margins have exceeded 25% (Figure 4.A2.2). Initially, the increased profits were at least partially passed on to clients, but since 2001 administrative charges have stopped falling (Figure 4.A2.1), while operating profits have been fluctuating around 30%: almost twice as high as during the first 15 years of the Chilean pensions system. This suggests there is room left to reduce user charges in the AFP system.

The experience with financial management of PAYG funds prior to reform led to strict public regulation of AFPs in terms of portfolio selection, investment rules and market behaviour. However, over the years the Chilean authorities have gradually relaxed rules to increase both individual choice and increase yields.[63] Since 2002, each AFP can offer five different portfolios and risk profiles to their clients ranging from "risky" (up to 80% of capital in the individual account is invested in equity) to a risk-averse portfolio which mainly invests in fixed-income instruments. AFPs are legally required to guarantee a "minimum return", which contributes to AFP pension-fund managers taking a relatively careful, with little difference in investment behaviour as smaller AFPs copy behaviour of larger ones. Since 1981, the annual average of real pension fund yield has been in excess of 10%. This result is comparable with pension fund returns in European and North American OECD countries, where the real rate of return (net of management fees) are typically around 7% (Antolin, 2008; and D'Addio *et al.*, 2009).

63. Berstein and Chumacero (2003) estimated that in 2002/03, total assets managed by AFPs could have been at least 10% larger in the absence of stringent regulation of investment limits.

Benefit payments: pay-out options and early withdrawal of pension wealth

In a strictly regulated environment, AFP clients have basically three pay-out options:

1. Life annuities sold by life insurance companies involving a monthly income until decease of participants, with survivor payments to beneficiaries afterwards. When a worker buys a life annuity, he/she transfers the financial risks attached to both longevity and the rate of return on investment to the life insurance company, and the contract is irrevocable. Life insurance companies hardly existed before the 1981 pension reform, but they have quickly developed since: in 2007 two-thirds of the pension payouts deriving from mandatory saving concerned annuities (Table 4.2).

2. Programmed withdrawals (PW): the worker keeps the funds in his/her personal pension account and draws a regular pension subject to the AFP rules. Benefit rates are set for one year only; and new rates are set each year: about 25% of clients receive their pension benefit in this manner.

3. Temporary income with a deferred life annuity. This is a hybrid of the two previous payment methods: it involves an agreement with a life insurance company to pay the client a life annuity from some future specified date; until that time clients receive a monthly pension financed out of funds in his/her personal AFP account. This method covers less than 5% of all pay-outs.

Table 4.2. Distribution of pensioners by payment methods

Stock of number of pension-payments (percentage of total) paid out, December 2007

	Programmed withdrawals	Annuities	Temporary PWs	Total
Old age	27.7	14.0	0.8	42.7
Early withdrawals	5.6	50.7	1.0	57.2
Total	33.3	65.0	1.7	100

Source: *Superintendencia de Pensiones*.

Programmed withdrawals (PWs) and annuities both have a gradual withdrawal profile, but they provide a very different time stream of benefits and risks. Programmed withdrawals have the advantage that they allow the retiree to: *i)* get his/her money out of the system more quickly than an annuity would, due to the required mortality and interest-rate assumptions; *ii)* choose and vary the AFP and investment portfolio, selecting a (risky) portfolio with a higher expected return than annuities; *iii)* leave a bequest to his/her heirs if he/she dies early; and *iv)* switch to an annuity later on, if

desired, whereas the choice of an annuity is irreversible. These advantages might seem to make PWs attractive to retiring workers, especially those with high discount rates (short life expectancy), bequest motives and investment experience. However, with PWs there is no investment and longevity insurance, and annual payouts can vary with the rates of returns on investment. The annual income stream will diminish over time and will become very small if the worker lives long enough. To risk-averse workers the latter is a strong incentive to annuitise.

The choice of payout method also depends on the value of accumulated capital in the individual account. In general, those with limited pension savings (generating a benefit just above the MPG and PBS) will choose PW as personal savings will be used relatively quickly while a minimum pension is guaranteed. However, the government also guaranteed 75% of the annuity value in excess of the minimum pension (and 75% of the annuity in excess of the PBS up to a maximum of UF 45 or USD 1 836 in June 2008) to cover insurance company insolvency, and this public back-up of annuitisation affects the pay-out choice for workers with medium and large accumulations.

In addition, there exist regulatory incentives and constraints, which lead insurance companies to compete (in contrast to AFPs who operate PWs) to offer a present value of annuity payments which is relatively high compared with the present value of future PWs. Moreover, for many workers it is easier to withdraw their pension savings through annuitisation as they are marketed by insurance company sales agents who prepare calculations, process the paperwork and sell annuities to clients (rather than guiding them to AFPs delivering PWs), often before the normal retirement age.

The normal retirement age in Chile is 65 for men, 60 for women, but early withdrawal is allowed once a specified minimum amount of pension saving has been accumulated (the term early withdrawal seems more appropriate than early retirement, since the initial withdrawal of pension wealth often does not coincide with retirement from the labour market). Since 1988, workers have been permitted to stop contributing and start withdrawing once their replacement rate is 50% of their own wage and 110% of the MPG. With recognition bonds considered as part of the accumulated amount, and high rates of return to retirement accounts during the 1980s and 1990s (on average in excess of 10% per annum in real terms), a high proportion of workers met the early withdrawal conditions once they reached their 50s. For those who qualified, it is rational to withdraw early, stop contributing, and either consume or save in a more flexible form. In order to reduce the incidence of early withdrawal, the benefit formula is being tightened to make early withdrawal less attractive: the replacement rate was raised to 70% of the average wage and 150% of the MPG (and

since July 2008: 80% of the APS threshold, see Table 4.1), and the reference wage now refers to an average over the last ten years with a maximum to the number of months without contribution that can be included (Iglesias, 2009).

Hence, it is no surprise that so many clients opt for annuities. Workers with small accumulations retire at the normal age and take PW pensions. But the majority of workers withdraw early and almost 90% of them purchase annuities (Table 4.2). This large percentage – which is far greater than in other countries – seems to be explained by incentives and constraints imposed by guarantees and regulations, as well as by the limited information available to AFP members. One of the aims of the 2008 reform is to improve the information stream to AFP members and help them make more informed choices on their withdrawal decision.[64]

Low coverage: the Achilles heel of private protection arrangements

Coverage of the AFP programme increased markedly during the 1981-86 period because of the many workers who switched from the PAYG system to the individual private AFP programme (Box 4.1), particularly in the period 1981-86. After this initial period, coverage in terms of the working-age population in employment increased from about 40% in 1987 to 60% in 2007 (Figure 4.4, Panel A). By OECD comparison, coverage is low: when measured against the labour force, pension coverage in Chile was about 54% in 2005 (Figure 4.4, Panel B), well below the OECD average of 83% (OECD, 2008b).

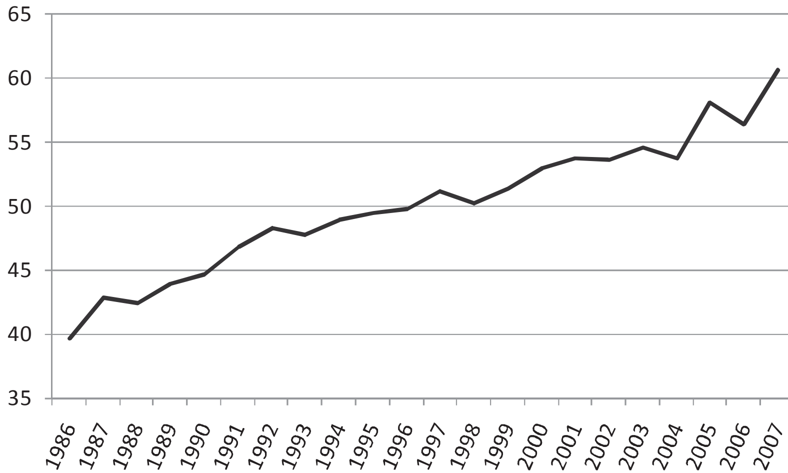
Coverage of pension schemes is also linked with national income. In countries where significant parts of the working-age population are in low productivity (*e.g.* small-scale agriculture), low-wage (and/or informal) employment, coverage of pension systems is relatively low. In recent years, Chile's employment growth has mainly been in the low-wage employment sector (Chapter 1), and there is no reason to believe that such workers will be more able to finance their health and pension contributions than in the past. The 2008 pension reform increased generosity of minimum pensions is financed out of general government (tax) revenue, which is tantamount to a redistribution of wealth from stronger growth sectors (*e.g.* the mineral sector) to low-productivity ones. Financing pension reform out of general government revue seems to be the best of available options, but the strategy is not without risk. For example, the cost of the 2008 reform is projected to

64. The reform will establish a fund for pension education that provides information on all aspects of the Chilean pension system, including information on yields, returns, annuities, etc. across different AFPs. This includes projections on future pension payments based on current assets and different contributory profiles (*e.g.* a full record or none at all). A network of accredited pension advisers will also be developed.

amount to 1.3% of GDP per annum in 2025. However, if plans to extend private pension coverage among a greater group of workers (see below) were not to have the desired effect in terms of mandatory individual pension saving, the total cost of the 2008 pension reform may well be higher than originally envisaged.

Figure 4.4. Pension coverage is increasing but remains low in international comparison

Panel A. AFP contributors as a proportion of the working-age population (15-64) in employment, 1986-2007[1]



Panel B. Coverage of mandatory pension schemes as a proportion of the labour force, 2005

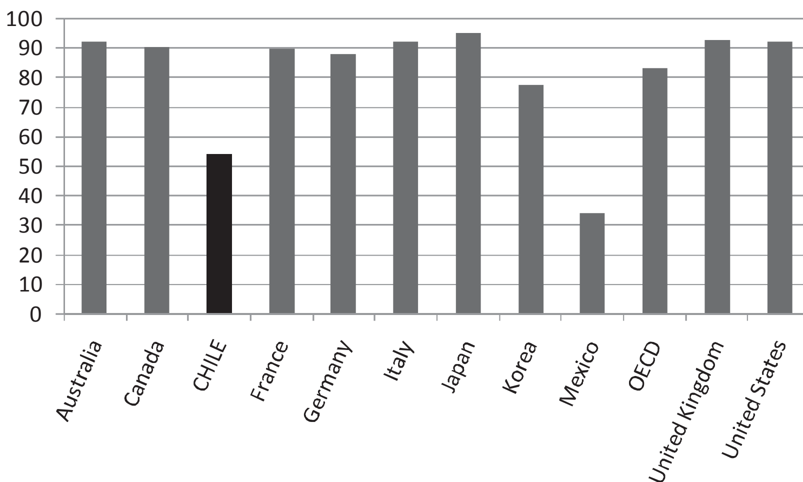
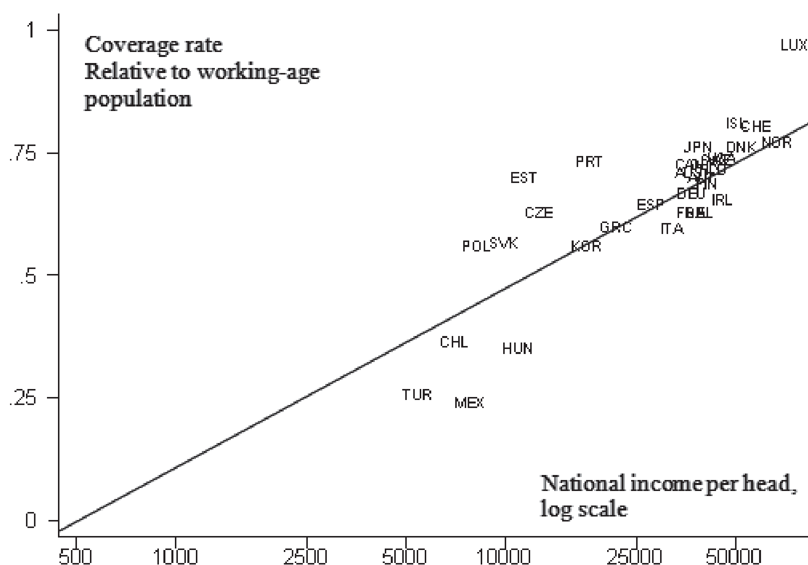


Figure 4.4. Pension coverage is increasing but remains low in international comparison *(cont'd)*

Panel C. Coverage of mandatory pension schemes related to national income per capita (log scale), 2005[2]



1. Contributors refer to contributors in December of a given year who have not yet retired and who made the contribution in the month for the wages they earned that month.

2. Australia, Austria, Belgium, Canada, Finland, France, Germany, Ireland, the Netherlands, Sweden, the United Kingdom and the United States are the countries included in the box in the figure.

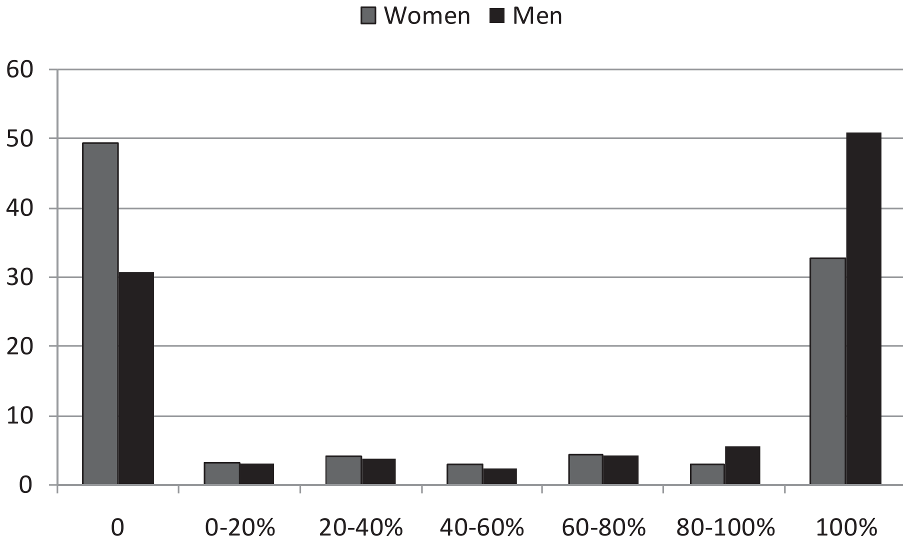
Source: Panel A: Contributors, *Superintendencia de Pensiones*; Employment data, both sexes, 51-64 (avg. November year x to January year x+1); INE; Panel B: OECD (2008b), *Pensions at a Glance: Asia/Pacific*; and, Panel C: World Bank Pensions database.

There may be fewer female than male AFP members and contributors, but, ever since the introduction of the AFP programme, coverage among females as a percentage of female employment is higher than for men, by about 4 to 5 percentage points (Iglesias, 2009). However, men are more likely than women to have a full contributory record during their membership period (Figure 4.5). Almost half of the female AFP members and one-third of the male members made no pension contribution from January 2004 to September 2006 (Figure 4.5); over the same period half of the men who contributed to an AFP fund contributed in full (as opposed to one-third of the women, with no discernible gender difference in contributory behaviour of those with a partial contributory record over the period). Contribution densities are also considerably higher among groups of workers with higher

income and education levels, and workers who are at least 45 years of age – women often defer affiliation until middle age (Asher and Vasudevan, 2008); contribution densities among low-income workers and workers with low educational attainment are limited (see also Cox, 2006).

Figure 4.5. The contribution density[1] among female workers is relatively low

Distribution of members by gender along the intensity with which they have made pension contributions during the January 2004-September 2006 period



1. The contribution density is the number of months in which an individual has made pension contributions as a proportion of months of membership in the AFP scheme.

Source: Based on data provided by the Government of Chile.

Another key aspect of AFP coverage is the low participation by self-employed workers. Coverage for this group of workers is not mandatory and is historically very low. In December 2007, only 60 000 out of 1.8 million self employed made pension contributions, and self-employed contributors accounted for 1.6% of all AFP contributors, whilst self-employed workers represented 27% of total employed people in the country (Iglesias, 2009). Workers with low contribution densities are unlikely to achieve the replacement rates shown above, and (without public coverage) are particularly vulnerable to the poverty risk in old age.

Policy initiatives to increase coverage

There are different reasons why different groups do not save (enough) for retirement. Often young people are simply not (yet) concerned about their retirement. Mothers who provide full-time care for their children have withdrawn from the labour force (and stopped making contributions). Other workers, including many of the self-employed, are unlikely to make voluntary pension contributions unless the relevant returns are considerably higher than returns to market saving. Otherwise, they will prefer liquidity, especially if it concerns cash-constrained, low-income households.[65]

Recent reform therefore tries to expand coverage through a mix of compulsion and financial incentives to make pension savings more attractive for groups with a low contribution density:

1. The introduction of mandatory coverage of pension contributions for *self-employed workers* who pay income tax (this measure is scheduled for gradual implementation over the 2012-18 period). The Internal Revenue Service will take over the collection of pension contributions (paid monthly or yearly based on the individual income declaration). The contribution rate will be the same as for salaried workers (with the same maximum threshold) and determined over 80% of declared income. Mandatory coverage will not be extended to some other groups of self-employed workers who are not obliged to declare income, *e.g*. artisanal fishermen and taxi drivers.
2. To encourage pension saving among *young workers* and increase formal employment: employers of contributors aged 18-35 with an income below 1.5 times the minimum wage (about USD 430), will receive a subsidy for their first 24 months of employment equal to 5% of the minimum wage (around USD 14). In addition, these participants will receive a similar bonus (USD 336 or 24 times USD 14) in their personal account from 2011 onwards. Some 300 000 young workers may be covered in 2009.
3. To encourage *female* pension saving, the state will pay contributions for mothers corresponding to 18 monthly MWs per child (about USD 518).

65. Evidence on non- or under-declaration of income for pension contribution purposes suggests this is not the major issue (again, the self-employed are not obliged to contribute): accumulated unpaid contributions, both declared and undeclared, are equivalent to less than 0.7% of the pension funds (Iglesias, 2009). The low non-compliance rate is also related to penalties for employers who do not pay contributions on behalf of their workers or who do so late. AFPs are legally obliged to recover outstanding contributions and have strong financial incentives to do so, as they can only charge management fees if contributions are registered in personal accounts (Iglesias, 2009).

This bonus will then receive a rate of return equal to the one obtained by pension fund “C” from the date the child is born until the mother reaches 65 years of age (despite a standard pension age at 60 for women). Also, in case of divorce, women can receive up to 50% of spousal pension entitlements, depending on their employment history. However, it is unclear as to why reform did not increase the normal withdrawal age for women to 65 years of age in view of the life expectancy trends and the recommendations of the Marcel Commission.

Thus far, the success of financial incentives to increase pension saving among the self-employed has not been very effective, and it remains to be seen to what extent these new initiatives will be more effective. Furthermore, the self-employed who are currently charged income tax on the basis of their VAT invoices may well change their behaviour faced with an increase of almost 20% of contributions (including towards health coverage) on their income. Because of this, reform may well lead to a decline in reported income for this group of workers, and much will depend on the effectiveness with which the tax authorities can implement the scheduled reform.

Disability and survivor[66] coverage: reduce cost-shifting while maintaining efficiency

In Chile, workers who fall ill, in the first instance can claim a sickness cash benefit at 100% of gross earnings up to a maximum of UF 60 (about USD 2 445) per annum. This benefit is financed by health insurers without specified maximum duration, so that health insurers are responsible for alerting clients to apply for a disability benefit, if they have not initiated such procedures themselves already.

If incapacity is employment-related clients may have a choice to apply for a benefit deriving from occupational accident and diseases legislation.[67] This scheme involves an employer contribution of 0.9% of wages and an additional contribution which varies with occupation and is reassessed annually, but which cannot be higher than 3.4% of wages, for example, in glass and ammunition industries. Contribution rates concern all workers in a company regardless of their specific task.

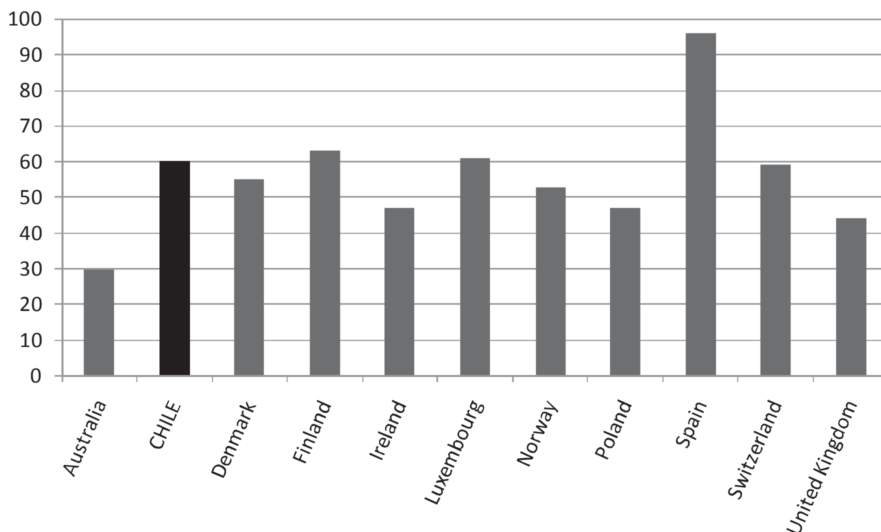
66. Survivor pensions can be received by widows (and since 2008 reform widowers), children (legitimate and biological), the mother of the biological children, and if there are no such beneficiaries, entitlement passes to the parents of the deceased AFP member.

67. Someone who applies for an employment-related occupational accident and diseases benefit cannot simultaneously apply for a benefit under the AFP scheme; claimants can apply for the other benefit if the initial application to either scheme was not successful.

AFP contributors not yet of pensionable age are entitled to a disability benefit in case of a "non-employment" related accident or illness. The defined-benefit payment is financed out of the capital in the AFPs members account and (if necessary) a supplement ("the additional payment") which is paid by the AFP and funded out of a group-policy the AFP takes out for its members with a life insurance company.[68] Compared with the average wage, the defined-benefit payment generates a *gross* replacement rate of around 60% (the benefit is 70% of the individual's average historical wage in case of total disability and 50% of that wage in case of partial disability). Figure 4.6 shows this is on par with gross replacement rates in other OECD countries; net (after-tax) replacement rates in OECD countries are often about 10 percentage points higher.

Figure 4.6. Disability benefit replacement rates in Chile are on par with other OECD countries

Gross replacement rates for disability benefit payments paid under the mandatory pension programmes, percentage of average wages, 2005



Source: Chile: Iglesias (2009); other countries: OECD, *Breaking the Barriers - Sickness, Disability and Work* (various issues).

68. When a worker covered by the contract becomes disabled or dies, the so-called "additional payment" is deposited into the individual's pension account. This additional payment is equal to the difference between the "necessary capital" to finance the legally prescribed level of pensions (in other words, the present value of estimated future pension payments) and the balance accumulated in his/her personal account at the time of disability or death.

For a client to be recognised as fully disabled, he or she must have lost as least two-thirds of his/her earnings capacity (the system classified those with a loss of half to two-thirds of earnings capacity as partially disabled). Initial claims are assessed along defined disability criteria by 21 regional medical commissions of three doctors appointed by the *Superintendencia* of AFPs. Clients who were declared to be disabled were re-assed three years later. During this three year period, AFPs could not use the capital in personal accounts to fund the claim, but they had to pay do so out of their administrative fees (with which AFPs bought a group-insurance policy for their members).

Because of this, AFPs had financial incentives to curtail the costs of disability by limiting the number of successful claims. Assessment procedures include participation by AFPs and insurance companies and both agencies pursue a strict application of the rules, fighting applications before they even get to the medical commission on technical grounds and appealing assessment outcomes where possible. Even when the system allows it, public officials may have limited direct financial incentives to appeal against successful disability claims, so that in many countries with public systems, appeals are only actively pursued by unsuccessful claimants. In the Chilean system, both AFPs and unsuccessful claimants have financial incentives to appeal and the number of successful appeals by both parties approximately cancels each other out, which contributes to a relatively low incidence of approved disability cases. James *et al.* (2008) show that the hazard rates of workers becoming disability pensioners in the AFP programme are 65-80% lower than under the previous public system, and that the reduction in disability hazard is related to systemic targeting of those with the most severe medical conditions.

The low hazard rates in Chile's private disability programme suggest it has chosen to minimise the chance of incorrectly granting claims, at the risk of turning down many deserving clients. However, this has been done at the cost of public budgets, as unsuccessful applicants sought to receive a minimum pension (to be eligible to the MPG clients who have been declared disabled need ten years of contributory record as opposed to the 20 years for old-age claimants) or a means-tested PASIS benefit.[69]

Abstracting from the cost to the public purse, the cost of the private insurance of disability and survivor risks is low in international comparison at less than 1% of wages, about a quarter of what it would typically be in many European OECD countries (*e.g.* Andrews, 1998). However, this

69. It is unclear to what the assertive approach of AFPs in disability-assessment procedures has had an upward effect on the number of claimants of the occupational accident and disease programme.

outcome should be put in context with the limitations in AFP coverage and the fact that disability is concentrated among poor families who are least likely to be covered by the AFP scheme.

Changes to disability and survivor insurance

The 2008 reform with respect to disability and survivor insurance included the following items:

- The disability and survivor insurance premium will be differentiated across genders: at present women are cross-subsidising men as the actual costs are about 45% lower than for men.[70]
- Mandatory re-assessment of certified totally disabled clients after three years was abolished as claims are not frequently reversed, so that in these cases the insurer can now fund the disability claim out of the personal account from the outset (partially disabled continue to be re-assessed).[71]
- In future, rather than competing against each other to select clients whose disability risk is relatively low, a consortium of all AFPs will use a public auction mechanism to buy a common disability and survivor insurance contract for two-year periods from a life insurance company (or a group of such companies). The resulting disability and insurance fee will then be applied to existing members regardless of the AFP to which they belong. Furthermore, the disability and survivor insurance fee will no longer be part of the administrative fee (see above), but will be separately identifiable, and from July 2011 onwards will be paid by employers (rather than workers).[72]

It is too early to assess the overall effect of these reforms, but experience with reform of disability programmes in OECD countries holds some lessons. From a narrow assessment-procedure perspective, it is desirable to avoid the cost of a procedure which seems to have little effect on disability

70. In 2004, the average cost of disability and survivor insurance was 0.86% of wages; while the cost for women was 0.57%, the cost for men was 1.01%. Because of the reform, men and women will start paying the cost of the insurance for men, but the difference between this cost and the cost for women will be deposited in women's pension's accounts.

71. James *et al.* (2008), report that out of 100 initial applicants, 42 claimants were re-evaluated after three years, of which 40 were declared permanently disabled.

72. The notion of employer responsibility for paying disability and survivor insurance will be phased in gradually; the fee will be charged to employers with 100 or more contracted workers as from 1 July, 2009, to be extended to all employers from 1 July 2011 onwards.

status. However, if re-assessment procedures were abolished to reduce costs for AFPs this could also have been achieved by allowing the AFP to charge back the costs of the initial three years temporary payment to the clients personal account, if the full disability status of the client was upheld after three years. The drawback of this measure is that it suggests that "once fully disabled, always fully disabled", and as policy messages go, that is a bad one for different reasons. It provides incentives to potential applicants (and perhaps in future some AFPs) to apply for a steady stream of future income payments under the programme; and, it ignores the capacities of persons with disabilities.

It is also unclear as to why employers are made responsible for disability contributions. Employers are likely to pass on the cost of this to their workers in future. Furthermore, experience in OECD countries shows that increasing the transparency of disability costs in this way has little effect on employer-behaviour. Experience-rating of disability premiums is likely to be more effective in terms of the preventive measures by employers, as the experience in the Netherlands shows (OECD, 2008c). In fact, the Chilean system involves sectoral experience-rating in its employment-related occupational accident and diseases scheme. Policy may consider to extend experience-rating to enterprises for both the employment-related and private disability schemes.

The recent reform may well increase the costs of the private disability scheme significantly, perhaps by as much as 25% (Iglesias, 2009). In particular, this increase in cost would be related to the increased coverage of the disability and survivor insurance (more self-employed low-income workers with an elevated disability risk) as well as new institutional arrangements. In future, individual AFPs will not have incentives to actively follow disability assessment, as this no longer affects their operations. In fact, individual AFPs may well help their clients with the administrative procedures to obtain a permanent disability benefit at the expense of the insurance company (or a consortium of insurance companies) which won the tender. The insurance company will in any case try to pass on costs to employers, who in turn will pass on cost to workers. In any case, since the tender-period only concerns two years; the relevant insurance company has limited incentives to invest in the quality of their assessment procedures, and the ensuing higher incidence of disability payments is likely to increase premiums.

To the extent that the rise in costs of the private disability programme reflects the expansion of worker coverage[73] (and reduce public sector

73. The coverage of some groups of workers may increase costs, while the tightening of early retirement regulations will increase coverage among older workers. On the other

coverage), this is understandable. However, Chile should avoid the experience of some OECD countries which found that cost of disability benefit schemes are hard to cut back once the inflow of new claimants into these schemes has increased significantly (OECD, 2004, 2006b, 2007c and 2008c). Recent reform involves a risk that less assertive application of assessment procedures may lead to a growth in the number of recipients. It is of course too early to assess the effect disability reform will have, but it needs to be closely monitored to ensure that the right people receive the assistance to which they are entitled.

3. Conclusions

More than 25 years of experience with mandatory private pensions has restored confidence in pension saving in Chile. One can argue that individual pension schemes may involve relatively high administrative costs compared with collective voluntary occupation pension saving as in the Netherlands, or that a system of individual accounts involves little interpersonal redistribution (a *sine qua non* for being classified as a social programme). However, such caveats need to give due account to the fact that Chile, unlike most OECD countries, had a very bad experience with corrupt pension schemes.

The pre-funded Chilean system has performed well over the years. It has deepened Chilean capital markets and helped economic development. Furthermore, it is not very susceptible to the dynamics of ageing populations, and in that way the Chilean system is ahead of many OECD countries which are still grappling with the issues of necessary pension reform in view of prospective increases in public spending commitments. The rates of return on investment have been higher than originally envisaged. However, competition is limited in the pension market, and recent reform aims to generate price competition by having AFPs compete for a share of the market (new entrants) rather than trying to stimulate competition within the market. At present, operational profits of AFPs seem to be at a structurally higher level than prior to the late 1990s, and this does not seem to be related to a change in cost structures. There seems to be room to reduce user charges beyond the changes generated by reform of disability insurance.

The 1981 pension reform failed to achieve one of its key objectives: ensure adequacy and coverage for the vast majority of Chilean workers. As in most OECD countries, the density of full-time earners with a full contributory record over 30 years is diminishing and there are increasing

hand, the projected increase of coverage among younger workers will off-set these effects to some extent.

numbers of workers with patchy employment profiles. Contribution densities are particularly low among low-income workers with low levels of educational attainment, young workers, female workers, and the self-employed. Recent reform targets increased coverage among these groups.

Public intervention is needed if a predominantly private pension system wishes to be successful in term of adequacy and coverage, and the Chilean authorities deserve to be commended for their introduction of a basic solidarity pension as of right. In addition, new measures have been introduced to stimulate private pension saving, so that Chile is moving toward the international benchmark model of a basic public pensions, mandatory second-tier pension saving, topped up with third-tier pension savings for those who want to save more.

The Chilean authorities started to improve benefit support to the elderly well before recent initiatives to support the working-age population unfolded (Chapter 3), and as a result the poverty rate among the elderly is relatively low. However, there is no room for complacency and the success of recent reform cannot be taken for granted in the future. Reform, rightly, aims to increase coverage of pension contributions to groups to low-income households and the self-employed. However, there are concerns that these initiatives may not be successful. For example, the implicit tax rate of up to 30% may be a deterrent for many low-income workers to save for retirement and some of the self-employed may stop reporting income to the tax authorities rather than pay contributions towards pension insurance.

The private AFP scheme has managed to limit access to its disability provisions. This has been at the public expense, since unsuccessful applicants are likely to seek recourse to publicly-financed minimum income benefits. Recent reform is likely to increase cost of the private disability programme as coverage is extended to groups of the self-employed, and cost may rise further because of institutional changes with AFPs no longer having incentives to keep costs down. It is too early to assess the disability reform will have, but it needs to be closely monitored to ensure the right people receive the assistance to which they are entitled.

Finally, it is not immediately obvious why employers have been made responsible for disability contributions, and experience in OECD countries has shown that increasing the transparency of disability costs in this way has little effect on employer-behaviour. Experience-rating of disability premiums is likely to be more effective in terms of the preventive measures by employers, and the Chilean authorities may wish to consider introducing this principle in the private disability scheme.

Annex 4.A1. Background data to Chile's private pension system

Table 4.A1.1. Most outlays on pension payments are through annuities rather than programmed withdrawals

Pension benefits receipts and outlays (billion of pesos, current currency)

	Mandatory pension contributions	Pension fund outlays towards annuities[1]	Regular pension payments		Temporary payments[2]		Annuity payments		Other[3]	Total		
			Old age	Invalidity and survivors	Old age	Invalidity and survivors	Old age	Invalidity and survivors	Invalidity and survivors	Old age	Invalidity and survivors	All
2000	1 409 850		8 404	3 982	2 645	159	19 868	3 854	1 978	30 917	9 973	40 890
2001	1 538 635		9 483	4 556	2 910	204	23 880	4 419	2 002	36 273	11 181	47 454
2002	1 604 635	525 580	9 753	4 826	2 130	306	27 340	5 243	2 038	39 223	12 414	51 636
2003	2 347 658	590 455	10 985	5 338	2 327	295	30 286	5 483	2 035	43 598	13 151	56 750
2004	2 651 485	640 680	11 473	5 843	2 547	369	42 713	8 638	2 093	56 733	16 943	73 675
2005	3 077 100	620 329	13 090	6 424	2 672	512	46 892	9 821	2 135	62 654	18 893	81 547
2006	3 512 688	627 279	15 291	7 693	2 717	566	50 142	11 224	2 239	68 151	21 721	89 872
2007	4 014 014	743 060	19 587	9 351	3 995	734	55 971	13 078	2 375	79 553	25 538	105 091

1. The present value of annuities bought that year (equivalent to capital transferred to life insurance companies to buy annuities).

2. A pensioner can buy a "deferred annuity", with pay-outs starting "n" years from the moment a person ceases to make contributions. From that moment until annuity payments start, the person can receive a temporary benefit financed out of the personal balance which was not used to buy the "deferred annuity".

3. Other payment as covered by insurance, *e.g.* benefits arising from accidents, illness and death.

Source: *Estados Financieros* AFP and SAFP (*www.spensiones.cl/safpstats/stats/*).

Table 4.A1.2. AFP portfolio characteristics and yields and default age rules for clients, 2008

Portfolio	Average yield[1]	Limit on investment in equities, as a proportion of balance in account		Default age designation[2]	
		Minimum	Maximum	Men	Women
A	18.2%	40	80	Not applicable	Not applicable
B	13.1%	25	60	< 35	< 35
C	9.9%	15	40	36 - 55	36 - 50
D	7.5%	5	20	56 >	50 >
E	4.3%	Largely fixed income instruments		Not applicable	Not applicable

1. Annual average real rate of return by type of portfolio over the 2003-07 period (*www.safp.cl,* download 12 September 2008). Each year each AFP must guarantee that the average real return in the last 36 months is not lower than the lesser of *i)* the average real return minus 4 percentage points for the funds A and B (with a higher equity exposure), and minus 2 percentage points for the funds C, D and E (with a higher proportion of fixed income securities) or *ii)* 50% of the average real return of all the funds.

2. Older clients (men over 55, women over 50) cannot choose portfolio 1 in any case, while beneficiaries of PWs in the same age group cannot choose portfolios A and B. Switching among portfolios is allowed, but only the first two changes within a single year are free of charge.

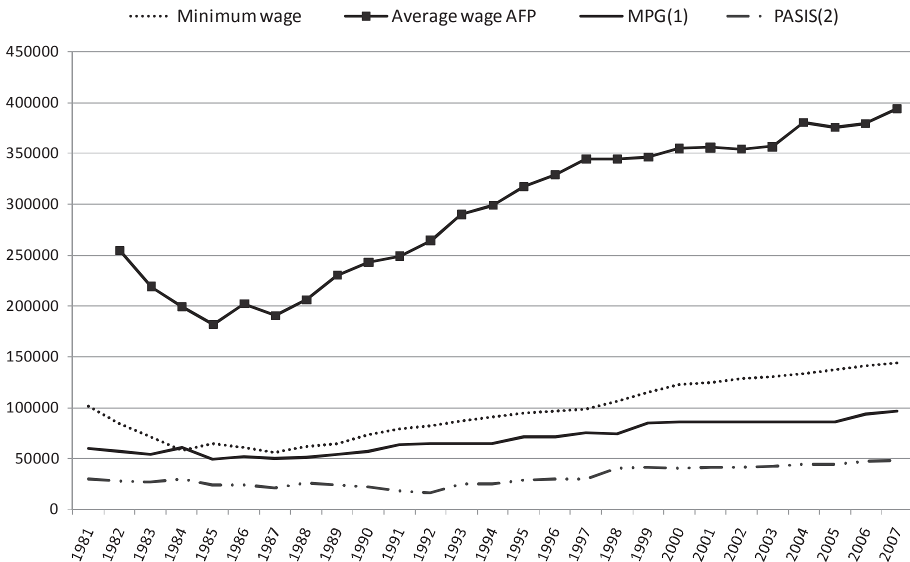
Source: *Estados Financieros* AFP and SAFP (*www.spensiones.cl/safpstats/stats/*).

Trends in minimum payment rates

The *Minima Pension Garantia* (MPG) was about CLP 96 391 (about USD 180) per month in 2007, but this varied with age (Iglesias, 2009). In 2007, the PASIS payment amounted to about one-third of the minimum wage, while the MGP was equivalent to two-thirds of the minimum wage. Average wages of contributors to the mandatory pension system were about eight times as high as the PASIS payment (Figure 4.A1.1). Since 2004 minimum pension payments increased relative to (minimum) wages, and this trend continued with the July pension reform: the PBS payment in 2008 was almost 25% higher than the 2007 PASIS payment in nominal terms.

Figure 4.A1.1. Evolution of the minimum wage, average wage of contributors to the mandatory pension system (AFP) and minimum pension payments

In Chilean pesos of December 2007



1. Minimum pension guarantee payment for retirees less than 70 years of age.
2. PASIS payment for retirees from over 70 to less than 75 years of age.

Source: Iglesias (2009).

Annex 4.A2. The Chilean pension market: competition, individual choice and financial risk management

In 2008, there were five *Administradora de Fondo de Pensiones* (AFPs) – Capital, Cuprum, Habitat, Planvital and Provida –, which operate pensions saving accounts and in this process fulfil a record-keeping, investment and benefit-payment function. Since 1981, the importance of the pension market industry has grown spectacularly: from about 1.4 million clients and pensions assets worth about USD 0.33 billion to almost 8 million clients by the end of 2007 and assets amounting to USD 111 billion.

Competition and the lack of it

AFPs charge fees on the payment of contributions, payment of programmed withdrawals (PWs) – usually a proportion of 1.25% of the pension payment –, and on management of voluntary pension savings accounts (AFPs could charge fees on transfer of client´s accounts to a different AFP, but this does not happen in practice). AFPs have to charge identical fees across their clients, and since there are no substantial differences in services, operational costs (or fees) between clients, high-income workers are financially most interesting to AFPs.

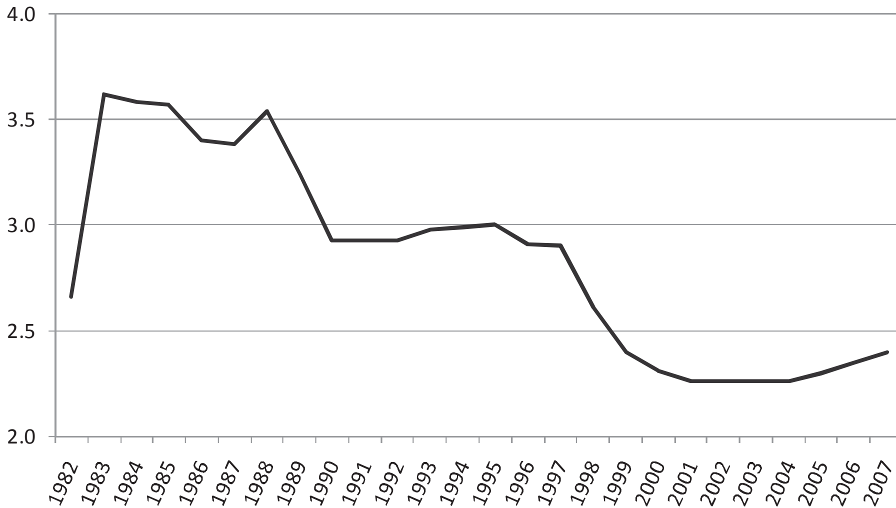
In December 2007, administration fees amounted to about 2.4% of wages, which included a 0.95% fee on disability and survivor fees; two AFPs also charged a flat amount in addition to the variable fee (in future AFPs will no longer be allowed to charge flat fees to increase market transparency). Administrative charges as a proportion of the taxable wage were highest in the early 1980s when APFs charged high fees to recoup part of the their income losses due to low wages and employment, but from 1984 to 2005 administrative fees fell from 3.6 to 2.25% of the average taxable wage in 2001, to increase to 2.4% in 2007 (Figure 4.A2.1).

International comparisons of administrative charge ratios are fraught with difficulties, because of systemic differences such as, for example, different types of charges and contributory periods. Gomez-Hernandez and Stewart (2008) consider 40-year charge ratios across 21 countries, and find that this charge ratio of the Chilean (and Israeli) systems are below average and below charge ratios for (in ascending order) Polish, Slovak, Hungarian,

Czech and Turkish defined-contribution pension systems (the result has to be interpreted with care as the chosen methodology favours a system which charge fees on wages, rather than on assets). Administrative fees may not be overly high in international comparison, but that does not mean they could not be reduced in view of market and cost structures in Chile.

Figure 4.A2.1. Administrative charges declined until 2001

As a percentage of client earnings[1]



1. In 2007, two AFPs also charged a flat fee.

Source: Iglesias (2009) and the *Superintendencia de pensiones* (*www.safp.cl*).

Different AFPs charge different fees, but differences are small. Many clients also find it difficult to obtain and understand all relevant information about pension options and their implications for future pension wealth. The mandatory nature of the system may also contribute to a certain degree of apathy among clients, as many of them seem to be unaware or uninterested in the relatively small differences in fees across AFPs (Asher and Vasudevan, 2008). The low price elasticity of demand limits price competition (*e.g.* Berstein and Cabrita, 2007; and Valdés, 2005).

In the absence of price competition (and "yield competition", see below), competition among AFPs mainly concerned (expensive) direct sales efforts and marketing campaigns. Indeed, in the mid-1990s, AFPs competed aggressively on the basis of marketing strategies, with sales agents luring in clients with more or less expensive presents and gifs. At peak, marketing

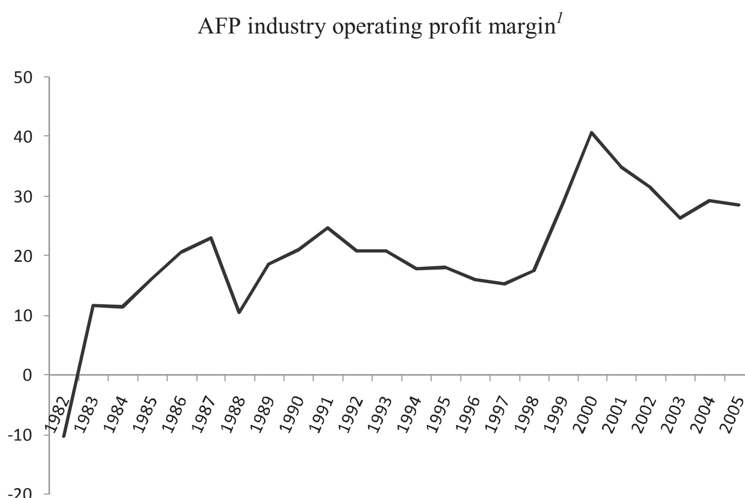
expenditure amounted to one-third of fee income in 1997 (up from about 10% in 1990; Iglesias, 2008), but with a tightening of the rules on switching between funds in October 1997, the number of salesmen fell from 17 448 in 1997 to 6 343 in 1998 (Asher and Vadusevan, 2008; and Iglesias, 2009). The increase in sales and marketing activities, reduced profit margins (which increased again since 1998) and contributed to a concentration of AFPs in the market from 21 in 1993 to 5 in 2008.

Entry to the pension market is free (subject to fulfilling basic conditions), but economies of scale effectively dictate an AFP needs about half a million clients to survive in the market (Iglesias, 2008). There are few restrictions on AFP ownership except, significantly, for commercial banks, mutual funds and insurance companies that cannot hold shares in AFPs, which helps shield pension-fund managers from competition by other financial intermediaries.

On the whole, the operation profit margin of AFPs was on average 18% from 1983 to 1998, but with the shake-out of salesmen operating profit margins have exceeded 25% (Figure 4.A2.2). Initially, the increased profits were at least partially passed on to clients, but since 2001 administrative charges have stopped falling (Figure 4.A2.1), while operating profits have been fluctuating around 30%: almost twice as high as during the first 15 years of the Chilean pensions system. This suggests that there is room left to reduce user charges in the AFP system.

Figure 4.A2.2. AFP profits seem to be at a higher level than in the 1990s

AFP industry operating profit margin[1]



1. The operating profit margin is the difference of operating income and expenses as a proportion of operating income.

Source: *Anexo Estadistico of the Sistema Chileno de Pensiones* as published by the *Superintendencia de pensiones* (*www.safp.cl)*.

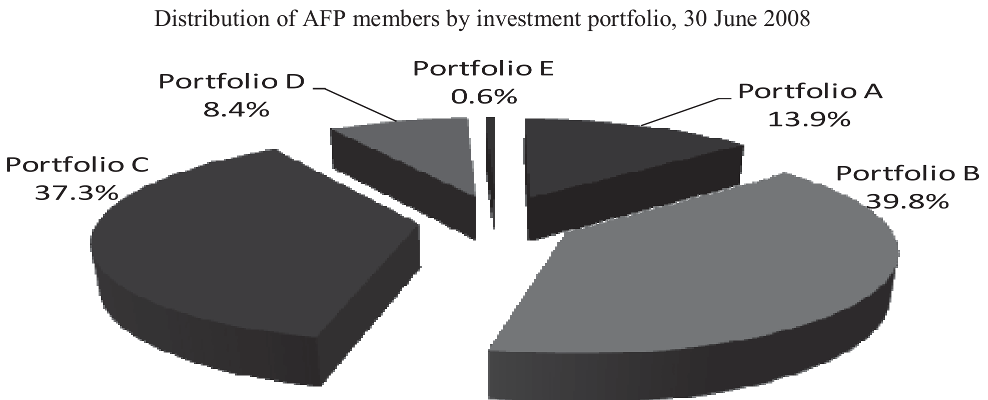
Increasing individual choice and the rate of return on investment

The experience with financial management of PAYG funds prior to reform led to strict public regulation of AFPs in terms of portfolio selection, investment rules and market behaviour. There is, however, a balance between regulation and individual choice as well as regulation and rates of return on investment, and over the years, the Chilean authorities have gradually relaxed rules to increase both individual choice and yields.

In terms of portfolio selection, originally each AFP offered only one portfolio to clients. Since 2002, AFPs can offer five different portfolios and risk profiles to their clients. Portfolio A invests 40 to 80% of capital in the individual account in equities: portfolio B, 25 to 60%; portfolio C, 15 to 40%, portfolio D, 5 to 20%, while portfolio E mainly invests in fixed-income instruments. In order to avoid clients who are close to retirement or those who are already retired taking considerable risks, they are not allowed to choose the more risky portfolios depending on their age (Table 4.A1.2). Furthermore, if clients upon joining an AFP for the first time do not reveal a preference, they are allocated a portfolio according to their age (portfolio B up to age 35; portfolio C for middle-aged workers; and portfolio D for older workers, see Table 4.A1.2). By the end of 2007, almost 3 out of 8 million clients had chosen a portfolio other than the default one, and 75% of these clients had opted for portfolios A or B; younger clients are more likely to take more risky investments (Iglesias, 2009). In the end, portfolios B and C cover about 40% each of all AFP clients while the interest for both very risky and risk-averse portfolios is limited (Figure 4.A2.3).

Figure 4.A2.3. Most AFP members have investment portfolios with intermediate risks

Distribution of AFP members by investment portfolio, 30 June 2008



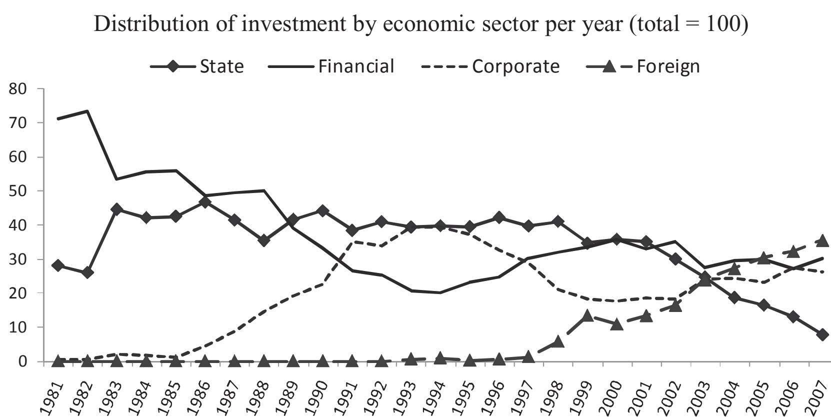
Source: *Superintendencia de pensiones* (*www.safp.cl/safpstats/stats/*)

AFPs are legally required to guarantee a minimum return for each of the five portfolios (Iglesias, 2008), and to this end they must constitute a "reserve for variations of return" and a "mandatory reserve" of at least 1% of the value of pension fund assets (if these reserves are not enough, AFPs have to use their other assets, and if that's not sufficient the government has to provide compensation towards the guaranteed return). The minimum return regulation seems to have contributed to pension assets homogeneity, because the formula determining the "minimum return" is such that the minimum return changes with average annual pension fund returns. This creates a moral hazard issue in that rather than competing to achieve the highest rate of return, AFP fund managers take a more careful approach and as smaller AFPs copy the investment behaviour of larger ones, this contributes to "herding behaviour in the pension market".

Relatively cautious investment behaviour is also related to the strict regulations concerning AFP pension investments, with maximum limits by type of investment and investee also depending on pensions fund size; some investments are subject to approval by the Risk Rating Commission. Over the years both capital markets developed and investment rules were gradually relaxed to achieve a more efficient combination of risk and return: for example, since 1985 AFPs are allowed to invest in private stocks, and since 1992 they can make foreign investments. As a result, since 1981 the pension fund investment in public debt has declined from almost 50% at peak in December 1986 to 8% in December 2007. Investment in financial instruments (largely term deposits and mortgages) still amounts to about 30% of all pension fund investment, but foreign investment has grown rapidly since 1996 and is now the largest investment area of pension funds (Figure 4.A2.4).

Figure 4.A2.4. Foreign investment by AFPs has grown rapidly over the last decade

Distribution of investment by economic sector per year (total = 100)

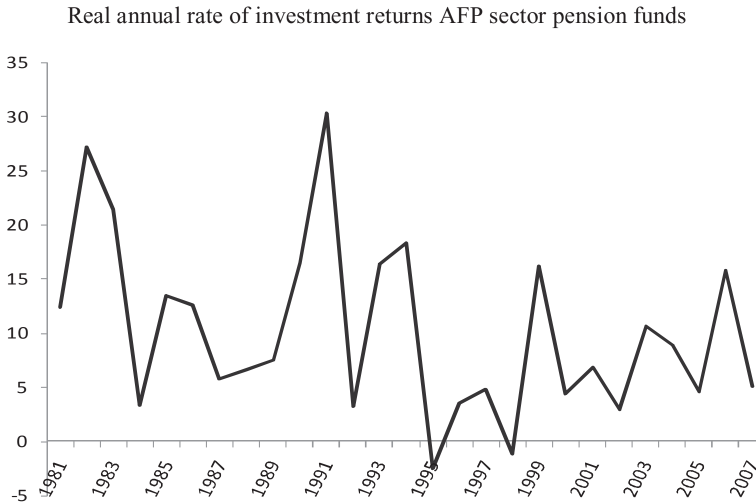


Source: *Superintendencia de pensiones* (*www.safp.cl/safpstats/stats/*).

Since 1981, the annual average of pension fund yield has been in excess of 10%, subject to considerable variation. During the mid-1990, some negative rates of return were recorded, but since foreign investment took off yields have trended upwards again (Figure 4.A2.5). Investment returns are comparable with pension fund returns in European and North American OECD countries, where the real rate of return (net of administration charges, Figure 4.A2.1) are typically around 7% (Antolin, 2008; and D'Addio *et al.*, 2009).

Figure 4.A2.5. Real rate of investment returns have trended up since the late 1990s

Real annual rate of investment returns AFP sector pension funds



Source: *Superintendencia de pensiones* (*www.safp.cl/safpstats/stats/*).

Reform to increase price competition and financial risk management

Following on to proposals by the Marcel Commission (2006), the following measures are being introduced to increase price competition and improve financial risk management:

- From 2010 onward, there will be competition for the market rather than in the market. The AFP which offers in a public auction to charge the lowest fees will provide coverage to *all new* contributors over for a two-year period. The market is substantial: the regular inflow of new members has been about 200 000 per annum in recent years and this will double during the 2012-15 period as about 800 000 self-employed workers will also have to be brought into the system. However, all members of an AFP must be charged the same

level of fees; so, the AFP concerned will also have to charge that reduced fee to its existing clients. Workers so allocated to an AFP have to remain with the AFP for at least for 24 months, unless they switch to an AFP which charges a lower fee (or to an AFP with a better net result, *i.e*. returns minus fees).

- The reform may also increase the number of AFPs in the market. Newly formed AFPs may win the public auction, though existing AFPs may well offer low fees in order to keep newcomers out. In any case, the new AFPs may well find it difficult to lower operational costs below the level of the larger incumbent AFP´s which have benefitted from economies of scale for some time. Another scenario is therefore, that after some years new AFPs may well be taken over by one of the existing companies. Pension reform also introduces tax incentives to AFPs to sub-contract some of their back-office operations, so that operational costs and user charges can be reduced.
- In future, AFPs will be allowed to invest in new financial tools (although great caution seems appropriate in the "post credit-crunch" investment environment), while maximum limits for different investment instrument will be increased (notably, foreign investment may make up 80% of a pension funds investment portfolio). For each of the five investment-portfolios, AFPs will have to make explicit their investment policies, which will be subject to approval and supervision by an investment committee of experts within the AFP.

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LIST OF ABBREVIATIONS

AFP	*Administradora de Fondo de Pensiones* (Pension Fund Management Companies)
ALMPs	Active Labour Market Programmes
APS	*Aporte Previsional Solidario* (Pension Solidarity Complement)
AUGE	*Acceso Universal con Garantías Explícitas en Salud* (Regime of Explicit Health Guarantees)
CAN	National Accreditation Commission
CASEN	*Encuesta de Caracterización Socioeconómica Nacional* (National Characterisation Socio-economic Survey)
CCT	Conditional Cash Transfers
CEPAL	*Comisión Económica para América Latina y el Caribe* (Economic Commission for Latin America and the Caribbean)
CLP	Chilean Pesos
DIPRECA	*Dirección de Previsión de Carabineros de Chile* (Social Security for the Police)
DT	*Dirección del Trabajo* (Labour Inspectorate of the Ministry of Labour and Social Welfare)
EITC	Earned Income Tax Credit
ENCLA	*Encuesta Laboral* (National Labour Survey)
EPL	Employment Protection Legislation
FONASA	*Fondo Nacional de Salud* (National Health Fund)
FOSIS	Fund for Solidarity and Social Investment
GDP	Gross Domestic Product
ICT	Information and Communication Technologies
INE	... *Instituto Nacional de Estadisticas* (National Statistics Institute)

INP	*Instituto de Normalización Previsional* (Chilean Social Insurance Agency)
INSP	*Instituto Nacional de la Salud Pública* (National Institute of Public Health)
ISAPRE	*Instituciones de Salud Previsional* (Private Health Providers)
IUSA	Individual Unemployment Savings Accounts
JUNJI	*Junta Nacional de Jardines Infantiles* (National Childcare Authority, part of the Ministry of Education)
MdH	*Ministerio de Hacienda* (Ministry of Finance)
Mideplan	*Ministerio de Planificación* (Ministry of Budget and Planning)
MINVU	*Ministerio de Vivienda y Urbanismo* (Ministry of Housing and Urbanism)
MPG	*Minima Pensión Garantía* (Minimum Pension Guarantee)
NEET	Neither in Employment nor in Education or Training
OMIL	*Oficinas Municipales de Intermediación Laboral* (Municipal Employment Intermediation Offices)
OTEC	*Organismo Técnico de Capacitación* (Technical Training Organisation)
PASIS	*Pensiones Asistenciales* (Social Assistance Pension)
PAYG	Pay As You Go
PBS	*Pensión Básica Solidaria* (Basic Solidarity Pension)
PISA	OECD Programme for International Student Assessment
PW	Programmed withdrawals (Regular pension payments)
SENCE	*Servicio Nacional de Capacitación y Empleo* (National Employment and Training Service)
SAFP	*Superintendencia de Administradoras de Fondos de Pensiones* (Supervisory body of Pension Fund Management Companies, see above)
SENAME	*Servicio Nacional de Menores* (National Service for Young People)
SIMCE	*Sistema de Medición de la Calidad de la Educación* (System for the assessment of quality in education)
SMEs	Small and Medium-sized Enterprises

SNED	National Education Evaluation Service
SOFOFA	*Sociedad de Fomento Fabril* (Chilean Federation of Industry)
SPR	*Ficha de Protección Social* (Social Protection Record)
TWA	Temporary work agencies
UF	*Unidad de Fomento* (Unit of account which adjusts the value of the Chilean Peso on a daily basis)
UI	Unemployment insurance
UTM	*Unidades tributarias mensuales* (Unit for monthly tax payments)
VAT	Value-added Tax

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