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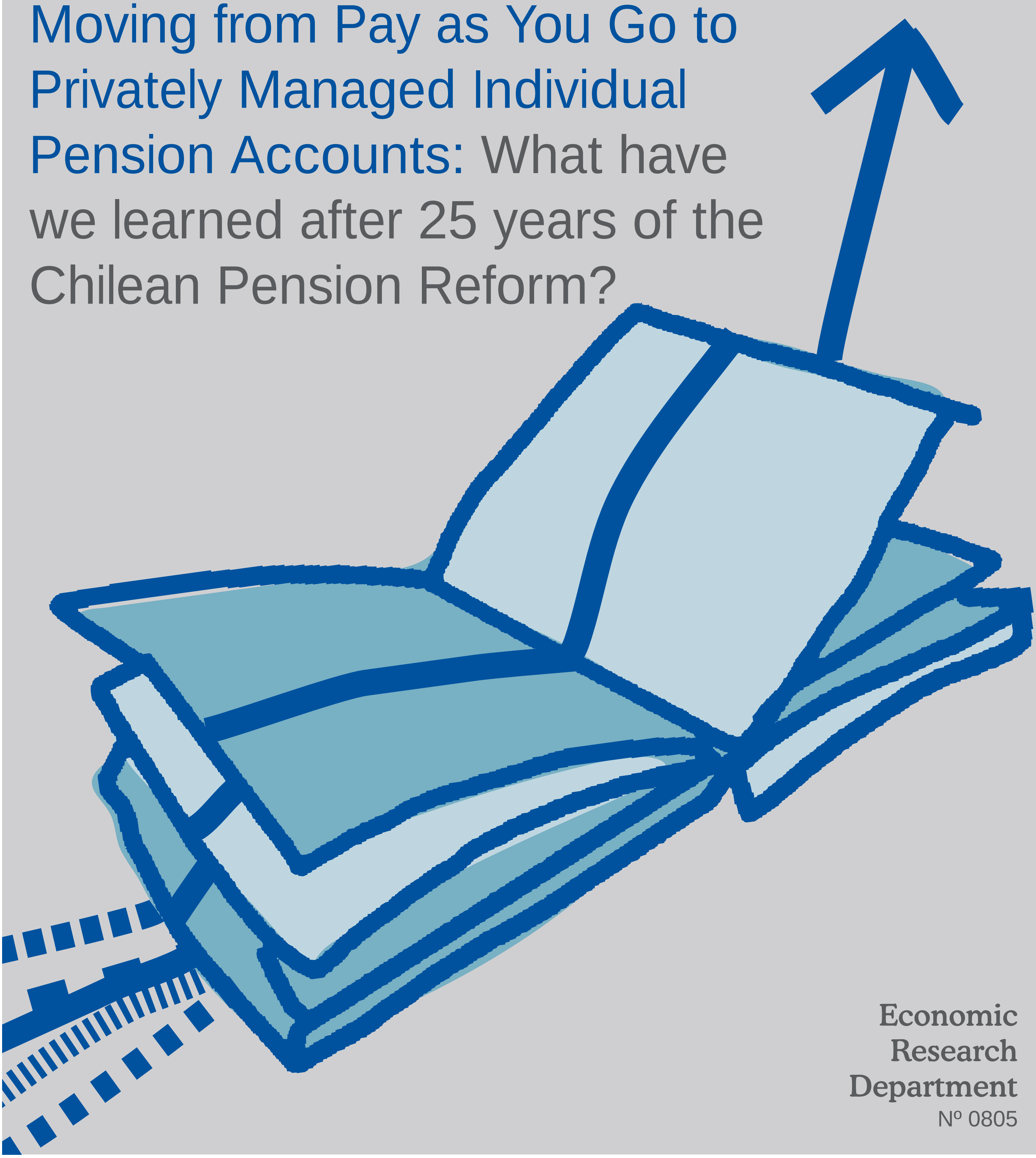

Economic Research Department

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Moving from Pay as You Go to Privately Managed Individual Pension Accounts: What have we learned after 25 years of the Chilean Pension Reform?[1]

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Abstract

This paper presents a brief history of pension reform in Chile, and the reasons behind the introduction of individual privately-managed accounts in 1981, as well as the adjustments to the system introduced in 2006-07. The main conclusions are that the system is sound, but the reinforcement of the social protection to low income-low contribution workers was a necessary step, given the problems of the formal labour market. This adjustment is also feasible since the budgetary expenses linked to the transition of the 1981 reform are entering the decreasing phase, opening room for these adjustments. We emphasize the importance of economic growth for the good performance of the pension system, reversing one of the traditional arguments for pension reform. Finally we explore elements that must be taken into account when designing this type of pension reform.

Keywords: pension reform, Chile, economic growth, fiscal policy, labour market, market reforms.

JEL classification: G23, H55, O40.

[1] Silvia Leiva provided very efficient assistance with this paper, which is mostly based on previous research (Favre, Melguizo, Muñoz and Vial, 2006), and it is part of a broader project by BBVA on the analysis of private pensions systems (Taguas and Vidal de Aragón, 2005). Vial is Chief Economist and Melguizo is Principal Economist at Global Trends, BBVA Research Department. E-mail: jvial@bbva.cl, angel.melguizo@grupobbva.com.

1. Introduction and background

Chile´s pension system was established at the dawn of the XXth Century, starting with public sector employees. It evolved gradually into a pay as you go (PAYG) system, with multiple operators catering to specific segments of the labor market, and a general coverage that reached about 60% of the labor force in the early 70s. Each operator ("Caja") had different rules concerning benefits and contribution schemes and many of them had major fiscal liabilities built into their financial structures. The system was extremely vulnerable to political pressure and even at early stages of the demographic transition, the Chilean Government had to make major contributions. According to World Bank calculations (Gill, Packard and Yermo, 2005) the projected Implicit Pension Debt of the Chilean Government would have been equivalent to 130% of GDP, without pension reforms. The inequities and fiscal risks of the old system were plain and evident by the late 50s, but a major reform of the system was possible only in 1981, during the military regime (1973-90)[2].

The reform was substantial and it entailed the substitution of the old system for a new one, based on individual capitalization accounts, managed by private operators (AFP, "Administradoras de Fondos de Pensiones") under strong state supervision through the *Superintendencia de AFP* (SAFP). The government kept an active role in the first pillar of the system (the so-called "solidarity pillar") through the Minimum Pension Guarantee (MPG) for all those workers who had 20 years or more of effective contributions and were not able to self-finance a pension above the legal minimum (US $ 165 per month, approximately), as well as providing a Non-Contributive Pension (called "PASIS") for the elderly poor (mean-tested) of about one-half of the MPG[3]. In addition, the government had to cover the transition costs derived from the migration of contributing workers from the old to the new system, as well as the cost of the so-called "Recognition Bond" (RB) for all those workers who had made significant contributions to the old system and migrated to the new one. All new entrants in the labor force had to go into the new system and those who switched could not go back.

After 25 years of operation, during a period in which the Chilean economy as well as the political system underwent major transformations, it seems the right time to assess the impacts of the reform and to identify critical issues for current or potential reformers of pension systems.

[2] See Superintendencia de Fondos de Pensiones (2002) and Favre et al. (2006) for further details.

[3] Both of them existed prior to the introduction of the new system.

2. The promise of Pension Reform

As the World Bank (Holzmann and Hinz, 2005) put it, the main goal of pension reform is to achieve "adequate, affordable, sustainable and robust pensions", while at the same time contributing to economic development. There are many ways to present and evaluate these goals. However, it seems relevant to put them in the perspective of the reformers and the targets they set for the reform process in Chile, in contrast to the diagnostic they had of the system by the end of the 70s.

2.1. Fairness. Probably the main motivation for the reform was the perception that the previous system was deeply flawed, with a few privileged groups getting extraordinary benefits (very early retirement with pensions linked to current compensation, for instance) at the expense of a large majority of affiliates who retired late, with very low replacement rates and limited protection against inflation[4]. The reform eliminated distinctions among workers, de-linking benefits from political clout. Contribution rates were lowered from levels close to 50% of salaries, to about 20% (covering pension benefits, disability and death insurance as well as health benefits) and other taxes (VAT) were raised to fill the gap in the public sector finances.

2.2. Labor incentives and economic efficiency. A second motivation was to line-up benefits with contributions, so to induce more participation in the system, as well as to reduce informality. Turning a payroll tax into mandatory savings in personal accounts, with competition in pension funds administration was expected to reduce labor costs in the formal sector and promote more efficient use of life time savings.

2.3. Savings and returns on investment. The old system did not accumulate significant savings, even if the demography was extremely favorable, either because there were no opportunities to save due to massive financial repression (negative real interest rates were the norm, rather than the exception) and also to the dilution of them into direct or indirect benefits to affiliates. Liberalization and development of the domestic financial markets was seen as a pre-requisite for a successful pension reform, as well as a consequence of the growing demand for new financial instruments coming from the new system.

2.4. Fiscal sustainability. At the time of the reform there were serious concerns about the fiscal sustainability of pension benefits in the old system. As the demographic transition progressed, workers in the most generous "cajas" retired very young, and the legitimacy of the system eroded, the ratio of pensioners to active contributors to the system from 8.2% to 40.0% between 1955 and 1979 (Infante, 1997). Estimations by the Budget Office at the time of the reform set the fiscal burden of the unreformed pension system at 7.1% of GDP by 2000 (Hepp, 1980). The World Bank estimated an Implicit Pension Debt of that system at about 130% of GDP in 2001, the largest in the region after Uruguay´s (Gill, Packard and Yermo, 2005). There is little doubt that a major driver for the reform was the fear of a fiscal crisis under a no reform scenario.

2.5. Economic growth. Chile´s economic performance in the 60s and 70s was far from satisfactory. The country had one of the lowest rates of growth in the region, the highest inflation rate, high unemployment and suffered from chronic shortages of domestic savings. Pension reform was perceived as one way to help change this scenario, by developing new sources of domestic savings, as well as improving the allocation of those savings fostering the development of the financial markets. In addition to that, a reduction in labor taxes was also seen as a significant step to reduce unemployment and informality.

Therefore, pension reform was expected to put public finances on a sustainable path, even though it was expected a major increase in public sector outlays during the transition phase (ODEPLAN, 1986)[5], raise national savings, improve coverage, both in terms of affiliates and the proportion of people with adequate pensions, as well as in terms of replacement rates (the target was set at 70%, for people with relatively high density of contributions, Comité Técnico de la Reforma Previsional, circa 1980[6]).

[4] Given that the deficit had to be financed by the government in most cases public finances were under severe strain. Reductions in benefits to affiliates of the state run Social Security (medium and low income blue collar workers, comprising about 80% of the labor force) as well as the increase in contribution rates, were the way to bridge up the pension gap.

[5] The combined deficit of the old pension system plus the expense in Recognition Bonds was estimated to be about 4% of GDP between 1985 and 2000. ODEPLAN (1986).

[6] Actually, analysts' assumption for the density of contributions was 80%. Departamento de Economía and Ministerio de Trabajo y Previsión Social (2004).

3. Outcomes

After 25 years, we are in a relatively good position to evaluate the performance of the system against the initial goals. At the same time, we can identify its shortcomings and derive lessons that might be useful both for countries that introduced similar reforms at a later date, as well as for those planning a pension reform. For these purposes we built an actuarial model of the Chilean Pensions System, with linkages to public finances and other macroeconomic variables[7]. The model was calibrated for 2004 and was used to generate projections up to 2050, using demographic projections from CELADE.

3.1. Good coverage, for those who get the right jobs. Our estimates show that the planned replacement ratios (70%) will be easily reached by those workers retiring at 65 years of age who have contributed regularly over their work life. This figure compares quite well with the theoretical replacement rates calculated for industrialized economies (OECD, 2007). In fact, the generations who benefited from the high rates of return earned by the pension funds in their first 25 years of operation and who also had the benefit of the RBs, and met the conditions above mentioned, will obtain substantially higher replacement ratios (close to 100%). The bad news is that not many workers meet these conditions. On one hand, legal retirement age for women is 60 years, and since they live – on average – five more years than males, they can expect significantly lower replacement ratios, even if they are regular contributors to their pension funds. On the other hand, too many workers in Chile do not contribute on a regular basis. Self-employed workers are not obliged to contribute and they comprise about 30% of the labor force, neither those workers in the informal sector (by definition). Individual labor records that are emerging from recent surveys show that a large fraction of workers move frequently from formal employment to unemployment, to informality or to self-employment[8]. Since they only contribute while working as formal sector employees, they have large blank periods without contributions to their pension accounts ("lagunas" in the Chilean jargon)[9]. Even though almost every eligible person is affiliated to some AFP in Chile (7.3 million affiliates compared with a labor force of 6.3 million and only 4.04 people legally forced to make contributions) only 4.1 million contributed to an AFP in December 2005. Data show that about 64% of Chilean workers make contributions to the pension system, but the figure for workers making contributions on a regular basis is closer to 40%. The remaining 24% of contributions come from the remaining 60% of the labor force, who make them only from time to time. These figures are especially worrisome, since Chile shows relatively good coverage of the pension system when compared to other developing countries. In fact, the usual statistics for coverage of the labor force (measured as people contributing with regularity to the system) are close to those in many developed countries and far above those that can be expected given its development level[10].

3.2. Myopia and impatience run high, and erode pensions. Reformers of the pension system in the late 70s and early 80s had great hopes on the positive role of incentives to mobilize resources to build decent pensions over time. This was probably one of the reasons why they chose not to make mandatory the contributions of independent workers (the other was practical, namely enforceability). This was also why they relied so much on information and competition to keep fees in check, and most important of all, why they put such low requirements to get an early retirement[11]. However the experience of the initial 25 years shows that impatience is very high, to the point that people who do not have an obligation, seldom make any contribution to their retirement accounts. The retirement statistics are even more telling: about 75% of the retirees have done so before the legal retirement age, and many might become eligible for the State Minimum Pension Guarantee (SMPG). The "bird-in-hand" syndrome is one of the biggest challenges that pension systems face everywhere. Results show that advancing retirement by one year reduces pensions by 6-7%, and still people choose early retirement, tempted by the short term gain of liquidity. In fact, according to the 2002 Social Protection Survey, 86% of Chilean make their saving and expenditure decisions considering a one-year horizon or shorter.

3.3. Women have good reasons to hate growing old. The Chilean system has set a lower legal retirement age for women (60 years). This is a clear benefit for them in a PAYG system where pensions are financed by the working population and the government, but could be very detrimental in an individual capitalization system, since it means, *ceteris paribus*, lower capital accumulation from contributions. The problem is further compounded by

[7] For the full details of the model see Favre et al. Op. Cit.

[8] See Departamento de Economía and Ministerio del Trabajo y Previsión Social: (2004) and Arenas et al. (2006).

[9] According to Departamento de Economía and Ministerio del Trabajo y Previsión Social: (2004) a 40% of the affiliates to the pension system have a density of contributions higher than 70%. Actual densities might be even lower than that, as suggested by registered individual contributions in AFP BBVA Provida (the largest of the system with about 40% of the total affiliates). See Chart A1 in the Appendix.

[10] See Chart A2 in the Appendix.

[11] Annual pension rights should amount, at least, 110% of the minimum pension and 50% of the last ten-year salaries. Due to the 2004 reform, these criteria will rise to 150% of the minimum pension by 2008, and 70% of salaries by 2010.

demographics (women live about five extra years than men in Chile) as well as economic factors (women are paid lower salaries than men on equivalent jobs, and have lower density of contributions due to maternity leaves, withdrawal from the labor force to take care of household duties and raise children, among others)[12].

The outcome of these factors is that for a given income and density of contributions, replacement ratios for women are between 10 and 15 percentage points lower than for men. Since both, average income and density of contributions are lower in the case of women, average pensions are considerably lower for them. One of the reasons why early reformers did not perceive the dimension of this risk and decided not to innovate with respect to the old system, was the prevalence of traditional household arrangements, with the male contributor providing most of the family income both during his active work life as well as during retirement. However, Chilean society has evolved in such a way that the so-called fifth pillar in the World Bank latest terminology (intra - family transfers), has been eroding very fast[13]. This new type of society means a higher proportion of women reaching retirement age who will not be able to rely on retirement incomes of a lifetime partner. In the long term this should encourage women to enter into the labor force, as well as to make regular contributions to the pension system. But in the meantime there will be several generations of women who will have very limited funds accumulated to provide for their old-age, and will be forced to remain in the labor force, and they might end-up being recipients of non-contributive (means – tested) state pensions (PASIS).

3.4. Rates of return of the pension funds have been very high, thanks in part to other reforms. The projections made by the government in the early 80s usually assumed real rates of return of the investment by the pension funds in the range of 4-5% in real terms. The actual performance has been far better than that, with a simple average real rate of return slightly higher than 10% for the first 25 years of operation of the system. Our estimates show that a 100 basis points difference in real rates of return sustained over the whole work life raises the average value of monthly pension income by about 25%. So it seems safe to say that those retiring in the next ten years will owe about half of their monthly pension to this extraordinary performance of the investments in the privately managed pension funds. This is in stark contrast with the pre-reform situation, when the old PAYG system got about 6% of its revenues from the return of the investments made by the “Cajas”.

Why have the rates of return been so high? There is at least one reason, besides the skills of pension fund managers: the overall success of market friendly economic reforms in Chile. Even though the deepest reforms were introduced in the mid 70s, they only borne fruit after a decade: a combination of transition costs, policy mistakes and severe external shocks meant that economic performance peaked up noticeably only by the end of the 80s. A successful transition towards a democratic regime, that validated and even deepened market reforms, was a key factor to secure this improved performance. The most telling indicators of these changes are the increases in per capita economic growth (from an average of just 1.8% per year in the 1966-85 period, to 4.8% for 1986 – 2004) as well as in the reduction of inflation (from 31.5% for the period 1966 - 85 to 8.2% in 1986-2004). As a result of these changes, asset prices have risen significantly, as well as all kind of investment opportunities. The total value of traded stocks has risen from 2.5% of GDP in 1988 to 12.3% in 2004 and the stock market capitalization has gone from 28.4% of GDP to 124.4% during the same period. A large fraction of this rise in the value of property was accrued by Pension Funds. Even though their investment were initially restricted to fixed income - low risk assets, those restrictions were gradually relaxed and pension funds were able to capture some of the capital gains due to the combination of economic and political reform. In later years, when rates of return in Chilean assets fell, pension funds were still able to perform very well thanks to a gradual relaxation of investment limits abroad, that not only created better opportunities for risk diversification, but also opened up untapped investment possibilities.

This process also shows a salient feature of Chilean pension reform: the adaptation of regulation to the new realities of financial development as well as globalization[14]. Even though the authorities have been very reluctant to allow excessive risk taking on the part of pension fund managers, and they have also been weary of macroeconomic impacts of major portfolio shifts by pension funds, they have allowed for increasing flexibility, as limits and regulations have become overly restrictive and enough safeguards have been built into the system. As time passed, authorities have relied more on decentralized market-oriented controls at the expense

[12] Average density of contributions for women is 43.8%, which compares for 59.8% for men. See Chart A3 in the Appendix. See also Consejo Asesor Presidencial para la Reforma Previsional (2006).

[13] For instance, the proportion of households with just one parent has grown from 7.1% to 11.4% between 1982 and 2002, while the share of women as head of households as risen from 21.6% to 31.5% in the same period. Consejo Asesor Presidencial para la Reforma Previsional (2006).

[14] Santiso (2006) highlights the benefits of the pragmatism in the Chilean regulation, especially in pension markets, as one of its main institutional assets.

of quantitative limits at the individual investment instrument level. However, the large size of the accumulated savings in the fund, as well as the reasonable assumption that they will keep growing as a fraction of GDP for a number of years to come, brings about the issue of how restrictive are current regulations[15]. There are some symptoms of overcrowding of several components of financial markets in Chile (bank deposits represent a high and rising share of fund investments, too little supply of long-term debt, etc.) suggesting that a review of the investment limits is needed.

3.5. Administration costs. Are they too high? A common criticism of private pension systems based on individual accounts and free affiliation to AFP (i.e. competition based) is that fees are too high and end up costing much to the affiliates. This issue is rather complex, since costs vary a lot depending on the stage of the life cycle of each affiliate, as well as the degree of maturity of the system. It is further clouded by two facts: contributions to pension funds are usually expressed as a fraction of wages, while financial market fees are calculated as a fraction of the assets under management. The second problem is that fees pay for different things in different countries. In many cases (being Chile one of them) they include insurance fees for the coverage of death and disability insurance, which is quite expensive (about one half of the fees in Chile go to cover that insurance). As shown in Favre et al. (2006), if net fees are calculated as a fraction of the funds managed, they are comparable with some of the best alternatives in private funds administration. It is true that managers of U.S. government pension funds charge lower fees, but they negotiate only with the employer, so that they do not have marketing costs, and processing costs are much lower.

An additional problem for these comparisons is that the system is in about half of the transition period: workers who only have made contributions in the new system are now in their mid to late forties, with about half of their working life in the future. Besides, the generations of the transition can be expected to bear a high cost due to the fact that the system had to be established from scratch, pension funds had to invest heavily in the development of new technology, build a client base, etc. and capital market imperfections exists, so these costs cannot be distributed evenly across generations. On the other hand, Chilean workers who moved to the new system have benefited from extraordinary circumstances, like the success of economic and political reforms, being finally reflected in the high rate of return earned by pension fund assets.

Probably the best way to estimate the true cost of private pension system is using ex-ante actuarial calculus to compute and compare notional rates of return of putting money into pension funds, with and without the fees, for a "representative" affiliate[16]. We performed such an exercise assuming high and stable density of contributions (93%) and an annual increase in real wages of 1.5% per year. Administration costs calculated as the difference of the internal rate of return of "pension investments" with and without fees was estimated as 0.39% for men and 0.42% for women[17], which is very competitive with market fees for competition-based funds. The Consejo Asesor Presidencial para la Reforma Provisional was asked to propose changes to produce more competition to reduce fees. They suggested an auctioning mechanism for new affiliates, similar to the one in place in Mexico, as well as some time limitations for transfers to higher-fees AFPs (Consejo Asesor Presidencial para la Reforma Provisional 2006). However, economies of scale do exist in this business and is quite likely that auctions might end up generating more concentration than the one that exists today.

3.6. The system is fairer. The old system, with the multiplicity of "Cajas", with specific benefits and contribution rates for their affiliates, without freedom to choose among them, produced severe inequalities among workers with similar characteristics (Arellano, 1985; Cheyre, 1991; Hepp, 1980) and was very vulnerable to rent – seeking by lobbies with good political connections. These inequalities are reflected today in the value of pensions of those who retired from different "cajas" and are being paid by INP[18]. In broad terms, most of the affiliates contributed to the state-supported blue collar workers system (SSS). In 2004, 82% of the INP pensions were paid to them, and their average value was barely higher than the Minimum Pension Guarantee (MPG) funded by the government, meaning that most of them were in fact recipients of the MPG. This reality is very different from that of the 18% of people whose pensions are being paid by INP and were affiliated to the other "Cajas". Most of them enjoyed early retirement and their average pensions are almost three times the average of the SSS pensioners.

Nowadays all workers in the private pension system are subject to the same rules, they can move freely from one AFP to another and poorer workers can rely on a MPG if

[15] Our calculations show that the fund will stabilize as a fraction of about 80% of GDP around 2020.

[16] Choosing the "representative affiliate" is not an easy task, even if we choose him to be of average income: What density of contributions are we going to choose? Are we going to assume lower densities at the beginning and higher at the end of the work life? What about unemployment, economic cycles and the life cycle? What is the right path for the evolution of wages over the life cycle? There are several differentiating characteristics that would make very difficult to find a truly representative affiliate, even in a purely notional exercise.

[17] The difference is due to the fact that retirement age for women is 60, while it is 65 for men.

[18] See Chart A4 in the Appendix

they contribute to the system for 20 years (this requisite is the same as in the old system). In the case of workers with less than 20 years of contributions, they did not receive pension benefits in the old system. Under the new system they are not eligible for the MPG, but they do not lose their contributions: they still can receive a pension, equal to the MPG, until they deplete their savings in the pension fund. Our projections show that the MPG will play a significant role to provide a minimum income for the poorest workers with regular contributions to the pension system. According to our calculations the fraction of new pensioners under coverage of the MPG will go from about 45% of those with significant contributions to 16% of them by 2050[19]. Voluntary savings also play an important role in the case of workers with higher income, since mandatory contributions to the pension fund are limited up to an income close to US $ 950 per month, a value that has been kept fixed in real terms since 1981, while real wages have risen at an average rate over 2% per year over that time. Since voluntary pension savings are subject to income tax benefits, this means that higher income affiliates, who make voluntary pension contributions into savings accounts, can have significant short-term gains[20], even though they cancel out over their lifetime.

3.7. But the holes in the social protection net are too big. Even though the reform has significantly reduced the inequalities of the pension system, it does not mean that it provides good coverage to all workers. There are two reasons why the system fails to provide enough coverage, as it stands today. On one hand, in many cases, women will have very low replacement ratios. Part of the problem can be solved by raising the legal retirement age to make it equal to that for males, but this may not be enough, given their higher life expectancy as well as their lower participation rates and lower salaries. It is true that women exhibit lower contributions and cannot expect to have the same benefits as men, but it is also true that in most cases this is not so much a voluntary decision under perfect market conditions.

The other source of problems also affect women, but it is not exclusive to them, reflecting a more general trend: many members of the labor force have a very precarious insertion into the labor market, moving from the informal sector to the formal market, falling into unemployment for a while and so on. This means that at the end they will not have enough accumulated funds to get a pension higher than the MPG, while the period of effective contributions falls short of the required to be eligible for that benefit. This problem is reinforced by the fact that social security contributions are mandatory only for dependent workers, and not so for self-employed or independent workers. Our estimates show that about 23% of the men affiliated to the system have an average density of contributions of 20%, a fraction of affiliates that rises to 29% in the case of women. This means that about one quarter of those that have been in the labor force will not have income security in the old age coming from the mandatory pension system, either because their participation as workers was too short, or because they failed to enter in the formal labor market as dependent workers. Not all will be unprotected: some self-employed workers have enough capital to support themselves (professionals, small merchants, taxi drivers, etc.), while others will rely in the fifth-pillar: intra-family transfers, as they are or might become dependents of a husband or their children, but there is no doubt that the system does not provide enough coverage for all of them under the current rules.

3.8. Pension reform does not come cheap, but fiscal discipline can make it affordable. One of the main issues when a country replaces the old PAYG system by a new one based on individual capitalization accounts is the fiscal cost of the transition. As active contributors move to the new system, they leave a financial gap in the old one, since they switch contributions from one to the other. Given the fact that most of these changes have occurred at times when countries have been well advanced into their own demographic transition processes, they tend to coincide with a dramatic increase in the old-age dependency ratio.

On top of this, the government should also compensate workers that switch from the old system to the new one for the contributions made in the past under the assumption that future generations were to take care of them in their old age. These high fiscal costs have been evident in the case of Chile, as many authors have shown (Valdés, 2006; Arenas, 1999; Arenas and Gana, 2005; Bennet and Schmidt-Hebbel, 2001). The traditional estimates of the fiscal costs of Old-Age Income Security are not very adequate to represent the true cost of the transition, since a large fraction of the pensions paid by INP are MPG transfers to retirees from the old system, and have been affected by policies adjusting the value of the MPG, which are totally independent of the transition itself, and tend to misrepresent the evolution of the fiscal impact of the MPG (Valdés, 2006)[21].

[19] Figures for the universe of affiliates are lower (go from 50% to 25%), given that a significant fraction of affiliates are active contributors of the system during the few periods in which they work under contract in the formal labor market.

[20] Not so in the long-term: since their pensions will rise due to the extra savings, this will cause them to fall into higher marginal tax rates at the time of retirement, so that the expected value of the tax benefits is almost nil. Of course, if impatience is high and the individual discount rate is higher than the market discount rate, then there will be welfare gains derived form short-term income gains.

[21] Part of the problem is due to the fact that many people think that the MPG is a new instrument introduced with the pension reform of 1981. In fact, its origin can be traced back to 1952 for the affiliates to the SSS (Valdés, 2006).

Table 1. Fiscal expenditure in pensions (% of GDP)

Year	Old System deficit Civil	Old System deficit Military	Recognition Bonds	Minimum Pensiones (new system)	PASIS (Non contributory)	TOTAL
1981	1,6%	2,0%	0,0%	0,0%	0,2%	3,8%
1984	4,7%	2,2%	0,2%	0,0%	0,5%	7,6%
1995	2,7%	1,2%	0,7%	0,0%	0,3%	4,9%
2000	3,1%	1,3%	1,1%	0,1%	0,4%	6,0%
2004	2,6%	1,2%	1,1%	0,1%	0,5%	5,5%

Note: The 2,6% figure for the civilian definit in the Old System includes 0,3 p.p. in MPG, Valdés (2006)
Source: National Budget Office

Despite the above mentioned qualifications, the figures in Table 1 show very clearly a major rise in the civilian pension deficit after the reform, which is the natural consequence of losing a majority of contributors while retaining all the beneficiaries into the PAYG system. What is truly remarkable in the case of Chile, besides the extraordinary increase in fiscal outlays in pensions, is that it took place at the same time that the overall tax burden was falling by about 10 percent points of GDP. In spite of these trends, fiscal accounts have remained in surplus for most of the time since the end of the 80s. The fiscal consolidation process started in the mid-seventies, and by the end of the decade a major surplus was projected[22]. The authorities decided to use those resources to fund the pension reform and reduce the tax burden. Even though this was made under military rule, the fiscal position remained in surplus after the switch to a democratic regime in 1990[23]. The long-term effects of the replacement of the old system on the fiscal accounts has been positive as shown in almost every projection (Favre et al, 2006; Bennett and Schmidt-Hebbel, 2001), as well as in the World Bank estimates of the evolution of the implicit pension debt, that in the case of Chile goes from 211% of GDP without pension reform in 2050, to almost 0 after the reform (Gill, Packard and Yermo, 2005).

Pension reform in Chile cannot be understood without reference to the fiscal adjustment process taking place before and after the reform, and this is one issue that sets it apart from the experience of most countries introducing private capitalization accounts as the centerpiece of their pension systems.

[22] Actual figures show a worsening of fiscal accounts after 81, but that was caused by the economic crisis of 82-83, when GDP fell by 17% in real terms. The "structural" balance remained in surplus, as became evident after GDP recovered to pre-crisis levels.
[23] See Chart A5 in the Appendix.

3.9. And the payoff in terms of growth has been positive*.* Pension reforms are usually undertaken because the pension system is on an unsustainable path, or because pension benefits are falling too short from expectations. However, they do have important impacts on the overall performance of the economy. The channels are well-known (Corbo and Schmidt-Hebbel, 2003): changes in domestic savings, impact on capital accumulation; changes in labor market incentives, affecting overall employment and changes in overall efficiency, mostly throughout the financial markets, allowing an acceleration in total factor productivity. A move from PAYG to privately managed individual capitalization accounts should be expected a priori to improve labor market incentives. A greater efficiency in financial intermediation as well as capital market deepening would surely require institutional changes, but the pressure to make them would be almost irresistible, given the size of the pension funds, so it seems highly likely to have positive effects on economic growth coming from this front. However, the increase in total savings cannot be taken for granted since increases in mandatory savings in private accounts could be matched or even surpassed by increases in fiscal borrowing requirements. Corbo and Schmidt-Hebbel (2003) estimate the average addition to GDP growth rates for the period 1981 – 2001 of the pension reform in Chile, as ranging from 0,22 percentage points (p.p.) to 0,93 p.p. depending mostly on the (ex-ante) net impact on overall savings. Even though the latter is not observable, given the overall performance of public finances in the period, it seems highly likely that the true result should be closer to the higher bound of that range. This means that the accumulated increase of GDP in the first 20 years after the reforms ranges between 4 and 9 p.p.

4. Adjusting the reforms at just the right time

After 25 years of operation of the new system and at a time in which accumulated savings in mandatory pension accounts have reached about 60% of GDP, and right before those workers that transferred from the old system begin to reach retirement age in significant numbers, a lively debate rose about the need to introduce some corrections to the system. Because the incentives to move from the old system to the new one were designed in such a way that most middle or old aged workers found more attractive to remain in the PAYG system, the age distribution of people affiliated to each system is very skewed. So we have few cases of people retiring in the new system, and in fact a large majority of them correspond to early retirement, which had some short-term liquidity gains that induced many medium and high income – very impatient and/or myopic – workers to retire earlier, at the expense of lower pensions over their lifetime[24]. However, recent evidence (Departamento de Economía and Ministerio del Trabajo y Previsión Social, 2004) is showing that the frequency of contributions is far lower than initially expected, and several studies have concluded that old-age coverage of the poor would be very limited. On the other hand, there has been a long discussion about the costs of the private capitalization accounts in Chile, and the need to introduce more competition to reduce fees. Finally, a third catalyst of the discussion has been the AFP's demand for a revision of the investment limits.

As 2005 was an election year and pension reform took a central place in the debates, it became clear that pension reform was going to be one of the main issues in the public policy agenda of the new government. In fact, one of the first moves of the new government was to appoint a National Council chaired by Mario Marcel to propose changes, while preserving the central components of the system (Consejo Asesor Presidencial para la Reforma Previsional)[25]. As expected, after an exhaustive consultation with almost any entity that had produced diagnostics or proposals for pension reform, including union leaders, business sector representatives, academics, both from Chile and abroad, etc., the Council produced a comprehensive report and a set of proposals, which was analyzed by the Executive in order to produce a project of law, that was sent to Congress by the end of 2006. In general terms, the Council´s diagnostic coincided with our previously described analysis and the general thrust of the proposals was very much in tune with the views collected during the consultation process. In what follows we integrate our own views with those reported by the Council[26].

The most important conclusion is that the system is sound, is working fine, but that it requires some upgrades in order to be able to fulfill its role. As the Council Report states, "the individual capitalization system has not failed as a financing mechanism. Even more, it will generate pensions with replacement ratios close to 100% for those workers with stable jobs and a regular history of contributions over their work lives"[27]. This conclusion is shared by most analysts. The Council also concludes that the system has been beneficial for the country in terms of economic growth and the development of the financial markets. However, they emphasize the need to act now making the necessary adjustments, before the bulk of those who transferred from the old system to the new one reach the retirement age. The most pressing problems to be addressed, according to the Council are the following: strengthening the first pillar; raising coverage and density of contributions; increasing gender equality; improving competition and reducing costs in the AFP sector; generating better conditions for investment and several other points, of a more general nature (better financial education, expanding voluntary pension savings, etc.). In what follows we compare our diagnostics and proposals with those coming from the Council in each of these areas.

4.1. Strengthening the first (solidarity) pillar. In our study we concluded that the fraction of workers who will not have enough protection in old age is too high. The main reasons for that are low density of contributions and too strict eligibility requirements to get a MPG, given the characteristics of the Chilean labor market. This is an area in which our analysis is in complete agreement with the Council´s report. However, there are some differences in terms of proposals. In order to improve the frequency of contributions the Council proposes to make contributions mandatory for all workers, extending the obligation to contribute to independent workers. They also make a number of proposals to provide better incentives to independent workers to contribute (similar tax treatment, extension of other social security benefits to independent workers, etc).

We feel that it may fall short of expectations if no special measures are taken in order to make this obligation

[24] They could keep working and can even make additional contributions to their pension funds.

[25] The Committee was very plural in its composition and its members were widely respected specialists, mostly from the academic world. For more information see www.consejoreformaprevisional.cl/view/presentacion.asp.

[26] Table A1 in the Appendix compares the main elements of the diagnostic as well as the Law Proposal.

[27] Council´s Report, Vol. I, Chapter II, page 31. The translation is ours.

effective, and for that, it seems highly important to mobilize the tax system as a tool for the purpose of improving collection among independent workers. In our report we also added some suggestions to introduce changes in the labor code so to recognize as dependent workers those people that today appear as independent because they work part-time for several employers. The other major proposal has to do with access to the MPG. Our proposal, coincidental with one already raised by several analysts and the AFP´s association, pointed towards the gradation of requisites to get access to a fraction of the value of the MPG, and the simulations showed that this was powerful enough to bring most unprotected workers under this umbrella. Our projections show that this would leave most people with some protection, and those who do not get it under this scheme, could still apply and obtain a PASIS, once they deplete their savings.

The Council and later the government went for a more radical proposal: the establishment of a Basic Pension (BP) funded out of the general revenues of the government budget, limited to those pensioners with incomes in the lowest 60% of the population. This BP would not require any contribution to the system and would replace the existing PASIS and MPG. The value of the BP would decrease gradually with the size of the self-financed pension, to reach zero at Ch$ 200,000/ month (about US$ 340/month). Even though this proposal greatly improves protection to the poor and middle income workers, it raises significantly the opportunity cost of contributing to the pension fund for them, creating strong incentives for informality. Additionally it has a non negligible fiscal cost, especially if the value is set too high and no limits to the number of BP per family are introduced, and will be highly vulnerable to political pressures. There are also several "transition issues" that could significantly increase the fiscal impacts of the BP.

4.2. Getting everybody to contribute regularly into the second pillar (mandatory individual capitalization accounts, privately managed). One of our main conclusions was that a large fraction of workers in Chile did not contribute regularly enough to get good replacement ratios once they retire. This was a result of high informality, rotation between formal and informal sectors, high degree of impatience and/or myopia preventing voluntary contributions from independent workers, and periods of absence from the labor market in the case of women. We called for a combination of actions to promote higher formality, and to induce independent workers to contribute using default mechanisms to direct tax refunds to pension accounts, as well as equal tax treatment for dependent and self-employed workers.

We fell short of proposing outright mandatory contributions for independent workers for practical reasons, but we feel that in the long run, this step should be taken. The Council´s proposal opted for making independent workers´ contributions mandatory, and the government put this proposal into the Law Project. They also included a number of other measures, some of them coincidental with ours. We also asked to get women to contribute more, mostly by postponing their retirement beyond the legal age (60 years). The Council also pointed in this direction and they were explicit in demanding an increase in the minimum legal age for retirement for women to 65 years (although the government rejected this proposal). Even though Chile ranks as a country with lower levels of informality in the labor market, at least when compared to other developing countries, especially in Latin America (OIT, 2006), this problem is still too prevalent, making very difficult to achieve old-age income security for all. A revision of labor market regulations and high long-term economic growth would be the obvious prescription, but for most workers these "solutions" would come too late to build significant pension savings. This is one reason why the first pillar should be strengthened in the short term. Apparently, impatience is too high for workers to consider mandatory savings as substitute for voluntary savings, at least in young and middle age, but this conclusion might be biased by the fact that we are still going through the transition period and the bulk of medium age affiliates started in the PAYG system and might have not realized in full the effect of the change of the system. Recent surveys show that most affiliates have very little knowledge of the system and apparently there is little sense of ownership of pension funds, and a significant fraction (close to 35%) of those below retirement age expect to keep working until their health and physical condition allows (Departamento de Economía and Ministerio del Trabajo y Previsión Social, 2004). The Council proposed aggressive financial education campaigns, with contributions from the government and the AFP industry to address these issues.

4.3. Developing the third pillar. On one hand, this is the main option for middle age workers to compensate for inadequate contributions in the earlier part of their working lives. On the other, this is critical for higher income wages, since the contribution is calculated on the basis of the so-called "sueldo imponible" (taxable salary) which has a cap of 60 U.F. per month (about US$ 2000) and has remained fixed since the introduction of the new system. This has caused that salaries of a growing fraction of workers have gone beyond that limit, and as a consequence, their contribution rates, measured against actual incomes, are lower than 10%, a fraction that falls as their wages go up in real terms. Given that middle and higher income groups tend to have better access to the levers of power, a massive frustration of expectations at the time of their retirement would severely weaken the support for the new system. Voluntary contributions subject to tax breaks exist from the beginning of the new system, but failed to attract much attention (or funds) up to 2002, when the government introduced some reforms giving additional incentives to promote this form of savings, both for the affiliates and the fund administrators, while at the same time opening this segment to almost all financial institutions. Voluntary savings are still low compared to mandatory pension savings, but they are growing fast: the number of accounts more than doubled since March 2002, reaching 376 thousand, while the amount of funds in APV (voluntary pension savings accounts) has gone from 1.2% of the total assets in the pension funds to 2.5%, an increase of about 1 percent of GDP.

The Committee proposed to introduce group contracts for APV, something that might give further impulse to this form of saving among workers in large firms. They also proposed to make it more easily available to independent workers, something that might also be useful, given that this form of savings can be withdrawn (paying back the tax saved when making the deposits).

4.4. The timing for adjustments is right, when looking at the budget. One main concern when dealing with reforms to the pension system, is the impact on the budget. Pension related fiscal outlays have remained close to 5% of GDP in the last decade or so, but with a changing composition: while the expenses derived from the obligations of pensioners in the old system paid by the INP are gradually falling in relative terms to GDP, RB redemptions have been rising fast, as the group that transferred from the old system to the new one is reaching retirement age. We are now close to the peak of RB expenses and they should fall fast in the next decade (Arenas and Gana, 2005). We project that government expenses in civilian pensions will fall from 3.2% of GDP in 2005 to 2.5% in 2015 and to just 1.4% in 2025. This is a unique opportunity which is further supported by the fact that the Chilean government has accumulated major surpluses in the last few years, thanks to the policy of saving the windfall due to extraordinary copper prices. As long as the BP is introduced gradually, and taking care to set the actual values in a conservative, careful way, the government should be able to fund this improvement maintaining the current tax burden.

5. How easy is to replicate the Chilean positive outcomes of pension reform?

Economic institutions not always travel well among countries, and reform processes that by definition are one-time shocks, travel even worse, so it is very difficult to export the Chilean experience to other countries, with different political and economic structures and institutions. What we can do, however, is to try to identify key elements that facilitated or dampened outcomes of pension reforms in Chile, so that local policy makers elsewhere can evaluate whether they are present in their own countries.

5.1. Market institutions. One key element for the success of a system based on individual retirement accounts is the good operation of market institutions, especially financial markets. The protection of property rights and minority shareholders is crucial for the operation of pension funds that have to invest across a wide range of debt instruments as well as shares of listed companies. When capital markets are not fully developed, pension funds will have to invest in the banking system, so a sound and well regulated banking system is another key factor of success. In the Chilean case, private property rights have strong backing in the Constitution and have been reinforced by a legalistic tradition. In fact, international indexes on the quality of market institutions tend to rank Chile very high, even when compared with OECD countries (WEF, 2006; World Bank, 2006). On the other hand, the biggest challenge to the new system came very early, when, as a result of a major economic crisis, many major banks and other financial intermediaries failed in 1983-84. Some were allowed to pass the losses onto the owners and/or depositors (mutual funds, for instance), but banks were put under government management and emergency measures had to be taken to preserve the value of deposits, minimizing the losses to the public, and transferring them to the owners and the government. This outcome, which was not independent of the political capital invested in the creation of the new pension system, allowed the pension funds to preserve their value and the system to survive[28].

5.2. Gradual development of financial markets. One lesson from the Chilean experience is that it is not necessary to have all the regulations and instruments of a modern financial market in order to launch the system. There is a learning process involving managers of AFPs, regulators, Central Bank and politicians. If financial markets are not well developed at the onset of the pension reforms it might be a good idea to start with a conservative regulation, and gradually proceed to reform it introducing more flexibility. On the other hand, being too conservative at the beginning has some risks. There is the risk of limiting too much the investment options, forcing too much concentration into government debt (more on this later). Low risk international investments might be a good option if not enough good alternatives exist in the domestic market, provided the introduction of some macroeconomic safeguards to avoid excessive foreign exchange volatility. On the other hand, there is inertia in policy making process and regulatory changes requiring new legislation could be postponed too much, depending on the urgencies and blockades of sometimes conflicting political agendas. The costs of excessive limitations could be substantial, as Berstein and Chumacero (2005) suggest for the case of Chile[29].

5.3. Fiscal policy and transition design matter a lot. There are at least two areas for which fiscal policy is very important. As it was previously mentioned, the move from PAYG to Individual Capitalization Accounts will have a positive impact on growth if there is a net addition to domestic savings. Given that the transition process entails major fiscal disbursements this is not granted, and in fact, the experience in many cases has been to issue additional government debt to finance the fiscal gap, so that the increase in private savings is offset by a reduction in government savings. Fiscal consolidation, mostly through current expenditure reallocations is needed in order to have a positive effect on savings and capital accumulation[30]. The other dimension has to do with risks to the pension fund portfolio. The traditional wisdom has been that the safest asset in a given country is public debt, because the government has the ability to tax the citizens in order to honor it. What is missing in this reasoning is that governments also have a limited power, but still significant, to repudiate or “liquate” its obligations through inflation, and governments in many developing countries, especially in Latin America, had found politically expedient to take this second way, instead of raising taxes or cutting expenses. The data shows that Chile is an extreme case when compared to other countries that reformed their pension system: pension funds tend to have a lower share of government debt and a much higher proportion of foreign assets than pension funds in other countries (Favre et al., 2006). Given the experience of pension funds in countries that have defaulted or liquated their public debt, it seems important to evaluate the safety

[28] The solution was not costless at all. Even today the Central Bank has underperforming assets for US $ 3.7 billion in its balance.

[29] They estimate the cost at about 10% of the value of the fund. However, they do not consider the benefits of a gradual learning process.

[30] Higher taxation might help, as long as it is not compensated by lower savings in the private sector. This dampening effect is the main difference with expenditure reallocation.

of pension funds investments taking into account fiscal sustainability. In many cases could be safer to invest abroad, even though those are precisely the cases in which the government will be under pressure to direct investment towards public debt.

5.4. Labor markets. The experience of Latin America shows that labor market informality severely limits coverage of pension systems, even in the case of individual capitalization accounts where incentives to contribute are greater than in PAYG systems. If informality is pervasive at the onset of the reforms, it seems almost inevitable to include a large "solidarity pillar" to provide some minimal income security to those who will not be able to make enough contributions. Unfortunately, a large fiscal commitment to a basic pension, not subject to contributions, is an important disincentive to formalization, so the design must be very careful. Chile has a non-contributive means-tested pension targeted to the poor of a value close to US $ 100/month, covering more than 400 thousand retirees, and does not seem to have had a significant impact in labor market informality. If a new protection scheme with a significantly higher Basic Pension is implemented, there is a risk of a drop in contributions at the low-income level. The reinforcement of the first pillar does not need to be introduced from the very beginning, since in any change of this sort there is a transition period – with high fiscal costs – in which those who enter into the new system accumulate resources in their accounts, well before they begin to retire. Only after that transition the protection mechanism should be in place. In Chile this transition will last about 30 years.

5.5. Pension reform and economic growth. We have seen that pension reform can make a significant contribution to economic growth, but the reverse causation is probably stronger and more important for the welfare of future generations. A major driver of the value of pensions and replacement rates, for a given history of contributions, is the rate of return earned by the investments of the pension funds. Our calculations show that for every 100 basis point in rates of return of investments, sustained over the whole work life, pension values rise by about 25%. Therefore a critical element for the success of the reforms, as well as a safeguard against potential design errors (too low contribution rates, or low density, for instance) is a sustained high rate of economic growth. That will not only induce more formality in the labor market in the long run, as well as higher real wages, but will also create the basis for high and sustained rates of return on investments. Chile was fortunate to benefit from economic and political reforms that significantly improved the economic performance of the country. This was reflected in major capital gains in the early 1990s and pension funds were able to capitalize on them. The fact that pension funds benefited from this process, despite investment restrictions, might contribute to ameliorate negative impacts of capital gains in the income distribution, even though with a major lag, since workers will benefit only at the time of retirement.

6. Concluding remarks

If we take the criteria advanced by Holzmann and Hinz (2005) as a reference to evaluate the success or failure of pension reform, it is hard to dispute that the Chilean experience has been a success. After 25 years there is no doubt that the system can and should be improved, but the Chilean pension system is fiscally viable, and will even leave room in the future to reinforce the solidarity pillar. It is definitely much fairer than what the country had in place before, and what most developing countries have today. It also has helped to fuel economic growth and as we mentioned at the end, might even be helpful to reduce some negative distributive effects of economic reforms. The incentives in place are far more conducive to economic efficiency, not only in labor and financial markets, but also in the “political” market, as it aligns the incentives of workers with economic success.

We have also shown that the system requires adjustments, because it was based in overly optimistic assumptions about the operation of labor markets and density of contributions, as well as an overestimation of long term incentives to induce savings in very illiquid assets, as the mandatory pension accounts, due to a higher than expected impatience and/or myopia. In addition the system has grown too much for the type of regulations in place, so that a major change in regulations is needed in order to achieve a better risk-return combination.

What is far less clear is that a reform like this can be easily exported to other countries, with different institutions. A system like this requires not only strong market institutions, protection of property rights and an adequate and flexible regulation of financial markets, but also puts strong demands on fiscal policy during the transition, as well as on the political system, in order to anticipate and adapt the policies and institutions as the system evolves and matures. For the most part Chile has managed to respond to these challenges and that is probably one of the main reasons for success, but this cannot be taking for granted in other countries, neither for Chile in the future.

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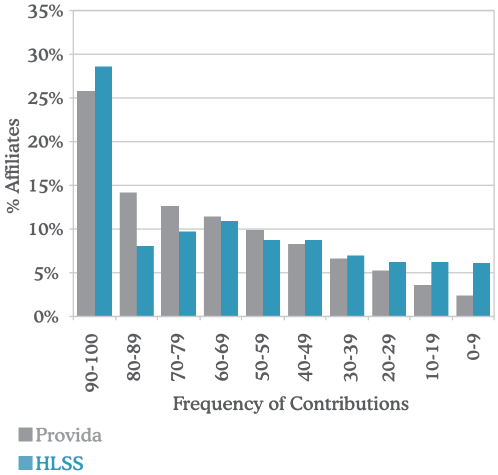
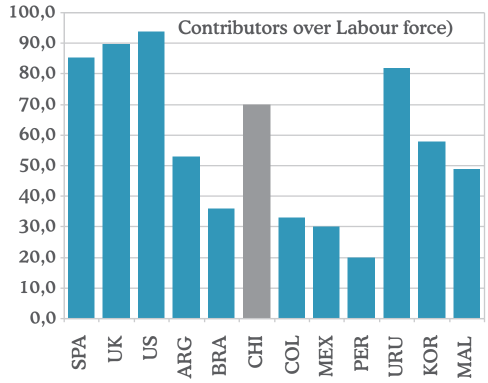
Appendix

Graph A1. Frequency distribution of contributions to pension funds



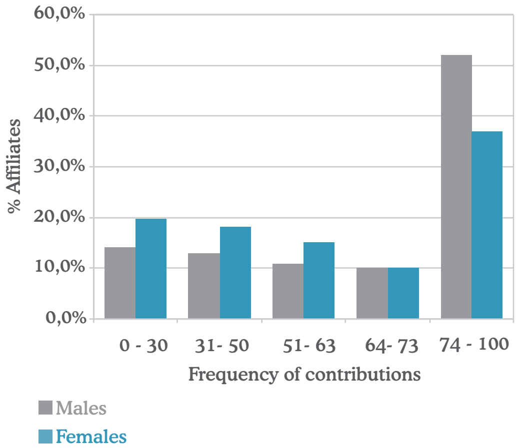
Source: HLSS, AFP Provida and author's calculations

Graph A2. Pension Systems coverage



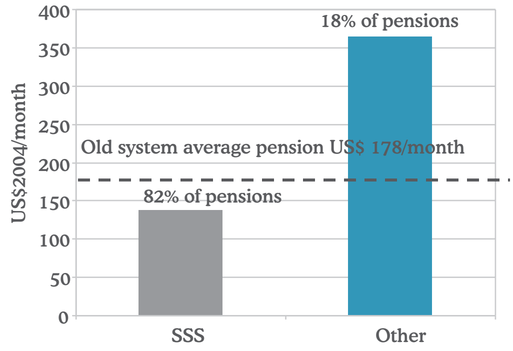
Source: Palacios and Pallarés-Miralles (2000)

Graph A3. Density of Contributions by Gender, Chile 2004



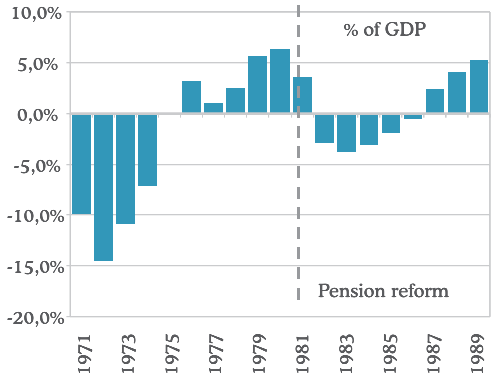
Source: HLSS

Graph A4. Pension levels in the Old System by affiliation



Source: Favre et al. (2006)

Graph A5. Central Government (cash) surplus



Source: J. Vial´s calculation based on data from F. Larrain, Controller´s Office and Budget Office

Table A1. Chilean pension system. Diagnostic and reforms

Council's diagnostic	Main proposal
Poverty risk at old-age	New redistributive pillar («pensión básica solidaria»)
Low density of contribution among self-employed	Gradual compulsory contribution Fiscal advantages (same as dependent)
Low projected replacement rates for women	Public contributions in case of maternity
Low competition	Auctioning for new affiliates (based on fees) Entrance of new actors (banks) Join bidding for survivors and diability insurance
Lower returns in the future	Relaxation of investment regulations (including abroad)

Source: Consejo Asesor Presidencial para la Reforma Previsional and author's

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