Original Article

Moving from pay-as-you-go to privately managed individual pension accounts: What have we learned after 25 years of the Chilean pension reform?

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ABSTRACT This paper presents a brief history of pension reform in Chile, the reasons behind the introduction of individual privately managed accounts in 1981, and the adjustments introduced in 2006–2007. 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 was also feasible because the transition costs of the 1981 reform are entering the decreasing phase. We emphasise the importance of economic growth for the effective 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.

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INTRODUCTION AND BACKGROUND

The Chilean pension system was established at the dawn of the twentieth 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

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labour market. Coverage reached approximately 60 per cent of the labour force in the early 1970s. Each operator ('Caja') had different rules concerning benefits and contribution schemes and many of them had major fiscal liabilities even at an early stage of the demographic transition. According to the World Bank,¹ the projected Implicit Pension Debt of the Chilean Government would have been equivalent to 130 per cent of GDP without pension reform. In addition, the system was extremely vulnerable to political pressure.

These inequities and fiscal risks were evident by the late 1950s, but a major reform of the system was possible only in 1981, during the military regime (1973–1990).^{2,3} The reform was substantial and it entailed the substitution of the old system for a new one, based on individual capitalisation accounts, managed by private operators (AFP, 'administradoras de fondos de pensiones') under strong state supervision through the *Superintendencia de AFP* (SAFP). The government maintained an active role through the minimum pension guarantee (MPG) for all those workers who had contributed for at least 20 years and were not able to self-finance a pension above the legal minimum (US\$165 per month, approximately), as well as providing a non-contributory pension (called 'PASIS') for the elderly poor (mean-tested) of about one half of the MPG. In addition, the government had to cover the transition costs derived from the migration of workers from the old to the new system, as well as the cost of the '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 labour force joined the new system and those who switched could not go back.

After 25 years of operation, a period in which the Chilean economy and the political system have undergone 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. In addition, after the 2005 general elections some relevant adjustment processes are on the way.⁴

This paper is organised as follows. In the second section, we will evaluate the performance of the pension system from a double perspective: backwards based on the past performance (in line with Arenas *et al*⁵ or Soto⁶) and forwards, based on official^{7,8}, and our own projections.⁹ The ongoing reform and related proposals are analysed in the third section, on the basis of the previous diagnosis. Finally, in the last section we will elaborate on how easy is to replicate the Chilean reform in other industrialised and emerging economies.

OUTCOMES OF THE 1981 REFORM

After 25 years of experience with the new system, now seems a good time to evaluate its performance against the initial goals, identify its shortcomings and derive lessons for countries that introduced similar reforms at a later date, as well as for those planning a pension reform. For these purposes, in 2005 we built an actuarial model of the Chilean Pensions System, with linkages to public finances and other macroeconomic variables.¹⁰ The model was calibrated for 2004 and was used to generate projections up to 2050, using demographic projections from the UN.

Good coverage, for those who get the right jobs

Our estimates show that the planned replacement ratios (70 per cent) would be easily reached by those workers retiring at 65 years with regular contributions. This figure compares favourably with the theoretical replacement rates in industrialised economies.¹¹ In fact, the cohorts who benefited from the high rates of return earned by the pension funds in their first 25 years of operation, and who also will receive the RB, will obtain substantially higher replacement ratios (close to 100 per cent).

The bad news is that not many workers meet these conditions. The legal retirement age for women is 60 years, and because they live, on average, five more years than men, they can expect significantly lower replacement rates. Additionally, too many workers do not contribute on a regular basis. Self-employed workers are not obliged to contribute and they

comprise about 30 per cent of the labour force. Individual labour records from recent surveys show that a large fraction of workers move frequently from formal employment to unemployment, informal employment or self-employment.^{12,13} Because contribution is only frequent while working as formal employees, Chileans accumulate large periods without contributions to their pension accounts.¹⁴ Even though almost every eligible person is affiliated to some AFP in Chile (7.3 million affiliates compared with a labour force of 6.3 million and only 4.0 million people legally forced to contribute), only 4.1 million contributed to an AFP in December 2005. Data show that about 64 per cent of Chilean workers make contributions to the pension system, but the figure for regular contributors is closer to 40 per cent. The 24 percentage points (p.p.) gap comes from the remaining 60 per cent of the labour force. These figures are worrisome, because Chile has a good coverage of the pension system when compared to other emerging countries, and is higher than those expected given its development level.¹⁵

Myopia and impatience run high, and erode pensions

Reformers of the pension system had great hopes for the positive role of incentives. This was why they relied so much on information and competition to keep fees in check, and, most importantly, why they set such low requirements to obtain early retirement.¹⁶ The experience of the initial 25 years shows, however, that impatience is very high. People who do not have an obligation seldom make any contribution to their retirement accounts. About 75 per cent of the affiliates retire before the legal retirement age, and many might fall below the state MPG. The 'bird-in-hand' syndrome is one of the biggest challenges that pension systems face everywhere. Anticipating retirement by 1 year reduces pensions by 6 to 7 per cent, and still people choose early retirement, tempted by the short-term gain of liquidity. In fact, according to the 2002 *Social Protection Survey*, 86 per cent of Chileans make their saving and expenditure decisions considering a 1-year horizon or shorter.

Women have good reasons to hate growing old

The Chilean system has kept a lower legal retirement age for women (60 years), as in the previous defined benefit PAYG. This rule has a significant impact in an individual capitalisation system, because it means, *ceteris paribus*, lower capital accumulation. The problem is further compounded by demographics (women live about five extra years than men in Chile) as well as economic factors (women are paid lower salaries than men for equivalent jobs, and have a lower density of contributions owing to maternity leaves and household duties, among other reasons).¹⁷

The outcome of these factors is that female replacement ratios are between 10 and 15 p.p. lower than for men. In the long term this should encourage women to enter into the labour force, as well as to make regular contributions to the pension system. But in the meantime there will be several generations who will have very limited funds accumulated to provide for their old age, will be forced to remain in the labour force and/or might end up being eligible for the non-contributory PASIS.

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 1980s assumed annual real rates of return of the pension fund investment in the range of 4 to 5 per cent. The actual performance since 1981 has been better, with a simple average real rate of about 10 per cent. A 100 basis points difference in real returns sustained over the working life raises the average pension by 25 per cent. Thus, those retiring in the next 10 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 per cent of its revenues from the return of the investments made by the 'Cajas'.

Why have the rates of return been so high? In addition to the skills of pension fund managers,

it seems that market-friendly economic reforms have played a key role. Even though the deepest reforms were introduced in the mid-1970s, they only bore fruit after a decade. Additionally, the successful democratic transition validated and even reinforced market reforms. The most telling indicators are the increases in per capita income growth (from an average of just 1.8 per cent per year in the 1966 to 1985 period, to 4.8 per cent for 1986 to 2004), as well as the reduction of inflation (from 31.5 per cent for the period between 1966 and 1985 to 8.2 per cent for 1986 to 2004). As a result, asset prices have risen significantly. The total value of traded stocks has increased from 2.5 per cent of GDP in 1988 to 12.3 per cent in 2004 and the stock market capitalisation has gone from 28.4 per cent of GDP to 124.4 per cent during the same period. Even though portfolios were initially restricted to fixed income–low-risk assets, restrictions were gradually relaxed and pension funds were able to capture some of these capital gains. In later years, when rates of return in Chilean assets fell, pension funds were still able to perform quite well thanks to a gradual relaxation of investment–abroad limits.

This process also shows a salient feature of Chilean pension reform: the adaptation of the regulatory framework to the new realities of financial development, as well as to globalisation.¹⁸ Even though the authorities have been reluctant to allow excessive risk-taking, and have also been weary of the macroeconomic impacts of major portfolio shifts by pension funds, they have allowed for increasing flexibility. As time has passed, authorities have relied more on decentralised market-oriented controls at the expense of quantitative limits at the individual investment instrument level.

Administration costs: Were they too high?

A common critique of private pension systems based on individual accounts and free affiliation to AFP (that is, competition-based) is that fees are overly high and end up costing too much for the affiliates. This issue is rather complex, because costs vary depending on the stage of the life cycle

of each affiliate, as well as the maturity of the system. It is further clouded by two facts. First, contributions to pension funds are usually expressed as a fraction of wages, whereas financial market fees are calculated as a fraction of the assets under management. Second, fees pay for different things in different countries. In many cases (Chile being one of them) this includes insurance fees for the coverage of survivors and disability insurance (about one half of the fees in Chile go to covering this insurance). As shown in Favre *et al.*,¹⁹ if net fees are calculated as a fraction of the managed assets, they are quite competitive.

An additional problem for these comparisons is that the system is already in the middle of the transition period: workers who have only made contributions in the new system are now in their mid- to late 40s. The transition cohorts can be expected to bear a high cost. The system had to be established from scratch and AFP had to invest heavily in the development of new technology and build a client base. Because capital market imperfections exist, these costs cannot be distributed evenly across generations. Finally, Chilean workers who moved to the new system have benefited from extraordinary circumstances, such as the success of economic and political reforms being finally reflected in an extraordinary rate of return earned by pension fund assets.

The system is fairer

The old system, with the multiplicity of ‘Cajas’, with specific benefits and contribution rates and without freedom to choose among them, produced severe inequalities among workers with similar characteristics,^{20–22} and was vulnerable to rent-seeking. These inequalities are reflected today in the value of pensions of those who retired from different ‘Cajas’ and were paid by the Instituto de Normalización Previsional (INP).²³ In 2004, 82 per cent of the INP pensions were paid to the state-supported blue collar workers system (SSS). Their average value was barely higher than the MPG. In contrast, those affiliated to the other ‘Cajas’ (18 per cent of people whose pensions are being paid by INP) enjoyed early retirement and

their average pensions are almost three times higher.

Since the 1981 reform, all workers in the private pension system are subject to the same rules; they can move freely from one AFP to another. Additionally, low-income workers can rely on an MPG if they contributed to the system for 20 years. In the case of workers with less than 20 years of contributions (who did not receive pension benefits in the old system and were not eligible for the MPG), they do not lose their contributions because they receive a pension, equal to the MPG, until they deplete their savings in the pension fund.

But the holes in the social protection net were too big

Even though the reform significantly reduced the inequalities, it did not provide sound coverage to all workers, as it stood in 2006. In many cases, women would have had very low replacement ratios, in part due to their higher life expectancy, but also to their lower participation rates and lower salaries.

The other source of problems reflects a more general trend: many members of the labour force have a very precarious insertion into the labour market, moving from the informal sector to the formal market, falling into unemployment for a while and so on. This means that they will not be eligible for the MPG. Our estimates showed that about 23 per cent of the men affiliated to the system had an average density of contributions of 20 per cent, a fraction of affiliates that rises to 29 per cent in the case of women. This means that about one-quarter of those who have been in the labour force would not have income security in old age coming from the mandatory pension system. Not all would be unprotected: some self-employed workers have enough capital to support themselves (professionals, small merchants, taxi drivers, and so on), whereas 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 has not provided enough coverage for all of them under the current rules.

Pension reform does not come cheap, but fiscal discipline can make it affordable

One of the main issues when a country replaces a PAYG system with a system based on individual capitalisation accounts is the fiscal transition cost. As active contributors move to the new system, they leave a financial gap in the old one, because they switch contributions from one to the other.

On top of this, the government should also compensate workers who switch for the contributions made in the past. These high fiscal costs have been evident in the case of Chile.^{24–27} The traditional estimates of the fiscal costs of old-age income security are not adequate to represent the true cost of the transition. 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 independent of the transition itself.²⁸

Despite these qualifications, the figures in Table 1 show very clearly a major rise in the civilian pension deficit after the reform, as a natural consequence of losing a majority of contributors while retaining all the beneficiaries in the PAYG system. What is truly remarkable in the Chilean case is that although the overall tax burden was falling by about 10 p.p. of GDP, fiscal accounts remained in surplus for most of the time since the end of the 1980s. The fiscal consolidation process started in the mid-1970s, and by the end of the decade a major surplus was projected.³⁰ The long-term effects of the replacement of the old system on the fiscal accounts has been positive, as shown in almost every projection,^{31,32} as well as in the cited World Bank estimates (the implicit pension debt was reduced from 211 per cent of GDP without pension reform in 2050, to almost zero after the reform).

In sum, pension reform in Chile cannot be understood without reference to the fiscal adjustment process taking place before and after the reform, in stark contrast with the experience of other countries, which introduced private capitalisation accounts as the centrepiece of their pension systems.³³

Table 1: Fiscal expenditure in pensions (per cent of GDP)

Year	Old system deficit (%)		Recognition (%) Bonds	Minimum pensions (%) (new system)	Pasis (%) (non-contributory)	Total (%)
	Civil	Military				
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 per cent figure for the civilian deficit in the old system includes 0.3 p.p. in MPG, Valdés.²⁹

Source: National Budget Office.

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 of expectations. They do, however, have important impacts on the overall performance of the economy. The channels were systematised in the work of Corbo and Schmidt-Hebbel.³⁴ A move from PAYG to a privately managed individual capitalisation account should improve labour market incentives. A greater efficiency in financial intermediation as well as capital-market-deepening would surely require institutional changes, but the pressure to implement these would be almost irresistible, given the size of the pension funds. Finally, under certain conditions, an increase in total savings can be expected. Corbo and Schmidt-Hebbel³⁴ estimate the average addition to GDP growth rates for the period 1981 to 2001 of the pension reform in Chile as ranging from 0.2 to 0.9 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.

ADJUSTING THE REFORMS AT JUST THE RIGHT TIME

After a quarter of a century of the setting of a new system, at a time when accumulated savings in mandatory pension accounts have reached

60 per cent of GDP, and right before those switching workers begin to approach retirement age, a lively debate arose over the need to introduce some adjustments. The incentives to move from the old system to the new were designed in such a way that most middle- to old-aged workers found it more attractive to remain in the PAYG system. This is why there are still a few cases of people retiring in the new system and a large majority of them correspond to early retirement (which had short-term liquidity gains that induced many medium- and high-income workers to retire earlier), at the expense of lower pensions. Their case is worsened firstly because of a lower-than-expected frequency of contributions and limited old-age coverage of the poor. Secondly there was a long discussion about the costs of the private capitalisation accounts in Chile, and the need to introduce more competition to reduce fees. Finally, a third catalyst of the discussion was the industry demand for a revision of the investment limits.

One of the first moves of the new Chilean government was to appoint a National Council to propose changes, while preserving the central components of the system ('Consejo Asesor Presidencial para la Reforma Previsional').³⁵ The council elaborated a comprehensive report, which set the basis for a project of law sent to Congress by the end of 2006 and approved in early 2008.³⁶

The most important conclusion was that the system is sound, is working fine, but requires upgrades. As the council report states, 'the individual capitalisation system has not failed as a financing mechanism. Even more, it will generate

pensions with replacement ratios close to 100 per cent for those workers with stable jobs and a regular history of contributions over their work lives'.³⁷ The council also concluded that the system has been beneficial for the country in terms of economic growth and the development of financial markets. However, they emphasised the need to act promptly, before the bulk of those who transferred from the old system to the new one reach the retirement age. According to the council, the most pressing problems to be addressed, 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, and so on). In what follows, we compare our diagnostic and proposals with those coming from the council and the new law in each of these areas.

Strengthening the first (solidarity) pillar

In our study, we concluded that the fraction of workers who would not have enough protection in old age was too high, due to the low density of contributions and overly strict eligibility MPG requirements. In order to improve this density, the new law makes contributions mandatory for all workers, gradually extending the obligation to contribute to independent workers. A number of proposals are also included to provide better incentives for independent workers to contribute (similar tax treatment, extension of other social security benefits). The new law also mobilises the tax system as a tool for improving collection among the self-employed.

Other proposals are related to the MPG. Several analysts and the AFP's association pointed towards the gradation of requisites to obtain access to a fraction of the value of the MPG. Our simulations showed that this was powerful enough to bring most unprotected workers under this umbrella. Pensioners 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 ambitious proposal: the establishment of a basic pension (BP) funded from the general revenues of the government budget, for those pensioners with incomes in the lowest 60 per cent of the population. This BP would not require any contribution to the pension 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\$250 000/month (about US\$370/month). Even though this proposal greatly improves protection to the poor- to middle-income workers, it raises significantly the opportunity cost of contributing to the pension fund, reducing the incentives for formality. Additionally it will have a considerable fiscal cost, and may be vulnerable to political pressures; therefore, attention should be devoted to this issue in the future.

Getting everybody to contribute regularly into the second pillar (mandatory individual capitalisation accounts, privately managed)

One of our main conclusions was that a large fraction of workers in Chile did not contribute regularly enough to get sound replacement ratios once they retire. Most analysts fall short of proposing outright mandatory contributions for independent workers for practical reasons. The law makes independent workers' contributions mandatory after a transition period (up to 2015). It also included a number of other measures, but opted not to change the retirement age for women.

Recent surveys show that most affiliates have very little knowledge of the system and there is little sense of ownership of pension funds. In addition, a significant fraction (close to 35 per cent) of those below retirement age expects to keep working until their health and physical condition allows³⁸. The law introduced aggressive financial education campaigns, with contributions from the government and the AFP industry to address these issues.

Developing the third pillar

On the one hand, voluntary pensions are the main option for middle-aged workers to compensate for inadequate contributions in the earlier stages of their working lives. On the other hand, they are critical for higher income wages, because the contribution is calculated on the basis of the so-called 'sueldo imponible' (taxable salary), which has a cap of 60 UF per month (about US\$2000) that has remained fixed since 1981. A growing fraction of workers have gone beyond that limit and therefore their effective contribution rates are lower than 10 per cent. 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 system.

Voluntary contributions subject to tax breaks have existed since the beginning of the new system, but failed to attract much attention or funds up to 2002, when the government introduced some reforms (additional incentives both for the affiliates and fund administrators, and reduction of entrance barriers to other financial institutions). Voluntary savings are still low compared to mandatory pension savings, but they are growing fast: the number of accounts has more than doubled since March 2002, reaching 376 thousand, whereas the amount of funds in APV (voluntary pension savings accounts) has gone from 1.2 per cent of the total assets in the pension funds to 2.5 per cent, an increase of about 1 per cent of GDP.

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

The timing for adjustments is right, when looking at the budget

One of the main concerns when dealing with pension reforms is the impact on the budget. Pension-related fiscal outlays have remained close

to 5 per cent of GDP in the last decade, but with a changing composition: although the expenses derived from the obligations of pensioners in the old system paid by the INP are gradually falling in GDP terms, RB redemptions have been rising fast, as the group that transferred from the old system to the new one is reaching retirement age. Chile is now close to the peak of RB expenses and these should fall fast in the next decade.³⁹ We projected that government expenses in civilian pensions would have fallen from 3.2 per cent of GDP in 2005 to 2.5 per cent in 2015 and to just 1.4 per cent in 2025. This provided 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 its value is set in a conservative way, the government may be able to fund this improvement while maintaining the current tax burden.

HOW EASY IS IT TO REPLICATE THE POSITIVE OUTCOMES OF CHILEAN PENSION REFORM?

Economic institutions do not always travel well among countries, and reform processes, which by definition are one-time shocks, travel even more badly. Thus, it may be difficult to export the Chilean experience to other countries with different political and economic structures and institutions.⁴⁰ What can be done is to try to identify key elements that facilitated or dampened outcomes of pension reform in Chile, so that local policy makers elsewhere can evaluate whether they are present in their own countries, and act accordingly.

Market institutions

One key element for the success of a system based on individual retirement accounts is the sound operation of market institutions, especially financial markets. The protection of property rights and minority shareholders is crucial for 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 banking deposits and therefore 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. International indexes on the quality of market institutions tend to rank Chile very high, even when compared with OECD countries.^{41,42} 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 between 1983 and 1984. The government opted to protect deposits, allowing the pension funds to preserve their value and the system to survive.⁴³

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 place to launch the system. There is a learning process involving managers of AFPs, regulators, the 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 reforming it, introducing more flexibility. On the other hand, being too conservative at the beginning entails some risks. There is the risk of overly limiting the investment options and thus 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 that there is an introduction of some macroeconomic safeguards to avoid excessive foreign exchange volatility. On the other hand, there is inertia in policy-making processes, and regulatory changes requiring new legislation could be postponed, depending on the urgencies and blockades of sometimes conflicting political agendas. The costs of excessive limitations could be substantial, as Bernstein and Chumacero⁴⁴ suggest for the case of Chile.

The importance of fiscal policy and transition design

There are at least two areas for which fiscal policy is very important. First, as previously mentioned, the move from PAYG to individual capitalisation 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, the increase in private savings may be 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.

The second dimension has to do with risks to the pension fund portfolio. Traditionally, public debt is considered the safest asset in a given country because the government has the ability to tax the citizens to honour it. However, governments also have the power to repudiate or 'liquiate' its obligations through inflation. In many developing countries, especially in Latin America, governments had found it politically expedient to apply this second course, instead of raising taxes or cutting expenses. The data show that Chile is an outlier when compared to other reformers: 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. Given the experience of pension funds in countries that have defaulted or liquated their public debt, it seems important to evaluate the safety of pension funds investments taking into account fiscal sustainability. In many cases it could be even 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.

Labour markets

The experience of Latin America shows that labour market informality severely limits coverage of pension systems, even in the case of individual capitalisation accounts where incentives to contribute are theoretically the greatest. If informality is pervasive at the onset of the reforms, it seems almost inevitable to establish a

large 'solidarity pillar'. Unfortunately, a large fiscal commitment to a BP, not subject to contributions, is an important disincentive to formalisation and therefore the design must be very precise. Chile had a non-contributory, means-tested pension targeted to the poor of a value close to US\$100/month, covering more than 400 thousand retirees, which did not seem to have had a significant impact in labour market informality. The new protection scheme with a significantly higher BP poses 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, because 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 should the protection mechanism be in place. In Chile this transition will last about 30 years.

Pension reform and economic growth

We have argued 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. 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. This will not only induce more formality in the labour 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, which pension funds were able to capitalise on. The fact that pension funds benefited from this process, despite investment restrictions, might contribute

to ameliorating the negative impacts of capital gains in income distribution, although with a major lag, because workers will benefit only at the time of retirement.

CONCLUDING REMARKS

It is difficult to dispute that the Chilean experience has been a success. After 25 years, there is no doubt that the system could 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 much fairer than what the country had in place before, and what most developing countries have today. The system also has helped to fuel economic growth and might even be helpful in reducing some negative distributive effects of economic reforms. The incentives in place are far more conducive to economic efficiency, not only in labour and financial markets, but also in the 'political market', as they align the needs of workers with economic success.

We have shown that the system required adjustments, because it was based on overly optimistic assumptions about the operation of labour markets and density of contributions, as well as on an overestimation of long-term incentives to induce savings in mandatory pension accounts. In addition, the system has grown too much and a major change in regulations was 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 'Chilean pension system' requires not only strong political and 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, 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 this is probably one of the main reasons for its success, but this cannot be taken for granted in other countries, nor in Chile, in the future.

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- 37 Council's report, Vol. I, Chapter II, page 31; the translation is ours.
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APPENDIX

See Table A1 and Figures A1–A5.

Table A1: Chilean pension system. Diagnostic and reforms

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

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

Figure A1: Frequency distribution of contributions to pension funds.

Source: Social Protection Survey 2002, AFP Provida and author's calculations.

Figure A2: Pension systems coverage.
 Source: Palacios and Pallarés-Miralles.⁴⁵

Figure A3: Density of contributions by gender, Chile 2004.
 Source: Social Protection Survey 2002.

Figure A4: Pension levels in the old system by affiliation.
Source: Favre *et al.*⁴⁶

Figure A5: Central government (cash) surplus.
Source: J. Vial's calculation based on data from F. Larrain, Controller's Office and Budget Office.