Brazilian Journal of Political Economy, vol. 20, nº 1 (77), pp. 124-145, January-March/2000

Reforming old-age pension systems in developing countries: lessons from Latin America

Reforma dos sistemas de aposentadoria por idade nos países em desenvolvimento: lições da América Latina

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RESUMO: Os países latino-americanos, pioneiros no Chile, lançaram reformas ousadas de aposentadoria por idade. Embora essas reformas possam tratar de questões de sustentabilidade financeira dos sistemas de pensão, sua contribuição mais valiosa está relacionada à políticas de aspectos econômicos, pois evitam a redistribuição perversa dentro do sistema e minimizam o risco de apropriação do governo. Do lado negativo, as reformas de inspiração chilena representam uma abordagem cara da reforma; eles podem levar à concentração dentro da indústria e aumentar os riscos enfrentados pelo indivíduo. Eles não eliminam a evasão e, em algumas de suas versões, podem apresentar problemas de seleção adversa. Mais importante, tais reformas não garantem que a velhice estará livre da pobreza, que é (ou deveria ser) o principal objetivo de um sistema de pensões.
PALAVRAS-CHAVE: Pensões; reforma previdenciária; sistema previdenciário.

ABSTRACT: Latin American countries, pioneered by Chile, have launched bold old age pension reforms. While these reforms may address issues of financial sustainability of the pension systems, their most valuable contribution is related to political economy aspects as they avoid perverse redistribution within the system and minimise the risk of government appropriation. On the negative side, Chilean inspired reforms represent a costly approach to reform; they may lead to concentration within the industry and increase risks faced by the individual. They do not eliminate evasion, and in some of its versions, they may introduce problems of adverse selection. More importantly, such reforms do not guarantee that old age will be free of poverty, which is (or should be) the main objective of a pension system.
KEYWORDS: Pensions; pension reform; pension system.
JEL Classification: J26; H55; J14.

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** The views expressed here are personal and do not reflect those of the United Nations.

 http://dx.doi.org/10.1590/0101-31572000-0974

INTRODUCTION

Old age pension systems have been suffering from severe shortcomings. In many developing countries coverage is far from adequate, systems are inequitable, deficits have been growing and evasion is rampant. Some Latin American countries, pioneered by Chile, have launched bold reforms to tackle these problems. Their approach to pension reform is worth being analysed, as there are lessons to be learnt from their experience. Issues such as higher administrative costs and industry concentration are some of them. Moreover, Chilean-style reforms have been vigorouslwy promoted as the cure for some of the problems developing countries face ranging from low savings to incipient financial markets. These issues remain unsettled. While these reforms may address issues of financial sustainability of the old-age branch of social security, it is not clear whether they represent efficient responses to ensuring the provision of adequate protection against the risk of income losses during old age. Furthermore, given the risks inherent to the individual capitalization system, it is not obvious whether the level of benefits it generates is sustainable and sufficient to prevent poverty during retirement, the very reason why public pension systems were introduced in the first place.

This article is organized as follows. First section presents common problems affecting pension systems in developing countries and which require changes in policy. The second section briefly describes the main features of pension reforms undertaken in six Latin American countries. Third section attempts at assessing the impact of such reforms in terms of their contribution to the solution of some of the problems identified in the first section. Fourth section concludes the paper.

PENSION SYSTEMS IN DISARRAY

Old-age pension systems in developing countries suffer from a series of problems, which need to be urgently addressed.

Despite progress over the past years, coverage remains inadequate (see table 1). This is due to the limited size of formal labour markets in these countries as well as to the political economy underlying the creation of such programmes. Some groups — usually the better politically organised ones — always have an edge in exerting pressure and having their interests seen to. It is true that some countries attempted to include occupational groups previously excluded from pension schemes (agricultural and domestic workers, the self-employed or those working in the informal sector) but usually on a non-mandatory basis and without much success. When inclusion was compulsory, pressure on social security funds resulted. Benefits had to be extended to the new participants entering retirement age but which had not previously contributed to the system.

In several developing countries, social security systems suffer from built-in inequalities brought about by deficiencies in system design, which leads to transfers of income from the low-income to the high-income groups. Indeed, the income distribution within the systems can be quite skewed. Generous pensions are granted to a few with a limited history of contribution while the vast majority of workers have to contribute for several years to obtain meagre benefits, usually the established minimum, if they are lucky enough to get one. Social security taxes can be regressive. Some countries put a cap on the maximum wage upon which the participant's contribution is to be assessed. This implies that those who receive higher salaries end up paying relatively less (as a share of their salaries) than those on lower wages. These provisions may also create perverse incentives for under-reporting[1] . Inequality is present even in the more egalitarian societies. In China, for instance, access to social security benefits (such as old age pension, health care, housing and food benefits) has depended upon holding a job in the state sector and being a registered urban resident. Reforms of the urban labour market adopted in the 1980s introduced additional inequalities to the system as the benefit structure is now also a function of the type of the labour contract (life-time guaranteed or temporary) a worker holds. In rural areas, people rely on the family for economic security, while the community plays a residual role whenever the family mechanism fails[2] . However, given the absence of pooling across the communities, the richer communities have greater ability to offer assistance to their needy residents than the poorer ones have.

The financial health of social security is precarious in several countries, with funds accumulating substantial deficits (see table 2). In some countries, funds have been invested in projects of dubious economic and social value or just borrowed by the central government at negative or very low real rates of interest. In other countries, inflation undermined the value base of the monies accumulated in such funds even further. In some instances, "[...] deficiencies of structure, coverage and benefits levels are frequently exacerbated by operational failures in management, administration or financial organisation or by excessive costs, and sometimes by corruption, so that even the intended benefits are not delivered.[3]" Governance is particularly critical in the administration of social security funds in developing countries. Limited administrative skills, poorly trained staff, badly maintained records, lack of cost controls imply in an inefficient and ineffective structure. Additionally, evasion is rampant in many developing countries thus compounding the difficulties social security systems currently face. For instance, overall system

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[1] In Brazil, for instance, the maximum earnings to compute the worker's contribution equal to 10 minimum wages, while the employer's contribution is due on total payroll. As the maximum payable benefit is limited to 10 minimum wages as well, under-reporting by the employer has the worker's connivance for his/her future entitlements will not be decreased by such a practice.

[2] H. Wenruo, "Urban and rural pension insurance in China", in Sustaining social security (United Nations sales publication n. E.97.IV.3: 184-98).

[3] C. Gillion, "Issues in the reform of social security: a perspective from the International Labour Office", in Sustaining social security: 26.

evasion has been estimated at 48% in Argentina, over 50% in Ghana and 36% in Brazi1[4] .

The ability a country has to pay promised benefits is affected by several other factors as well. Dismal economic growth during the last decade led to inadequate growth of social security revenue vis a vis the increase in expenditures. In some countries, the resumption of economic growth in the 1990s has not stopped the decline in the importance of the formal sector as employer. In Latin America, for instance, the share of the informal sector in non-agricultural employment expanded in Argentina, Brazil, Colombia, Chile, Ecuador, Mexico, and Uruguay during the first half of the current decade. The so-called "black economy" absorbs at least 50% of non-agricultural labour force in all of these countries. Similar trends have been observed in Africa and South Asia. This implies that the resource basis of social security funds has been seriously compromised, as revenues are not growing as fast as expected. On the other hand, as the number of pensioners increased and benefits readjusted, social security expenditures soared, particularly in those countries with mature systems. In Latin American countries such as Argentina, Brazil and Uruguay social security absorb the bulk of public expenditures (see table 3).

The expansion of social security deficits has usually led to increased taxation as cuts in entitlements have proven to be politically unacceptable or of difficult implementation in many countries. This strategy however seems to have reached a limit. Non-wage costs are increasingly perceived as eroding a country's competitiveness in the international markets and discouraging employment creation by the formal sector. While these issues are far from being settled, the need of reform is indeed well established[5] . Very few experts would disagree over its urgency. The direction that such reforms should take, however, is far from clear and the subject of intense debate.

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[4] Argentinean data refer to the year 1992, while the Brazilian and Ghanaian figures are for 1991 and 1989, respectively. See F. E. B. de Oliveira (ed.) Social security systems in Latin America, The Johns Hopkins University Press for the Inter-American Development Bank, Washington, 1994; World Bank, Brazil social insurance and private pensions, report n. 12336-BR, January 1995; and ILO, The cost of social security — Fourteenth international inquiry, 1987-1989, Geneva, 1996).

[5] It is not obvious whether social security costs are absorbed by the firm or by the workers in the form of lower wages. They can also be absorbed by the society at large if firms are able to pass these costs on to consumers in the form of higher prices. It is not settled whether labour taxes inhibit the demand for labour by the formal sector in the developing economies. Non-compliance can be quite substantial in these countries, as mentioned above. Furthermore, labour markets have shown a great deal of flexibility during the past years as wages decreased in real terms in several countries. However, this has not induced increased demand for labour by the formal sector in these countries as anticipated. Turning to the issue of competitiveness, factors such as the overall labour productivity and the ongoing exchange rate policy may have a greater impact on the determination of international competitiveness of a given country than tax charges on labour do. See Report on the World Social Situation 1997, United Nations sales publication n. E.97.IV.1; and ILO, World Employment 1996-97, Geneva, 1996.

Problems such as those mentioned above have generated increasing disenchantment with the public provision of retirement benefits. Some countries, pioneered by Chile, have been increasing relying on the private sector for the provision of such services. Reforms adopted implied in a decline of the relative importance of social insurance mechanisms and the replacement of the pay-as-you-go (PAYG) method of financing by fully funding. They have also led to the substitution of benefit-determined systems by contribution-determined ones and, in some instances, a more extensive use of targeted and means-tested benefits, as opposed to universal ones.

It is worth saying, for the sake of accuracy, that this is not a universal trend and several countries have adopted far less radical approaches[6]. The recently proposed reform in Brazil is a case in point. And in countries such as Nigeria the reform went on an opposite direction from a fully funded provided fund to a pay-as-you-go system. But reforms as those initiated in Chile are the ones that have attracted most attention. They have also originated a great deal of debate in so far as what they can (or cannot) accomplish beyond the provision of an adequate pension.

The sections below will focus on the first set of reforms, that is, those introducing an individual capitalisation scheme managed by the private sector.

The Latin America experience: the Chilean reform and its derivatives

In 1981, Chile introduced a profound reform in its old-age pension system, moving from a highly fragmented defined benefit to a defined contribution system. The reform also implied a change from publicly managed PAYG systems to a privately managed fully funded one. Workers joining the labour force after 1981 have to deposit 10% of their earnings into individual savings accounts managed by private pension fund companies (Administradoras de Fondos de Pensiones, AFP's) and subject to strict government regulations. Affiliates select their AFPs and are allowed to change AFP's at any time. Additional contributions can be paid towards disability and survivor's benefits. The Law foresees no employer's contribution. Yet, wages were increased so as to compensate workers for the additional costs to be incurred by them with the adoption of the new system.

Affiliates to the old system could choose between the public and the private system. Those who opted to change had their contributions to the old system acknowledged through the issuing of a Treasury bond (the so-called bono de recono-

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[6] Some countries have approved legislation extending coverage to previously uncovered segments of the population. In other countries emphasis was placed on the unification and standardisation of existing programmes thus reducing problems caused by excessive fragmentation. There have been countries whose reforms aimed at strengthening their existing systems without changing their structure by tightening up benefits and qualifying requirements. On trends of social security reforms see the monthly newsletter Trends in Social Security of the International Social Security Association.

cimento), which is payable at retirement date, fully indexed and carries an annual interest rate of 4%.

Pension benefits to be received depend on contributions made. At retirement date, the accumulated capital (contributions and the return on their investment, net of administrative expenditures by the APF) can be used to buy an annuity with an insurance company or withdrawn in scheduled payments. The State guarantees the payment of a minimum pension for those meeting the qualifying requirements. These include minimum age (65 for men, 60 for women), contribution history (minimum of 20 years) and insufficient accumulated funds to provide the minimum benefit (about 25% of average taxable income). The minimum pension is not indexed but occasionally adjusted by the government. The State also offers means tested old-age pension benefits under its social assistance programme[7].

The AFPs are strictly regulated. They have to meet minimum capital and reserve requirements and must guarantee a minimum rate of return on deposited funds. When an AFP does not generate the established minimum rate of return (industry based), it has to use its reserves to make up for the difference. If reserves are not enough, the AFP is liquidated, the State covers for the gap in return and affiliates move to another AFP. Investments are also tightly controlled. Portfolio diversification evolved pari passu with the system, as initially the only investment possibilities were government papers, bank deposits and mortgage notes. Portfolio composition must observe imposed limits. For instance, the current limit for investments in foreign securities and stocks, which were not allowed before 1993, is 9%. Investment in domestic stocks has been authorised to increase gradually since 1986 and is now limited to 37%.

The Chilean reform inspired other social security reforms in Latin America. But while the other reforming countries retained some of its elements, the so-called "Chilean model" is still unique to Chile. The sections below review the major features of pension reforms in Colombia, Peru, Argentina, Uruguay and Mexico. To ease comparison, table 4 summarises their most important characteristics.

Peru and Colombia: choice is possible

The Peruvian and Colombian reforms share some common features of system design and therefore will be presented together. In both countries, the public system continues to exist (after undergoing some reforms itself). Affiliation to the fully funded, privately managed, individual capitalisation system is optional. New entrants to the labour force can choose the system they want to participate. Contributors to the public system can switch to the private system. Those who transfer have their past contribution acknowledged through the issue of "bonos de recono-

[7] P. Diamond & S. Valdes-Pietro, "Social security reforms", in B. P. Bosworth, R. Dornbusch & R. Laban (eds.), The Chilean economy: policy lessons and challenges, Washington D.C., The Brookings Institution, 1994.

cimiento," but in both countries qualifying conditions to apply to such bonds are somewhat stricter than in Chile. In the case of Peru, for instance, workers had to have contributed to the old systems for at least 4 years during the period 198292 (in Chile, required past contribution was 12 months) and during 6 months before the reform. The latter corresponds to the height of the Peruvian urban open unemployment. Such requirement was later relaxed.

In the Colombian reform, entitlements acquired in the old public system by workers younger than 40 (males) and 35 (females) were kept unchanged. The reform in the public system (stricter entitlements and benefits, higher contribution rates) thus affects only younger workers. A "solidarity" contribution is required but only on those whose earnings are higher than 4 minimum wages (MW). These funds are earmarked for coverage expansion for low-income groups. Outside the social insurance scheme, the State offers a social assistance pension (equal to 50% of the minimum wage) for the destitute aged and the elderly native Indians. The Colombian state does guarantee a minimum pension (subject to the adherence of certain conditions, see table 4) and a minimum rate of return in the fully funded system. Additionally, AFPs must contribute to the financial sector guarantee fund. In case of bankruptcy, affiliates can receive back their contribution up to a ceiling of 150 minimum wages.

Pension contributions correspond to 13.5% of earnings and which are paid in part by the employee (25 per cent) and in part by the employer (75%): 10% are deposited in individual savings accounts with the AFPs. The remaining 3.5% are to cover AFPs' fees and the provision of disability and survivors' insurance. Affiliates can switch AFPs every 6 months and systems (private and public) every 3 years. A similar possibility exists in the Mexican reform (see below), but it is restricted to the so-called "transition" workers.

Argentina and Uruguay: basic pension offered by the public system

The Uruguayan and Argentine reforms created system where the public system is reformed and offers a basic pension. In the case of Argentina, the value of the universal basic pension (UBP) bears a direct relationship with the average value of total contributions to the system by all active participants. The minimum UBP is equal to 2.5 times average compulsory contribution (the Aporte medio provisional obligatorio, APMO) on the date of retirement and is adjusted to inflation — on an ad hoc basis — from then on. It corresponds to 27.5% of the average covered wage and it is determined on a system base. In the case of Uruguay, the basic pension (BP) bears relationship with the worker's past earnings, it is thus individually determined. In both cases, these pensions are financed by the employers' contributions to the social security system. In Argentina, differently from Uruguay, there is no employee's contribution to the basic pension.

A second — also compulsory — tier offers a complementary pension (CP) which is financed by the employees' contributions. In Argentina, there is an option between the public system, which functions on a defined-benefit base and a fully funded, contribution-defined system, administered by the Administradoras de Fondos de Jubilaciones y Pensiones (AFJPs), similar to the Chilean AFPs. In Uruguay, the option to choose is restricted to workers older than 40 years, who are allowed to switch from the defined benefit to the defined contribution scheme. Younger workers and new entrants to the labour market must join the defined contribution, fully funded scheme for complementary pension.

Pension fund management companies do not need to be privately managed in either country. In fact, public agencies, not-for profit groups (labour unions, for instance) can establish such "administradoras". Affiliates can switch twice a year among the different companies. Finally, both countries offer a third, voluntary pillar, to which contributions exceeding the compulsory ones can be made. The third pillar works on a fully funded basis. In Argentina, the optional pillar is restricted to those who opt for the fully funded scheme as the second pillar.

Both countries acknowledge past contributions to the old system. In Argentina, this takes the form of the earnings-related compensatory pension (CP). As of June 96, 67% of system-wide affiliates had selected the fully funded system in Argentina.[8] In Uruguay, the incentive to switch to the fully funded system is quite generous at 75% of the pension one would have been entitled under the old system.

Neither country offer minimum pension guarantees under the defined contribution scheme, as a basic pension is already offered by the State. Guarantees are available in the case of AFP bankruptcy. AFPs are highly regulated and have to comply with minimum return requirements. Investments are subjected to clear rules and allowed only in certain types of assets.

Mexico: another radical reform

The 1997 Mexican reform is perhaps the one that most closely resembles the Chilean model. The public pension system is to be phased out: it continues to pay benefits for current retirees and leaves open the option for the so called "transition " workers to receive benefits under the old terms. But both "transition" workers and new entrants to the labour markets must join and contribute to the new scheme. It operates on a fully funded, individual capitalisation base, with privately managed Administradoras de Fondos de Ahorro para el Retiro (AFOREs) which are subject to government control and regulation.

There is no acknowledgement of past contributions to the old system. The government however will allow the "transition workers" to choose between receiving benefits under the old formula or withdrawing the funds accumulated in their private accounts. If they opt the first alternative, the existing funds in their savings accounts are transferred to the Instituto Nacional de Seguridad Social (INSS) which then takes on the responsibility of paying a pension benefit as defined in the old

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[8] D. Vittas, Private pension funds in Argentina's new integrated pension system, World Bank, Washington D.C., Policy Research Working Paper n. 1820, August 1997.

system. If they choose the second option, the route is either an annuity bought from an insurance company or programmed withdrawals based on the worker's life expectancy. This implies that the cost of the transition may be confined to the payment of benefits to current pensioners. Costs from transition workers may be nihil if the fully funded scheme outperforms the expected benefits under public system. For the "new" workers, there is always the guarantee of a minimum wage at the date of retirement, provided that certain requirements are met (see table 4).

A BRIEF ASSESSMENT OF THE LATIN AMERICAN REFORMS: LESSONS LEARNED

The Chilean reforms have been highly praised. Currently, employee coverage is practically universal (97 per cent of the labour force in formal occupations by the end of 1995). The APFs have produced substantial real returns on their investments: 12.8% in average per year during the period 1981-95. Pension benefits generated by the new system are higher than those generated by the old one (about 40% higher) and correspond, in average, to a 78% replacement rate (estimated on the base of the average real salary in the 120 months preceding retirement) [9]. They are also delivered more efficiently not incurring in prolonged delays. Funds accumulated by the new system amounted to about 45% of the GDP by the end of 1995.

While the above accomplishments are indeed remarkable, it is not obvious whether they are sustainable. During the period 1981-95, rates of return on the individual accounts have been, in average, twice as much as the rate of GDP growth. In the long run both rates tend to converge and lower returns — and consequently, lower replacement rates — should be expected. In fact, real rates of return around 6% per year (the average annual GDP growth during the period in question) would be already a major achievement for the system, if they can be maintained over the years. The lesson learned so far is that high returns are indeed possible in the private system. Impressive results have also been achieved in Argentina where the average gross nominal return for the investment performance of the AFJPs was about 15% per year during the period July 94 to June 96[10]. Less spectacular results have been reported for both Peru and Colombia. But what is important to emphasise here is the unsustainability of such high returns in the long run. Convergence towards the GDP growth rate should be expected. Moreover, there may have been some specific events which contributed to such high performance, but which may not be present in different circumstances. In the case of Chile, for instance, besides the overall strong performance of the economy the new system also benefited a great

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[9] S. Edwards, The Chilean Pension re/0rm: a Pioneering program, NBER Working Paper n. 5.811, November 1996.

[10] D. Vittas, op. cit.

deal from the process of privatisation, which opened up new opportunities for private investment in the country. This possibility is almost exhausted nowadays. Additionally, some commentators argue that the recognition bonds, which were added to the value of the pensions, boosted the value of pensions received[11]. In the case of Argentina, the high rates of return were supported by the monetary policy adopted in the aftermath of the Mexican crisis and which pushed interest rates up.

Supporters are particularly enthusiastic about the political economy aspects of the reform. By transforming a publicly administered PAYG system into one based on individual capitalisation, which is privately managed, perverse redistribution becomes more unlikely. Indeed, the only redistribution that remains is towards those unable to accumulate funds — due to low earnings — to finance a minimum pension, and which is financed by general taxation and not by payroll contributions. As pension benefits depend on the value of contributions made (and on the returns to their investment) the distribution of "free" benefits is abolished. The new system therefore avoids redistribution from single and/or childless participants to those who are married or have children. Survivor benefits now require additional contributions to the system. Similarly, defined benefit systems prevent redistribution among different occupational groups (with the exception of those whose earnings are not enough to finance the established minimum but, again, such benefit is financed through general taxation and not through wage taxes) and from male to female workers [12] . On the other hand, the absence of some redistribution may exacerbate existing inequities. Female workers, for instance, are penalised when earlier retirement ages are imposed on them. This results in lower annual pension benefits, when compared to males with same contribution history and earnings. Females' longer longevity intensifies this problem. Some countries took this concern into account when reforming their system. Mexico and Peru reforms, for instance, adopted the same retirement age for both men and women.

Contribution-defined systems also enable changes to underlying demographic and economic conditions to be automatically incorporated into the system by the market for all pensions (minimum and assistance pensions excluded), while in the PAYG benefit-defined system adjustment is more difficult. It requires politically sensitive negotiations among employers, workers and the government and is usually delayed. However, modifications to the benefit formula, contributions or qualifying requirements are explicitly set forth under the defined-benefit system, and not simply reflected in the changes of the stock of mandatory savings or in the calculation of the

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[11] C. Gillion & A. Bonilla, "La privatizacion de un regimen nacional de pensiones: el caso chileno", Revista Internacional del Trabajo, vol. 111, n. 2, 1992: 193-221

[12] Given their longer longevity, women usually accumulate more benefits than men do under a defined benefit system. On redistribution and pension schemes see L. Willmore, Social security and the provision of retirement income, University of London, The Pensions Institute, Discussion Paper P1-9805, February 1998.

indexed annuities as in the defined-contribution system[13] . It is nonetheless true that certain practices by the government such as freezing benefits, defaulting on payments or manipulating indexation indices are no longer possible. Finally, government appropriation of funds accumulated in the individual accounts becomes more difficult. It would correspond to expropriation of private property. The political risk is therefore much smaller. Naturally, under the fully funded privately managed system the government still has access to these funds by limiting investment options to government papers or by taxing pension benefits. In a nutshell, as far as political economy considerations are concerned, the new systems avoid perverse redistribution. It also minimises government appropriation of such monies, but it does not necessarily put these funds out of the reach of government taxation and intervention.

It is obvious that the costs of inaction are high, but reforms are quite costly as well. And this is another lesson learnt from Chile inspired reforms. They are expensive not only for the state and the taxpayer, as it will be discussed below, but also for the affiliates. Commission charges imposed by the APFs are high: around 3% of wages, that is, 30% of contributions. Similar charges were reported in other reforming countries. This is because marketing and sales related expenditures are high in order to attract affiliates who can switch AFPs at any time in the case of Chile. Indeed, there is a lot of AFP switching in Chile: about 50% of all contributors in 1996. Later reformers were less permissive and restricted the number of switches over a specified period (usually two switches per year). Finally, fees charged by the insurance companies that provide retirees with annuities are also costly. In the case of Chile, they amount to about 4% of the value of the contract and usually carry a low implicit interest rate.

A related problem is the existence of a great deal of concentration within the industry and the APFs that have most affiliates are not necessarily those offering lower commissions and higher returns, but rather those with an "established " name and considerable marketing effort. The problems of high costs and industry concentrations — although in some countries not as pronounced as in Chile — are also present in the other reformed systems in their a fully funded component.

The Chilean reform was also expected to increase coverage and decrease evasion. As benefits are tied to contributions there is — in theory — an incentive for their prompt payment. This is not the case, and delinquency remains quite high in the system. About 40% of the AFP's affiliates are not active contributors. Similar behaviour exists in the other countries. In Argentina, for instance, the degree of noncompliance in the defined contribution system is actually higher (50%) than the one observed in the defined benefit system.[14] It is possible that the fact that the government guarantees the payment of a minimum pension contributes to such

[13] R. Cortazar, "The new Chilean pension system: lessons after 15 years", in Sustaining social security: 123-42.

[14] D. Vittas, op. cit., p. 9.

outcome. Hence, incentives for full compliance may be not present in the reformed system either. Alternatively, inability to pay may be due to temporary unemployment or any other unforeseen circumstances. In the case of Argentina, there is greater evasion within the self-employed, as they also have to bear alone the cost of the contribution that would have been made by the employer.

Supporters have also stressed the importance of the reforms for removing labour market distortions created by perverse incentives, the deepening of financial markets in the country and for its contribution to increased savings. Indeed, many have been advocating the adoption of similar reforms, that is the switch to a fully funded system, by other countries to attain similar results. The first two outcomes are usually accepted — although one should not forget that specific reforms undertaken by Chile on the banking system and the privatisation process also gave a boost to the development of local financial markets — and their importance in fomenting growth recognised. The third one — increased savings — however, has proven to be considerably more controversial.

Aggregate savings did increase in Chile, from about 19% of the GDP during the period 1978-80 to about 27% of GDP in the period 1991-93. Yet, it would be wrong to affirm that such increase in savings was the sole result of the social security reforms[15]. As a matter of fact, such radical reform may not be required if its main objective is to increase savings. Higher saving rates may also be achieved as a result of a more modest reform in the PAYG system. Indeed, it is not obvious that the simple replacement of a PAYG by a fully funded system can increase savings at all. Changes in the contribution rate (or cuts in entitlements) are required. In fact, unless the contribution rate is raised and private agents do not replace their voluntary savings by their mandatory savings by the same amount, the new fully funded system may contribute to the generation of additional savings. On the fiscal side, and assuming no change in the contribution rate, the government may run a larger deficit, as it will have to keep honouring pension rights acquired by current pensioners without the payment of contributions by current workers (these are channelled to their individual accounts). Such deficit, however, is offset by the surplus being accumulated in the fully funded system. Aggregate savings may also increase if the government decides to run a surplus in its primary accounts to compensate for the deficit in the social security accounts. Alternatively, the government may opt for reducing entitlements. In this case, public deficit would be smaller and more than offset by the flows of contributions in the fully funded system[16]. Savings can only increase if consumption decreases. This may be achieved by more conventional reforms (higher taxation and/ or lower entitlements, provided private agents

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[15] On Chile's recent policies and macroeconomic performance see World economic and social survey, 1996 (United Nations sales publication n. E.96.II.C.1: 164-69.

[16] G. A. Mackenzie, et al. "Can public pension reform increase saving?" Finance and Development, December 1997: 46-49.

do not decrease their voluntary savings) or by tighter fiscal policies[17]. Neither privatisation nor funding is a requirement for savings to increase.

In the case of Chile, the costs of the reform have been high. Costs correspond to an annual average of 3% of the GDP for a period of 40 years [18] . It reached more than 6% of the GDP in 1984. Such costs have been financed by a drastic public retrenchment. The public sector primary balance registered substantial surplus in the years previous to the reform (about 5% of GDP in 1979 and 1980) and a great deal of fiscal austerity since then. Therefore, the Chilean reforms have been financed by the current generation through lower government expenditure and this is possibly a major factor behind the increase in savings. It is worth recalling that a budget surplus is not a sine qua non condition for implementing this type of reform. The government can finance its unfunded social security liabilities through debt issuing. This corresponds to the transformation of the implicit debt — in the form of future pension claims — into an explicit debt — in the form of government paper. The impact on aggregate savings however would not be positive.

Finally, as far as savings is concerned, on should stress that the reforms do not free the savings question from the demographic factors, that is, from the ageing of the population. Eventually, based on current fertility trends, the share of the non-working old in the population will increase and an additional share of the national income will have to be devoted to them. Aggregate savings may decline if a certain standard of living is to be maintained during old age. Therefore, the distribution of the GDP between consumption and savings will have to be renegotiated unless GDP growth is fast enough to ensure additional resources in the future. Consequently, if a social security reform generates higher savings, which is then invested in productive activities, the resource base may expand. The distribution between active and inactive workers may be less problematic. But if growth and distribution are the issues, "the funding versus the PAYG controversy can therefore be argued rather to miss the point by concentrating on a method of increasing output which is both indirect and debatable. [19] "

Chilean inspired reforms require substantial government involvement. This may imply that this type of reform is not easily replicable in other developing countries. The State regulates monitories and supervises the new system. A great deal of administrative capacity is thus required. Additionally, the government guarantees benefits for those whose earnings fall short of what is required to obtain a

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[17] For desegregation of savings components in Chile see H. Holzmann, Pension reform, financial market development and economic growth: preliminary evidence from Chile, IMF Staff Paper, vol. 44, n. 2, June 1997: 149-78. The author also shows that net pension savings were negative until 1989 and small after that.

[18] Costs include the payment of pensioners' benefits on the public system plus the expenditures on "bonos de reconocimiento" for those who migrate to the private system. See World economic and social survey 1 995, United Nations sales publication n. E.95.II.C.1.

[19] N. Barr, The economics of the welfare state, Stanford, Stanford University Press, 1993: 233.

specified minimum. It also guarantees the overall performance of the privately managed system by covering for those APFs that eventually run into bankruptcy. The "privatised " system is in fact very much public. Therefore, contrary to what is usually claimed, the reforms did not free the public budget — and therefore the taxpayers — from having to commit additional resources to the old age branch of social security.

Problems such as those described above may be compounded whenever participants have choice between the public and the private system. Adverse selection problems may emerge because higher risk individuals remain in the public system while lower risk participants opt out. Experts believe that the private option is more attractive for young male workers with higher earnings. Conversely, the public system offers better benefits for those who are relatively older (limited contributory life), in low-income jobs (lower value of contributions) and female (more prone to unemployment)[20]. Adverse selection has been observed in Colombia and Argentina where the majority of affiliates to the public system are relatively older. One can therefore expect a deterioration in the dependency ratio in the public system in the future.

In some countries, political compromise or deficiencies in system design may produce potential additional responsibilities for the government in the future. In Colombia, for instance, workers can switch systems (from public to private or from private to public) every three years. Workers affiliated to the private system do not contribute to the public system while active, but they may become public pensioners — with full pensions — if the private system produces disappointing results and generates pensions that are lower than those provided by the public system. The possibility of a mass migration of workers from the private scheme into the public one on the eve (3 years) of their retirement cannot therefore be discounted. If the defined contribution system fails to deliver, the Colombian reform will actually mean less than originally intended. It will be restricted to a reformed, less fragmented, public system with tighter requirements and relatively lower benefits. Its financial implications for the public budget, however, cannot be anticipated.

Problems of system design can also be found in the initial stages of the Peruvian reform which, in this case, contributed to a slow implementation of the reform. Initially, contribution rates were higher and qualifying conditions in the private systems were tougher than in the public system, which acted as powerful disincentive to affiliation. As in the case of Chile, the Peruvian reform granted a salary increase for those who switch to the private system. Yet, very few employers could actually afford it. The raise implied in a de facto increase in their labour costs (employers were to pay 6% to the public system). Additionally, affiliates to

[20] U. Ayala, Que se ha aprendido del sistema de pensiones en Argentina, Colombia, Chile Y Peru?, Washington D.C., Banco Interamericano de Desarrollo, serie de Documentos de Trabajo 330, Diciembre 1996.

the private system had to pay an additional 1% of their earnings as "solidarity" contribution to the public system[21] . No minimum pension was guaranteed. As a consequence of such features, affiliation to the new system grew below government expectations and changes had to be introduced later in 1995 and 1996. Contribution rates and minimum retirement ages are now comparable, eligibility criteria to apply to recognition bonds have been relaxed, and the solidarity fee was abolished. A law on minimum benefits and return requirement has been approved but has not implemented so far due to pending regulation. Given their absence, the switch and affiliation to the fully funded system exposes individual workers to additional risks.

Finally, an important feature of the Chilean reform — and which will also be present in Mexico — refers to the inadequate social insurance available in the new system. In the case of Chile, the value of one's pension depends on one's ability to find and keep a job as well as on the returns of financial markets. Risk pooling is therefore less in the defined-contribution system than in the defined-benefit system and, in the case of Chile and Mexico, restricted to the availability of a minimum pension. In Peru and Colombia affiliation to the fully system is not mandatory and social insurance exists under the public system. In Uruguay and Argentina, social insurance is also present in the public pillar.

In the case of compulsory affiliation to the defined-contribution system, pensioners also bear the risk of longevity, as they might outlive their pensions if they choose the option of phased withdrawals rather than the annuity route. While they are still entitled to the minimum pension after they exhaust their funds, it is probable that the change may bring about a loss in welfare for the person concerned if it implies relatively lower benefits. Once in the minimum pension track, the worker faces the inflation risk (as this pension is not indexed) and the budget risk. Alternatively, if the annuity option is chosen, pensioners bear the risk of the discount rate offered by the insurance company from which he/she buys an annuity[22] Additionally, pensioners bear the risks of adverse financial developments. The past stock market and banking crises in many countries can vouch for the volatility of these markets. Lifetime savings can be significantly reduced by such crises. Hence, it is not clear that in the long run the new system will be able to offer adequate replacement rates as Chile has so far[23]. It is therefore possible that many workers will be confined to the benefits of a minimum pension, which es-

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[21] M. Queisser, Pension reform and private pension funds in Peru and Colombia, Washington D.C., World Bank, Policy Research Working Paper n. 1.853, November 1997.

[22] R. J. Meyers & P. Diamond, "Social security reforms in Chile: two views", in P. Diamond (eds.) Social security: what role for the future?, Washington D.C., National Academy of Science, 1996: 209-24.

[23] A defined-benefit program however does not guarantee that benefits will be paid as expected either, but the privately run individual capitalisation system seems to expose individuals to additional risks, unless additional guarantees are given by the State.

tablished at the level of the minimum wage might not ensure that old age would be free from poverty.

CONCLUDING REMARKS

The Chilean reform undoubtedly introduced a revolutionary way to approach retirement pension system and has inspired several other pension reforms in Latin America. Its most valuable contribution is related to the political economy aspects of the reforms. It avoids perverse redistribution within the system and minimises the risk of government appropriation. It also had a positive impact on the development of financial markets in the countries, although those were far from incipient — as in other developing countries — when the reforms were launched in Chile. On the negative side, it represents a costly approach to reform, it led to concentration within the industry and it increased risks faced by the individual. It does not eliminate evasion, and in some of its versions, it introduces adverse selection problems. More importantly, it does not guarantee that old age will be free of poverty, which is (or should be) the main objective of a pension system.

Individual capitalisation and its private management have been advocated to solve a wide range of economic problems from public sector inefficiencies, low savings and incipient financial markets to labour market rigidities and anaemic GDP growth. It is far from clear whether these are the objectives to be pursued by a pension system or whether reforms such as those analysed in this paper can accomplish such goals. One should be realistic about the possible achievements of this type of reform. The success of the reform in Chile can be attributable, in part, to a deep commitment of the government not only through its regulatory role but also as a guarantor of the system. Economic and political circumstances also played a role. The Chilean pension reform was not performed in the vacuum. On the contrary, it has been one of the elements of a comprehensive economic reform introduced in the country during the last 25 years. These structural reforms also enabled and facilitated the implementation of the pension reform. Policy makers therefore should be aware of the adequacy of the policy instruments they choose to achieve certain objectives. The transformation of a PAYG system in to a fully funded one per se has at best a debatable positive impact on growth. It does not necessarily increase national savings or eliminate potential economic problems brought about by the ageing of the population.

Table 1: Coverage of Old-age Pension Benefits in Selected Countries, 1989
(Percentage of working age population covered)

Africa	%
Burkina Fasso	2.4
Cameroon	10.6
Cote d'Ivoire	3.9
Ghana	24.7
Guinee	0.9
Kenya Madagascar	0.8
Morocco	13.0
Mauritius	5.8
Rwanda	48.3
Chad	9.5
Togo	4.2
Tunisia	6.6
Uganda	22.8
	0.3
Latin America and the Caribbean	
Argentina	31 .2
Brazil	30.9
Colombia	13.4
Costa Rica	27.6
Cuba	50.9
Chile	47.1
Ecuador	15.2
El Salvador	8.0
Guatemala	14.9
Mexico Nicaragua Peru	22.0
	14.3
	23.9
Trinidad and Tobago	41 .6
Uruguay	42.1
Asia and the Pacific	
China	21 .2
Iran	9.1
Kuwait	7.5
Pakistan	1 .1
Philippines	36.7
Fiji	34.8

Source: ILO, The cost of social security — Fourteenth international inquiry, 1987-89, Geneva, 1996.
Note: Taking a more comprehensive approach and including other social risks, C. Mesa-Largo reports much higher coverage ratios for Latin American countries and which are comparable to those in developed countries. Argentina - 80%, Chile - 86%, Colombia - 21 %, Costa Rica - 83%, Cuba - 95%, Mexico - 54%, Peru - 22% and Uruguay - 72%. See C. Mesa-Lago, Social welfare reform in the context of economic political liberalisation: Latin American cases, World Development, vol. 25, n. 4: 497-507, 1997.

Table 2: Selected Developing Countries. Social Security Funds Global Balances. 1990-1995 (Share of GDP)

	1990	1991	1992	1993	1994	1995
Argentina	-0.35	0.09	0.29	–	–	–
Bahrain	I .81	1 .87	1 .51	2.00	1 .37	2.05
Bolivia	-0.83	1.04	-0.96	-1 .01	05	-1 .06
Brazil	3.64	-0.17	-0.36	-1 .93	–	–
Burundi	–	–	–	–	–	0.09
Cameroon	-0.04	-0.28	–	–	–	–
Costa Rica	-0.63	-O. 14	-0.18	0.38	0.03	0 04
Cyprus	1 .21	1 .09	1 .45	1 .39	–	1 46
Dominican Rep.	-0.03	0.03	0.02	-0.02	-0.02	–
Egypt	1 .95	2.28	2.39	3.00	–	–
Indonesia	–	–	0.19	–	–	–
Israel	-3.70	-2.58	-3.57	-3.76	-4.1 6	-3.99
Malaysia	0.26	0.26	0.28	0.33	0.32	0.42
Mauritius	-0.70	-1 .01	-1 .00	-O. 64	-0.68	-0.61
Mexico	0.02	-0.23	-0.12	013	-0.04	–
Morocco	0.34	0.21	0.22	–	–	–
Nicaragua	-0.13	0.34	0.41	-0.07	-0.22	-0.32
Panama	-1 .03	-0.60	-1 .1 1	-0.35	0.14	–
peru	0.00	0.19	0.02	0.12	0.08	0.03
Rwanda	0.49	0.35	-0.59	035	–	–
South Africa	-0.07	-0.01	-0.02	-0.05	-0.05	–
Thailand	0.02	0.12	0.1 1	0.13	0.1 7	0.1 8
Tunisia	-0.18	-0.68	-0.60	–	–	–
Uruguay	-3.92	-4.49	-5.04	-2.85	-3.13	-6.65
Venezuela	0.01	0.18	-0.23	-0.07	-0.14	–

Source of data: International Monetary Fund, Government Financial Statistics and International Financial Statistics, various issues.

Table 3: Selected Developing Countries: Social Security and Welfare xpenditure as Share of Total Central Government Expenditures (Period averages)

Latin America	1985-1987		Most Recent Years
Argentina	31.7	47.0	(90-92)
Bolivia a/	21.7	15.2	(93-95)
Brazil	–	30.7	(91 -93)
Costa Rica	15.0	16.0	(93-95)
Dominican Republic	6.0	3.7	(92-94)
Mexico	–	14.6	(92-94)
Nicaragua	13.6	21 .7	(92-94)
Panama	13.6	21 .7	(92-94)
Uruguay	49.6	60.8	(93-95)
Venezuela a/	6.3	–	–
Asia			
Bahrain	2.0	3.4	(93-95)
Cyprus	19.6	23.4	(93-95)
Israel	16.8	24.4	(93-95)
Indonesia	–	5.3	(1 994)
Malaysia b/	4.0	7.0	(94-96)
Thailand	3.2	3.5	(93-95)
Africa			
Burundi	–	7.3	(1995)
Cameroon c/	4.2	0.9	(93-95)
Egypt	11 .2	10.4	(91-93)
Mauritius	15.4	16.4	(93-95)
Morocco	6.2	5.5	(90-92)
Tunisia	12.4	14.1	(90-92)

Source of data: IMF, Government Finance Statistics, various Issues. a/ 1986-87, b/ 1988-90. c/ 1985.

Table 4: Old-age Pension Reforms in Selected Latin American Countries

Reforms	Argentina (1994)	Chile (1981)	Colombia {1 994)
Public regime	Reformed.	Phased out. Old workers had option to switch. New entrants to LF cannot opt.	Reformed Reforms affect younger than 40 (men) and 35 (women).
New system	Mixed, dual system. The public PAYG system offers universal basic pension. (UBP) Complementary pension (CP): choice between a defined contribution fully funded (FF) capitalization or the defined benefit public system (PAYG).	Fully funded, individual capitalization, privately managed (AFP) and publicly regulated and supervised.	Dual system. Contributors can choose between a public partially funded PAYG (scaled premium) system and a privately managed fully funded, individual capitalization system.
Retirement age	65, males 60, females	65, males 60, females	62, males 57, females

Minimum period of contribution	30 years	20 years for minimum pension	20 years under the pu-blic option
Special programs?	Yes, military	Yes, military keep old system.	Yes, state oil company employees, teachers, military, national police.
Payroll taxes	16% employers (funds the UBP) 11% employees (funds the CP)	10%, paid by employee	For both systems: 13.5% (75% paid by the employer; 25% paid by the employee)
Mandatory wa-ges Increase?	No	Yes,	No
Expected benefits	Public pillar: UBP=2.5 times the Aporte Medio Previsional Obligatorio {AMPO) and equivalent to 27% average covered wage. Higher with more years of contribution. AP: 1.5% avg indexed salary previous 10 years, for every year of contr. into the new system.	Contributions plus net return on investment. Lump sum (buy annuity from insurance company) or phased withdrawals.	Public system: 65% of contribution bases over previous 10 years, increment with additional years. FF system: contributions plus net return.
Any guaranteed benefits?	Yes. Under the FF system: Minimum return requirement. Maximum benefit of 5 times the UBP in case of AJPF goes into bankruptcy.	Yes, minimum rate of return on investment. Minimum pension equals to 20% reference wage.	Public system: minimum pension equals to one minimum wage (MW). FF system: State supplements pension up to 1 MW. Requires 23 years of contribution.
Acknowledge-ment of past contributions?	Yes, in the form of the compensatory pension (CP): 0.85% of previous 10 year wages and taking into account the number of years in old system. Requires 30 years of contribution.	Yes, "bonos de reconocimiento" J paid at retirement plus 4% interest per year. Paid at retirement. Requires a minimum of 12 months of contr. to old system.	Yes, "bono de reconocimiento", indexed and with interest, 3 to 4% per year, paid at retirement. Requires a minimum of 3 years of contribution to the old system,
Other	AJFPs can be publicly operated. or managed by not-for-profit groups.	Social assistance pension (means tested) financed by general taxation. Limited to 300,000 beneficiaries.	Those who earn over 4 minimum wages pay an extra 1% for Solidarity fund (finances contri-butions for those who cannot afford to pay)

Sources: SSA, Social security programs throughout the world 997 (SSA Publication n. 13-1 1805), August 997; C. Mesa-Lago, Social welfare reform in the context of economic-political liberalization: Latin American cases, World Development, vol. 15, n. 4: 497-517, 1997: C. Mesa-Lago, "Las reformas de las pensiones en America Latina y 'a posicion de los organismos internacionales", Rev;sta de 'a Cepai, n. 60: 73-94, Dec. 1996; G. A. Mackenzie et al., Pension regimes and savings,

Table 4: Old-age Pension Reforms in Selected Latin American Countries

Mexico (1997)	Peru (1993, 1995)	Uruguay (1996)
Phased out. Current pensioners: unaltered entitlements. Transition pensioners: retain option to retire under old terms. New workers: new plan	Reformed.	Reformed Those older than 40 can switch to FF. Younger than 40 are compulsorily covered by the FF system
Fully funded, individual capitalization. Privately managed Administradoras de Fondos de Ahorro para el Retiro (AFOREs) but publicly regulated and supervised.	Dual system. Choice between the public, partially funded public PAYG (scaled premium) and the fully funded privately administered (AFP), publicly supervised, individual capitalization.	Mixed. Public PAYG system offers basic pension (BP). Fully funded, privately managed (AFAP), individual capitalization system offers a complementary pension (CP)
65 for both males and females	65 for both males and females	60, for both males and females advanced age ret. at 70
1250 weeks for minimum pension	20 years	35 years 15 years for the advanced age pension
No, all workers entering labour force after 1 Jan 97 are covered by the new system,	Yes, fishermen, stevedores and employees not covered under the national pension system.	Yes, bank employees, notaries, university graduates, armed forces and police.
6.5%, employee Government pays Mex $l .00 a day (social quota)	Public system: 11 % by employee FF system: 11.6%, by employee	12.5% by employer (finances the public system) 15% by the employee, split between the public and the FF.
No	Yes, if employees switch to FF system	No
New system: AFORE balances (including INFONAVIT sub account). Transition workers also get back their 1993-96 SAR accounts. Phased withdrawals or buy a annuity from insurance company.	Public system: basic pension: 50% reference salary (average wage final previous 3 years), plus 4% per year beyond a minimum of 20 years. FF system: balances at the AFP, phased withdrawals or annuity (bought from insurance company)	Public system: BP is 50% of average earnings previous 10 years, Increases with longer working life. FF: contributions made and interests accrued.
Minimum pension equals to 1 MW, as of 1 Jan. 1997, indexed to the CPI, Requires a minimum contribution of 1 , 250 weeks. No guaranteed minimum rate of return	Public system: Yes? FF system: The original decree did not foresee a minimum guaranteed pension. Later changed by the July 95 legislation Any other guarantee? (CHECK).	Minimum pension under the public system equals to 1 MW No minimum pension guarantee in the private system.

No, Transition workers can choose benefits.	Yes, “bonos de reconocimiento”. Price indexed but no interest. Requires 4 years of contribution during the period 1982-92.	Those who shift get 75% of the pension they would have been entitled under the PAYG system (check, ML did not mention any).
No investment in foreign securities is allowed. Early retirement at 60 if unemployed		The state pays a social assistance pension for the old poor aged 70 and over. AFAPs can be operated by public agencies.

IMF Occasional Paper n. 153, Washington DC IMF. August 1997; R. Cortazar, “The new Chilean pension systems. lessons after 15 years”, Sustaining social security, United Nations Sales Publication n. E.97.iV.3: 123-41; M. Nitsch & H. Schwarzer. “Recent developments in financing social security in Latin America ”.Issues in social protection, Discussion paper n. 1. Geneva, ILO, 1996 Note: Figures in brackets indicate the first year of implementation of the reform.Revista de Economia Política, vol. 20, n o 1 (77), janeiro-março/2000