J. Lat. Amer. Stud. **40**, 1–28 © 2008 Cambridge University Press
doi:10.1017/S0022216X07003616 Printed in the United Kingdom

Pension Reform in Latin America: Distributional Principles, Inequalities and Alternative Policy Options*

CAMILA ARZA

Abstract. During the 1990s a wave of major structural reforms that changed the distributional principles underpinning pension policies spread across Latin America. Outcomes were not always as expected. The implementation of new pension rules in the socio-economic, political and institutional context of Latin America has resulted in a number of inequalities which affect pension system performance and the gains that different income groups and generations may obtain. In order to overcome the distributional drawbacks of reform, Latin American governments may need to afford a new role to non-contributive pensions, as well as consider the application of specific regulatory adjustments to reduce the risks and inequalities involved in the private pillar. Cross-border policy learning may provide useful tools to achieve these aims.

Keywords: Pensions, pension reform, inequality, distribution, non-contributory benefits, private pensions, three-pillar, defined-contribution, coverage, Latin America

Introduction

Following the economic restructuring of the early 1990s, pension reform acquired a privileged place in the policy agendas of Latin American governments. The reduction of the economic role of the state, combined with the processes of deregulation, privatisation and liberalisation that spread across the region, challenged the continuity of public pension systems. In many countries, the pension policy paradigm which had existed for at least half a century shifted towards a new model based on individual savings and private administration – an approach largely shaped by the ideas published in the

Camila Arza is visiting professor at the Social and Political Science Department, Pompeu Fabra University. Email: camila.arza@upf.edu

* I would like to thank Colin Lewis for his invaluable help throughout the research on which this paper is based. I am also indebted to Nicholas Barr, Peter Lloyd Sherlock and Rubén Lo Vuolo for comments and suggestions, and to four anonymous referees for critical advice on how to sharpen the argument and presentation of the paper. Naturally, any errors of fact or interpretation remain my own.

World Bank's 1994 report *Averting the Old Age Crisis*.[1] Throughout the 1990s, however, research with an interest in Latin American pension policy was largely focused on the financial prospects and economic impacts of existing schemes, rather than on the models of equity underpinning social security arrangements, which had been central to most European welfare analysis.[2] Most of the concepts used to classify and compare pension reform alternatives were centred on the administrative and financial aspects of the system: for example, defined-benefit vs. defined-contribution, pay-as-you-go vs. funding, public vs. private, and so forth. The conception of pensions as a mechanism for social stratification, which reflects a political logic and a model of equity, tended to be left out of most Latin American policy-oriented research.[3]

To a certain extent research interests reflected what was going on in the policy arena: throughout the 1990s and into the new century, broadly speaking, Latin American policymakers showed limited interest in the impacts of pension reform on equality and stratification. It was only after reforms were approved and implemented in many countries that concerns about their impacts began to emerge. This article seeks to bring the study of equality into the analysis of pension reform in Latin America by evaluating competing pension models in terms of their distributional logic and stratifying potential. It is structured as follows: the first section discusses the key concepts that can be used to classify and compare pension models according to their distributional logic. The second section analyses the experience of pension reform in Latin America. It shows that even when alternative (specific) reform designs have been adopted, a general trend is identifiable across all the major reforming countries towards new distributional principles and outcomes. In practice, the operation of this new pension model has been more problematic than initially assumed. This article considers three key

[1] World Bank, *Averting the Old Age Crisis: Policies to Protect the Old and Promote Growth* (Oxford, 1994).

[2] See, for example, Gøsta Esping-Andersen, *The Three Worlds of Welfare Capitalism* (Cambridge, 1990); Francis G. Castles (ed.), *Families of Nations: Patterns of Public Policy in Western Democracies* (Aldershot, 1993); Maurizio Ferrera, 'The "Southern Model" of Welfare in Social Europe', *Journal of European Social Policy*, vol. 6, no. 1 (1996), pp. 17–37; Maurizio Ferrera, 'The Four "Social Europes": Between Universalism and Selectivity', in Martin Rhodes and Yves Mény (eds.), *The Future of European Welfare: A New Social Contract?* (New York, 1998), pp 81–97; Joakim Palme, *Pension Rights in Welfare Capitalism: The Development of Old-Age Pensions in 18 OECD Countries, 1930 to 1985* (Stockholm, 1990); Julian Le Grand, *Not Only the Poor* (London, 1987); and Richard M. Titmuss, Kay Titmuss and Brian Abel-Smith, *Social Policy: An Introduction* (London, 1974).

[3] Notable exceptions include Carmelo Mesa-Lago, *Social Security in Latin America. Pressure Groups, Stratification and Inequality* (Pittsburgh, 1978), *Changing Social Security in Latin America: Towards the Alleviation of Social Costs of Economic Reform* (Boulder, 1994), and Alberto Barbeito and Rubén Lo Vuolo, *La modernización excluyente* (Buenos Aires, 1992).

distributional issues that have characterised reformed systems: (1) coverage inequalities and the limitations of contributory pension design; (2) transition costs and the regressive impacts of budget transfers, and (3) the distributional impacts of shifting the new risks of funded individual accounts to the individual concerned. The third section comparatively evaluates the different policy alternatives available that could improve the distributional outcomes of pension policy in Latin America.

Conceptualising Welfare: the Distribution Pattern of Pension Policy

Distributional issues have always been central to the operation of pension systems. In fact, the achievement of key aims of pension policy – such as income smoothing,[4] poverty prevention, insurance and redistribution – entails a distribution of rights, resources and risks, both inter- and intra-generationally. The particular institutional design that gives form to this distribution has varied over time and across countries, and has been a central variable used to classify pension arrangements in 'regimes' and 'families'. The distributional outcomes of pension policy in each country, and the net winners and losers, result from the institutional model adopted and the context of implementation in each country. The former sets the rules according to which rights, resources and risks are apportioned across the population; the latter facilitates or constrains the operation of those rules in practice and the achievement of expected outcomes.

Three dimensions can be identified in the distributional nature of pension policy: rights, resources and risks.[5] Most of the literature on comparative welfare research has given substantial importance to the mechanism by which rights to benefits have been allocated in different countries. Indeed, the distribution of pension rights entails a definition of the principle of citizenship underpinning social policy.[6] *Flat-universal* systems, as those characterising some European models with Beveridgean roots[7] (Denmark, Netherlands, Norway), conceive pension benefits as an unalienable right which is independent of both working histories and income levels.

[4] Income smoothing refers to balancing out income over the course of a person's life, transferring resources from periods when income is higher to periods when income is lower, in order to attain the highest possible living standard over the entire life course.

[5] For a more detailed discussion see Camila Arza, 'Welfare Regimes and Distributional Principles: A Conceptual and Empirical Evaluation of Pension Reform in Europe', European University Institute Working Papers, RSCAS 2006/30 (2006).

[6] On conceptions of citizenship in social security design, see Raymond Plant, 'Citizenship and Social Security', *Fiscal Studies*, vol. 24, no. 2 (2003), pp. 153–66.

[7] Beveridgean systems typically provide universal flat-rate benefits which are independent of the work-nexus.

A different approach to the allocation of benefits was adopted in Latin American countries, which have embraced the Bismarckian tradition[8] of distributing pension entitlements according to work and contribution records, under a *contribution-based* model. A third model exists in many countries (with Bismarckian as well as Beveridgean roots) where rights to specific benefits are dependent on a *means-test*, rather than on contributions. This is a model that emphasises the poverty-prevention function of pension policy, restricting eligibility to the needy population. Each of these three models of distribution (flat-universal, contribution-based and means-tested) underlies a principle of economic inclusion; by citizenship, work or need, and defines the subjects of state attention, and thus the political implications of pension reform.

The second distributional dimension of pension policy, the distribution of resources, refers to the way in which net benefits are apportioned in the population; that is, how much each person receives after having discounted for contributions or taxes paid to finance the system. Under a *flat-rate* model of resource distribution, benefits are not linked to past contributions and are given at the same value for all. These benefits have a strong distributional potential: low income groups tend to obtain more than they have contributed, and high income groups receive less. A *residual* model also de-links benefits from contributions, but makes benefits dependent on post-retirement income, such as income from employment, capital, other pensions, and so forth. The central aim of the residual model is poverty prevention, and the value of benefits is set in such a way as to complement existing income up to the minimum income threshold (often the poverty line). In contrast, under an *earnings-related* model benefits depend on previous earnings and tend to reproduce the patterns of income distribution existing before retirement. This is the type of resource distribution traditionally found in most Latin American countries before reforms were adopted. In some cases, earnings-related formulas were 'flattened' in an attempt to produce some progressive redistribution across income groups; for example, providing higher replacement rates for low income workers, or introducing maximum and minimum benefits. Finally, there is the *actuarial* model, where individual benefits fully depend on individual contributions: this is the typical distributional logic of private pension accounts introduced in Latin America over the past two decades.

But pensions do not just distribute rights and resources; they also distribute risks within and across generations. The development of universal pension schemes over the twentieth century has been one dimension of the

[8] Bismarckian pension systems are characterised by state provision of earnings-related benefits to eligible workers.

public management of social risk.[9] This risk-sharing motivation goes beyond redistributive aims in the more traditional sense of transferring resources from the rich to the poor and cuts across the entire social structure.[10] Pension models differ in terms of the risks they face as well as in terms of the way they deal with these risks – that is, the breadth of the risk-pooling mechanism.[11] Universal defined-benefit (DB) systems involve broad risk-pooling: given that there is no explicit link between individual contributions and benefits, the risk of some workers not saving or contributing enough for retirement can be pooled across the population. Contribution-based DB systems, such as those existing in most Latin American countries, can also involve *some* risk-pooling, depending on the specificities of benefit calculation.[12] As pension systems started to shift towards more individualistic types of arrangements, the pooling of risks has reduced. In defined-contribution (DC) systems, the risk of financing is transferred to the individual and no risk-pooling exists between workers with different career paths or income levels, or between generations. Under these systems labour market risks are borne by the individual: low wages, interrupted or short working histories and informal employment are all reflected in low pension accumulation and low benefits. In funded DC systems macroeconomic risks are also largely borne by the individual: low economic growth, high inflation, and poor financial market performance can affect the level of resources in individual pension accounts and thus the value of benefits. Although it was initially assumed that privatisation of pension schemes would eliminate political risks, it is now widely acknowledged that some important political risks – such as irresponsible modifications of pension rules, bad macroeconomic administration, poor pension and financial market regulation – can also affect private pensions.[13] The only area where funded

[9] See Gøsta Esping-Andersen, *Social Foundations of Postindustrial Economies* (Oxford, 1999); and Peter Baldwin, *The Politics of Social Solidarity. Class Bases to the European Welfare State. 1875–1975* (Cambridge, 1996).

[10] Baldwin, *The Politics of Social Solidarity*.

[11] For an excellent assessment of the risks involved in different types of schemes see Nicholas Barr, 'Reforming Pensions: Myths, Truths, and Policy Choices', *International Social Security Review*, vol. 55, no. 2 (2002), pp. 3–36.

[12] The distinction between 'broad' and 'some' risk-pooling reflects different degrees of coverage of the risks of old-age financing. There is no absolute dividing line between the two. While in some cases, for instance, inflation is fully covered (for example, in DB systems with good indexation formulas), in other cases it is not (for example, unindexed annuities). Labour market risks can also be fully covered (when benefits are independent of working histories), covered partially (for instance when the system requires contributions for a period shorter than the whole working life, or when some periods out of the labour market, such as maternity, are insured), or they can be left uncovered (when there is a full link between contributions and benefits).

[13] See Barr, 'Reforming Pensions'; Nicholas Barr, *The Welfare State as Piggy Bank: Information, Risk, Uncertainty, and the Role of the State* (Oxford, 2001); and Robert Holzmann, Richard Hinz, Hermann von Gersdorff, Indermit Gill, Gregorio Impavido, Alberto R. Musalem,

DC schemes maintain risk-sharing is precisely where they perform in a similar way to insurance schemes: the pooling of longevity risks. When workers buy an annuity with an insurance company, the risk of individual longevity – that is, the risk of a single individual living longer than expected – is pooled across the members of the scheme.[14] The redefinition of the risk-pooling mechanisms underpinning pension system design has been a key feature of Latin American reforms, and is likely to have important impacts on reform outcomes.

Pension Reform in Latin America

A new distribution pattern in pension policy

In Latin America, pension reform was one of a number of market-based reforms that aimed to reduce the role of the state and promote open-market economies. However, specific reform designs were not shared across borders. Bargaining processes within countries and previous institutional structures contributed to shape reforms differently in each context. Governments undertook varying degrees of privatisation and assigned a differential role for the state in post-reform pension provision.[15] Institutional diversity remained, but the direction of change was similar across countries undergoing structural reform: a shared shift towards the so-called 'three-pillar' model, where the state administers basic income protection and the bulk of pension policy is left to a privately-managed system of individual funded accounts. In other words, this is a model that converts the core of pension policy into a system of individual savings.

As mentioned above, traditional pension systems in Latin America followed the Bismarckian model. Originally, benefit entitlements were part of a wage package for specific occupational groups. Pension benefits tended to be conceived as a form of deferred salary and this largely explains their contribution-based and earnings-related nature. It has also been a factor to rule out other types of flat-universal pensions which could be applied in countries where benefits were not regarded as part of the salary, but rather as

---

Michal Rutkowski, Robert Palacios, Yvonne Sin, Kalanidhi Subbarao, Anita Schwarz, *Old-Age Income Support in the Twenty-First Century: An International Perspective on Pension Systems and Reform* (Washington DC., 2005).

[14] Cohort longevity, in contrast, if properly projected by the insurance company, is fully borne by the individual who receives a lower benefit in the face of higher (projected) life expectancies.

[15] Carmelo Mesa Lago and Katharina Müller, 'The Politics of Pension Reform in Latin America', *Journal of Latin American Studies*, vol. 34, no. 3 (2002), pp. 687–715.

a universal right guaranteed by the state (an entitlement linked to age and citizenship rather than work-status).[16] Latin American schemes, however, did not completely exclude distributional aims, but solidarity was confined to 'insiders' and denied to the rest. In some cases, however, contributory requirements were rather loose, thus allowing for an expansion of coverage to workers with shorter formal working histories. Another form of intra-group solidarity was the use of progressive benefit calculation formulas that somewhat departed from the strict earnings-related model; for example, those that provided higher relative-to-wages benefits to low income workers. Under these types of benefit formulas, which were incompletely linked to contributions or earnings, risk-pooling was sometimes substantial, but again, only benefited the covered population. Existing systems were far from perfect. Limited coverage, contribution evasion, pension budget imbalances and a substantial degree of discretion in the application of benefit indexation were some of the key issues of concern. As a result of the fragmented origins and the clientalistic use of pension policy, a number of schemes targeted at specific occupational groups coexisted, operating under different eligibility and benefit rules and, in some cases, hiding privileges that affected the legitimacy of the system.

With the exception of Chile, which pioneered pension reform in 1981, ten Latin American countries reformed their pension systems during the 1990s into alternative versions of the 'three-pillar' model advocated by the World Bank.[17] Different specific designs were adopted.[18] Chile, Mexico, Bolivia, El Salvador and the Dominican Republic chose a 'substitutive' model, closing down the old pay-as-you-go (PAYG) system for new entrants and replacing it with individual private accounts. Peru, Colombia and Argentina adopted a 'parallel' system instead, whereby the old defined-benefit (DB) PAYG system is maintained as an option to the funded defined-contribution (DC) system and workers are allowed to choose between one or the other. Finally, Uruguay, Costa Rica and Argentina (again) introduced a 'mixed' system made of a first PAYG DB public pillar and a second funded DC private

[16] On the origins and development of social security in Latin America, see Carmelo Mesa-Lago, *Social Security in Latin America. Pressure Groups, Stratification and Inequality* (Pittsburgh, 1978).

[17] Two other countries (Ecuador and Nicaragua) also approved structural reforms, but never applied them. Implementation was postponed indefinitely in Nicaragua due to the fiscal costs of the transition from one system to another, and in Ecuador due to an appeal in the Constitutional Court, which ended in 2005 with the declaration of the unconstitutionality of several articles of the new pensions law. The Dominican Republic's law has been partially implemented in only one of the three schemes it stipulates.

[18] See Carmelo Mesa-Lago, 'Private and Public Pension Systems Compared: an Evaluation of the Latin American Experience', *Review of Political Economy*, vol. 18, vo. 3 (2006), pp. 317–34.

pillar.[19] The establishment of funded DC pensions as a single or second pillar entailed, to a greater or lesser degree depending on the country, a redefinition of the distribution pattern of pension policy, which maintained (and often strengthened) contribution-based access, but adopted an actuarial model of distribution of resources and reduced the pooling of old-age related risks.

Institutionally, the change in the distribution pattern resulted not from the separation of the pillars itself, but rather from the modification of the mechanisms of benefit calculation and allocation in each of the new pillars (see Table 1). The majority of countries (Chile, Mexico, Bolivia, El Salvador, the Dominican Republic, Peru and Colombia), adopted a pension scheme based on a large second-pillar of individual private accounts, with contribution-based rights, actuarial benefits and limited risk-pooling. A residual first pillar complements the system, and provides a minimum income guarantee financed from general taxation for workers with sufficient contribution records and no other sources of income (hence, a contribution-based *and* means-tested model). In this pillar, by financing contribution-based benefits – which are restricted to workers with contributory records – with resources from general taxation (paid by the whole population), the system generates an 'unbalanced' pooling of risks, whereby the poverty risk of the covered population is shared by the whole population (via taxation) while the poverty risk of the uncovered population is not, with the consequent inequalities that this generates. Costa Rica and Uruguay together constitute a second group of countries that has applied a 'mixed' system, thus giving greater importance to a public first pillar, which maintains the pattern of distribution of the old system; contribution-based rights, earnings-related benefits and some risk-pooling. In the second pillar, the actuarial benefits typical of private personal pensions are adopted. Finally, Argentina has also applied a mixed system similar to Costa Rica and Uruguay, but in the first pillar, the old system's earnings-related model has been replaced with a flat-rate model that has greater distributive potential. This first pillar is financed from social security contributions and continues to restrict eligibility to the covered population – risk-pooling is broad but operates only for 'insiders'. As a system of individual accounts, the second pillar shares the distribution pattern of other countries, with contribution-based and actuarial benefits that provide limited risk-pooling. In Argentina, as in Colombia and Peru, the option remains for workers to choose a public second pillar with contribution-based rights and earnings-related benefits.

[19] In Argentina, the system is both parallel – workers can choose between private or public coverage – and mixed; those who choose private coverage are eligible for 'first-pillar' benefits provided by the state.

Table 1. *Changing the distribution pattern of pension policy in Latin America*

	Old system			New system					
	Single Pillar			First Pillar			Second Pillar		
	Distr. rights	Distr. resources	Risks-pooling	Distr. rights	Distr. resources	Risks-pooling	Distr. rights	Distr. resources	Risks-pooling
Mexico	CB	ER	Broad/Some (within covered)	CB & MT	RS	Broad (unbalanced)	CB	AC	Limited
Bolivia	CB	ER	Broad/Some (within covered)	CB & MT	RS	Broad (unbalanced)	CB	AC	Limited
Salvador	CB	ER	Broad/Some (within covered)	CB & MT	RS	Broad (unbalanced)	CB	AC	Limited
Dominican Rep.[1]	CB	ER	Broad/Some (within covered)	CB & MT	RS	Broad (unbalanced)	CB	AC	Limited
Chile	CB	ER	Broad/Some (within covered)	CB & MT	RS	Broad (unbalanced)	CB	AC	Limited
Peru[2]	CB	ER	Broad/Some (within covered)	CB & MT	RS	Broad (unbalanced)	CB	AC	Limited
Colombia[2]	CB	ER	Broad/Some (within covered)	CB & MT	RS	Broad (unbalanced)	CB	AC	Limited
Uruguay	CB	ER	Broad/Some (within covered)	CB	ER	Some (within covered)	CB	AC	Limited
Costa Rica	CB	ER	Broad/Some (within covered)	CB	ER	Some (within covered)	CB	AC	Limited
Argentina[2]	CB	ER	Broad/Some (within covered)	CB	FR	Broad (within covered)	CB	AC	Limited

Notes: CB = Contribution-based; MT = Means-tested; FR = Flat-rate; RS = Residual; ER = Earnings-related; AC = Actuarial.

[1] The Dominican Republic law has been partially implemented in only one of the three schemes it stipulates.

[2] As the system is 'parallel', workers can opt for a public second-pillar pension with a CB rights, ER benefits and some risk-pooling (within the covered population).

Source: Own elaboration based on *Social Security Worldwide* database compiled by the International Social Security Association.

To a greater or lesser extent, depending on the country, a modification in the pattern of distribution of pension policy appears in all major reformers. Pension systems continue to allocate rights according to contribution records, although often more strictly than before, and there is also a new role for means-tested benefits in the first pillar. In contrast, the distribution of pension resources no longer exclusively follows an earnings-related model, shifting instead to an actuarial model of distribution with the introduction of private individual accounts. The pooling of risks becomes more limited: it virtually disappears in the second pillar and is maintained in the first pillar, but in an unbalanced form. Overall, pension reform in Latin America entailed a redefinition of the policy paradigm, characterised by a reduction of the role of the state in pension administration and a transformation of the bulk of pension policy into an income-smoothing devise that facilitates individual savings. Redistribution is restricted to the (covered) bottom income groups as a minimum income guarantee. For the rest of the covered population, pension benefits tend to be actuarially distributed, reflecting individual saving efforts. Even when the specificities of reform differed across countries (as did the political processes leading to reform), a substantial shift in principles of distribution underpinning pension policy appears in all major reformers. The distributional impacts of reform on the ground will depend on this new distribution pattern, as well as on the macroeconomic and socio-demographic contexts within which these new systems are being applied. The interaction between pension system design and the context of implementation has been crucial in defining the outcomes, effectiveness and limitations of the new system.

The real world: implementation impacts unveiled

Although distributional issues were not at the centre of the discussions surrounding reform processes, they formed part of at least two arguments supporting the need for change. In an attempt to legitimise pension reform, reference to the distributional limitations of existing pension schemes was oriented to contest the widespread idea that public PAYG systems promote equality and solidarity between workers and generations. In fact, the argument goes, there are two sorts of inequalities in traditional pension systems: first, the proliferation of 'privileged' schemes, often enjoyed by higher income groups but paid for by the whole population; and second, the regressive effects of differential mortality between the rich (who live longer and hence receive more benefits) and the poor. PAYG financing was also regarded as inter-generationally unfair: as both cohort sizes and pension rules change over time, some generations can benefit more than

others.[20] While there was a case for these concerns about the distributional limitations of existing systems, the policy options adopted to solve them were not necessarily the most adequate for the Latin American context. Privileged pension schemes need not exist in a public PAYG system, and many of them actually remained after reform.[21] Regressive income transfers resulting from differential mortality were indeed a drawback of existing systems but, as explained below, the problem was not solved with three-pillar pensions. Neither were funded systems exempt from the effects of demographic change.[22] Thus a shift to three-pillar pensions was not necessary to deal with the distributional drawbacks of existing schemes.

A dual equity principle sustained the three-pillar pension model. On the one hand, the individualisation of benefits under an actuarial distributional logic was expected to restrict intra- and inter-generational redistribution to the minimum, thus simultaneously eliminating the sources of 'perverse' redistribution. On the other hand, the concentration of redistribution in the first pillar only would make income transfers more transparent and better targeted at low income groups. These were the implicit assumptions underpinning reforms following the three-pillar model. However, the bulk of intra-generational inequalities across Latin American countries did not result from differential mortality or from privileged regimes, but rather were a consequence of a combination of partial and unequal coverage (which was not remedied by the reforms) and public pension deficit financing, which dramatically increased after the reforms as a result of the transition costs involved. The transition process itself would also introduce new inter-generational inequalities by burdening some generations with the 'double-payment' problem. Last but not least, private pensions were not intrinsically 'safer' than publicly administered PAYG systems, because they suffered from new types of financial and management risks and were not completely exempt from already existing demographic and political risks.[23]

Throughout Latin America, the application of the new ideas of pension financing seemed to assume there was a single 'best model' which could be

[20] It was argued, for instance, that 'Some of the problems [of PAYG systems are] the inevitability of intergenerational transfers and low rates of return to later cohorts'; World Bank, *Averting the old-age crisis*, p. 236.

[21] Remaining special regimes include, among others, schemes for public employees in Mexico, Peru and Colombia, for oil industry employees also in Mexico, and for the armed forces in most countries. See Mesa Lago and Müller, 'The Politics of Pension Reform'.

[22] See Barr, 'Reforming Pensions'; John Eatwell, 'Pensions, Fiscal Policy and the Distribution of Risk', paper presented at the Conference Pension Fund Capitalism and the Crisis of Old-Age Security in the United States, New School University, New York, 10–11 Sept. 2004; and Peter R. Orszag and Joseph E. Stiglitz, 'Rethinking Pension Reform: Ten Myths about Social Security Systems', in Robert Holzmann and Joseph E, Stiglitz, *New Ideas about Old Age Security: Towards Sustainable Pension Systems in the 21st Century* (Washington D.C., 2001), pp. 17–89.

[23] See Barr, 'Reforming Pensions'.

adopted in all countries independent of the diverse and far from perfect contexts of implementation. But it soon became clear that the particular characteristics of Latin American labour markets, macroeconomics and institutional history, would make the outcomes of this model diverge, sometimes substantially, from original expectations. Socio-economic, institutional and labour market contexts particularly affected the distributional impacts of reform: large informal labour markets almost everywhere, and an institutional context of long-lived and in some cases quite extensive PAYG pension systems, led to at least three sorts of inequalities. Most of these were not acknowledged, at least not explicitly, in the official discussions surrounding Latin American reform processes.

Distributional impacts of unequal coverage

Coverage inequalities have been a pervasive element of pensions systems in Latin America since their inception. Thus when reform was introduced, it was not new to policymakers that a large share of the population was uncovered; mostly low income workers in the informal economy. At that point in time, the diagnosis put forward by reformers was that low coverage originated from both lack of positive incentives and lack of trust in the system: as there was no link between contributions and benefits, workers tended to see contributions as a tax like any other. Greater transparency, administrative efficiency and a closer link between contributions and benefits in the new system could produce, it was thought, better incentives and induce most workers to participate.[24] A few years after reforms were implemented it became clear that outcomes were not as expected: pension coverage continued to be stubbornly low, very unequally distributed and in some cases virtually only available to the highest income groups (see Table 2). The diagnosis of lack of compliance changed from 'discouraged workers' to 'rational workers' who decided not to contribute because, being poor, they tend to have a high discount rate for future consumption. Or, to put it simply, regardless of the type of system and the incentives it may produce, it makes no sense for the poor to save for retirement if their current needs risk being unmet.[25] Incentives were not enough – in order to provide old-age income security and poverty-prevention for the whole population, pension policy needed to acknowledge the limitations of the contributory system.

[24] See World Bank, *Averting the Old-Age Crisis*; and Olivia S. Mitchell, 'Building an Environment for Pension Reform in Developing Countries', World Bank, Social Protection Discussion Paper 9803 (Washington D.C., 1998).

[25] Indermit S. Gill, Truman Packard and Juan Yermo, *Keeping the Promise of Old Age Income Security in Latin America* (Washington D.C., 2003).

Table 2. *Pension coverage rates in Latin America*[1]
(percentage of the employed population who makes contributions to a pension scheme)

	Year	Quintile 1 (lowest)	Quintile 2	Quintile 3	Quintile 4	Quintile 5 (highest)
With structural reforms implemented						
Argentina	2004	9.6	31.0	44.1	53.8	59.3
Bolivia[1]	2002	0.5	2.6	7.5	13.2	30.9
Chile	2003	53.1	62.6	65.8	68.7	72.4
Colombia	1999	11.9	12.9	21.9	33.8	54.4
Costa Rica	2004	50.3	61.0	64.8	69.5	77.8
Mexico	2002	7.9	25.6	38.9	48.8	57.7
Peru	2003	1.3	4.7	11.6	21.5	37.7
El Salvador	2003	13.2	19.5	31.2	40.1	55.8
Uruguay	2004	25.0	50.3	62.8	73.2	75.6
With no structural reforms implemented						
Brazil[1]	2002	21.0	40.5	49.9	60.5	69.8
Ecuador	2004	14.3	16.8	23.0	33.6	50.2
Guatemala	2000	2.1	11.1	19.3	27.2	40.4
Nicaragua	2001	5.0	12.8	20.6	30.0	28.8
Paraguay	2004	0.6	3.7	10.1	19.5	28.3
Venezuela	2004	20.5	29.0	35.5	42.6	52.3

[1] Only contributory pensions included. Bolivia and Brazil have significant additional coverage through non-contributory pensions.

Source: Rafael Rofman and Leonardo Lucchetti, 'Pension Systems in Latin America: Concepts and Measurement of Coverage', World Bank Social Protection Discussion Paper, No. 0616 (Washington D.C., 2006), Annex I.

However, for most governments in the region, the problem of contributory social security to reach poor and informal workers was not an issue of concern until very recently.[26] When reforms were passed, the focus was largely oriented to pension financing and privatisation. Governments were eager to introduce private provision and ensure that the transition costs of shifting from public to private pensions could be met. Furthermore, the demand for resources needed to re-establish the financial equilibrium of pension schemes in deficit and to guarantee a smooth transition to funded individual accounts encouraged governments to increase the number of contributory years

[26] In the scholarly literature, however, the issue had been raised on a number of occasions before and during the reform processes. See for example Mesa-Lago, 'Changing Social Security', and 'La Seguridad Social y el Sector Informal', ILO-PREALC (Santiago de Chile, 1990); Armando Barrientos, 'The Changing Face of Pensions in Latin America: Design and Prospects of Individual Capitalisation Pension Plans', *Social Policy and Administration*, vol. 31, no. 4 (1997); and Rubén Lo Vuolo and Alberto Barbeito, 'La Reforma del Sistema Previsional Argentino: El Mercado de Trabajo y la Distribución del Ingreso', *Estudios del Trabajo*, vol. 6, no. 2 (1993), and *La Nueva Oscuridad de la Política Social. Del Estado Populista al Neoconservador* (Buenos Aires, 1994).

required for retirement. This has helped to increase revenues and reduce expenses, but at the same time it strengthened the contributory nature of the pension system. In countries where there was no structural reform or privatisation of pension provision, the Bismarckian tradition also sustained contribution-based rights, which in the context of unequal coverage generated similarly unequal outcomes. No real effort was made to increase the scope for non-contributory pensions. At present, only a few countries provide assistance to the older groups in poverty, and their coverage is limited. Two notable exemptions are Brazil and Bolivia, where universal non-contributory pension schemes have expanded pension coverage in a very significant way.[27]

By and large, however, throughout Latin America, pension schemes were contribution-based systems which tend to reinforce income inequalities after retirement. This can be quantitatively observed if coverage distribution is included in the estimation of the future distribution of pension benefits, which simply allows for the interaction of institutional and contextual features in the evaluation of the impacts of pension policy. This exercise is presented in Table 3, which demonstrates that in the existing context of unequal coverage, a fully contribution-based pension system generates a post-retirement distribution of income that is even more unequal than pre-retirement income distribution. Three hypothetical pension designs are presented: a fully earnings-related system (case 1), an earnings-related system with minimum benefit (case 2) and an earnings-related system with a flat-rate benefit (case 3), all of them under a contribution-based model of distribution of rights.[28] Gini coefficients show that inequalities increase in all three cases: the inequalities in benefit distribution that result from unequal coverage are so pronounced that they are not overcome with the application of progressive elements in the benefit calculation formula (such as the minimum and flat-rate benefits of cases 2 and 3). While earnings-related benefits reproduce past income inequalities, unequal coverage exacerbates them. Note that the actuarial system (funded DC), applied across Latin American major

[27] In 2000–2001, non-contributory pension benefits represented only 0.2% of GDP in Argentina, 0.4% in Chile, 0.3% in Costa Rica and 0.6% in Uruguay. In contrast, non-contributory pensions concentrated about 1.3% of GDP in Brazil, where quasi-universal rural pensions exist, and 1.2% in Bolivia (year 2004), as a result of the universal pension 'Bonosol' (Fabio Bertranou, C. Solorio and W. van Ginneken, *Pensiones No Contributivas y Asistenciales: Argentina, Brazil, Chile, Costa Rica y Uruguay*, International Labour Office (Santiago de Chile, 2002), p. 19, and Larry Willmore, 'Non-Contributory Pensions: Bolivia and Antigua in an International Context', *CEPAL Series Financiamiento y Desarrollo*, no. 167 (Santiago de Chile, 2006), p. 27). See also Armando Barrientos, 'Poverty Reduction: The Missing Piece of Pension Reform in Latin America', *Social Policy and Administration*, vol. 40, no. 4 (2006), pp. 369–84.

[28] Further methodological details are provided in the note to the table.

reformers, would produce similar distributional impacts in this respect because it maintains the contribution-based distribution of rights and the close link between earnings and benefits. In other words, the inequalities presented here are the direct outcome of a fully contribution-based distribution of rights, no matter whether the system is funded or PAYG, public or private, earnings-related or actuarial. As coverage is unequally distributed, a pension system that is fully contributory and earnings-related (or actuarial), cannot but reflect the combined inequalities in both income distribution and coverage prevailing among the working population. A shift towards others forms of non-contributory coverage are required to remove these regressive elements from pension policy.

Distributional impacts of transition

The results shown above are centred on the benefit side and make no reference to financing. The issue of whether the distributional effects of social security contributions and benefits should be evaluated together has encouraged substantial debate.[29] In any case, part of the justification for the unequal distribution of the pension budget rests on the distribution of financing: the distributional logic of fully-contributory systems is that individuals who pay should be those who benefit. But inequalities in benefit distribution become more difficult to legitimise if they cannot be justified from the financing side or, in other words, if the individuals who benefit – largely high income workers – are not also those who have paid to finance the system. In such cases the system would be sustaining an indirect income transfer from the poor to the rich. In fact, this is what has been happening in many Latin American countries for some time now. Over the few decades preceding pension reforms in Latin America, public pension schemes in a number of countries suffered from financial deficits as a result of the maturation of pension schemes built on inadequate actuarial calculations. Deficits were often paid for with resources from general taxation – in other words, paid by both the covered and uncovered populations, thus eroding the equity logic of the contributory system.

Transition costs have exacerbated this problem. Structural reforms involving a shift from PAYG to funding typically demand significant amounts of resources to finance the unpaid liabilities of workers and pensioners in the old system. As reforms are implemented and worker contributions start to be

[29] See, for example, John Brittain, 'The Incidence of Social Security Payroll Taxes', *The American Economic Review*, vol. 61, no. 1 (1971), pp. 110–25. For a combined cost-benefit analysis for the Argentine case, see Camila Arza, 'Distributional Impacts of Pension Policy in Argentina: Winners and Losers within and across Generations', *International Social Security Review*, vol. 53, no. 3 (2006), pp. 79–102.

Table 3. *Coverage-corrected distributional impacts of alternative pension schemes in Latin America*

Case 1: Fully earnings-related benefit formula (60% of wage)

	Year	Quintile 1 (lowest)	Quintile 2	Quintile 3	Quintile 4	Quintile 5 (highest)	Gini Pensions	Gini Labour Income[1]
Argentina	2004	0.6	4.7	11.3	22.4	61.1	0.555	0.461
Bolivia	2002	0.1	1.0	4.3	11.7	82.9	0.705	0.466
Brazil	2002	1.0	4.2	8.7	17.9	68.2	0.592	0.513
Chile	2003	2.8	6.5	10.4	17.5	62.8	0.524	0.495
Colombia	1999	1.0	2.4	6.2	15.0	75.4	0.645	0.478
Costa Rica	2004	3.4	8.1	12.8	20.9	54.8	0.462	0.411
Ecuador	2004	1.3	3.2	6.7	15.3	73.5	0.627	0.485
Guatemala	2000	0.2	2.4	7.1	15.7	74.5	0.648	0.496
Mexico	2002	0.8	5.2	11.5	21.1	61.3	0.547	0.408
Nicaragua	2001	0.7	3.5	8.7	20.7	66.5	0.595	0.499
Paraguay	2004	0.1	1.5	6.2	18.7	73.5	0.656	0.453
Peru	2003	0.2	1.7	6.1	17.2	74.9	0.659	0.432
El Salvador	2003	1.3	3.9	9.9	19.4	65.5	0.575	0.426
Uruguay	2004	1.2	5.5	11.2	21.7	60.4	0.539	0.473
Venezuela	2004	2.2	6.5	11.9	21.3	58.0	0.506	0.401

Case 2: Earnings-elated benefit (60% of wage) + minimum benefit (20% mean labour income)

	Year	Quintile 1 (lowest)	Quintile 2	Quintile 3	Quintile 4	Quintile 5 (highest)	Gini Pensions	Gini Labour Income[1]
Argentina	2004	1.2	4.7	11.2	22.2	60.7	0.546	0.461
Bolivia	2002	0.2	1.0	4.3	11.7	82.8	0.704	0.466
Brazil	2002	2.2	4.3	8.5	17.6	67.4	0.575	0.513
Chile	2003	5.0	6.3	10.2	17.1	61.4	0.495	0.495
Colombia	1999	1.9	2.4	6.1	14.8	74.8	0.633	0.478
Costa Rica	2004	4.6	8.0	12.6	20.7	54.1	0.446	0.411
Ecuador	2004	2.4	3.1	6.7	15.1	72.7	0.611	0.485
Guatemala	2000	0.4	2.4	7.1	15.7	74.4	0.645	0.496
Mexico	2002	1.1	5.2	11.5	21.0	61.2	0.544	0.408
Nicaragua	2001	1.3	3.4	8.7	20.5	66.1	0.587	0.499
Paraguay	2004	0.2	1.5	6.2	18.7	73.5	0.655	0.453
Peru	2003	0.3	1.7	6.1	17.2	74.8	0.657	0.432
El Salvador	2003	2.0	3.9	9.8	19.2	65.1	0.566	0.426
Uruguay	2004	2.4	5.4	11.1	21.4	59.7	0.523	0.473
Venezuela	2004	3.1	6.4	11.8	21.1	57.5	0.494	0.401

Case 3: Earnings-elated benefit (60% of wage) + flat-ate benefit (20% mean labour income)

	Year	Quintile 1 (lowest)	Quintile 2	Quintile 3	Quintile 4	Quintile 5 (highest)	Gini Pensions	Gini Labour Income[1]
Argentina	2004	1.4	6.9	13.5	23.3	54.8	0.493	0.461
Bolivia	2002	0.2	1.5	5.7	13.5	79.0	0.678	0.466

https://doi.org/10.1017/S0022216X07003616 Published online by Cambridge University Press

Table 3. (*cont.*)

	Year	Quintile 1 (lowest)	Quintile 2	Quintile 3	Quintile 4	Quintile 5 (highest)	Gini Pensions	Gini Labour Income[1]
Brazil	2002	2.6	6.8	11.1	19.3	60.2	0.511	0.513
Chile	2003	6.0	9.5	12.8	18.4	53.3	0.413	0.495
Colombia	1999	2.4	3.7	8.0	16.8	69.2	0.587	0.478
Costa Rica	2004	6.2	10.6	14.5	21.1	47.6	0.373	0.411
Ecuador	2004	3.0	4.9	8.6	17.0	66.6	0.558	0.485
Guatemala	2000	0.5	3.9	9.2	17.7	68.7	0.600	0.496
Mexico	2002	1.6	7.1	13.5	22.3	55.5	0.493	0.408
Nicaragua	2001	1.5	5.4	11.2	22.7	59.2	0.530	0.499
Paraguay	2004	0.3	2.2	7.8	20.8	68.9	0.624	0.453
Peru	2003	0.4	2.4	7.6	19.0	70.7	0.628	0.432
El Salvador	2003	2.7	5.6	11.7	20.5	59.5	0.515	0.426
Uruguay	2004	2.8	8.1	13.5	22.5	53.1	0.460	0.473
Venezuela	2004	4.2	8.6	13.6	21.8	51.8	0.434	0.401

Methodological note: Aggregate benefits that would be received by each income quintile following the benefit formula are 'weighted' by coverage. Thus, for example, a quintile where only 50% of workers are covered is allocated half the benefit it would get from the application of the pension formula to the whole group. Calculations use quintile averages (of coverage and earnings) and thus exclude within-group variation. Coverage in cross-section is taken to represent the whole life cycle of individuals in the group. Calculations illustrate the effects of the pension system on its own. As people may respond to the absence of benefit entitlements (for example, by working longer), the overall distribution of resources, including income from work, family transfers, and so forth, may differ from the purely pension-related distribution showed in the table.

[1] Distribution of household equivalized labour monetary income in urban areas.

Source: Own elaboration based on Rofman, 'Pension Systems in Latin America' (for coverage data) and CEDLAS and The World Bank, 'Socio-Economic Database for Latin America and the Caribbean' (for income distribution).

directed to individual accounts in the new system, the payment of pension benefits in the old system requires additional resources in order to cover the financial gap. The need for resources partly explains the rise in payroll taxes taking place in most countries after the reform.[30] In all cases, however, a significant part of transition costs were covered from the general state budget. A study by the World Bank published in 2004 estimates that pension system deficits will need to be covered from general revenues as far as 2050.[31]

[30] Total payroll taxes increased from 18% to 20.5–22% in Peru; from 17.8% to 33.8% in Colombia; from 20% to 26% in Mexico; from 19% to 24% in Bolivia; from 11.8% to 13.5% in El Salvador; from 22% to 26% in Costa Rica; from 17% to 21.5% in Nicaragua; and from 9.25% to 20% in Dominican Republic; Gill et al., *Keeping the Promise*, p. 21.

[31] For year 2001, pension deficits financed with government transfers were estimated to be about 4% of GDP in Uruguay, 2.5% in Argentina, 0.5% in Mexico, 3.5% in Bolivia, 7.2% in Chile, 1.4% in El Salvador and 0.7% in Peru. For year 2050, the deficits were estimated at 2.8% of GDP in Uruguay, 4.4% in Argentina, 0.6% in Mexico, 0.9% in Bolivia, 5.4 in Colombia, 0.8% in Chile, 0.5% in El Salvador and 1% in Peru, see, Asta Zviniene and Truman G. Packard, 'A Simulation of Social Security Reforms in Latin America: What Has

Country figures differ and fluctuate according to pension design and to the size of the implicit pension debt at the time of reform, but state transfers to finance transition are substantial everywhere.

This entails both intra- and inter-generational inequalities. Pension system deficits are not equally paid by all generations. Young generations at the time of reform are particularly harmed by the 'double payment' problem – throughout their working life they will have to pay for their own retirement via wage contributions and for the retirement of older generations via general taxation. As Lars Calmfors and others state, there is no way to make everybody better off in a process of transition: at least one generation must necessarily lose.[32] On the other hand, in countries with unequal coverage, as prevails across Latin America, the intra-generational inequalities introduced with reform have been sizeable. The cost of the system is increasingly borne by the entire population via general taxes allocated to pay for the transition, while eligibility for benefits continues to be concentrated in the highest income brackets. In other words, in a context of transition, unequal coverage and public pension deficit financing, the poor contribute to pay for a system from which they will not benefit. This generates a straight transfer of resources from low to middle and high income groups that will continue as long as there is a combination of contribution-based access, general budget transfers and unequal coverage. 'Perverse' redistribution here is probably stronger than ever.

Distributional impacts of fully funded pension schemes

In a funded DC system, further intra- and inter-generational inequalities are introduced at the point when private schemes pay out retirement benefits. First, there is the problem of differential mortality, which already existed in the previous system.[33] Upon retirement, workers in the private system have to contract a benefit annuity in the pension insurance market. This annuity is calculated by the insurance company according to the contributions capitalised in the worker's account, a projection of future returns and mortality probabilities. In other words, in order to determine the monthly pension each worker should get, insurance companies need to know how much the

Been Gained?', Background paper for regional study on social security reform, Office of the Chief Economist, Latin American and the Caribbean Region, The World Bank (Washington D.C., 2004), p. 21.

[32] Lars Calmfors, Giancarlo Corsetti, Seppo Honkapohja, John Kay, Willi Leibfritz, Gilles Saint-Paul, Hans-Werner Sinn and Xavier Vives, 'Report on the European Economy 2005', European Economic Advisory Group at CESIFO (Munich, 2005), p. 76.

[33] For a discussion, see Camila Arza, 'Aims, Outcomes and Prospects of Pension Reform in Argentina: An Assessment Ten Years After', New School for Social Research, Argentine Observatory, Policy Paper No. 6 (New York, 2005).

funds accumulated will grow in the following years (future returns), and for how long benefits will be withdrawn (future mortality). In this calculation, insurance companies tend to use a single mortality probability for the whole cohort, thus immediately benefiting workers who live longer than average – usually higher income workers. There are two reasons for this. One is technical: it is often quite complicated to get sufficient knowledge of the individual to enable a more accurate mortality probability to be assigned. The other is a policy reason: private pensions continue to work as a pooling device for mortality risks. In the context of uncertainty on how long each individual could live, the pooling of risks allows the system to prevent some individuals ending up in poverty because they have underestimated their life expectancy. The use of more precise mortality probabilities is possible, although the issue of whether this is desirable or not is complex. Some countries, such as Chile, have allowed insurance companies to divide mortality probabilities according to gender. This has produced rather questionable distributional impacts. While making the system more actuarial, it has in practice made women (who live longer) receive a lower benefit for each unit of resources accumulated. This has deepened gender pension gaps which already existed due to women's lower wages and shorter working careers.

On the other hand, fully funded systems introduce additional inter-generational inequalities resulting from both the differential impact of financial downturns for workers at different points of their accumulation stage and the uncertainties involved in annuisation. In a funded system, the timing of pension fund returns matters. While poor returns at the beginning of the accumulation stage – that is, for young workers – can have relatively small impacts on accumulation, negative real rates of return at the end of the accumulation phase can be particularly damaging. This is because when workers are close to retirement, any change in the fund value resulting from the performance of the financial market can no longer be compensated with future improved performance. Thus workers who experience financial crises, such as those which occurred in Argentina in 2001–2, at the end of their working careers may be more affected than those who experience them at the beginning, thus introducing a random factor of inter-generational inequality in the operation of the system. In other words, two workers who retire at the same age, and have similar wages and working lives, can end up with quite different benefit levels as a result of the different moment of the accumulation cycle in which a crisis has hit them. The same occurs with annuisation. Workers who buy an annuity in periods when projected (real) returns to financial assets are low are likely to get lower pension benefits – given equal contribution accumulation – than those who buy them when projected returns are high. As in most countries annuities are fixed (that is, they are bought once and for all) and have to be purchased immediately after retirement, the

variability of returns introduces another random factor in the benefit levels for workers in different cohorts. A similar problem arises with inflation. Insurance companies are typically unable to cover inflation, so the real value of benefit annuities cannot be guaranteed. If inflation rates are higher than those projected in the annuity calculation, real benefits will inevitably fall. There are some policy instruments which could be used to counteract these distributional failures of the system, yet they have been used in a highly limited fashion in Latin America.

Learning from Experience: Improving Distributional Impacts of Pension Policy in Latin America

Over a decade after the implementation of pension reform in most Latin American countries, a number of studies have been produced to evaluate the performance of the new pension systems. Among them, two reassessments of the operation of pension reform by the World Bank gave greater relevance to the impacts of national environments in the operation of pension systems.[34] These studies acknowledged key problems of the new pension model, such as high costs, low coverage and a significant exposure to political risks. Concerns were also raised about the distributional impacts of reform. The recognised limitations of the contributory system in reaching the broader population opened the way to a more systematic consideration of the role that non-contributory pensions might play in covering the gap. Some of these studies now propose the introduction of a 'zero-pillar'; a non-contributory pension financed from general taxation to provide basic benefits for the entire population.[35] Unfortunately, governments have been much slower to implement any of these reforms than they were to adopt the new pension paradigm over the 1990s. While in theory the problem of coverage can be addressed via alternative models of non-contributory pensions, in practice the specific model of distribution of rights, resources and risks is central to determining the distributional outcomes of the system. Non-contributory pensions can range all the way from universal pensions, where eligibility is only dependent on age, to social assistance pensions – where a means-test is required.[36] One of the reasons why governments in Latin America have tended to prefer means-tested over universal pensions is costs: being targeted to the lowest income brackets, means-tested benefits require less aggregate resources than universal pensions, although some authors have shown that part of the costs of

[34] Gill et al., *Keeping the Promise* and Holzmann et al., *Old-Age Income Support*.
[35] *Ibid.*
[36] For a survey of existing models and their application around the world see Willmore, 'Non-Contributory Pensions'.

universal pensions could be recovered through taxation of high pension earners.[37] A recent report by ECLAC estimated that universal pensions at the poverty line level (excluding savings from taxation) would cost an average of 2.2% of GDP in Latin American countries.[38] The figure is not negligible. However, the experiences of Brazil and Bolivia show that non-contributory universal pensions can be both affordable and effective. The Bolivian pension, universally provided to every resident over 65 years of age, costs about 1.2% of GDP,[39] while the Brazilian quasi-universal pension for rural workers costs around 1% of GDP.[40] Both systems have contributed to increase coverage and reduce old-age poverty in an extraordinary way. In Bolivia, coverage has increased from 13% to 58% in the 65–69 age-group, and from 12% to 83% in the 70–74 age-group.[41] Existing estimations suggest that their impacts on poverty reduction have been very significant.[42] In Bolivia, benefits were also found to have multiplier effects: by helping households invest in home production they have allowed for a rise in food consumption of over one and a half the value of the pension.[43]

While most recent studies have centred on the poverty-prevention impacts of non-contributory benefits,[44] their effects on equality can also be remarkable. Table 4 presents simulations of the impacts that alternative models of non-contributory pensions could have on the distribution of pension income. Both means-tested and flat-rate universal benefits substantially improve the distributional outcomes of pension policy, generating a post-retirement distribution of benefits that is much more equal than the pre-retirement distribution of labour income: a major improvement of the distributional effects

[37] Larry Willmore, 'Universal Pensions in Low Income Countries', Task Force on Pension Reform and Social Insurance, Initiative for Policy Dialogue (Columbia University, 2001).

[38] Comisión Económica para América Latina, 'La Protección Social de Cara al Futuro' (Santiago de Chile, 2006), p. 141.

[39] Data for year 2004. Costs are estimated to grow to 2.9% of GDP by 2050 as a result of population ageing (2% if the eligibility age is raised to 70 years of age); Willmore, 'Non-Contributory Pensions', p. 27.

[40] Peter Lloyd-Sherlock, 'Simple Transfers, Complex Outcomes. The Impacts of Pensions on Poor Households in Brazil', *Development and Change*, vol. 37, no. 5 (2006).

[41] Comisión Económica para América Latina, 'La Protección Social', p. 133.

[42] See HelpAge International, *Non-Contributory Pensions and Poverty Prevention. A Comparative Study of Brazil and South Africa* (London, 2003); Helmut Schwarzer and Ana Carolina Querino, 'Non-Contributory Pensions in Brazil: The Impact on Poverty Reduction', Extending Social Security Working Paper, ILO Social Security Policy and Development Branch (Geneva, 2002).

[43] Sebastián Martínez, 'Pensions, Poverty and Household Investment in Bolivia', University of California at Berkeley, 2004, unpublished.

[44] HelpAge International, *Non-Contributory Pensions*; Schwarzer and Querino, 'Non-Contributory Pensions'; Armando Barrientos, 'Poverty Reduction: The Missing Piece of Pension Reform in Latin America', *Social Policy and Administration*, vol. 40, no. 4 (2006), pp. 369–84; Lloyd-Sherlock, 'Simple Transfers'; Martínez, 'Pensions, Poverty', among others.

of a public policy intervention. The choice between universal and means-tested pensions certainly involves normative assumptions about what the objectives of policy should be.[45] Means-tested pensions are focused on poverty-prevention while universal benefits are based on conceptions of entitlements provided as a matter of right. While an effectively applied means-tested benefit could be regarded as more cost-efficient for poverty prevention, avoiding leakages to the 'non-poor', its comparative advantage for distributional purposes is less clear. In fact, the simulations presented in Table 4 show that, following Gini measures, universal pensions can generate greater distributional improvements than a perfectly targeted means-tested scheme in most Latin American countries. On the other hand, as Gini coefficients value equally income differentials between all groups,[46] any consideration on the progressivity of a policy model will in fact depend on how equality is defined or, in other words, how much weight is given to the welfare of each group in the population. It will also depend on the context in which the non-contributory benefits are to be applied and their interaction with coverage and benefit inequality in other layers of the system. Common assumptions, such as 'means-tested benefits are more progressive because they concentrate resources on the poor', are unable to capture this complexity.

Yet beyond distributional aims, if the objective was only poverty prevention (sharply defined),[47] the choice between universal and means-tested benefits would need to consider the administrative capacity of governments to implement each system as well as their political implications. Some scholars have argued that a problem of means-tested benefits is that they lack political support. This leads to the so-called 'paradox of redistribution'.[48] As Korpi and Palme put it, targeted programmes 'may have greater redistributive effects *per unit of money spent* than other institutional types of programmes', but the size of the redistributive budget is not fixed. While 'the degree of redistribution finally achieved depends on the size of the redistributive budget, … the greater the degree of low-income targeting, the smaller the redistributive budget'.[49] To a significant extent, the size of the

[45] Barrientos, 'The Missing Piece'.

[46] The income difference between the first and the second deciles counts the same, in terms of the inequality coefficient, than the difference between the ninth and the tenth deciles. On inequality measures see Frank A. Cowell, *Measuring inequality* (London, 1995).

[47] The idea of a poverty line that divides the eligible from the ineligible population for means-tested benefits entails a 'sharp' conception of poverty. For a discussion on the implications of a 'sharp' definition of poverty see Anthony Atkinson, *Incomes and the Welfare State* (Cambridge, 1995), pp. 233–4.

[48] Walter Korpi and Joakim Palme, 'The Paradox of Redistribution and Strategies of Equality: Welfare State Institutions, Inequality, and Poverty in Western Countries', *American Sociological Review*, vol. 63 (1998), pp. 661–87.

[49] *Ibid.*, p. 672.

Table 4. *Distributional impacts of different types of non-contributory pensions in Latin America*
(Gini coefficients)

		Labour market income[1]	Non-contributory Means-Tested + Earnings related benefit	Non-contributory Universal + Earnings-related benefit
Argentina	2004	0.461	0.350	0.339
Bolivia	2002	0.466	0.256	0.274
Brazil	2002	0.513	0.413	0.386
Chile	2003	0.495	0.410	0.354
Colombia	1999	0.478	0.359	0.359
Costa Rica	2004	0.411	0.363	0.315
Ecuador	2004	0.485	0.347	0.342
Guatemala	2000	0.496	0.311	0.318
Mexico	2002	0.408	0.328	0.322
Nicaragua	2001	0.499	0.258	0.262
Paraguay	2004	0.453	0.237	0.254
Peru	2003	0.432	0.273	0.290
El Salvador	2003	0.426	0.332	0.327
Uruguay	2004	0.473	0.396	0.365
Venezuela	2004	0.401	0.302	0.288

Methodological note: Gini coefficients were calculated using income deciles. Both the means-tested and the flat-rate benefits were set at 20% of mean wages, but while the universal benefit is allocated to all income groups, the means-tested benefit is only allocated to those who obtain an earnings-related benefit below the minimum threshold (the value of the benefit is such as to increase the total pension up to that threshold). The state budget required for the system design alternative with non-contributory universal benefits is therefore higher than for the alternative with non-contributory means-tested benefits.

[1] Distribution of household equivalized labour monetary income in urban areas.

Source: Own elaboration based on Rofman, 'Pension Systems in Latin America' (for coverage data) and CEDLAS and The World Bank, 'Socio-Economic Database for Latin America and the Caribbean' (for income distribution).

budget depends on the political backing the programme can raise. Means-tested and universal benefits differ in terms of the constituencies they represent and the amount of popular support and legitimacy that can guarantee their continuity. As they target a smaller and usually less powerful part of the electorate, means-tested benefits tend to be politically weaker and more vulnerable to budget cuts. In contrast, universal benefits tend to enjoy greater support and stability.

Apart from political issues, two key advantages of universal over means-tested benefits are related to administrative efficiency and economic incentives.[50] It has been widely acknowledged that means-tested benefits usually entail higher administrative costs for targeting, increase the opportunities for

[50] Larry Willmore, 'Universal Pensions in Low Income Countries', *Working Paper of Task Force on Pension Reform and Social Insurance*, Initiative for Policy Dialogue, Columbia University (New York, 2001).

political manipulation in benefit allocation, and may reduce take-up due to social stigma or insufficient information on complex administrative mechanisms of allocation. Thus from a policy perspective, the capacities of Latin American countries to implement a theoretical model effectively should be taken seriously into consideration. It cannot be assumed that targeting will be effective. While estimations presented in Table 4 refer to a perfectly targeted means-tested benefit where everyone who is eligible applies for the benefit and gets it, and no-one who should not be eligible manages to get it, this is often not the case in practice. It is difficult to get good data on targeting efficacy, but even in developed countries targeting has proved to have significant flaws: Ruth Hancock and others estimate that in the case of Great Britain, roughly 36 per cent of pensioners fail to claim at least one of the means-tested benefits they are entitled to.[51] In Latin America, where political manipulation of government spending is more common, and where there is less administrative capacity for the management of complex testing procedures, the gap can be even larger. In addition, this gap between entitlement and take-up tends to be greater for more vulnerable and less educated groups, thus deepening the inequalities of the system.[52] On the other hand, the perverse economic effects of means-tested benefits have also been acknowledged.[53] Unlike flat-rate universal benefits, means-tested benefits can introduce disincentives to save and work (or at least to declare them): as the value of the benefit received depends on the amount of income (or means) that each individual has available from other sources – including savings, other pension schemes, and work, these schemes can discourage workers to save or continue working after retirement age – especially workers with incomes or savings close to the means-testing threshold.

While the balance between effective poverty prevention, post-retirement income equality, and tax pressure to finance non-contributory pensions is something to be decided, the simulations presented here show the extent to which the introduction of non-contributory benefits could improve the distributional impacts of pension systems. They could also contribute to at least mitigate the intra-generational inequalities resulting from budget financing of social security deficit and reform transition. If their continuity over time can be guaranteed, non-contributory benefits could also improve intergenerational equality, providing similar rights and coverage to every generation, independently of macroeconomic and labour market environments

[51] Ruth Hancock, Stephen Pudney, Geraldine Barker, Monica Hernandez and Holly Sutherland, 'The Take-up of Multiple Means-tested Benefits by British Pensioners. Evidence from the Family Resources Survey', *University of Leicester* (2003).

[52] See Lloyd-Sherlock, 'Simple Transfers'; and *Old Age and Poverty in the Developing World. The Shanty Towns of Buenos Aires* (London, 1997).

[53] See Atkinson, *Incomes and the Welfare State*.

prevailing over the working lives of each. Recent concerns about the distributional implications of allocating limited resources to the old – especially based on the idea of the 'intergenerational conflict' – have made some authors rather reticent to accept an increase in pension spending because they consider this would deepen the already unequal distribution of public resources between different age groups. These ideas are, however, at odds with much of the existing evidence for Latin America. In contrast to most of the developed world, in many Latin American countries the incidence of poverty among the elderly is similar and sometimes higher than for the rest of the population. Recent estimates have shown that the poverty headcount ratio is greater for the elderly than for the rest of the population in nine Latin American countries, and about the same in another six (the elderly are significantly better off only in Argentina, Brazil, Chile and Uruguay).[54] Most importantly, pension benefits are often shared within the household and constitute a form of income protection not only for the old but for the entire family as well. In fact, intra-family transfers from the old to the young have been common in both developed[55] and developing countries.[56]

While the policy interventions required to reverse the negative impacts of unequal and limited coverage are probably the most urgently needed, as well as being those with the widest impact, other specific policy instruments could also contribute to overcoming some of the inequalities brought in by the establishment of private funded individual accounts, as analysed above. First, the use of alternative investment portfolios could be considered as a policy alternative to reduce the inter-generational inequalities resulting from financial market volatility. Portfolio choice could permit older workers to make safer investments and younger workers to risk more and eventually obtain higher returns. Such an option was adopted in Chile in 2002 with the creation of 'multi-funds', a number of investment portfolios differentiated according to risk and yield.[57] In Sweden, workers can choose from a much

[54] The 'headcount ratio' is the ratio of poor over non-poor people in each given age-group. The 'elderly' have been defined as the population of 60 or more years old, and the income variable (with which the poverty headcount is calculated) has been adjusted for adult equivalents and economies of scale. See Leonardo Gasparini, Javier Alejo, Francisco Haimovich, Sergio Olivieri and Leopoldo Tornarolli, 'Poverty among the elderly in Latin America and the Caribbean', *Centro de Estudios Distributivos, Laborales y Sociales*, Universidad Nacional de La Plata, Working Paper 55, July 2007, Table 3.3, p. 41. In addition, see Barrientos, 'Poverty Reduction', p. 372, who shows that the old are overrepresented among the poor in most Latin American countries.

[55] Martin Kohli, 'Private and Public Transfers Between Generations', *European Societies*, vol. 1 (1999), and 'Generational Equity: Concepts and Attitudes' in Camila Arza and Martin Kohli (eds.), *Pension Reform in Europe: Policies, Politics and Outcomes* (London, 2008).

[56] Lloyd Sherlock, 'Simple Transfers'; and HelpAge, 'Non-Contributory Pensions'.

[57] Superintendencia de Administradoras de Fondos de Pensiones, *The Chilean Pension System* (Santiago de Chile, 2003).

larger number of investment options and can even change their choices every 24 hours.[58] In any case, portfolio choice is no automatic solution. Workers need to be appropriately informed in order to make decisions which are sometimes too sophisticated even for individuals with some knowledge of the financial market. Instead, some 'default' options and restrictions for risky funds at older ages could be adopted, as has been the case in Chile. Investment risks are obviously not eliminated by portfolio choice, but they can be reduced there where they become more damaging for individuals.

The distributional issues arising from mortality differentials are more complex, and reducing mortality risk-pooling is not always the best option. The use of more 'accurate' mortality probabilities (such as gender-specific mortality) has in fact increased the inequalities of the system. On the other hand, while in the pursuit of equality between men and women governments may aim to promote the use of gender-neutral mortality, this may be problematic for insurance companies due to adverse selection. In Sweden, this problem has been addressed with a radical policy choice: the establishment of a state monopoly for the administration of annuities, which avoids the effects of adverse selection and provides gender-neutral annuities to the whole population. This has also helped to address another problem of private individual pensions: the indexation of benefits. In general, the provision of indexed annuities by private insurance companies is difficult when fully-indexed financial assets are not available. In Sweden, the centralisation of the pension insurance market in the hands of the state has made it possible to guarantee price-indexed benefits, taking the risk of inflation back to the state.[59] This kind of approach could avoid benefit erosion among the covered population, but in the Latin American context of unequal coverage it could also entail an income transfer from the whole population to the relatively better-off covered population. Finally, one way to reduce the inter-generational inequalities resulting from changing macroeconomic contexts is to eliminate the rigidities of annuity purchase, allowing workers to choose when to buy an annuity. If upon retirement the value of assets is low, workers should be able to wait and retire in a better context in the immediate future. However, investment risks are not eliminated by these adjustments. A more radical policy option to reduce both inflation and financial market risks is the adoption of notional defined contribution (NDC) accounts, as applied in Sweden, Italy, Latvia and a number of Central-Eastern European countries. Instead of investing funds

[58] On the Swedish case, see Edward Palmer, 'The Swedish Pension Reform Model: Framework and Issues', World Bank Social Protection Discussion Paper, no. 0012 (2000).
[59] *Ibid.*

in the financial market, NDC systems maintain the PAYG model, but calculate benefits actuarially following individual contributions (typically indexed with GDP growth) and life expectancies.[60] This type of design makes benefits less subject to risk and more easily predictable. Reforms following a NDC model can also eliminate the regressive effects of transition to funded systems as there are no transition costs involved.

Options exist and can be created and recreated for each national environment. Some of these require greater state capacity than others, and some – such as portfolio choice in Chile – may be feasible administratively in some countries and not yet in others. International experience is full of examples of alternative models of old-age provision which can be used to deal with specific problems of the Latin American systems. Even more policy learning is possible across Latin American countries. The inequalities deriving from unequal coverage, deficit financing of transition, and the risks faced by private pensions could be effectively reduced, but problems have to be identified in the first place and policy options discussed for each particular setting. The growing interest in the distributional failures of current pension systems may help to better orient policy in this direction.

Conclusion

The past two decades have witnessed the most substantial reshaping of pension schemes to occur around the world. In Latin America, ten countries implemented structural reforms which have transformed part or all their existing public PAYG systems into funded systems of private individual accounts. These reforms have not only entailed the introduction of private administration in mandatory pension schemes. They have also established a new distributional logic, which appears consistently across all structural reformers, albeit to a greater or lesser extent depending on the specific design adopted. The contribution-based distribution of rights has been strengthened almost everywhere, and a newly adopted actuarial distribution of resources has also expanded with the adoption of individual accounts. Risk-pooling has been reduced and most of the risks of old-age financing have been transferred back to the individual.

Beyond policy design itself, the context of implementation in Latin America has been key to determining the impacts of reform. Although complete outcomes may not be observable until the reforms are fully operational at the end of the transition period, the interaction between the new design

[60] On the mechanisms behind NDC models see Michael Cichon, 'Notional-Defined-Contribution Schemes: Old Wine in New Bottles?' *International Social Security Review*, vol. 52, no. 4 (1999).

and the current socio-demographic, labour market and economic context of Latin American countries have produced a number of intra- and inter-generational inequalities. The contribution-based distribution of rights, in the context of the unequal distribution of coverage prevailing in the region, could not but reproduce existing income inequalities after retirement. As the unequally distributed benefits of the contributory system are also financed by the population at large – through state transfers to cover deficits and finance reform transition, original inequalities in the distribution of coverage have been exacerbated. Low income groups are actually financing a system from which they will not benefit, and some generations will unavoidably pay a larger share of the financing burden. The transfer of the risk of financing pensions back to the individual, in unstable macroeconomic contexts, means that some generations could randomly benefit over others as a result of varying levels of inflation in the post-retirement period, or sharp falls in projected returns or asset values at the end of their working careers. As longevity risks continue to be pooled among the participants of each insurance scheme, the systematic distributional gain of high income groups resulting from differential mortality is not really overcome with the new pension systems.

Some policy options to avoid these distributional failures are available, but they require a greater regulatory role for the state and the abandonment of the idea that good pension policy is all about encouraging individual savings and transparent administration. The most pervasive inequalities of the pension system are those resulting from unequal coverage. In the labour market context of Latin American countries, the introduction of non-contributory universal pensions is probably the best way to solve this problem. The inequalities brought in by both reform transition and the transference of old-age related risks to the individual also require serious consideration. Alternative policy options need to be evaluated for the environment in which they will be applied, not least in terms of administrative capacity of each country to deal with the complexities involved in policy design and implementation. While some alternatives to ameliorate the distributional effects of pension systems can be 'learnt' from international experience, others will have to be designed specifically for the Latin American context and the socioeconomic, political and administrative environments in each country.