WORLD BANK INVOLVEMENT IN THE PRIVATISATION OF PUBLIC PENSION SYSTEMS IN DEVELOPING AND TRANSITION COUNTRIES

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Abstract:

Over the last decade, more than a dozen countries in Latin America and Central and Eastern Europe have partially or completely replaced public pay-as-you-go pension systems with funded systems managed by private financial institutions. The World Bank has been a major catalyst for this shift, providing loans and technical support. This paper examines the main arguments for replacing public pay-as-you-go systems with privately managed funded systems. In conclusion, the paper draws the lessons of the different country experiences and demonstrates the numerous deficiencies in the funded systems as compared to the pay-as-you-go systems they replaced. Annexed is a brief account of the transition in each of the countries where it has been implemented, examining how the previous systems have been modified and the main features of the new systems that have been established.

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The World Bank's approach to pension reform

By far the largest source of retirement income from pension schemes comes from pay-as-you-go (PAYG) pensions with a stable financial base. That base is not the stock market with its ups and downs, but rather entire generations of workers that support generations of retired workers. In the United States, the legislation creating Social Security included a ban on investment of the trust fund in private financial markets because millions of workers had seen their savings for retirement, often invested at high returns, wiped out by the Great Depression. The pay-as-you-go financing system reflects the strength of the real economy and preserves an important income source that creates a demand in the economy.

Pay-as-you-go systems have been among the most effective anti-poverty programmes. In many countries that now have efficient, adequately financed systems, only a few generations ago, millions of older people who were too old to work, but too young to die, were condemned to misery and were burdens on their children. This major accomplishment - decent living standards of living and dignity for older people - is something that shouldn't be risked or tossed aside due to ideological fashions.

In addition, healthy and sound retirement schemes need to become more rather than less comprehensive, and need to include more and more workers in developing countries. Where no retirement system exists, pay-as-you-go has the advantage in developing countries - with the greatest poverty - of beginning to pay benefits relatively rapidly to those retiring – without having to wait one or two generations. In systems based on private investment, funds must build up to protect the individual in his or her future retirement.

In the context of poverty alleviation, the central focus on the global level in terms of retirement income should be on inclusion of those not already benefiting, particularly the poor.

Of course, one of the main arguments in favour of PAYG has always been the fact that it is a system based on solidarity. As such, it has been very successful at making societies more equal over time. Workers with a relatively low income could still enjoy their retirement thanks to the redistributive element that was built into the system.

Unfortunately, the World Bank, rather than taking advantage of the experience gained with operating pay-as-you-go systems (not only at the national level, but also the level of the International Labour Organisation and the International Social Security Association), decided to chart a radical new course. This work, often in co-operation with private investment firms who stand to gain billions from the privatisation of social security, is based on the false notions that private is always better than public and that the market is somehow more secure than intergenerational solidarity.

In fairness to the Bank, as they have stumbled along in this process, there have been some signs of moderation and greater realism than in the earliest days of its campaign.

The dramatic losses experienced by the stock markets of this world over the last few years have already considerably changed the debate and taken a lot of the steam out of the arguments in favour of funded pensions. For example, all US companies together had a total pension shortfall of about US$ 300 billion at the end of 2002. However, in spite of the growing number of press reports on corporations and others facing these large funding problems, the issue still is on the table.

This paper is largely limited to examining these issues in connection with the World Bank experiments with the futures of people in developing and transition countries. It is not in the context of a broader discussion about the relative merits of pay-as-you-go plans that provide benefits that are determined and dependable, versus private, funded, occupational pension schemes, i.e. defined benefit or defined contribution plans that are individual and that transfer the risk to the individual.

The World Bank has influenced and provided advice and support to more than a dozen countries in Latin America, Central and Eastern Europe and Central Asia that have converted public pay-as-you-go pension systems into partially or fully privatised, mostly defined contribution funded systems. In addition, there are a number of other countries with plans to replace PAYG systems by funded systems in the near future. These privatised defined contribution funded systems substantially alter the nature of the state's commitment to support workers in retirement, often producing more inequity, and shifting more risk onto workers. In many cases, workers risk receiving considerably lower benefits than they would have received under the public systems that were replaced.

This paper examines this World Bank fostered shift from mandatory PAYG public pension systems that provide predictable benefits, to pension systems that rely partially or completely on mandatory individual savings accounts. It evaluates the World Bank's rationale for promoting this shift, which was presented at some length in its 1994 volume *Averting the Old Age Crisis*. At the end is a brief conclusion, analysing the main lessons drawn.

In the annex, a country by country examination can be found of the impact of this switch. It includes a discussion of the main features of the new systems that have been put in place, such as the size of the contribution to the privatised system, the administrative costs, the pay-out system at retirement (e.g. annuities or phased withdrawals), and whether or not the funded system is mandatory. It also discusses the transition process for switching over to a funded system. It is important to note that the term “social security” covers much more than providing retirement income. In many countries, the term covers the financing of health care, unemployment insurance, disability and other benefits. This complicates comparison with often more limited private pension systems.

The World Bank's Rationale for Individual Accounts

The World Bank began to make the replacement of public, pay-as-you-go systems a high priority in the early nineties, as it sought to have other developing countries follow the example of Chile, which replaced its pay-as-you-go system in 1982. The 1994 volume *Averting the Old Age Crisis* was a major statement of the World Bank's perspective on public Social Security systems and retirement income in general. While the volume examines numerous issues related to retirement income, the most important policy recommendation in the book, is that pay-as-you-go Social Security systems should be at least partially replaced with funded systems managed by the private sector.[1]

This effort to have developing countries replace their pay-as-you-go pension systems with mandatory individual accounts is explicitly premised on the view that the developed countries had made a "mistake" in adopting their pay-as-you-go pension systems. The Bank argued that it becomes more difficult to move away from a pay-as-you-go system through time, as a larger segment of the population becomes dependent on the system. The Bank suggested two reasons why this would be the case. The first reason, the Bank said, was that a larger share of the work force is likely to be covered by the public pension system through time, as more workers leave agricultural and other, often more precarious economic activities for formal employment, which is more likely to be covered by public pension systems. The second reason is that countries tend to undergo a demographic shift as they develop, with increasing life expectancies leading to longer periods of retirement, and falling birth rates leading to a relative decline in the working age population.

As a result, the ratio of retirees to workers will generally increase through time. The World Bank approached pension reform, had the explicit intention of trying to keep the developing countries from repeating the so-called mistake made by the industrialised countries before their public pension systems became more entrenched (1994, pp 156-163). The World Bank never fully explained, however, how changes in the design of pension systems would change the demographics problem. It failed to see that, no matter how the system is financed, one still has the economy and, therefore, active workers, supporting those who are no longer active. Whatever system of pension provision is used, it will always involve a transfer of a given amount of real resources from the working population to the retired population.

An additional problem may be that the demographic changes may cause the value of assets to be negatively affected, once there are more people selling their assets than there are people that buy them.

The World Bank itself had a long set of reasons for preferring systems of mandatory savings over traditional pay-as-you-go systems, including the following:

[1] Several of the points in this section parallel arguments presented in Orszag and Stiglitz, 1999.

1) Public pension systems become unsustainable as the population ages

2) Systems of mandatory savings will increase national saving

3) Systems of mandatory savings will be less susceptible to political risk than publicly managed systems

4) Systems of mandatory savings will provide more incentives to work, since benefits are more closely linked to contributions

5) Systems of mandatory savings can help to promote the growth of a capital market in developing countries

Each of these rationales for systems of mandatory savings is addressed below.

The Sustainability of Public Sector Pension Systems

The Bank's view that the pay-as-you-go public pension systems in the developed countries were a mistake appears to be somewhat peculiar. Demographic changes in previous decades did not lead to the same ideological call for change. Many of these problems, with changes similar to the ones now being faced, were solved by a redistribution of a country's income, as economies expanded over time and had more resources to adjust.

In general, these pay-as-you-go programmes have enjoyed enormous public support. As part of the effort to maintaining these systems, voters in the developed countries have been willing to support, for example, tax increases, as the changing ratio of workers to retirees made pension systems more expensive through time. While it is reasonable to assume that tax increases will always be controversial, it is not apparent that these democracies would refuse to support their public pension systems as costs continue to rise in the future, especially since a large share of voters would be retirees.

The presentation of this issue in *Averting the Old Age Crisis* misleadingly focused on projections of rising tax rates, as the ratio of workers to beneficiaries continues to decline (pp 159-160). However, the ability of workers to support public pension programmes will depend primarily on their before-tax wages. Under almost any plausible scenario, before-tax wages will increase enough that workers could still experience substantial gains in after-tax wages, even if they had to pay higher taxes to support a public pension system.

Because it mistakenly focused on tax rates, rather than after-tax earnings, the analysis in *Averting the Old Age Crisis* made it appear that most European countries faced a more serious problem supporting their public pension systems than the United

States, because the projections showed that it would require larger tax increases to support the European pension systems.

The World Bank's projections implied, however, that, in spite of larger tax increases, European workers would enjoy substantially more rapid after-tax real wage growth than would workers in the United States (Baker 2001). The bank's projections assumed that real wages for European workers would increase at the rate of 2.0 percent a year, while the real wage of workers in the United States was projected to rise at the rate of 1.0 percent annually. Both projections were consistent with recent trends in Europe and the United States at the time the book was written. This meant that the before-tax real wages of European workers would have approximately doubled in 35 years, while the before tax real wages of workers in the United States would have risen by just over 40 percent. In this scenario, European workers would see approximately the same after-tax wage growth as workers in the United States, if their tax rate increased by 30 percentage points, while taxes in the United States did not increase at all.[2]

It is a basic tenet of economic theory that workers are motivated by the after-tax wage, and of course it is the after-tax wage that determines workers' living standards. This means that if the public pension system in the United States was viewed as sustainable based on the World Bank's projections, then the European pension systems could be viewed as being in even better shape, based on the projection of more rapid real wage growth in Europe. In this regard, the World Bank seriously misrepresented the issue of the sustainability of pay-as-you-go public sector pension system by ignoring economic theory. Whether traditional pay-as-you-go systems are sustainable as the ratio of beneficiaries to workers rises, depends on their level of political support. It is entirely possible that workers in the future will continue to opt to take a portion of their real wage growth in the form of a longer retirement, and therefore will be willing to pay higher taxes through time. The World Bank presents no evidence in *Averting the Old Age Crisis* that this will not be the case.

The Limited Impact of Private Accounts on Savings and Growth

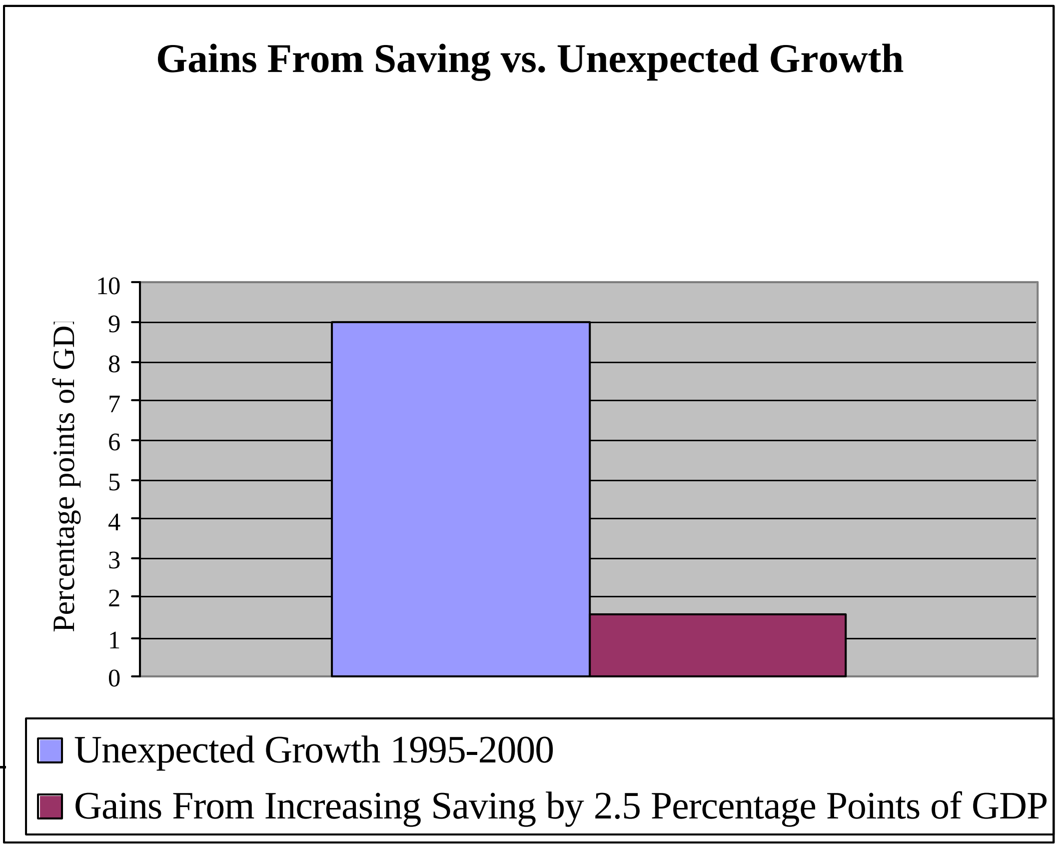
One of the major goals of most proponents of private accounts is to increase national savings. It is hoped that higher levels of savings will lead to more growth, and therefore make it easier for countries to support a higher ratio of retirees to workers. But while it is possible that a funded system, by increasing savings and investment, could increase future output, it is important to recognize how limited this potential increment to growth is. It is also important to recognise that it is not clear that systems of private accounts will increase savings at all.

[2] At a 2.0 percent annual growth rate, the before-tax wage of European workers would increase by almost exactly 100 percent after 35 years. If their tax rate is raised by 30 percentage points, then this will leave them with an after-tax wage that is approximately 40 percent higher than in the starting year (200% - .3*(200%) = 140%). By contrast, if wage growth is 1.0 percent annually in the United States, then wages will have increased by 41.7 percent after 35 years. This means that U.S. workers would be only slightly better off than European workers, even if the European workers faced a 30 percentage point increase in their tax rate, and the U.S. workers had no tax increase whatsoever.

On the first point, most estimates suggest that the impact of the additional savings that could plausibly result from a funded, as opposed to pay-as-you-go pension system, is relatively modest. For example, the United States Congressional Budget Office estimated that an increase in public saving equal to 2.5 percent of GDP -- a very large increase in national saving -- would lead to an increase in national income of just 1.6 percent after 35 years (CBO 1997, p 90).[3] This means that it is unlikely that most of the projected growth in the expenditures of public pension systems, due to the ageing of the population, could be met by any increase in output caused by higher savings resulting from the introduction of a system of private accounts.

It is important to fully appreciate the limited size of the prospective gains from the potential increases in savings induced by individual accounts. In the years from 1996-2000, the U.S. economy grew far more rapidly than had been projected. The 1996 report from the Social Security trustees projected an average growth rate of 2.1 percent for these five years. The actual growth rate over these years averaged 3.8 percent. The cumulative difference between the actual growth rate experienced by the economy over these five years, and the growth rate that was projected in 1996 was almost 10 percentage points of GDP. This is six times the growth dividend that CBO had projected from an increase in public sector savings equal to 2.5 percent of GDP, as shown in figure 1.

Figure 1



In other words, the gain from the better than expected economic performance in the U.S. in the late nineties dwarfed any potential growth dividends from higher saving. Assuming that there is no offsetting reduction in the long-term growth rate in future years, the U.S. economy will be far larger in 2030, even without additional saving, than it would have been if the 1996 projections had proved accurate, and there had been a large and sustained increase in public sector saving. In short, if the additional growth that might have resulted from the increased savings in private accounts could have been sufficient to address the problems of a growing population of retirees, then the unexpected growth of the late nineties has already made the U.S. better prepared to deal with this problem, than anything it could have done to stimulate savings.

This course of events points to the relative unimportance of even large swings in savings to the growth rate. A modest rise in growth, especially if sustained over a number of years, will dwarf the impact of the increase in savings that can plausibly be generated by policy changes.

Furthermore, it is unlikely that a switch to private accounts could produce an increase in savings of even the 2.5 percentage points of GDP used as a reference point in the above discussion. The switch to placing contributions in private accounts rather than the public treasury means that the government must borrow an offsetting amount, in the absence of new taxes or the sale of government assets, leaving national saving unaffected. In addition, workers may view their accounts as assets in a way that they did not view their government pensions, and therefore reduce other savings. It is also possible that the development of a national capital market -- one of the goals of systems of private accounts -- would actually reduce savings, since it facilitates borrowing, as indicated in a study of the pension reform in Chile (Holzmann, 1996). The studies of the impact of private accounts on savings in Chile, the most studied example, have been ambiguous (e.g. Corsetti and Schmidt-Hebbel, 1997 and Coronado, 1997), but these findings suggest that the effect was probably small. This means that the hope that private accounts will generate enough additional growth -- through their effect on savings -- that it will be possible to support a relatively larger population of retirees, is almost certainly misplaced. Any effect on the growth rate attributable to a net increase in national savings would probably be too small to measure.

Individual Accounts and Risk

For a lot of reasons already given, there are many advantages to a pay-as-you-go system over other systems that offer higher risks to the individual and less equity. Despite this, the Bank argues that a funded system is preferable to a pay-as-you-go system financed through current tax revenue, and that it is better to invest its holdings in a broad mix of public and private assets, rather than just holding government debt. This is a biased and highly political proposition.[4] Private accounts -- especially a system of

[4] This section parallels the discussion in Diamond, 2000.

decentralised private accounts -- are far more costly to manage than a single government fund. The resources used to run these accounts are a waste from an economic standpoint as the capital and labour could have been used in some alternative productive use. In addition, the cost represents a transfer of revenue to the financial industry which could have otherwise been used to support workers' retirement.

If the state sought to minimise the administrative costs of a funded pension system that invested in private assets, it would simply run the system itself (or contract out the management to a unified fund) and save the fees charged by the financial industry. Such a system could be put in place with a common pool of money, in which workers either get a guaranteed benefit (e.g. Aaron and Rieschauer, 2001) or a varying benefit linked to the overall performance of the economy, as is now the case with the Swedish benefit structure (e.g. Scherman, 1999). A number of industrialized countries, including Canada and some European countries, have, in recent years, brought some degree of advance funding into their public defined benefit pension schemes.

In addition to saving resources in the management of the system, a unified system also saves time for individual workers, since it is not necessary for them to spend time overseeing their individual accounts. There is little research to indicate how much time workers do spend managing accounts in the countries where they have them, but any time spent would be a direct loss compared to a pay-as-you-go system. Pay-as-you-go systems generally make no demands upon workers' time between the period when they first register and the point at which they arrange to start receiving benefits.

The Chilean example provides evidence suggesting that the amount of workers' time required to manage these accounts could be substantial. In 1997, Chile started a "benefits awareness" programme to educate workers about the country's pension system. It intends to incorporate this course into school curricula throughout the country. A recent World Bank study recommended that the other countries in Latin America with individual account systems should follow Chile's example (Devesa-Carpio and Vidal Melia 2001, p 26). While learning these financial skills may offer students other benefits, it is not obvious that it is the best use of their time. A full assessment of the merits of individual accounts would have to recognise that workers' time and students' time has an opportunity cost.

Since the comparatively high administrative costs of individual accounts are widely recognised, the decision to rely on them must rest on the political judgement that the government cannot be trusted to control large pools of money. The argument is that political factors will inevitably affect the government's investment decisions, even in cases where it has contracted out the management of the funds. As a result of political interference, funds that are managed directly or indirectly by the government would receive lower rates of return than privately managed funds. In addition, according to this view, there is the possibility that the government will use the market power it would have from controlling a very large pool of capital to impose political conditions on firms. For example, the government could require that firms maintain a certain level of domestic production in order to qualify as an acceptable investment for the pension fund. In theory, this problem would not arise with funds managed through the private sector.

There are several distinct parts to this argument which must be considered separately. First, there is the claim that government managed funds will necessarily get lower returns than funds managed through the private sector. Second, that political interference in the operation of these funds is likely to be a serious problem -- in a negative way. And third, that private sector management removes, or at least substantially reduces, the risk of political interference.

Taking each claim in turn, the evidence of returns from publicly managed funds is actually mixed. The World Bank (1994, p 128) examined a number of public pension funds (mostly in developing countries) and found that most had negative real returns. This finding is somewhat less damning than it first appears. In many cases, these funds were legally required to hold government bonds, which provided negative real returns due to increases in the inflation rate.

As a more general matter, Mitchell and Hsin (1998) and Munnell (1999) provide evidence which indicates that it is possible to have publicly managed or supervised investment funds that get returns that are comparable to privately managed funds. This article examines the returns received by a cross section of state pension funds in the United States, over the period from 1986 to 1990. The article finds that these funds had an average annual nominal return of 11.6 percent. This return is approximately the same as that earned by private sector pension funds in the same period. This experience suggests that publicly managed or supervised funds can get returns that are competitive with private sector funds, with no apparent evidence of political interference.[5] In short, the evidence suggests strongly that it is possible to establish public sector pension systems that are largely free of political interference -- or at least interference that lowers the rate of return on investment.

The flip side of this issue is whether it can be assumed that systems of individual accounts managed by the private sector will necessarily be sheltered from political interference. It is certainly not obvious that this can be assumed. Virtually all proponents of systems of individual accounts, including the World Bank, advocate strict rules on the sort of investment instruments that are appropriate for these accounts. The purpose of these rules is to ensure that workers' risks are limited. For example, most proponents would require that any equity investments be restricted to broadly based indexes, rather than individual stocks. Also, investments in complex and speculative financial instruments would generally be precluded.

[5] Another example that demonstrates this point is the Thrift Savings Plan, which is a voluntary retirement savings programme for federal government employees in the United States. This plan has more than 2 million enrollees, making it one of the country's largest investment funds. It invests only in broadly based stock and bond indexes, and therefore its returns closely follow the broader market. Because of its size, and the simplicity of its investment strategy, its annual administrative costs are extremely low, approximately 0.1 percent of its assets (www.tsp.gov/features/tspsf.html).

Given that these accounts are mandatory, with the purpose of ensuring workers a base income in retirement, there is a solid basis for these sorts of restrictions on investment instruments, but the mere fact of such restrictions creates the same sort of opportunities for political interference as with a publicly run system. There are and may be strong incentives for the financial industry to seek to expand the types of instruments that could qualify for the system. A firm that was in the forefront of marketing a new financial product could be in a position to make large profits, if it could change the regulations so that its product was an acceptable investment instrument. There are only a few countries where the political system is sufficiently insulated from corporate influence for the possibility of this sort of political interference could be ruled out.

An argument often used in favour of individual accounts is that they will be somehow more secure than any public fund could ever be. In principle, the individual accounts are the property of their holders, whereas the benefits owed under the public system are simply promises by the government. The fact that this distinction may not be so clear was demonstrated in December 2001 in Argentina. In the midst of its financial crisis, the Argentine government seized workers' private accounts to meet current debt obligations. It replaced the account assets with long-term government bonds.[6] Clearly there will be enormous political obstacles to seizing accounts under all but the most extraordinary circumstances, but this will also be true with cuts in pay-as-you-go pension plans.

As this example shows, individual accounts cannot be made immune to political risk. Whether they are less vulnerable than traditional pay-as-you-go plans is an empirical question that has not been seriously examined to date.[7] There is certainly no proof that this is the case.

No Evidence that Aligning Benefits with Contributions Improves Incentives

Another issue that has been raised in World Bank documents discussing pension reform has been the desire to have benefits clearly aligned with contributions. In principle, according to classic economic theory, making the benefit depend more directly on the worker's contribution should increase economic efficiency, since workers will be less likely to view the contribution as a form of tax. The World Bank hopes that pension reform will lead workers to view their contributions as deferred wages, and therefore increase their incentive both to work and to contribute to the system, since larger contributions will lead to higher benefits in retirement. In fact, however, it is not clear that workers perceive a strong difference between paying for the pensions of others and paying for their own pensions. In both cases, money is put into the systems and money is paid out.

[6] An account of this seizure can be found on the British Broadcasting Corporation's website [http://news.bbc.co.uk/hi/english/business/newsid_1696000/1696010.stm].
[7] The seizure that occurred in Argentina is an extreme case. A more typical occurrence might be a change in tax laws that takes back part of the accumulations in these accounts.

The extent to which the change to a defined contribution funded system (in those countries where it has been implemented) has increased the incentive to work and contribute to pension funds is deeply questionable. The ebbs and flows of returns on financial assets seriously challenge the idea that benefits and contributions are strongly linked through time under full funded arrangements. If it is true, as the Bank suggests, that the expectation of higher benefits would encourage workers to contribute to funded schemes, the sharp downturn in financial returns resulting from the bursting of the stock market bubble in the US and other countries starting in 2000 would actually constitute a disincentive to make contributions to pension funds.

It also seems that most workers in countries that have switched to defined contribution systems still view their contributions as a tax. The participation rate in most countries has not increased to any great extent, and many workers that do participate seem to target their contribution levels so as to just pay in enough to qualify for the minimum benefit.

Furthermore, the implications of this switch to defined contributions systems are quite straightforward.[8] Making the benefit more dependent on contributions inevitably increases the degree of inequality in pension income. A pure defined contribution funded system eliminates any progressivity from the payback structure. If workers are equally skilful or lucky in their investments, regardless of their income, then workers at all income levels will get the same rate of return. By contrast, the pay-as-you-go systems are quite deliberately designed to be progressive in their payback structure, with higher wage workers, although getting more retirement income than lower wage workers, receive benefits that are, relative to wage income, proportionally lower than benefits for low wage workers.[9] In this sense, the switch to defined contribution funded systems would increase inequality among retirees, if there are no countervailing measures put in place.[10]

In addition to increasing inequality in pension benefits, the World Bank pension reform has also led to higher retirement ages. The pension systems in many developing countries often provided full benefits to women at age 55, and full benefits to men at age 60. In some cases, workers were able to begin collecting benefits as early as age 50. In addition to imposing costs to the government, allowing early retirements also provided a disincentive for older workers to stay in the workforce. As a result, the World Bank has supported an increase in the retirement age as part of many pension reforms, so that people would work longer.

[9] Typically much of the work force in developing countries works in the informal economy, and is not covered by the public or any other pension system. These workers tend to be disproportionately poor. In this sense, the redistributive aspects of public sector pay-as-you-go pension systems, like other social protection measures generally do not directly help the poorest segments of society.

[10] The minimum pension, which guarantees a full career worker a benefit of a specific size, regardless of the size of the accumulation in their accounts, is an example of a policy that partially offsets the increase in inequality attributable to defined contribution accounts.

It is also worth noting in this respect the importance of the pensions for public sector workers. In most developing countries (like most developed countries), the pension plans for public sector workers are distinct from the public pension plan for the rest of the work force. In many cases, the public sector plans provide higher benefits. This is generally due to the fact that public sector workers receive relatively lower wages in order to get increased pension benefits. The relatively higher benefits for public sector workers are often viewed by the Bank as a serious flaw in existing systems.

While there are efficiency gains associated with a single pension system, that allows workers to freely move back and forth between the public and private sectors, it is important to recognise the stake that public sector workers have in their pensions. The fact that these pensions might be higher than the standard pension is not an accident, but usually came about in exchange for wage concessions. For this reason, public sector workers generally have a well-founded claim to the higher pensions provided under pre-reform systems.

It is generally not easy to determine exactly how these public sector pensions were dealt with in the IMF/World Bank reform process. In most developing countries, there were different pension arrangements for various groups of public sector workers. Most of the literature, especially the literature available in English, has focused on the changes in the general public pension plan, not the specific plans negotiated by groups of public sector workers. In general, the ability of public sector workers to protect their pensions through the reform process has probably depended on their bargaining power at the time of the reform. It is likely that many public sector workers were forced to take substantial cuts in their pensions as a result of the switch.

Building Capital Markets vs. Greater Efficiency through PAYG Provision

One of the arguments often put forward by the Bank for favouring a system of mandatory privately managed individual accounts, is that it will help developing countries build up a modern capital market. This may, in some cases, occur. In such cases, the government mandate can be seen as a form of subsidy to the domestic financial industry (or foreign subsidiaries of transnational financial firms).[11] A well-developed financial system is a necessary institution for a modern economy, and mandatory accounts might help to produce such a system. That would depend, of course, on larger economic factors, such as whether there are significant and profitable investment opportunities in the local economy or whether funds would seek such investments elsewhere. In a global context of capital glut rather than shortage, the problem might be less the lack of capital than the uneven distribution of it.

[11] It is interesting to note that the World Bank is aggressively promoting this subsidy to the development of the financial sector in developing countries, at the same time that recent trade agreements have been structured to radically limit other types of subsidies that developing countries provide to promote domestic industry.

There are large dangers, however, involved with basing a pension system on newly created financial structures. Not only will an enormous amount of money need to go to build the infrastructure of these capital markets, it is self-explanatory that building a funded pension system on a less than firm domestic financial system – with all the necessary guarantees – is not really a good idea.

Furthermore, it is important to consider these opportunity costs associated with the establishment of individual accounts. There is a limited amount of loan money and expertise available to these countries from the World Bank and other international lending agencies. The fact that this money is going to develop systems of individual accounts means that it is not being used for other purposes. While the list of other possible uses is endless, the obvious ones to consider in this context are the other pillars of the retirement system. Instead of devoting its resources to establishing systems of mandatory individual accounts, the World Bank could be supporting the further development of other elements of retirement provision, in particular, the pay-as-you-go system. For example, the Bank could assist in the development of an efficient public sector agency to effectively administer a pay-as-you-go-pension system. There could potentially be substantial returns to any resources invested by the Bank.[12]

After all, pension systems are not created because of the impact they might have on the economy. They are designed, first and foremost, to provide retirement income for the population.

The Social Security Administration (SSA) in the United States is an obvious model of an efficient public pension agency. It operates the system in the United States at a cost of less than 0.7 percent of annual contributions. It is widely viewed as efficient, in terms of delivering checks in a timely manner, and it has been remarkably free of corruption throughout its existence. In addition, because the programme serves the entire country, the SSA has an administrative structure that, similar to many other countries, can be used for purposes other than just administering the public pension system. SSA also administers the country's public disability insurance programme. It also administers the Supplemental Security Income programme, a means-tested benefit that is provided to the low-income elderly. Its administrative structure can be used for other purposes when the need arises.[13]

It is argued that funded programs may be a better solution in countries where the state does not perform as it should be. Yet any system that operates on a funded basis requires significant public regulation. If a country is in no position to create and run a public pension system, it will, in all likelihood, not be able to create the necessary regulatory bodies that ought to make sure that the pension money is safe.

[12] It is important to note that the World Bank has occasionally worked to promote greater efficiency in defined benefit public systems. For example, it recently concluded that the system in Brazil was quite effective, although it suggested a set of changes to make the system more equitable and efficient (World Bank, 2001b).

[13] A trivial, but interesting, example of the other purposes that the agency can serve was the decision to use the Social Security Administration to distribute information related to a change in the benefits that coal miners received under a 1992 law (Social Security Trustees 2000, p 41). The fact that the agency has a network in place that can serve the entire country means that it can be used for such purposes when they arise.

If the resources that the World Bank and/or other lending agencies provide to promote the creation of individual accounts could instead be used to build up an efficient governmental agency, it would be providing developing countries with a tremendously valuable asset. Most developing countries suffer from the lack of well functioning administrative agencies. This is one reason why tax evasion is such an enormous problem in developing countries. Creating an efficient agency to manage a public pension system is not a simple task, nor would it solve all the problems of governance in developing countries. But it is reasonable to believe that the resources that international lending agencies are devoting to develop pension systems based on individual accounts could also be used effectively in constructing an efficient publicly managed system. Not using resources for this purpose is part of the opportunity cost of promoting individual accounts.

There are a number of countries that have pay-as-you-go systems at the centre of retirement provision, but also allow or provide tax incentives for the establishment of funded, occupational schemes. Whereas both individual and pay-as-you-go retirement provisions mostly have the advantage of portability, funded occupational schemes, however, normally require a minimum of years of service in order to benefit or fully benefit from the programmes.

Some countries with funded occupational schemes have had major difficulties with such funds, including through fraud or mismanagement, or saw their disappearance because of failures of the companies that are providing the funding. In some cases, this has resulted in government regulation to provide protection to the members of funds. However, in the case of individual accounts, there is not yet much regulation, as demonstrated by the enormous losses experienced by Enron employees in their individual accounts.

The World Bank should draw on experience from those countries that have experienced problems with funded pension plans and individual accounts. It could promote best practices in regulation and fund governance in order to provide, within the inherent limits of risk built into such schemes, protection for the interests of workers. Good corporate governance practice should include the involvement of representatives of those having the greatest stake in the success of fund investment, i.e. the workers dependent on such funds.

In many countries, private pension schemes have limited or very limited coverage. In most of those countries, a well-constructed pay-as-you-go system might provide a much better coverage, as well as adequate pensions. Other measures could also be considered, including improving the beneficial effects of private schemes by encouraging measures to reduce the very high costs of administration through the consolidation of small funds into larger funds that can be more efficient.

The Transition Problem: Failing to meet Obligations to the People

One last important item that is often overlooked in the World Bank's discussion is the "double burden". In a switch from a PAYG system to a funded system, the first generation of workers under a funded scheme may face double pension contributions. Essentially, the pressure comes from providing one's own retirement though the individual account while supporting accounts through the pay-as-you-go retirement system for current retirees. This often creates an important fiscal strain on government finances. Unless a government can make up the tax revenue shortfall with an alternative source of revenue, or is in a position to borrow to finance the transition, it has no choice but to cut benefits. It is almost unavoidable that a large segment of the work force experiences a significant decline in benefits.

In World Bank analyses, these cuts are generally viewed as an unfortunate by-product of a desirable policy. But, there is little, if any, economic significance attached to the consequences of such cuts. By contrast, if a developing country opted not to honour a portion of its debt, economists at the World Bank, and elsewhere, would be quick to warn of the consequences for the government's ability to borrow in the future.

The loss of legitimacy from failing to meet pension obligations can be a very practical problem in countries where respect for the integrity of government is often already quite low. It can manifest itself in even greater levels of tax evasion and more widespread disregard for rules and regulations. It can also lead to protests, strikes, and civil unrest. Undoubtedly, the failure to meet pension obligations in Argentina, where a 13 percent across the board cut was implemented in the fall of 2001, was a factor in sparking the protests that led to the government's downfall.[14]

The lessons learned from Latin America and Central and Eastern Europe

(Please see the annex for a detailed country-by-country overview)

The shift by the World Bank away from pay-as-you-go, mainly defined benefit, public pension plans, to defined contribution funded systems has led most countries in Latin America to overhaul their pension systems, as well as many of the transition economies in Central and Eastern Europe. This shift has had several goals, including reducing the costs of public plans, increasing national saving, reducing the "distortionary effects" of mandatory pension contributions, and reducing the amount of evasion in these systems.

Since most of the reforms are relatively new, the full effects of these reforms remain to be seen. However, there are some points that can be made about these systems based on their design and the evidence currently available. First, by design,

[14] The decision to confiscate the newly created individual accounts probably did not improve the government's standing either.

the new systems, in many cases, are likely to provide lower retirement benefits. In some cases, notably in Central and Eastern Europe, the reforms were quite deliberately designed to lower benefits, often by raising the retirement age and making the basic pension benefit lower.

Although the shares of GDP devoted to public pensions in countries such as Poland and Hungary were high, it is important that these costs be understood in the context of their transitions from centrally planned economies. As state-owned firms shut down or shed workers as they entered a market environment, many older workers were pushed out of their jobs. These workers often opted to retire, because no jobs were available for them. This drastically increased the ratio of retirees to workers and obviously put enormous strain on the pay-as-you-go public pension programmes. In effect, it placed much of the burden of the social costs of economic restructuring on the pension system, because alternative possibilities for workers were not available, including employment.

While there were many aspects of these systems that were in need of reform, the immediate crisis was due more to the displacement created by the transition, than the inherent flaws in the pension systems. The basic problem in the transition economies has been the very high levels of unemployment that have characterised them, rather than overly generous social security regimes. Insofar as pension reform reduces the pensions of workers who lost jobs in the transition, it would be a second source of decline in these workers' living standards. It seems that efforts have been made to protect the value of the pensions already being paid, but some newly retired workers will be getting considerably lower benefits under reformed systems than under the pre-existing systems.

It is worth noting that the most common way in which public pensions have been reduced, both in the transition economies and in Latin America, has been through an increase in the normal retirement age. However, workers in many jobs (e.g. mining, construction, and some manufacturing jobs) are not able to work beyond their mid-fifties. These workers may be forced onto disability rolls, if they cannot qualify for a pension.

It is also worth noting the gender dimension to this issue. Many countries had lower normal retirement ages for women then men. A part of reform in most cases has been to raise the normal retirement age to the same level for both sexes. While it is a reasonable policy to make retirement ages equal, it does mean that women workers will experience a larger reduction in pension benefits than men.

In addition, funded plans also tend to be less favourable to women, for two reasons. First, since women generally earn lower wages than men, and spend fewer years in formal recognised employment, they are likely to accumulate much less in individual accounts than men. Since pay-as-you-go plans are generally designed to be redistributive, the women who qualify for benefits are able to redress some degree of inequality from the redistribution. The shift to funded plans means that women will no longer benefit from the redistributive aspect of the previous programmes.

The second reason why the switch from pay-as-you-go to funded plans tends to hurt women is the structure of the benefit payment. In general, the benefit payment from a pay-as-you-go plan is gender blind, with a worker's benefit depending on workers' contributions. However, the payments from some funded plans are based on gender specific life expectancies. This means that a woman who retires at a particular age will get a smaller benefit than a man retiring at the same age with an identical accumulation, because she has a longer life expectancy. The combination of gender specific annuities, and the lower accumulations that women are likely to have, could lead to significant reductions in benefits for many retired women.

A further problem has arisen concerning the minimum pension benefit that most of the defined contribution systems provide. These benefits are based only on the number of years that the worker has contributed, not the amount of the contribution. In the case of Chile, the longest established defined contribution funded system, it appears that many workers are deliberately targeting their contributions so as to just qualify for the minimum pension. Ironically, this strategy effectively makes the system into a defined benefit system for a large percentage of the covered work force. However, to prevent this sort of gaming of the system, the more recently reformed systems generally require 20 to 25 years of contributions to qualify for the minimum pension, instead of the 10 years required in Chile.

The fact that so many workers do target the minimum pension points to a major failure of these systems. Workers still seem to view the contribution as a tax to be evaded, if possible, rather than a form of deferred compensation. The extent of coverage in the informal economy and among the self-employed has remained low in every case. As long as workers regard their contribution as a tax, any increase in economic efficiency from the transition to a funded system will be minimal, although the fact that the tax rate has been lowered in most cases would be a gain in that sense.

Another important argument is that both the change from pay-as-you-go to funded systems, as well as the change from defined benefit to defined contribution systems, have the effect of leaving workers much more vulnerable to the volatile international financial markets. Pension guarantees may not really exist, if what you will receive by way of pension benefits depends on how well the stock market behaves.

The effect of these systems on national saving also appears to have been less than many proponents had hoped. The evidence from Chile, probably the best model, is ambiguous. If there was an increase in saving, it almost certainly was not large enough to have much economic consequence.

On the other hand, the transition to a defined contribution funded system can create enormous strains on public budgets. Argentina provides the clearest example of the problems that can arise. Privatisation deprived the government of an amount of revenue approximately equal to 1.0 percent of GDP. This shortfall, and the subsequent interest burden, fully explains the deficit crisis that Argentina's central government country faced in 2000 and 2001. In other words, had the government not privatised its social security system in 1994, it would have had a balanced budget in both of these years and not have faced default and the resulting economic crisis (Baker and Weisbrot, 2002).

Ironically, as a result of this crisis, Argentina has both imposed large cuts on the pay-as-you-go portion of its Social Security system and seized the accounts in the defined contribution funded system. The disastrous outcomes of Argentina's pension reform should provide a clear warning to countries with insecure tax bases about the potential hazards associated with a costly transition process.

The other important lesson that seems clear from the experience with reform to date is that funded systems are costly to administer. The average administrative cost of the systems currently in place is more than 15 percent of annual contributions. On top of this, workers will have to pay out 5-10 percent of the accumulation in their account to purchase an annuity, if they want to be assured of the same sort of lifetime income stream as would be provided under a pay-as-you-go system.

In addition, the supervision of a system of mandatory accounts is very costly. In fact, the cost of operating the supervisory agency is larger, measured relative to the size of contributions, than the whole cost of operating an efficient system like the Social Security programme in the United States. These privatised systems in fact require a high and sophisticated degree of public regulation if conflicts of interest are to be avoided and the interests of pensioners are to be protected. Lack of state capacity to run a public pension scheme efficiently should most certainly not be the excuse for switching to privately managed individual accounts pensions, since the latter demand a similar level of regulatory capacity for safeguarding pensioners' interests. Also, the time that workers must spend managing their accounts is a further cost which must be considered in assessing the merits of defined contributions funded systems, even though such costs are ignored in many analyses.

In total, all of these administrative costs can exceed 25 percent of the contributions to a funded system. Expenses of this magnitude should be a serious caution against funded systems. It is also clear that these systems mean greater risks to workers, and will in general be less progressive than a pay-as-you-go system. All in all, it is not clear what advantage a funded system can provide that would warrant the sort of waste that has characterised these systems to date.

Conclusion

Many of the claims that are often put forward to support the switch away from pay-as-you-go, mainly defined benefit, public pension plans, to defined contribution funded systems, misrepresent the problems of pay-as-you-go systems and distort and exaggerate the benefits of private accounts.

In several cases, this confusion resulted from a failure to not adhere strictly to economic theory, but to an overly ideological approach to "reform". In other cases, concerns about the financial markets and the actors in those markets seem to have priority over the interests of older workers.

The argument that pay-as-you-go plans must be unsustainable because they will require rising tax rates through time, ignores the fact that it is the after-tax real wage that affects incentives and determines living standards, not the tax rate. As long as countries experience respectable rates of before-tax real wage growth, there is little threat that the rising tax burdens caused by the ageing of the population will lower living standards. The argument also ignores the fact that a sound pay-as-you-go system is part of a very real and tangible social wage and provides purchasing power for beneficiaries with a positive effect on the overall economy. This has a particularly important impact at times when the economy, including stock prices, may be in temporary slumps. There is no economic obstacle that prevents current pay-as-you-go plans from continuing indefinitely.

It is also not clear what it is that leads the World Bank to continue pushing countries to partially dismantle pay-as-you-go programmes in favour of highly inefficient privatised plans that ultimately penalise retirees. The only plausible explanation would seem to be deeply ingrained but nevertheless highly debatable ideological preconceptions within the Bank about the inherent superiority of private providers in each and every circumstance. Preconceptions of a similar nature seem to explain the Bank's involvement in some highly controversial initiatives to privatise other basic public services such as potable water provision.

The country-by-country descriptions provided in the annex demonstrate that the privatised, defined contributions pension fund formula promoted by the Bank in developing and transition countries has frequently failed to deliver on its promises. The reformed pension regimes in place with World Bank assistance have had many failings:

- The reformed pension systems have generally delivered lower benefits to retirees -- disproportionately so to women

- They have been designed, in most cases, to lead to lower coverage of workers than under the previous programmes, meaning that large numbers of future retirees will benefit from no protection under these plans;

- They have proven to be highly inefficient in their administration, as demonstrated by extremely high administrative fees, which will translate into a direct and permanent loss for future retirees;

- The transition from public to partially or wholly privatised plans has posed enormous fiscal strains on governments, sometimes with disastrous consequences, most dramatically so in the case of Argentina.

If, as World Bank spokespersons sometimes claim, they are willing to give a fair hearing to all options for improving essential services, the institution should overhaul its whole approach in the area of social security reform. A good start would be for the Bank to offer to use its considerable expertise and financial resources by assisting countries in improving their public pension programmes. The Bank could do this rather than, as it is currently doing, demand as a condition for the institution's assistance that these programmes be scaled down and replaced by highly flawed alternatives.

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ANNEX

THE STRUCTURE OF PRIVATIZED SOCIAL SECURITY SYSTEMS IN DEVELOPING AND TRANSITION COUNTRIES

The World Bank's promotion of mandatory systems of individual accounts as a substitute for a pay-as-you-go public pension system is a relatively new development. The first country to replace a pay-as-you-go public pension system with a mandatory system of individual accounts was Chile, which made the transition without World Bank support in 1981. It carried through this transition under the Pinochet military dictatorship, which limited the extent to which the government had to respond to public input. As a result, the system adopted in Chile was one of the more extreme privatisations to date, with the pay-as-you-go system being completely replaced by private accounts. In addition, workers entering the system after the transition date in 1982 had no option other than to participate in the individual account system.

Later in the eighties, three developed countries, the Netherlands, Switzerland, and the United Kingdom, replaced a portion of their pay-as-you-go systems with a funded leg. In the nineties, a second wave of privatisation began in 1993 when Argentina, Australia, Columbia, Denmark, and Peru all set up systems of individual accounts to replace all or part of their pay-as-you-go pension systems. In the developing countries, this second wave of privatisation was strongly promoted by the World Bank with loans and technical assistance. Several more countries in Latin America, including Mexico, Uruguay, and Bolivia, had adopted systems of individual accounts by the end of the decade. In addition, several former Communist countries, including Hungary, Kazakhstan, and Poland, also adopted individual accounts with the World Bank's support. The process of social security privatisation is still ongoing, since many other countries in both regions are currently planning to replace their pay-as-you-go systems with defined contribution funded ones.

The main features of these new systems, as well as the transition from the prior pay-as-you-go systems, are discussed below. The Chilean system is discussed in some detail because it has been around longer than any of the other systems, and therefore there is more evidence on its performance. It has also served as a model for other countries that have subsequently switched over to a defined contribution funded system.

Chile

Although the World Bank did not play an active role in the establishment of the Chilean system, it is still worth including in this analysis since it provided a model for subsequent programmes. The problems with Chile's pay-as-you-go system were widely recognised at the time that Chile's government introduced its privatised system. Unlike most pay-as-you-go systems that are large in size, relatively simple, and small in number, contributing to economies of scale, the old Chilean system was actually an array of more than 30 distinct pension plans, each of which had different contribution rates and benefit formulas. The average contribution rate was 22.8 percent of taxable wages (Acuna and Iglesias, 2001). This rate led to a large amount of evasion. The benefits provided under the old system were both low and subject to significant fluctuations. Diamond and Valdes-Prieto (1993) concluded that close to 70 percent of the pensions provided in 1979 were the minimum pension. They also found that the standard deviation of the real value of the minimum pension was 29 percent over the period from 1955 to 1979. In this sense the guaranteed benefit was neither very large, nor was it stable.

It is worth noting that, in Diamond and Valdes-Prieto's assessment, the old system was sustainable, even if it required reforming. They find that it had balanced income and that its ratio of contributors to beneficiaries had stabilised by the mid-seventies. This assessment is interesting because it differs sharply with the assessment presented in the recent World Bank paper by Acuna and Iglesias (2001, p 21). This paper refers to a study (Wagner, 1983), which finds that the deficit in the system would rise to between 10.3 and 16.1 percent of GDP in 2000, requiring a state contribution equal to 21.5 percent of GDP. To fully determine the accuracy of these competing assessments, it would be necessary to independently evaluate the finances of the old Chilean system. However, there does seem to be a basic logical contradiction between two contentions of the Acuna and Iglesias paper -- that the benefits of the old Chilean system were both low and unaffordable. Since there seems to be general agreement among analysts that the benefits provided under the old system were low, it is probably reasonable to assume that they were affordable -- there was no imminent threat to the system's sustainability at the time of the privatisation.

The new Chilean system was established as almost a pure defined contribution funded system, under which workers pay an amount equal to 10 percent of their wages to a registered financial intermediary or AFP.[15] AFPs compete for members, but are subject to a series of restrictions on the types of investments they hold, the fees that they charge, and the returns that they provide. AFPs are required to provide a return within a band around the average for all AFPs. They are required to hold insurance to guarantee that their return will fall within the band. They are also required to use a portion of the worker's payment to buy survivor's and disability insurance on the worker's behalf. These insurance policies must meet standard conditions set by the government's AFP supervisory board. Under these provisions, the disability benefit is set at approximately 70 percent of the worker's average wage over the prior ten years, in the case of full disability.[16] Under the survivor's benefit, the accumulated account is transferred to survivors, who may withdraw it subject to the same provisions as the worker.

When a worker reaches retirement age, 65 for men or 60 for women, he or she is entitled to the money in their account. They can take this money either in the form of a phased withdrawal or an inflation-indexed annuity, or some combination of the two. It is

[15] "AFP" is the acronym for "Administradoras de Fondos de Pensiones."
[16] This only applies to non-work related disabilities. Work related disabilities are covered under a separate programme.

worth noting that annuity payments are based on gender specific life expectancies, so that at any given age, a woman will get a considerably lower annuity than a man with the same accumulated assets. The system is not pure defined contribution in that there is still a minimum pension, equal to approximately 70 percent of the minimum wage, to which workers are entitled subject to certain conditions, even if their account is not large enough to provide this benefit. There is also a separate means tested welfare benefit for retirees, which is apart from the system altogether. Both the minimum pension and the means tested welfare benefit are paid out of general revenue.

Both of the retirement distribution systems have proven somewhat problematic. The phased withdrawal system creates a problem, in that a retiree's benefits will generally decline in real terms each year. This is due to the formula used to determine the amount that can be withdrawn.[17] The annuity system suffers high administrative fees, recently estimated at 5.9 percent of the sum being annuitised (Acuna and Iglesias, 2001, p26), and is structured such that workers will get less than an actuarially fair benefit because of adverse selection. Adverse selection is a problem in this system, because the voluntary nature of the annuity means that many people with shorter life expectancies will opt not to take the annuity. As a result, insurers must lower their pay-outs to compensate for the fact that the people buying annuities are longer-lived on average than the population as a whole. This means that a person with an average life expectancy will get less than an actuarially fair benefit.

Another problem has arisen with the annuity system. The regulations only require that workers buy an annuity equal to a fixed percentage of the minimum benefit. Apparently insurance companies have now established a system where they effectively provide a lump-sum pay-out of the value of an account in excess of what in needed to meet this minimum (Acuna and Iglesias, 2001). Many workers now take this option, which significantly reduces their retirement benefit.

This issue is interesting since it may reveal the sort of political pressures which exist in this type of defined contribution funded system. The whole point of mandatory savings is to ensure that workers will have an adequate standard of living in retirement. Insofar as the pay-out system is structured in a way that allows workers to withdraw disproportionate amounts from their accounts at the beginning of their retirement, this is a flaw in the system. However, the political pressures may be such that it is difficult to adjust the system to close off the loopholes that allow these excessive withdrawals. As a result, many workers may find themselves with inadequate benefit levels later in their retirement. If a funded system is to prove effective in providing workers with a core retirement income, it is necessary that non-retirement uses of these funds be strictly limited. If it turns out to be difficult politically to maintain restrictions on the uses of this money, then this would be an extremely serious, and possibly fatal, flaw in funded

[17] For example, assume the life expectancy of a worker at age 65 is 15, this means that they can withdraw one fifteenth of their account that year. At age 66, their life expectancy might be 14.5 years. This means that they will be able to withdraw 1/14.5 of the amount remaining in their account. This decline in nominal benefits is larger in real terms as a result of inflation.

systems. If governments cannot enforce rules requiring that the money be kept for retirement, then it has not established an effective retirement system.[18]

Proponents of the Chilean system often point to the fact that the vast majority of the workers who were under the old system, and were given the option to remain under the old system, chose instead to join the new system. But it is misleading to refer to this choice as a referendum on the relative merits of two systems. In the transition, the Chilean government effectively took responsibility for the debts of the old system. It agreed to pay the obligations to current and future retirees that had been built up under the old system. (In a pay-as-you-go system, like Chile's at the time of the transition, the worker's contribution is for the purpose of meeting these past commitments to those already retired, not to provide for a worker’s own retirement.)

That is the main reason why the new Chilean system can appear to provide relatively high returns. Since the government has eliminated the need to support current retirees, workers' entire contributions are instead invested for their own retirement. However, the old plans did not benefit in the same way. The pension benefits were not increased, even though in principle these plans were no longer liable for the support of past retirees. In this sense, the government was providing a huge subsidy for the new plan which they were not giving to the old plan.

Concretely, this took the form of a 22 percent government mandated increase in take home pay, which was supposed to compensate workers both for the payroll taxes that had been taken out of their checks to support the old system, and also the employers' contribution on behalf of the workers. If workers wanted to remain in the old system, they would have to use this entire 22 percent of their wages, to get the same benefit as they would have received had the government not taken responsibility for the system's obligations. Since most workers chose not to throw away the subsidy the government was offering to join the new system, the vast majority of workers under age 45 chose to join the new system. This shows that when the government chooses to subsidise a defined contribution funded pension system, but not a pay-as-you-go system, most people will choose the subsidised system. It reveals little about the relative popularity of the two systems.

The Transition Process

The Chilean government financed the transition from the old system by building up a large surplus in other areas of the government budget. The Pinochet government carried this out largely by cutting back other areas of public spending. This surplus allowed the government to continue to make payments to retirees under the old system, even after it had lost the bulk of contributions from the current workforce. In the years

[18] A comparable problem has arisen with the defined contribution tax sheltered retirement accounts held by many workers in the United States. Since the tax code was first changed to allow for these accounts in 1982, the list of reasons for penalty free withdrawals has steadily expanded (e.g. first time home purchase, medical emergencies, some education expenses). As a result, a smaller portion of the money placed in these accounts is likely to be available to support retirement income.

immediately after the transition, the gap that had to be financed from general revenue was equal to approximately 8 percent of GDP. By 1991 the operating shortfall in the old system had fallen significantly, but was still equal to 4.0 percent of GDP. It is currently close to 2.0 percent of GDP and is projected to fall to 1.3 percent by the end of the decade.

The government also had to compensate workers who switched to the new system for the contributions already made to the old system. It did this by issuing "recognition bonds," which were supposed to be set at a level equal to their contributions under the old system, and accrue interest at a real rate of 4.0 percent annually until the worker retires.[19] While the operating deficit of the old system has been gradually declining as the number of beneficiaries falls off, the cost to the government of honouring the recognition bonds has gradually increased. It currently stands at 1.1 percent of GDP, and is projected to remain roughly constant at this level over the next decade.

These numbers show that the transition to the new system has been extremely costly for Chile. In the years immediately following the transition, the government would have had to maintain a surplus of more than 8 percentage points of GDP on its general budget to offset the cost of the transition. A decade later, it still needed a surplus equal to more than 4 percentage points of GDP, and even two decades after the transition it still costs more than 3.0 percent of GDP to pay current expenses from the transition. While it did increase its general account surplus through temporary tax increases and holding down expenditures, it also had to borrow heavily in the first years of the transition.

The size of these transition costs points to the difficulty in answering the question as to whether the new programme raised national saving. With such large sums involved, it is very difficult to accurately describe the counter-factual scenario. Presumably, Chile would not have run as large a surplus on its general budget if it didn't have the need to offset massive deficits on its Social Security budget. On the other hand, it is likely that it would have run a larger unified (i.e. total government spending) surplus in the absence of the transition costs. Also, private sector behaviour is difficult to predict in the counterfactual. The large increase in workers' take home pay from the transition led to a surge in consumption. At the same time, the savings under the new plan were an increase in private sector savings that previously would have appeared to be public sector savings. Several analyses conclude that on net that the transition did increase national saving somewhat (e.g. Holzmann 1996 and Corsetti and Schmidt-Hebbel, 1997). The evidence presented in Diamond and Valdes-Prieto (1994) and Acuna and Iglesias (2001) indicates that the direction of change was ambiguous, but in any case, the net effect on national savings was small.

[19] Predictably, there were problems in assessing the amount of contributions that workers should be credited. Accounts were not always well kept, and it is likely that many workers did not get fully compensated for their contributions under this transition. Of course, the same problems may have arisen when workers reached retirement, and the old system had been left in place.

The Performance of the Chilean System So Far

The new system's record in the first twenty years has been mixed. The individual accounts have generally provided good returns. The simple average of real returns in the AFPs was 11 percent between 1981 and 2000. Any system that consistently provides returns of this size will allow workers to have substantial retirement pensions. But on the negative side, the cost of operating the accounts has proven to be quite high. The administrative fees charged to manage the funds have exceeded 15 percent of the money deposited in these accounts. This indicates that workers are paying a very high cost for the opportunity to have an individual account, as opposed to a centrally managed fund that was invested in the same assets, or to a pay-as-you-go system. Each of these issues merits somewhat closer examination.

The high return on the accounts is primarily due to the early years after the creation of the system when the Chilean stock market was soaring at double-digit rates. At the time, the stock market was quite small, and the infusion of funds through the pension system undoubtedly played a large role in raising stock prices, as was intended. However, the return in more recent years has been much lower. The average return from 1995-99 was just 4.0 percent. The lower return in recent years is of much more consequence than the high returns in the early years of the system, since there is much more money in the system at present. Relatively few workers benefited significantly from the high returns of the eighties, because they had little money in the system. A weighted average of the returns through 1999 is 7.5 percent.[20] It is likely that the pension system helped to propel the strong growth of Chile's stock market in the eighties and early nineties, but after reaching a high level relative to GDP, it is unlikely that it will provide the same sort of returns in the future. Presumably the returns on more recent years have been yet lower, given the fortunes of the stock market over the last two year period.

The administrative costs of the Chilean system are actually lower than the average among the countries that have established systems of individual accounts.[21] As noted earlier, these fees are a direct drain, not only on workers' accounts, but also to the economy as a whole, since they involve a waste of productive resources. The capital and labour that are devoted to the management and marketing of these accounts could instead be used for productive purposes. In addition, the direct administrative costs are not the only costs associated with individual accounts. The government must establish an administrative agency to oversee these accounts. The agency in Chile is the most efficient of those in existence, measured relative to the size of annual contributions, but still costs an amount equal to 0.28 percent of contributions (Demarco and Rofman, 1998, table 3). This is much higher than the expense of running

[20] This calculation is based on the returns that appear in Palacios and Pallares-Miralles (2000, table 4.14b). The weights were based on the data in table 4.14a.

[21] Some countries, most notably Bolivia, have managed to lower costs through tight regulation of the management of accounts. Since the financial firms that operate the accounts have considerable political power, it is questionable whether other countries will be able to follow this example. The average fee among the pension systems in Latin America is 16.3 percent of contributions (James, Smallhout, and Vittas, 1999, p 38).

the pay-as-you-go system in, for example, the United States. The supervisory systems in other countries have expenses that run as high as 0.94 percent of annual contributions.

The pay out system will cause workers to incur additional expenses in a funded system. If they opt to purchase an annuity to ensure a fixed lifetime benefit comparable to what they would receive from a pay-as-you-go system, the cost would be an additional 5 percent to 10 percent of their accumulation (Mitchell, et al, 1997).[22] As noted earlier, workers also must take some amount of their time to oversee their accounts in a funded system. This would not be necessary in a traditional pay-as-you-go system. The table below summarises the costs of operating a defined contribution funded system measured as a share of contributions.

Operating Costs of Defined Contribution Funded Pension Systems as a Share of Contributions

	Administrative Fees[23]	Oversight Agency[24]	Annuity Fees[25]	Opportunity Cost of Time[26]	**Total**
Low Estimate	4.8%	0.28%	5.0%	0.5%	**10.58%**
High Estimate	23.0%	1.80%	10.0%	1.0%	**35.80%**

This table shows that even in the low cost estimates, it is far more expensive to run a defined contribution funded pension system than a pay-as-you-go plan. The low cost estimate is approximately 1500 percent of the cost of operating the pay-as-you-go system in the United States. The high cost estimate would make the operational expenses of a defined contribution funded system approximately 500 times that of US Social Security. These expenses imply a serious drain of resources. If a mature system has contributions equal to 6 percent of GDP, the low cost estimate implies that the amount of waste, compared with the cost of running a pay-as-you-go system, is equal to approximately 0.6 percent of GDP annually. This would be equivalent to approximately $65 billion a year in the United States at present. The high cost estimate would imply a level of waste equal to 2.1 percent of GDP, which would be the equivalent of $230 billion a year in the United States.

[22] This figure represents the pure cost of buying annuities, reflecting the costs and profits of the insurer. It does not factor in any additional costs associated with adverse selection, which would cause a person of average life expectancy to receive a lower than actuarially fair return.
[23] The low estimate is for Bolivia and the high estimate is for Argentina. Both are taken from James, Smalhout, and Vittas, 1999, p 38.
[24] The low cost estimate is for Chile, the high cost estimate is for Bolivia. The estimates are taken from Demarco and Rofman, 1998, table 3.
[25] These estimates are taken from research on the costs of annuities by Mitchell, et al, 1997. They refer only to actual expenses, not additional costs associated with adverse selection.
[26] The low estimate assumes that workers spend an average of 0.5 hours annually on their accounts and that the annual contribution is equal to 200 hours of work (10 percent of 2000). The high end assumes that workers spend an average of 2 hours per year making decisions on their accounts.

In summary, the Chilean system excludes an important part of the working population and has high administrative costs. Experiences in Chile and elsewhere with private pension systems also point to the need to adequately regulate such systems to ensure that there are not risks beyond the built-in risks of such systems.

Argentina

The Argentine pension system was reformed with the financial and technical assistance of the World Bank in 1994, as part of a larger structural adjustment programme. The pre-reform plan was a publicly managed pay-as-you-go system, broken down into separate national and provincial plans. It required contribution rates of up to 50 percent which then became unsustainable and decreased to 21%. Pension benefits amounted to between 70 and 82 percent of a worker's wages, though this too was reduced with the decrease in contribution rates. The real value of the pension benefits eroded as the government avoided indexation of these benefits as promised under the regulations, which then led to lawsuits by pensioners that in 1991 resulted in bond and cash payments by the government of the past debt of pension benefits. The system was running deficits by the time of reform.[27]

The new plan is a "multi-pillar" system. There is a mandatory pay-as-you-go system, financed by employers' and self-employed contributions of 16% of gross taxable income. However, due to a set of ad hoc tax reductions for employers by location and industry that have been put in place since the introduction of the system, the real contribution rate is actually just 7.5% of gross wages. The pension benefit is a flat monthly amount of 28% of average wages, which can be claimed by any worker with 30 years of contributions once he or she has reached the eligible age, which is 65 for men and 60 for women, raised from 60 for men and 55 for women under the old system.

The benefit payment had been legislated to be subject to an automatic indexation mechanism tied to wages. However, because mistakes were made in constructing the index, it did not end up moving at the same pace as wages, so the law was changed and the indexation was suspended. While the legislature intended to keep benefits in line with wages, there is not currently an automatic mechanism.

The second pillar is financed by employees' and self-employed contributions of 11% of gross taxable income, with the self-employed therefore contributing a total of 27% of their income. A worker can choose to have their contribution in this pillar go to either a defined benefit government-run system or a privately managed defined contribution system. The default choice, if the worker does not make one, is the funded scheme. The government-run portion of this pillar pays out 0.85% of pre-retirement income per year of contribution. For example, a worker who has contributed to the system for 30 years would be entitled to a benefit equal to 25.5 percent of his or her average wage over their last ten years of contributions.

[27] See Arenas de Mesa and Bertranou (1997) and World Bank Technical Annex Argentina document (1996).

The funded portion of this pillar pays out benefits in the form of either annuities or phased withdrawals, depending on the preference of the worker. Married workers are required to purchase dual life annuities. The phased withdrawal scheme allows for monthly withdrawals from the worker's account, based on life expectancy and interest rates. The amount of the monthly withdrawal may be adjusted and reduced depending on the returns to the fund. Workers who opt for a phased withdrawal may use their fund balance to purchase an annuity at any time. As with most defined contribution funded systems, the annuities are based on gender specific life expectancies, so women will get lower benefits than men of the same age and with the same accumulation.

The second pillar also includes survivors and disability benefits. Under the government-run portion, survivors receive 50 to 70% of the deceased worker's salary, and the disabled receive 70% of their previous salary. There is a regularity rule that requires that the deceased or disabled worker must have made regular contributions in more than 29 of the last 36 months in order to qualify for this benefit. If the deceased or disabled worker had made regular contributions in 18 to 29 of the last 36 months, the benefit paid out is 5/7ths the normal amount, and if the worker had contributed regularly for less than 18 months there will be no pay-out. Under the funded portion of the second pillar, the criteria for receiving the benefit is the same, but the financial arrangement is in the form of either an annuity or scheduled withdrawal.

There is a third pillar where workers make voluntary contributions to a private fund. It is fairly small, and allows for supplementary contributions beyond those made to the second pillar funded scheme.

The Argentine system ranks near the top in administrative costs. Fees average 3.28 percent of wages, of which 1.19 percent pays for insurance. This leaves an administrative fee of 2.09 percentage points, or 21.3 percent of total contributions.[28]

In transitioning to the new system, workers are guaranteed a second tier benefit equal to 1.5 percent of their pre-retirement wage for each year that they contributed to the old system. This means that a worker who has contributed for 20 years under the old system, will be entitled to a benefit equal to 30 percent of their final wage, plus the flat benefit of 28 percent of the average wage, in addition to whatever benefits they accrue under the new system.

Workers who were already receiving survivors or disability benefits during the transition, will continue to receive their benefits, with part of the cost being paid out of general revenue.

In principle, participation in the pension programme is compulsory for wage earners in the private sector and government employees at all levels excepting military. Some provincial government employees have not yet been brought into the system. About 1 million workers still contribute to the provincial systems.

[28] Deveso -Carpio and Vidal-Melia, 2001, table VIII.

Other groups in society, such as clergy or spouses outside of the paid labour force, may join on a voluntary basis. Those workers who earn less than 33% of average wages or six times greater than the average wage amount may opt out of the programme due to minimum and maximum taxable income guidelines.

Roughly 6.8 million active employed workers, more than half the work force, are not currently contributing to the system, and therefore have limited coverage. As with Chile, there is a substantially larger number of affiliates than active contributors. More importantly, the ratio of contributors to affiliates had been declining, even before the country's recent financial crisis. This means that the number of people guaranteed coverage has been declining.

This declining coverage rate is one of the biggest problems associated with the new system. Reversing this trend had been one of the main arguments for reform of the previous pay-as-you-go system. The drop in coverage appears to be attributable to the increasing stringency of contribution laws, in addition to decreased participation by workers in the formal economy. The number of self-employed contributors has dropped due to the high costs associated with contributing.

In addition to the fall in coverage, payments have also dropped as a result of the legal loopholes introduced to aid different employers by location and industry. As a result of the low coverage rate and special concessions, the percentage of benefit expenditures financed by sources other than the payroll tax is 65% and growing. This has been a large factor in Argentina's fiscal problems in the last four years. In 2001, Argentina was forced to cut back pension benefits for all but the poorest workers by 13 percent (IMF, 2001). Later that same year, in December 2001, the government seized the individual accounts held in the second pillar, replacing the holdings with long-term government bonds, as a way of getting sufficient revenue to meet interest obligations.[29] As a result, it is not clear if this system will survive the current crisis intact.

Bolivia

Pension reform took place in Bolivia in 1996.[30] The reform changed the old public pay-as-you-go system into a private funded defined contribution system. The old system provided a pension benefit of 30% of a worker's wages averaged over the last five years of contributions. There also was a supplementary fund that primarily benefited public sector employees. The supplementary funds provided an additional benefit of 40% of average wages. Participation in the old system was mandatory for the basic national plan and voluntary for the supplementary plan, although almost all workers who were eligible and affiliated with the national plan were also affiliated with the supplementary plan.

[29] An account of this seizure can be found on the British Broadcasting Corporation's website [http://news.bbc.co.uk/hi/english/business/newsid_1696000/1696010.stm].
[30] Details on Bolivian pension reform taken from Von Gersdorff (1997) and US SSA (1999).

The contribution rates for the old plan were 2.5% of monthly wages for employees, 4.5% for employers, and 1.5% by the government, though in practice it only contributed this amount for public sector employees. The supplementary pension funds had a range of contribution rates from 3.5 to 12%. The retirement ages under the old system were 50 years for women and 55 years for men. In order to qualify for pension benefits, workers must have made 180 monthly contributions, or roughly 15 years worth of contributions. There were 300,000 contributors to the old plan, most of whom were public sector employees and also members of the supplementary fund. There were 120,000 beneficiaries.

Covered workers accounted for 12 percent of the economically active population. Public sector contributions to the pension system were generally in accordance with the system's guidelines, but the private sector was beset by non-payment or lack of reporting of all of the contributions that were made. The old system had a deficit in the years before reform, which was equal to approximately 0.23% of GDP in 1995. Administrative costs in the old system were equal to 17% of annual contributions, on average.

The new pension system consists of a private funded plan in addition to a supplemental social fund called Bonosol. Bonosol is financed by revenues from the privatisation of state-owned enterprises. The contribution rate for the private plan is 12.5% of employee wages, where the 12.5% is broken down into 10% to the private funds, 2% for survivors and disability insurance due to common causes, and 0.5% for administrative costs of the private funds, or AFPs. Employers contribute an additional 2% of wages to finance survivors and disability insurance for work-related causes.

The normal retirement age is 65 in the new system, but workers are allowed to start drawing on their accounts before age 65 if they have accumulated enough savings to provide a benefit equal to 70% of their average salary over the previous five working years. At age 65, however, a worker may retire regardless of the amount they have accumulated. The benefits are accumulated and paid out through a fixed or variable annuity. Participants over the age of 65 receive a Bonosol annuity of US$248 per year, plus at least 70% of the minimum monthly wage of US$48 until the savings in their individual retirement account are exhausted, at which point they receive only the Bonosol annuity. All workers who were at least 21 by the end of 1995 qualify for the Bonosol benefit. This is the only sort of minimum pension guaranteed by the system, and applies only to this first generation of workers experiencing the reform. Pensions, both in the old and new system, are indexed to the US dollar.

Contributors to the old pension system were automatically transferred to the new privately funded system in 1997, which began collecting contributions at that time. All employers were required to formally affiliate their workers to the AFP within two years. This means all 300,000 affiliates to the old system would now belong to the new system. Those workers who qualified for retirement by the time the new system would be put into effect, which was approximately 20,000 workers, would still receive the old system's benefits, paid for out of general tax revenue. New entrants to the labour force are required to affiliate to the new system. Those workers who should have been covered by the old system, but were not, are also required to join the new system.

The number of unaffiliated but eligible workers is estimated to be 500,000. Self-employed workers earning at least the minimum wage may voluntarily affiliate. By mid 1997 roughly 85,000 private sector workers and all of the public sector except for the military had affiliated to the AFP. Two AFP firms administer the private pension accounts. The average monthly management fee per account is US$2.37 or about 1% of the average affiliated worker's salary. Rates of return on the funds averaged around 11 percent a year between 1997 and 2000, although they have no doubt fallen since.[31]

Survivors and disability benefits are built into the new system. There are only full disability pensions, for disabilities incurred by common causes. The benefits are 70% of the worker's average wages over the last five years of contributions. In addition, there is a continued payment of a contribution into the worker's private fund account, so that at age 65, the disability pension is replaced by the regular old-age pension. For disabilities due to work-related causes, there are both full and partial disability benefits, which is also replaced by the old-age pension at age 65. The survivors' pension benefits are the deceased's accrued benefits plus interest, with a minimum of 70% of their average salary over the last five years. If contributions were not made over the entire previous five years, then the base wages for calculating the benefit is at least an 18 month period in which contributions were made, between a period of the last 18 months and five years prior to the death of the insured.

Transition benefits were written into the system. Recognition bonds, similar to those in Chile, were provided to past contributors to the old system as part of the transition pension benefit. The compensatory pension to aid workers in the transition is dependent on the amount the worker contributed to the old system. For those that made more than 60 monthly contributions (equivalent to five years of work), the following calculation is used to determine their monthly benefit: number of years contributed to the old system, multiplied by 70%, then divided by 25, and then multiplied by the last monthly salary. So for someone who had contributed for 25 years, this formula guarantees the worker 70% of their last monthly salary as of October 1996. The benefit is subject to a maximum of 20 times the minimum wage. For workers with less than 60 contributions, the benefit paid out is a lump-sum amount equal to 100 times the amount calculated by the above formula, also with a maximum payment amount of 20 times the monthly minimum wage.

Existing pensioners under the old system continued to receive pensions under that system. Those who qualified for retirement under the old system by the time the new system was fully implemented in May 1997, were given the choice between continuing with the old system's benefits, or continue working and incrementally increasing their benefits as calculated under the old system by 2% a year for every extra year they remain in the workforce. Or they can buy an annuity with the proceeds

[31] Devesa-Carpio and Vidal-Melia (2001).

from their individual account. For these workers the contribution rate is also 12.5% and collected by the AFPs. These benefits are financed by the Treasury.

The government established a transition agency specifically to manage the issues and problems associated with the transition phase. Financing the pension reform required 2.24% of GDP in 1997. It should be noted Bolivia has very low coverage in its pension system, largely as a result of the fact that approximately 60% of the Bolivian working population is employed in the informal economy.

Colombia

The reform of the Colombian pension system was enacted in 1993 and implemented in 1994.[32] As with most other countries in Latin America, the existing pension system was characterised by multiple administrators, at both the national and regional levels. There were also a set of voluntary pension plans run by insurance companies for saving by both private and public sector employees, as well as privately sponsored pension plans for employees of larger firms. Despite the diversity of plans that were available, pension coverage was low with just 29.6% of the labour force contributing in 1993.

Contributions paid by government employees before the reform were nearly zero. There was a mandatory contribution of 6.5% of wages for private sector employees. The retirement ages were 50 for women and 55 for men in the public sector, and 55 for women and 60 for men in the private sector. Benefits were 75% of wages averaged over the last two years of work in the public sector and between 45 and 90% of average wages in the private sector. The required years of contributions to receive benefits were 20 in the public sector, though there were many special regimes with easier requirements, and a minimum of 10 years of contributions in the private sector. There was a minimum pension of 100% of the minimum wage for private sector workers. The main impetus for reform were projections that the ageing of the Colombian population in coming decades would make the old system unsustainable (presumably, a claim as unsubstantiated in Colombia as elsewhere).

The pension system created in 1994 consisted of two pillars with both a pay-as-you-go and a fully funded plan. New entrants to the labour force and public sector workers changing jobs were required to affiliate with the new system, and were given the option to choose between the two pillars. Workers in insolvent funds were also given that choice. Solvent funds were allowed to retain their affiliates until the last of their survivors pass away. The funds for teachers, oil workers, and the armed forces were allowed to remain as pay-as-you-go programmes. For both pillars, the contribution rates are 13.5% of wages, with 75% of that coming from the employer, and 25% from the employee. This is a marked increase from the contribution rates under the old system. For higher-income workers earning four times the minimum wage, there is an additional required contribution of 1% of wages, as explained further below.

[32] Details of this discussion taken from Queisser (1997), Schmidt-Hebbel (1997), and US SSA (1999).

In the pay-as-you-go plan, retirement ages for older workers who had either been contributing for 15 or more years or were 35 (women) and 40 (men) by the time of reform in 1994, were 55 for women and 60 for men. For the younger workers, the ages increased to 57 for women and 62 for men. For older workers under this first pillar, their pension benefit was calculated using the same formula as under the old system, which gives a benefit between 45 and 90% of their average wages over the last two years of work, depending on the number of years of contributions. Twenty-five years of contributions would lead to a benefit of 90% of wages. For younger workers, a minimum of 1,000 weeks of contributions was required. Pension benefits would be between 65 and 90% of average wages over the last two years (one year for public sector employees), and were also dependent on the number of years of contributions. There is an annual adjustment of pensions for changes in the consumer price index.

The funded second pillar allows for a retirement age of 60 for women and 62 for men, at which point the pension savings should finance a pension annuity greater than 110% of the minimum wage for an average worker (given standard assumptions on returns). Workers may retire at a younger age if they reach this savings level earlier. The benefits are the pensioner's contributions plus accrued interest, and are dependent on the rate of the returns of contributions. The worker may purchase an annuity, make phased withdrawals, or a combination of the two. There are 10 privately managed funds. Without taking into account administration costs, real rates of return in the funds were 14.4% in 1994, 15.9% in 1995, and 15% in 1996. The combined cost for survivors and disability insurance premiums and administrative fees in the funded pillar is 3.5 percentage points of the 13.5% total contribution.

There is a minimum pension guaranteed by the government, which gives workers a benefit equal to 110 percent of the minimum wage, if they do not accumulate enough in their account to get a benefit of this size. Workers must have contributed for 23 years to qualify. This benefit is financed by a 1% payroll tax on higher-income contributors.

Both survivors and disability pension beneficiaries receive 45% of average earnings. For survivors there is an increment of 2% of wages for each 50 weeks of contribution over 500 weeks. For those receiving disability, this increment is 1.5% of wages for each 50 weeks of contribution over 500 weeks, when the disability is a loss of between 50 and 66% of previous earning capacity. The disability pension is 54% of average earnings plus 2% of wages for each of 50 weeks of contribution over 800 weeks, when the disability is a loss greater than 66%. The maximum survivors and disability pensions are 75% of the average monthly wage, and the minimum is the minimum monthly wage. To qualify for the disability benefit, workers must have contributed for 26 weeks in the year prior to the onset of the disability.

To aid workers through the transition from the old system to the new, the government recognised full pension rights to current pensioners and long-time contributors, and partial pension rights to younger contributors. Those women and men above the age of 35 and 40 respectively at the time of pension reform, or for whom the number of years of contributing exceeded 15 years in 1994, were entitled to the benefits provided under the old system. Pension recognition bonds were issued to any worker who contributed under the old system and now chose to affiliate with the fully-funded plan or for those who shifted from affiliation with a programme other than the old national pay-as-you-go plan to the new national pay-as-you-go plan.

Coverage of the new system as of December 1996 was 2.6 million affiliates to the public pillar, or 22% of the economically active population, and 2.1 million affiliates to the private pillar, or 18% of the economically active population.

A major issue with the reformed system is the low amount of contributions due to the low incomes of the contributors. In addition, in the fully-funded plan there is the problem of high administrative costs. The AFPs currently spend 70% of their revenue on advertising and marketing, and as a result, they are not breaking even. Due in part to the prevalence of low-incomes in Colombia, the new pension system has not increased national savings. In fact during the 1990s, national savings rates have actually decreased.[33]

El Salvador

In April of 1998, El Salvador put in place a system of mandatory individual accounts that is intended to gradually replace its pay-as-you-go pension system. Under the law, all workers under age 36 at the time of the creation of the new system were required to join it. Workers who were older than age 36, but less than 50 in the case of women or 55 in the case of men, had the option to join the new system or remain in the old system. Older workers were required to remain in the older system.

Under the pre-reform system, workers who reached the normal retirement age (60 for men, 55 for women), with 25 years of contributions, were entitled to a pension equal to 30 percent of their average salary over their last ten years of covered employment.[34] They received an additional 1.5 percent of their wage for each additional year of contributions over the minimum. Workers could also retire with full benefits once they had thirty years of covered employment, regardless of their age. The system had a minimum pension for workers who had put in enough years of covered employment. It was set at 700 colones per month in 1999, which was equal to approximately $80 (U.S.).

The system was supported by a 5.5 percent payroll tax paid by both the employee and the employer (11 percent total). Under the 1998 reform this tax rises at the rate of 0.5 percentage points annually until it reaches 7.0 percent in 2002.

[33] See Lopez and Ortega (1998).
[34] Most of the information in this section is taken from the "Social Security Programmes Throughout the World: El Salvador," United States Govemment, Social Security Administration, [http://www.ssa.gov/statistics/ssptw/1999/English/elsald.htm].

The pre-reform system in El Salvador was still relatively young (it was first implemented in 1969) and had limited coverage. Just over one quarter of the workforce was enrolled in the system, and pension spending was just 1.3 percent of GDP.[35]

The new system required workers initially to pay an amount equal to 2 percent of their earnings into an approved fund. The employer was required to pay an additional 5.5 percent of the wage. These amounts rose gradually until 2002, when the employee side tax reached 3.25 percent of wages and the employer side hit 6.25 percent. In addition, workers must pay approximately 3 percent of their wages to cover mandatory survivors and disability insurance and administrative costs. Workers who had been covered under the old system, but opted to switch into the new plan were given recognition bonds that were supposed to be equal to their past contributions, plus interest.

The qualifications for collecting benefits were the same in the new system as in the public system. Workers must reach the normal retirement age (55 for women and 60 for men), and have 25 years of covered contributions, or have 30 years of covered contributions. In addition, workers may retire on the new system if they have accumulated enough money in their account to pay 160 percent of the minimum pension.

The benefit can be paid out in either a phased withdrawal or an annuity, both of which are indexed to inflation. There is a minimum pension provided to workers who have met the work and age requirements to qualify for benefits, but whose accumulations are not sufficient to pay the minimum pension.

The new system is decentralised, although there are only five separate funds. The two largest control almost two-thirds of all deposits.[36]

It is worth noting that the disability insurance provided under the new system is far lower than under the pre-reform system. Under the pre-reform system, a worker was eligible for disability benefits if they had contributed to the system for 3 years and were below the normal retirement age. The new system requires 10 years of contributions before a worker is eligible for disability. Given the prevalence of informal employment, it is likely that many workers with extensive work experience will not meet the requirements for coverage under the new system.

Hungary

The Hungarian pension reform legislation was passed in 1997, with the changes being implemented in 1998.[37] It was part of a series of privatisations that took place in the economy aided by the World Bank and other international institutions in the

[35] Palacios and Pallares-Miralles, 2000 (tables 4.7 and 4.8).
[36] Devesa-Carpio and Vidal-Melia, 2001, Appendix table 10.
[37] Details of this discussion taken from Rocha and Vittas (2001) and US SSA (1999).

transition period of the post-Soviet era. The old pay-as-you-go public system was updated with a reformed public pay-as-you-go pillar, a second private funded pillar, and a third voluntary defined contribution funded pillar, which had also existed before the reform.

In the old system, the ratio of pensioners to workers increased substantially over time, raising the cost of the programme. By the early 1990s, the contribution rate was about 34.5% of gross wages, with 30.5 percentage points of that amount going towards old age and survivors benefits, and about 4 percentage points going to disability pensions. The basic pension benefit was equal to 2 percent of the worker's average wage (net of taxes) for each year of work. Pension benefits were indexed to wages, which ensured that retirees' wages would keep pace with living standards, but substantially increased the cost of the programme. At the time of reform, the high tax rates were leading to widespread evasion.

The new system included a set of measures to reduce benefits. The retirement age in the new system was increased to 62 for both men and women, up from 60 for men and 50 for women, previously. The number of years of contributions needed for workers to retire early with full benefits was increased to 40. The retirement age and the minimum years of service needed to be eligible for early retirement were raised immediately upon reform, and are set to continue to be gradually increased until reaching their final values in 2009. The existing penalties for taking early retirement were increased, and in addition, the rewards for working longer and taking late retirement were increased. Changes were also made in the calculation of benefits that eliminated some redistributive elements that existed in the system prior to the reform -- specifically, a regulation that taxed higher income workers more. The indexation of the system went from being based on net wages, to being based on a combination of wages and consumer prices, called the Swiss formula.

Workers choosing to stay in the reformed pay-as-you-go system will pay a contribution rate of 30% of gross wages. This results in a benefit equal to 1.65% of average wages per year of contribution. These workers may also opt to contribute to a voluntary third pillar, which was introduced before the reform, in 1994. Workers who switch to the new system will contribute 22% of gross wages to the first public pension pillar, and receive an accrual rate of 1.22%. Another 8% of wages will go to the second private pillar. This second contribution rate is set to be phased in to limit the revenue losses to the pay-as-you-go system. The phase-in schedule provided that in 1998, 24% would go to the first pillar and 6% to the second, in 1999, 23% would go to the first pillar and 7% to the second, and in 2000, 22% would go to the first pillar and 8% to the second. This phase-in plan encountered some difficulties when a new government came into office in 1998. The new government did not keep with the gradual contribution rate increase to the second pillar, instead holding the 6% rate in effect until the end of its term in mid-2002.

The voluntary third pillar began operation in 1994 and provided tax incentives to encourage membership, which led to 25% of the labour force becoming affiliates by

1999. The average contribution has been about 5% of the average wage. These affiliates are mostly middle- to high-income workers above the age of 35. There are 160 private funds from which to choose.

Workers who switch to the new system and continue to contribute for at least 15 years, will be guaranteed a minimum second pillar benefit equal to 25% of their first pillar pension. At retirement, the benefit pay-out process requires the worker to purchase an annuity.

There are approximately 25 funds in the private second pillar. Five main firms account for 73% of all assets in this programme. The minimum second pillar pension benefit guarantee -- 25% of the first pillar pension -- is backed by a guarantee fund to which all pension funds contribute. Second pillar funds are also required to make up for shortfalls in rates of return that are more than 15% less than the return of a portfolio of long-term government bonds. This minimum return is guaranteed by a reserve fund. This fund is supported through a requirement that all funds put aside an amount equivalent to 0.5% of total assets which can be tapped to offset shortfalls; in addition returns that are more than 40% above the benchmark are also placed in this reserve.

Survivors and disability pensions were included in the reform. The survivor's pension is 50% of the pension of the deceased. Qualifying for a disability pension requires at least a 67% loss of productive capacity, and no expectation to recover within the year. The disability pension benefit is 51% of average net earnings, with incremental increases in coverage for each year of contributions over 2 years. For 25 years of contributions the benefit is 63% of net earnings. For more than 25 years, the disability benefit is equal to the old-age pension plus 5%.

Private pension funds incur operating costs of 7.5 to 11% of contributions in the mandatory funds and 5.5 to 7.5% in the voluntary funds. While there is not solid data on the returns in these funds to date, Rocha and Vittas (2001) estimated returns based on the average quarterly asset allocations of the pension funds, and applied this to the rates of return for each asset (bank deposits, bonds, and equities). They concluded that in 1998 and 1999 the funds had a very low positive real rate of return.

Workers who had accumulated benefits under the old system were given the option of staying in the reformed public plan, or switching to the new private plan. The deadline for these workers to switch to the new system was September 1999. At that time, 2 million workers, or half the covered labour force, had opted to switch to the new system. Workers were also given the option to switch back, if they so choose, until December 2002. After that, workers will stay in the programme they are already assigned to. For all new entrants to the labour force after July 1998, the new system is mandatory.

Kazakhstan

In January of 1998, Kazakhstan initiated an overhaul of its public pension programme with the support of the World Bank and the Asian Development Bank. Kazakhstan replaced a pay-as-you-go pension system with a defined contribution funded system similar to the system in Chile. Under this system, workers are required to pay 10 percent of their wages to an account in an authorised financial institution.

Under the pre-reform system, workers with full coverage (20 years for women, 25 years for men) were entitled to a benefit equal to 60 percent of their highest 12 months pay.[38] This amount was increased by 1 percent of the worker's wage for each year above the minimum. The normal retirement age had been set at age 55 for women and age 60 for men, but this was being increased at the rate of 6 months per year, until it reached 58 for women and 63 for men, under a law passed in 1996. The pre-reform system was financed by a 25.5 percent payroll tax paid by the employer.

The pension under the pre-reform system was not formally indexed to the rate of inflation, but was increased periodically by presidential decree. As a result, the real value of pensions fluctuated significantly, with the value of the average pension reaching a low of 24 percent of average wages in 1992 and a high of 42 percent in 1991. In 1998 before the reform, the average pension was equal to 36 percent of average wages.

At the time of the reform, the existing system was in a serious crisis. Not only were many workers not making contributions, as was the case in many developing countries, but many firms were not passing along contributions to the government. Furthermore, the mechanism of collection required firms to make their payments to regional governments. These governments were supposed to use a portion of the contributions to pay current beneficiaries, and then pass along the rest to the central government. By 1996, many regional governments were no longer making their payments to the central government. The total arrears of payments to the central government were equal to five months of pension payments by the middle of 1996 (Andrews, p 6).

Due to the failure to collect contributions, the government fell more than two months behind in making pension payments in 1996. While the government eventually made up the pension arrears with money from general revenue, this failure to make payments led to social unrest and created an environment in which people were more willing to accept an overhaul of the pension system.

The new system required that workers contribute 10 percent of their wages to either an authorised private pension fund, or the state accumulation fund, which serves as a competitor with the private funds. This whole amount can be used for pensions and administrative fees, as disability insurance is provided through the general budget.

[38] Most of the information in this section is taken from Andrews (2000).

There are many important details about the programme that had yet to be resolved at the end of 2000. For example, the pay-out mechanism at retirement had not yet been determined, so workers did not know whether the new system would require that they take benefits in the form of annuity or allow a phased withdrawal, or some other alternative. There was a minimum pension set at 19.2 percent of the average wage for workers who had worked the minimum years for full coverage. This was left at 25 years for men and 20 years for women.

The exact path for the transition does not appear to have been fully determined either. Workers who retire in the period immediately after the adoption of the new system will be entitled to the same benefit as under the old system, but the pace at which this is phased out was yet to be determined. The government did not project any significant reduction in the cost of the old system until after 2012.

The fact that the transition did not lead to an immediate cut in pension benefits led to serious budget problems for Kazakhstan. The 25.5 percent payroll tax was reduced to a 15.5 percent tax that is paid into general revenue. The tax is projected to be reduced by 1.0 percentage points annually between 1998 and 2008. As a result of this lost tax revenue, the government deficit has increased by an equivalent amount, approximately 1.7 percent of GDP.

This loss of revenue came at an especially bad time for Kazakhstan. It was already experiencing an economic downturn due to the Russian financial crisis. The impact of the downturn, combined with the revenue lost due to privatisation pushed the deficit up to 4.1 percent of GDP in 1998.[39]

In addition to creating budgetary problems, the administrative apparatus established to support the system has not proven to be very effective. Kazakhstan has very poorly developed capital banks, and a very limited private sector. It was hoped that the funds channelled through the private pension system would help to finance the privatisation of state owned assets and would also help develop a modern capital market. However, the privatisation of state owned industries has progressed less efficiently than had originally been anticipated, so there have been few high quality private assets in which the pension funds could purchase shares. (They are prohibited from buying foreign assets, although they can buy bonds of multinational institutions, like the World Bank.)

In addition, the private sector has proven less effective in marketing pension funds than had been expected. As a result, the state fund, which was intended to be a default fund for workers who had not selected a fund on their own, accounted for more than half of all accounts by the middle of 2000. Due to the restrictions on investment options, and the large portion of the funds held directly by the state owned fund, the overwhelming majority of assets of these funds were invested in government bonds. In total, as of July of 2000, 92 percent of pension fund assets were invested in some type

[39] See [http://devdata.worldbank.org/external/dgprofile.asp?rmdk=82569&w=0&L=E].

of government debt (Andrews, p 22). This calls into question the purpose of having switched to a system of private accounts in the first place.

Clearly this was not the situation that the architects of the system envisaged at the time of the reform. Essentially, the same money that used to go to the government in the form of payroll taxes was now being lent to the government through the pension system. The major difference was that the financial intermediaries pulled out 10-15 percent of the funds in the form of commissions and fees. The designers hope that the programme will improve through time, with the share of deposits in the privately managed funds growing, and more of this money being invested privately. The World Bank has also proposed that the state contract out the management of its own fund to ensure that investment decisions are made in the interest of the shareholders. Similar to other countries' experiences with reform as detailed in this paper, the new system has not lived up to its designers' expectations thus far.

Latvia

In January of 1996, Latvia instituted what was expected to be the first leg of a broader pension reform plan. This first leg involved the restructuring of its pay-as-you-go system in a way that both reduced costs and increased the link between contributions and benefits. At the time, the government had anticipated introducing a second pillar, mandatory defined contribution, as well as a reformed system of voluntary pensions. Due to political opposition, the new second and third pillars have yet to be established. However, the reforms implemented to date have already radically transformed the country's pension system.

Prior to the reform, Latvia's pension system was experiencing a serious crisis in the wake of the collapse of the Soviet economy.[40] In the early and mid nineties, Latvia's economy had contracted by more than 40 percent. The economic collapse led many people to seek retirement earlier than they otherwise might have. As a result, the cost of the pension system rose from 5.5 percent of GDP in 1985 to 10.4 percent in 1994. In addition, the decline in employment, along with increased evasion by the working population, led to a 50 percent drop in the number of contributors between 1991 and 1994.

Under the pre-reform system, nearly all workers were eligible for pensions when they reached the normal retirement age -- 55 for women and 60 for men. The benefits were based on the average wage rather than the worker's actual wage, although the age when benefits could first be drawn varied by occupation. Some jobs that were very demanding physically had lower retirement ages, in some cases as low as age 40. There was a minimum pension set at 30 percent of the average wage, and the average pension was equal to 50 percent of the average wage (both figures are net of taxes). Pensions were supposed to be indexed to wage growth, but the government did not

[40] Most of the information in this section is taken from Fox and Palmer, 1999.

fully index as a result of the fiscal crises of the early and mid-nineties. The old age and survivors pension had been supported by a 27.5 percent payroll tax which, together with a 6.5 percent tax for disability, sickness, and maternity, and a 3.0 percent unemployment insurance tax, brought the total payroll tax to 37.0 percent of wages.

The reform implemented in 1996 mixed features of a defined contribution system with features of a defined benefit system by establishing a system of notional accounts. Under this system, each worker has an account with the pension system which is credited each year with an amount equal to 20 percent of his or her wage. The account gets a return equal to the growth in covered wages. For example, if in a given year the work force increases by 1 percent and the average wage increases by 2 percent, then every account would be credited with a 3 percent return, the increase in the total wage bill. When workers retire, they can get an annuity based on the accumulation in their account, that corresponds to their life expectancy at their age. For example, if they have accumulated 20,000 lats (the Latvian currency) and have a life expectancy of 10 years at the age at which they retire, then they will be entitled to a benefit of 2000 lats a year for the rest of their life. This sum was indexed to prices as of 1996. The indexation was supposed to be switched to wages at a future date.

The normal retirement age was moved up gradually to 60 (at the rate of six months a year) for workers in occupations with earlier retirement ages under the old system. The retirement age for women was left at 55, but the formula in use under the new system means that women who start collecting their pension at this age will receive very low benefits. Benefits under the new system are subject to tax for workers with incomes above two-thirds of the average wage. There is a minimum pension which is set at 28 percent of the average wage.

Under the transition formula, workers were credited with their years worked under the old system, based on the wages they earned in the years immediately following the transition. For example, if a worker's average wage in the period from 1996 to 2000 was equal to 1.4 times the average wage in these years, and they had 20 years of credit under the old system, then their accounts would be credited with contributions consistent with having earned 1.4 times the average wage over those prior twenty years.

The new system includes a separate disability insurance programme, in which the benefit depends on both the degree of disability and the worker's average pay in the five years preceding their disability. This programme is financed by a separate 6.0 percent tax. The tax for the old age and survivors portion of the programme was reduced by 3.5 percentage points after the reform to 24.0 percent.

It is worth noting that the administrative costs for both of these publicly-administered programmes, together with the unemployment insurance programme (which is financed by a separate 3.0 percent tax), is 1.5 percentage points of payroll or approximately 4.5 percent of annual contributions. This is far lower than the administrative costs of most defined contribution funded programmes, which are generally in the range of 15 to 20 percent of annual contributions, with another 5 to 10 percent pulled out as the cost of an annuity for those who opt to collect their benefit in this form.[41]

The new system did imply substantial reductions in benefits for most workers, as was intended. It also made the benefit structure much less progressive, which is an inevitable outcome of linking benefits more closely with contributions. In addition, it increased the penalty for early retirement, which is the flip side of providing greater incentives to work longer, another explicit goal of the reform. The table below compares the benefits under the two systems for low wage workers (lifetime earnings equal to half the average), and average wage worker, an a high wage worker (lifetime earnings equal to 1.5 times the average) at various retirement ages.

Age of Retirement	**50**	**55**	**60**	**65**	**70**
New System (Share of average wage)					
Low wage	13	17	23	31	43
Average Wage	25	34	46	63	85
High wage	38	51	69	94	128
Old System					
Low Wage	42	44	46	48	50
Average Wage	42	44	46	48	50
High Wage	42	44	46	48	50
New/old (Percent)					
Low Wage	30	38	50	66	85
Average Wage	59	77	98	129	170
High Wage	58	115	148	195	255

Source: Fox and Palmer, 1999, Box 8.

As can be seen benefits for low-income workers will be cut substantially regardless of what age they retire. Average wage workers nearly break even under the two systems if they retire at age 60. They will do considerably better under the new system if they can work past age 60. High wage workers will do better under the new system at almost any retirement age. It is important to recognise, that since most workers do earn less than the average wage, the majority of workers are likely to have substantially lower benefits under the new system.[42]

[41] This comparison is not entirely fair to the Latvian system because it includes the costs of the disability and unemployment insurance programmes, both of which are far more expensive to administer per dollar of benefits than the old age and survivors programme.

[42] The benefit cut is actually somewhat larger than is indicated in the table, because the worker being modeled is one who had the right to retire with full benefits at age 60 under the old system. Workers in many occupations, and all women, were entitled to full benefits at earlier ages.

While the Latvian government may push the rest of its pension reform agenda at some future date, the policies it has already implemented have substantially changed the programme. But although the cost of the programme has been reduced, the benefit structure is far more closely related to contributions, and therefore much more unequal, than it had been under the old system.

Macedonia

Macedonian pension reform was legislated in 2000 and will gradually be phased in, with new entrants to the system beginning to be covered by it in 2003.[43] As these reforms have taken place more recently, full details on the reform and transition are not known, nor have they been completely worked out. The old pay-as-you-go system has been replaced by a three pillar system, similar to other countries mentioned in this paper, where the first pillar is the mandatory public pay-as-you-go plan, the second pillar is a mandatory private funded plan, and the third pillar is a voluntary private funded plan. In the second pillar there are 14 different funds from which workers can choose, which are managed by two different companies. Payment of the pension benefit is made in the form of annuities.

The retirement age in the new system has not increased from the old – for men it is 64, and for women it is 62. The contribution remains the same as in the old system – only now it will be divided between the first and second pillar. The contribution rate is 20% of the employee’s gross wages, with 13% going to the first pillar, and 7% going to the second. The percentage of a worker’s net salary that the worker received in benefits under the old system was about 72-80%, provided that the number of years of contribution to the system was between 35 and 40 years. In the first pillar of the new system the pensioner will receive a benefit of about 30% of net wages. In the second pillar the worker will receive an annuity which should pay out about 40-50% of net wages, using the government's assumptions about interest rates and rates of return on private accounts.

The transition from the old system to the new was not intended to occur all at once, but rather is to be a gradual transition. In 2003, all employees will be given the option of becoming members of the new system. The new plan requires that all new entrants to it forfeit their accumulated benefits under the old system. It is predicted that most new entrants to the system who had been covered by the old system will be workers under the age of 35, who would have not as many accrued benefits to lose. Affiliation with the new system will be mandatory for new entrants to the labour force.

During the transition, the government will need to find a way to finance the pay-as-you-go part of the system, since now only 13 percentage points of the 20% contribution rate will be going to finance the first pillar.

[43] Details of this discussion are taken from Nakeva (2001).

Mexico

Mexico implemented a major overhaul of its Social Security programme in September 1997, creating a system of mandatory individual accounts in place of its pay-as-you-go system. This reform followed the failure of a 1992 attempt at restructuring its Social Security programme. The stated goals of the reform were reducing the cost of the programme to the government, increasing the link between contributions and benefits, and reducing the extent of evasion. Since the programme is still very new, there is little basis for assessing its success in these areas.

The old system had two components.[44] The first was a pay-as-you-go plan that was financed through an 8.5 percent payroll tax. In addition to providing retirement and survivor benefits, this portion of the programme also provided health care benefits to retirees, and disability benefits. The second portion of the programme was a housing fund, to which private sector employers contributed 5 percent of the workers' wages. At retirement, age 65, the worker received back the value of his or her nominal contributions to the housing fund.

To qualify for a pension under the pay-as-you-go portion of the programme, a worker had to contribute for 10 years to the programme. The pension benefit was based on the workers' average nominal wages over their last five years of contributions. A worker that had contributed for the minimum 10 years would receive a benefit equal to 35 percent of their average wage. This was increased by 1.25 percentage points of their average salary for every additional year of contributions. There was a minimum benefit which was set at the federal minimum wage. Benefits were indexed to the consumer price index.

This system led to widespread evasion, since it encouraged workers to only contribute for the minimum 10 years needed to qualify for retirement benefits. As a result of the decline in real wages in Mexico in the eighties, real benefit levels fell sharply. At the time of restructuring, 80 percent of beneficiaries were receiving the minimum benefit.

Evasion was also creating financing problems for the system, although these do not appear to have been especially severe. Grandolini and Cerda estimate that there would not be a cash deficit in the system until 2007, and that even in 2030, the cash deficit would only be 3.75 percent of GDP (1998, p 8). Many of the developed countries experienced much sharper increases in the cost of their Social Security programmes when they were at a comparable stage of development.

Mexico experimented with a system of individual accounts in 1992. This system required that workers pay 2 percent of their wages into individual accounts, held at private banks. This money was in turn supposed to be invested with the Central Bank, which guaranteed a return of 2.0 percentage points above the rate of inflation. This system was abandoned just five years after it was put in place, primarily because of the

[44] The information in this section is drawn largely from Grandolini and Cerda, 1998.

administrative problems it encountered. It appears that records were very poorly kept. Many contributions were not credited, and a large number of workers appear to have held multiple accounts.

The government tried again with a new plan in 1997. Under this system, workers pay an amount equal to 6.5 percent of their wage into an individual account managed by a financial institution. In addition, the government makes a contribution equal to 5.5 percent of the minimum wage to the account of each active worker. Workers are also required to continue to contribute 5 percent of their wage to the housing fund. A change from the 1992 reform, which was preserved in the 1997 plan, is that the money deposited with the housing fund will earn a return based on the performance of the fund. By contrast, under the old system, workers simply had their nominal contributions returned at retirement. The retirement age remained at 65. At this age workers can either have a phased withdrawal of their money or buy an annuity.

The new system includes a minimum benefit, equal to the minimum wage in 1997 and indexed to inflation in subsequent years, for workers whose accounts are not large enough to provide this benefit. (Assuming that real minimum wages rise through time, the value of the minimum benefit should fall substantially relative to the minimum wage, if this formula is left in place.) Workers are required to contribute for 25 years to qualify for this benefit.

All workers entering the workforce after the reform were required to join the new system, but workers who were already contributing to the old system had the option to either receive the benefits that they would have been entitled to under the old system as of 1997, or the benefit from the accumulation in their account. The life insurance and disability components of the insurance system, as well as the component that provided medical benefits for retirees, were not directly affected by the reform.

At its inception, the administrative costs of the new system were extremely high, with the financial intermediaries charging fees that in some cases exceeded 20 percent of annual contributions. The average fee was considerably above 15 percent of annual contributions (Grandolini and Cerda, 1998, table 8). Originally, the government required that the accounts be invested exclusively in government debt, although the intention is eventually to allow a broad range of equity and bond funds to be held in these accounts.

It is important to recognise that this new system is likely to imply either a substantial reduction in benefits or substantially higher contributions for most workers, including those who are in the transition cohort. If a worker had already contributed to the old system for 10 years, as of 1997, then they will already be guaranteed a benefit under the old system. However, given the widespread evasion that is generally noted, it is unlikely that many workers who were still in the workforce as of 1997 had ten years of coverage. (Grandolini and Cerda put the percentage of the workforce that was covered by a government pension plan at less than 37 percent prior to the restructuring [table 1]). This means that most workers in the transition will be not be entitled to any benefits under the old plan.

To qualify for the minimum benefit under the new plan, they will have to contribute to it for at least 25 years. They are credited with years of contributions to the old system. Workers who are unable to put in enough years to qualify for this benefit, will be entitled to only the money accumulated in their account. It is likely that many transition workers will be in this situation. For example, a worker at age 50, who had been credited with 5 years under the old system, would have to work for another twenty years in order to accumulate enough work credit to qualify for the minimum benefit. Since workers generally attempted to minimise their payments to the pension system, it is reasonable to expect that many older workers will find it difficult to accumulate enough work credits to qualify for the minimum benefit.

Peru

Pension reform in Peru took place in June 1993, with the implementation of a law passed the prior year.[45] The old public pay-as-you-go system was replaced with a two-tier system similar to Colombia's, comprised of a pay-as-you-go component and a private fully funded component. For both plans, the retirement age was increased from 55 for women and 60 for men, to 65 for both. Participation in the pension system is ostensibly mandatory.

Workers are given the option to choose either the public or private portion of the system. Transfers between the two programmes are allowed at any time for those workers who were already covered under the old system. New entrants to the labour force are given the option to choose which programme they want to join within a period of 10 days. The default option is the private plan. New entrants, however, are no longer allowed to transfer from the private to the public plan. Voluntary coverage is provided for other workers such as spouses outside of the paid labour force, or the self-employed.

The pay-as-you-go component requires an employee contribution rate of 13% of wages, employers contribute nothing. The contribution rate under the old system was 3%. A worker under the public plan, who has made contributions for twenty years, will receive a benefit equivalent to 50% of their average salary over the last five years. Each additional year of contributions increases this rate by 4%, with a maximum of 100%, though there is a cap of 807 soles per month. (For reference, the minimum wage is 410 soles per month.) If one has contributed for as long as 25 to 30 years, the average salary will instead be calculated over the last three or four years.

There is a minimum pension guarantee in the first pillar which is financed by the revenues from the privatisation of state-owned enterprises. However, there are no specific rules regulating how these benefits are given out, so it is at the discretion of the fund's managers. The supplemental income that has been given out is 600 soles per year, paid semi-annually. Another reserve fund, also financed by proceeds from privatisation, was created to cover the liability of the public portion of the reformed

[45] Much of the details of this discussion taken from Queisser (1997) and IMF (2001).

system. The minimum earnings for the purposes of contribution is the legal minimum wage, and for domestic workers it is 1/3 the minimum wage. There is no maximum contribution ceiling.

The second pillar of the plan is the private funded portion. The contribution level for this plan was originally 10% but was decreased to 8% through 1999 so as to attract workers away from the public plan. Also to encourage participation in the private plan, in 1997 the contribution rate for the public plan was increased to 13% from 11%. Workers may choose between an annuity or a phased withdrawal under this system. The private funded plan has five AFPs. Total assets under administration were 2.3 billion soles, or about 1.5% of GDP, by the end of 1996 and about 8.4 billion soles, or 4.8% of GDP, by the beginning of 2001.

In addition to the 8% contribution rate, workers must pay fees of 3.74 percentage points of wages for administration costs and survivors and disability insurance. Administrative costs account for 3.36 percentage points of this charge. Even with these high fees, only one of the five funds managing the private accounts broke even by 1996. All of the others have had large operating losses as a result of high start-up costs and expenses for advertising and sales.

The government originally set a benchmark rate of return, with an acceptable band around it. This has since been changed to a minimum profitability requirement, which changes every year. The average real rate of return between 1993 and the end of 1996, before deducting operating expenses or commission fees, had been about 7% annually. After taking these fees into account, however, the real return dropped to a small negative value in the first two years, improving to about 4.5% by 1996. There is no minimum pension guarantee in the private plan.

Benefits for the disabled under the public plan allow for the pensioner to receive 50% of their average salary over the last three years, with an increment of 1.5 percentage points for each year of contributions over 3 years. If the disabled contributed between 1 and 3 years, the benefit is 1/6th of average earnings for each year. The minimum benefit is 3 times the legal minimum wage, and the maximum is 80% of average wages. Survivors' benefits under the public plan are 50% of the pension paid or owed to the insured. The minimum is the same as with the disabled, whereas the maximum is 100% of the pension of the insured.[46] Under the private plan, disabled workers will receive benefits under their group survivors' and disability insurance which amounts to 70% of their previous salary. The benefits for survivors under the private plan are also paid out by the group survivors' and disability insurance amounting to 35% of the insured's salary for the widow and 14% of the salary to each child or surviving parent. The group insurance premiums were financed by a contribution of 1.23% of wages by participants as of 1996.

Workers switching over from the old system who opt for the private funded component are entitled to recognition bonds to aid them in the transition. They must

[46] These details taken from US SSA (1999).

have contributed to the system during the six months before the reform and for at least four of the last 10 years prior to 1992. The recognition bonds are non-interest bearing, non-transferrable, and are indexed, as with the whole system, to the consumer price index.

By the end of 1996, 1 million workers representing 12% of the economically active population were affiliated with the public portion of the system, and 1.55 million workers representing 18% of the economically active population were affiliated with the private portion. Total coverage of all the pension plans is 20% of the labour force. The pay-as-you-go component of the reformed system is broken down into a national plan that covers the majority of eligible workers, and a separate set of public plans that cover the military, police, teachers, and a special higher benefit plan for civil servants called Cedula Viva. The national pay-as-you-go plan has about 500,000 contributors, 250,000 pensioners, and 100,000 survivors and disability pension beneficiaries. The military and police plans have 135,000 contributors and 92,000 pensioners; the teachers' plan has 200,000 contributors and 150,000 pensioners; and the Cedula Viva plan has 55,000 contributors and 265,000 pensioners.

There are incentive and benefit issues associated with the pension reform. In the public plan, one problem is the incentive for underreporting of wages in the last three to five years of work so as to increase the value of the wages during the reference period by which the public pension is calculated. For the private plan, the issue is that due both to lower contribution rates than in the public plan and low rates of return, benefits from the private funds will not be as high as in the public plan, if the average years of contribution remains near 20, as is currently the case.

Poland

The Polish pension system was reformed in 1999, transformed from a public pay-as-you-go system to a multi-pillar system with a continuing pay-as-you-go component, a private funded component, and a voluntary employee pension plan component.[47]

In the old pension system, due to the relaxation of regulations, the effective retirement age dropped from age 60 to age 55 for women, and from age 65 to age 59 for men, over the course of the 1980s and 1990s. Due to the problems of maintaining the fiscal balance of the programme, contribution rates to the old pension system were raised from 25% in 1981 to 38% in 1987-1989 to 45% in 1990, entirely paid by the employer. The average pension benefit as of 1991 was 76% of the worker's last salary. There was no benefit reduction for workers taking early retirement. The benefit had three components: a flat benefit which had increased from about 22% of the average wage in 1992 to 24% by 1999; an earnings-related component; and a third supplemental component intended to make up for loss of benefits in years when the worker may not have contributed. These benefits were indexed to the rate of inflation.

[47] Details of this discussion taken from Chlon, Góra, and Rutkowski (1999).

The minimum pension benefit was set in 1991 at 35% of the average wage. After age 75, a supplement of an additional 10% of average wages was to be paid out. By 1994 expenditure on the pension system, including farmers' social security and disability benefits, had risen to 15.4% of GDP. For comparison, by 1996, average social security spending in the European Union was 12.3% of GDP. By the time of reform in 1998 the system had roughly 12.5 million contributors and almost 7.5 million beneficiaries.

The reformed Polish pension consists of three pillars – a first public pay-as-you-go yet defined contribution pillar, a second private funded defined contribution pillar, and a third voluntary funded defined contribution pillar. In contrast to the old system, benefits payment calculations in the new system take into account a worker's life expectancy and retirement age. The first pillar, while pay-as-you-go financed, will have a pay-out based on the rate of growth of the covered wage bill -- a notional defined contribution system similar to the one put in place in Latvia. The second and third funded pillars have rates of return based on capital market investments. The old system has been closed to workers born after 1948. Workers born after 1968 are covered by both the first and second pillars. For those born between 1949 and 1968, the workers may choose both the first and second pillars, or to participate only in the first pay-as-you-go pillar. For new entrants to the labour force, membership in both the first and second pillars is mandatory.

The contribution rates under the new system are more than 36% of gross wages. Of this contribution, 19.52% goes to the old-age pension system, 13% goes to survivors and disability pensions, and the last 3 or so percent goes to sickness and maternity and work injury benefits. The contribution to the old-age pension is evenly divided between the 9.76% coming from the employer and the 9.76% coming from the employee. A total of 12.22% of these contributions goes to the pay-as-you-go pillar, with 6.11% coming from each of the employer and employee's 9.76%. A total of 7.3% goes to the funded pillar, with 3.65% each coming from the employer and employee's 9.76%. The accumulated contributions will be indexed to 75% of the quarterly growth of the wage bill. The new retirement age is 60 for women and 65 for men, up from 55 and 59, respectively. Any shortfall in revenue from the reduced contribution base of the first pillar will be made up with government revenues from the privatisation of state-owned enterprises. Different from the old system, the contributions are now divided roughly equally between employer and employee, though only employers contribute to work injury benefits and only employees contribute to the sickness and maternity benefits. Also, there is an upper limit on the wage from which contributions must be made, set at 250% of average wages. Workers may make contributions of up to 7% of their wages to the third voluntary pillar, in which they get preferential tax treatment.

Pension benefits in the new system are calculated using a formula that takes into account the number of years of contribution, rate of return on the individual accounts, the age of entry into social security, and the average life expectancy at that retirement age. In the first pillar, benefits will be indexed to consumer prices and increased by 20% of real wage growth in the pay-out phase. A reserve fund to anticipate any possible shortfalls in the reformed system was created by mandating any surplus in the first pillar and a contribution of one percentage point of the wage bill between the years 2002 and 2008 to be applied to this fund.

In the second pillar, each worker chooses one fund among a set of choices. Upon retirement, the worker will purchase an annuity. There are 21 pension funds operating the second pillar. By the end of August 1999, of 11.5 million potential members, 6 million affiliated with the second pillar funds. The majority of workers joined three main funds, with the top seven comprising 95% of the market.

The voluntary third pillar consists of long-term savings plans and work-related pension programmes. The aim is to allow workers to have more control over their investment options. The work-related programme entails employee membership in group life insurance plans bought by employers.

There is a minimum pension guarantee paid at retirement age for those workers who have contributed at least 20 years for women or 25 years for men. The guarantee is equivalent to the 451.11 zlotys per month, or 35% of average wages, allotted under the old system. Survivors and disability pensions continued to be provided under the public pay-as-you-go plan.

Administrative costs for the second funded pillar include a management fee from the fund's assets and a defined percentage commission deducted from contributions. The management fee cannot exceed 0.6% of annual asset value, and the commission fees have averaged between 7 to 9% of contributions, meaning that between 0.51 and 0.66% of gross wages are being applied towards commissions. After two years of participation, this commission will be reduced to 5%, or about 0.37% of wages.

Due to the scheduled reduction in fees over time, the rates of return to workers will vary depending on their years of contribution. For example, if the funds earn a gross return of 5 percent a year, this fee structure will yield net returns of between 3.22 and 4.09%, depending on whether a worker has contributed for 10 years at the low end, or 35 years at the high end. This means that workers who spend relatively little time in the programme will see their accounts heavily reduced by administrative fees.

There is a rate of return guarantee, which is based on the average rate of return of all the private funds. If the value of a given fund either does not achieve at least a return of 50% of the average nominal return or is four percentage points below the average, then the fund administrator must make additional payments to the fund to account for the shortfall. Such additional payments will be taken from a reserve account put aside for this purpose. There is also a similar separate guarantee fund for the same purpose. The funds for both these reserves will come from assets put aside by the private fund administrators.

Workers who have contributed to the old system will have accumulated funds under the new system. In the first pillar, initial capital was added to workers' accounts in the transition. This initial capital will pay out the same amount of benefit as would have been calculated under the old system, simulating the retirement benefit paid out to all workers as if they had retired on the last day of the old system. Since there is a longer-term goal in the reformed system to reduce the percentage of average wages paid out in pension benefits, the initial capital amount will be reduced over time.

A special rule was put in place to ensure fairness for those women workers, during the transition, who are not participating in the funded pillar. This rule set up a benefit formula for women workers who retire in the years from 2009 to 2013, which is calculated using a mixture of the old and new systems' formulas. This combined formula will start off with an 80% old, 20% new distribution in 2009, and end up with a 20% old, 80% new distribution in 2013. In the beginning, the initial capital benefits for all transition workers will account for more than 60% of the total pension benefit for the oldest workers at the time of reform.

Uruguay

Uruguay restructured its public pension system at the beginning of 1997 with the support of the World Bank.[48] It replaced a pay-as-you-go system with a two pillar system, consisting of a mandatory pay-as-you-go first pillar, and a second pillar with a defined benefit or a defined contribution funded system. Workers who were over age 40 at the time of the restructuring have the option to remain in a modified pay-as-you-go system. This change was associated with a substantial reduction in benefits for workers near retirement age, in addition to an increase in the retirement age for women from 55 to 60.[49]

The old system had a contribution rate of 13 percent of wages from workers and 14.5 percent for employers. In addition, the government made contributions that averaged approximately 8.6 percent of wages to maintain the system's solvency. While in principle the system was mandatory, evasion was widespread. In addition to workers in the informal economy, who are not covered in most developing countries, many formal workers also evaded the tax for much of their working lives. The benefit provided under the system was based on the worker's average wage in his or her last three years of work. The rate of evasion was estimated at close to 30 percent just before the restructuring (Garcia-Mujica, 1996, pii). Since a longer period of contributions did not affect the retirement benefit, workers had a strong incentive to avoid paying taxes except in the years that determined their benefit. This formula also gave workers an incentive to exaggerate their earnings in their final three years of work, a practice which was also widespread. Garcia-Mujica estimated that 44 percent of workers exaggerated their earnings to inflate benefits (p ii). The total cost of these abuses was estimated at 7.4 percent of GDP, which caused the system to have a deficit equal to 4.8 percent of GDP just prior to the restructuring of the programme.

[48] It received a loan of $100 million from the International Bank for Reconstruction and Development to help implement the new system.
[49] Most of the information in this section is taken from Garcia-Mujica (1996).

Under the new system, there is a mandatory defined contribution first pillar, which is financed by the employer's side of the payroll tax.[50] This was reduced from 14.5 percent to 12.5 percent. In the restructuring, the worker's side of the tax was increased by 2.0 percentage points to 15 percent of wages, offsetting the cut on the employer's side. Workers over 40 at the time of the restructuring (1997) had the option of either putting their contribution into a defined benefit system or into a defined contribution system. Workers under 40 must have placed their contribution in the defined contribution system. The government provided a substantial subsidy to encourage workers who have a choice to opt for the defined contribution system.

The replacement rate in the defined benefit system for a worker who works 35 years, and retires at age 60, is 50 percent. This is increased by 0.5 percentage point for each year of work in excess of 35 (up to a maximum of 2.5 percentage points), and by 3.0 percentage points for every year of work past age 60 (up to a maximum of 30 percentage points). The benefits are indexed to the rate of increase in the average wage. There is a minimum benefit, equal to the minimum wage at the time of retirement, which goes to all workers with at least 10 years of contributions. There is also a separate social insurance programme for retirees without a sufficient work history to qualify for benefits.

One of the main purposes of the restructuring was to save money and thereby reduce the deficit of the old system. To do this, the replacement rate for a male worker with 35 years of experience, who retires at age 60, was reduced from 65 percent under the old system to 50 percent under the new system. The reduction in benefits was even larger for women, since their normal retirement age was raised from age 55 to age 60, along with the cut in the scheduled replacement rate. While workers who opt for the defined contribution system may do somewhat better, especially with the subsidy for choosing this option, these workers will still experience reductions compared to the prior system, even with optimistic assumptions about the returns in their accounts.

The new system does not appear to have substantially increased coverage rates, which are currently 75.7 percent overall, but just 43.2 percent for workers at the bottom decile of the earnings bracket.

It is further worth noting that the old system had been quite successful in alleviating poverty among the elderly. The World Bank (2001c, p 63) noted that the over 55 population had the lowest poverty rate among any age group in Uruguay. It also admitted that the new system was not likely to reduce inequality and could increase it, since benefits would be tied more closely to earnings.

[50] Bank employees, notaries, the police, and the military, are covered by separate systems.