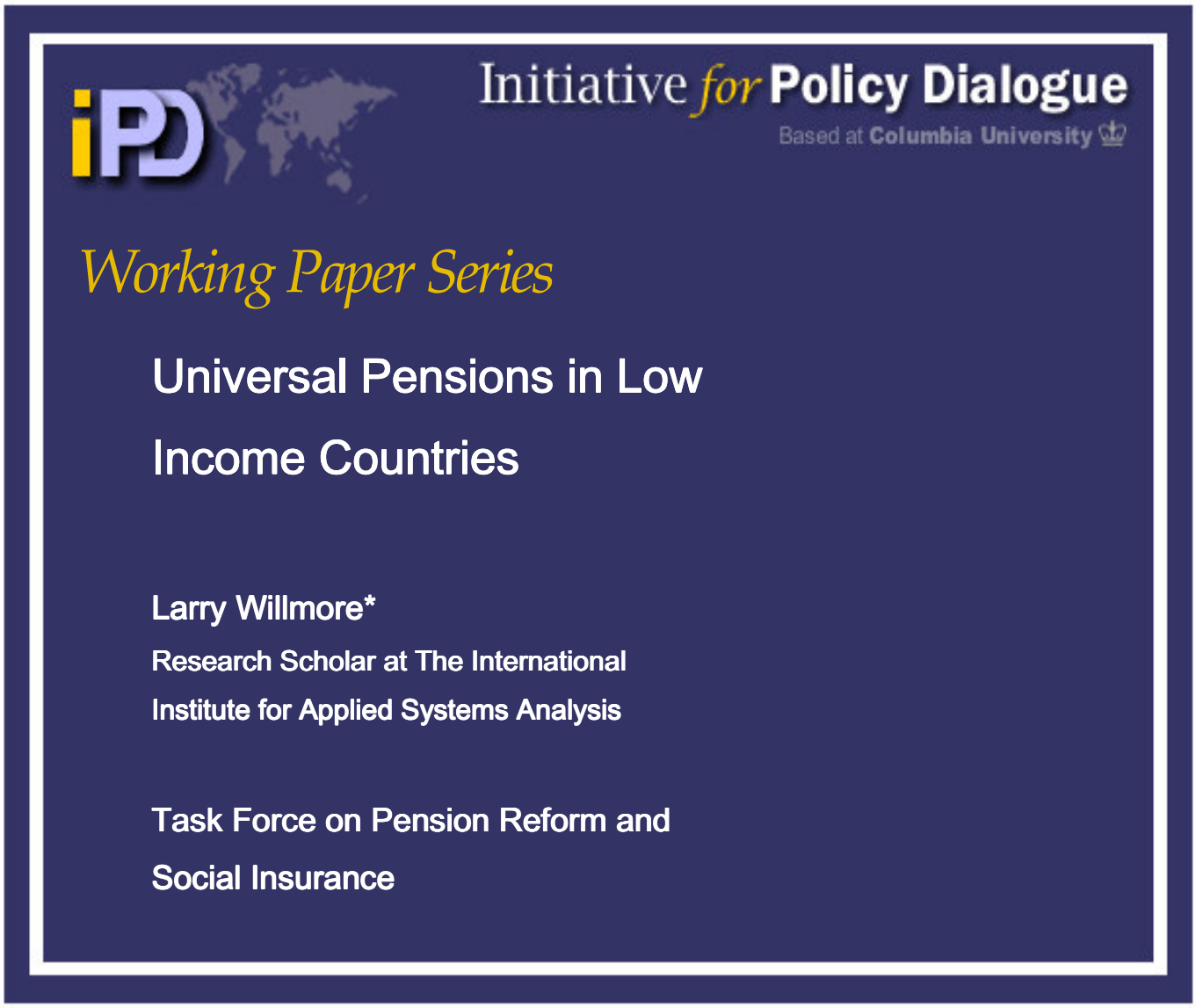

> "Extending coverage by requiring low income informal sector workers to contribute to social security would not be in the best interests of these workers …, even if the government had the capacity to enforce the mandate."
>
> -- Estelle James (World Bank, 1999, p. 9)

Introduction

It is estimated that no more than 10 to 15 percent of the world's working-age population contribute to a formal system of old age pensions (Gillion et al, 2000; Holzmann et al, 1999). Many are excluded because they are unpaid caregivers or are unemployed, others because they are employed in agriculture or in the informal sector of the economy. In general, the lower the per capita income of a country, the lower the rate of pension coverage, even where contributions are mandated by law. Well-intentioned reformers are aware of this problem, but have concentrated their efforts on privatisation of public pensions and the creation of individual accounts, which does nothing to expand coverage. On the contrary, such reforms typically result in decreased coverage because benefits are linked more tightly to contributions, so there is less redistribution and less reason for the poor to participate. In Chile, for example, active participation of workers fell from rates of over 70 percent in the public pension system of the 1960s and early 1970s to rates of 50 to 55 percent in the privatised system of the 1980s and 1990s (Barrientos, 1998, p. 172).

A non-contributory, flat pension can ensure that all citizens, regardless of earnings or occupation, have an income in old age. It is possible for this type of pension to automatically cover an entire population, in a way that contributory schemes never can. By de-emphasising the link between paid, formal employment and income in retirement, non-contributory pensions are particularly helpful to women and to workers in the informal sector. This paper explores the feasibility of introducing such a pension in low income countries, preferably as a universal 'citizen's pension' rather than a means-tested 'social pension'.

* Adriana Alberti, Christopher Willmore and members of the Oxford IPD Workshop provided helpful comments, but the views expressed are the responsibility of the author, as are any remaining errors.

Three pillars of pensions

Specialists have traditionally divided pensions into three pillars, which group schemes from the perspective of pension providers:

1. Public pensions
2. Occupational pensions
3. Personal pensions.

The World Bank, in a now famous Report titled *Averting the Old Age Crisis* (1994), devised alternative pillars that classify retirement income schemes from an entirely different perspective, that of participants:

1. Basic pension
2. Mandatory contributions to an earnings-related pension
3. Voluntary saving.

Confusingly, these are also called pillars, and are three in number, but they are very different. The first pillar is an anti-poverty pillar that guarantees a minimum income in old age, irrespective of a worker's history of earnings. It is almost always financed from general taxation, but it can also be financed from contributions, as in the United Kingdom. Pillars 2 and 3 provide benefits only to those who contribute and, in general, provide the most benefits to those who contribute most. Contributions to Pillar 2 are mandatory, whereas those to Pillar 3 are voluntary.

The first pillar of this classification protects the elderly from absolute poverty (consumption below a minimum level), while the other two pillars protect them from relative poverty (fall in a worker's accustomed level of consumption). The pensions of Pillar 2 have traditionally been public, pay-as-you-go and defined benefit. Reform of the second pillar has generated considerable debate; the World Bank has been very vocal in promoting a shift from public to private pension plans that are both pre-funded and defined contribution.[1] There has been much less discussion of appropriate policies for pillars 1 and 3 (the basic pension and voluntary saving).

In its 1994 Report, the World Bank took the position that the basic pension of Pillar 1 *ought* to be public and financed on a pay-as-you-go basis, whereas the earnings-related pension of Pillar 2 *ought* to be private and pre-funded with individual accounts (defined contribution). The World Bank has since come to use these *prescriptive* pillars to *describe* systems of pensions in the real world:

> The multipillar system consists of three "pillars": (a) a publicly managed, unfunded, defined benefit scheme; (b) a [mandatory] privately managed,

[1] "Defined benefit" plans promise retirement income based on the number of years of contributions and average earnings or, more often, on an average of each participant's last few (or best) years of earnings. In contrast, "defined contribution" schemes set up individual accounts for participants; retirement benefits depend entirely on accumulated contributions and on the investment return credited to each account.

> fully funded, defined contribution plan; and (c) voluntary retirement savings in the form of housing, insurance, or other assets (World Bank, 2001, pp. 31-32).

Similar descriptions of the "multipillar system" can be found in Holzmann, et al (1999), World Bank (2000) and other publications of the World Bank and its pension experts.

These prescriptive pillars are not very helpful for describing actual systems of pensions, for three reasons. First, it is not true that public pensions are "unfunded" whilst private pensions are "funded". There is no free lunch: all pension schemes must be funded if they are to be viable; the choice is rather between pay-as-you-go funding and pre-funding. Second, and more serious, the three prescriptive pillars do not exhaust all types of pensions; they exclude the possibility of pre-funded public pensions, pre-funded defined benefit schemes, and public plans with pay-as-you-go individual accounts, known as notional defined contribution. Third, the prescriptive first pillar is very heterogeneous; it includes *all* publicly managed schemes, so lumps earnings-related with flat pensions.

In this paper, I restrict my comments to Pillar 1 of the original World Bank classification. To avoid confusion with other definitions of this pillar, I refer to it as a "basic pension". In another paper (Willmore, 2001), I argue that, with a universal basic pension in place, there is no need for a second, mandatory pillar, and I question the rationale for the special tax treatment often accorded voluntary retirement savings. I ignore contributory pension schemes for the moment because they do not appear to be promising tools for expansion of retirement income protection in low income countries. Contributory schemes, to quote a World Bank pension specialist, "may not be feasible or desirable for large portions of the population in developing economies" (James, 1999, p. 1). The World Bank now recognises this and, despite almost total neglect of Pillar 1 in the past, promises that its "work on pension reform will focus more on the provision of retirement benefits for people in the informal sector and on old-age income support for the life-time poor through public non-contributory schemes and community support" (World Bank, 2001, p. 32). A recent assessment of pension reform in Latin America (Gill, Packard and Yermo, 2004) reflects the Bank's new emphasis on the importance of poverty relief.

The basic pension of the first pillar can take any of three forms:

- Universal flat pension
- Means-tested flat pension
- Minimum pension guarantee (or flat top-up) for earnings-related pensions.

A universal, flat pension, often referred to as a 'citizen's pension', is the simplest plan, and the only one that covers the entire population of the aged. The benefits are the same for everyone of a specified age, regardless of income, assets or work history. A means-tested 'social pension' provides reduced benefits, or none at all, for those whose income or assets exceed a specified level. A minimum pension guarantee is useful for some

workers with low lifetime earnings, but does nothing for unpaid caregivers or for those in the informal sector who do not have access to earnings-related pensions.

A minimum pension guarantee is the basic pension that is most common in developing countries. It is linked to contributory schemes of the second pillar, so fails to insure the poorest workers against the risk of poverty in old age. Chile, for example, requires 20 years of covered employment for participants to qualify for a minimum pension; in Uruguay the requirement is 15 years and in Brazil, it is currently 5 years (increasing gradually to 15). Argentine workers need contribute only 10 years to qualify, but the minimum pension is rather low, and is not paid until the age of 70. (See James, 1999.) Those eligible for contributory pensions above the minimum do not benefit from the minimum pension guarantee, and this discourages contributions once eligibility is established. Instead of a discrete break between non-eligibility and full eligibility, it might be better to pay a flat benefit for each year of contributions, as in the United Kingdom; this method, for unknown reasons, has not been adopted by developing countries.

Means-tested basic pensions are common in developed countries, and in many developing countries as well. Means tests target the poor, so are preferable to minimum pension guarantees, which exclude the poorest and most vulnerable members of society. Means tests also reduce the fiscal costs of non-contributory basic pensions, so are popular for this reason. Nonetheless, means testing is inferior to universal pensions on a number of grounds (World Bank, 1994, pp. 239-240). First, means tests increase administrative costs and provide opportunities for corrupt behaviour on the part of government officials. Second, the tests set up perverse incentives, discouraging saving for retirement as well as continued work in old age. Third, means-tested benefits often come to be regarded as charity, which reduces their political appeal and discourages applications from the eligible poor.

Universal, flat pensions have considerable advantage over schemes that reduce benefits for those who have too high an income, too many assets, or an inadequate record of contributions. The World Bank, in its 1994 Report, praised systems that provide the same benefits

> "to everyone of pensionable age, regardless of income, wealth or employment history, as in New Zealand and the basic pensions paid by the Nordic countries. Administratively, this is the simplest structure, with the lowest transaction costs, for the public pillar—an important advantage in developing countries with limited institutional capacities and incomplete record-keeping systems. It avoids the disincentive to work and save inherent in means-tested plans. Its universal coverage helps ensure that the poverty reduction objectives are met, provides a basic income for all old people (coinsuring against low investment returns or high longevity), and might receive broad political support" (p. 240).

Nonetheless, the basic pension rarely takes the form of a universal age benefit, largely because it is regarded as a costly luxury that few societies can afford. The next section addresses this concern.

The cost of universal pensions: simple analytics

This section of the paper uses basic algebra and illustrative calculations to address two questions. First, what is the tax revenue needed to finance a universal, flat pension on a pay-as-you-go basis? Second, once such an old age pension is in place, under what conditions will population ageing cause taxpayers to suffer a reduction in standard of living? The calculations below do not take costs of administration into account, but it should be noted that a citizen's pension does not require any record of earnings or contributions. The fact that they are the simplest to administer makes universal, flat pensions particularly appropriate for developing countries.

Suppose that proportion 'r' of the population is eligible for a uniform pension of py, where p is the ratio of the flat pension to per capita GDP (gross domestic product) and y is per capita GDP.[2] Ignoring costs of administration, per capita expenditure on pensions is then rpy, which is necessarily less than the size of the flat pension, since r is less than unity. Per capita taxes required to pay these pensions can be denoted as 'ty', where t is the ratio of taxes to GDP and y is per capita GDP.

Balancing the budget for basic pensions requires that tax revenue equal pension expenditures or, equivalently, that tax revenue per capita (ty) equal expenditure per capita (rpy):

$$ty = rpy \ . \qquad (1)$$

Solving for t (taxes as a proportion of GDP) yields:

$$t = rp \ . \qquad (2)$$

In words, the tax revenue requirements of a universal pension (as a proportion of GDP) is equal to the proportion of the population eligible for pensions times the ratio of the flat pension to per capita GDP. Costs will be higher the more generous the pension, and the larger the proportion of the population that is eligible to receive it. If 5 percent of the population are eligible for a pension equal to 30% of per capita GDP, the revenue requirements for such a transfer are easily calculated: (0.05)(0.3)=0.015, or 1.5 percent of GDP. If 10 percent of the population become eligible for a pension of the same size, required taxes are (0.1)(0.3)=0.03, or 3 percent of GDP.

A key parameter for calculation of pension expenditure is r, the proportion of the population that is eligible to receive a basic pension. Using 65 as an arbitrary, though common, age of eligibility, table 1 reports United Nations Population Division estimates

[2] The ratio of pensioners to non-pensioners, r/(1-r), is sometimes referred to as the 'dependency ratio'.

of past, present and future values of this parameter for the world, as well as for the more developed and the less developed parts of our planet. The bad news (at least for pension costs) is that the population of the world is ageing. Fifty years ago only 5% of the population were older than 65 years. Today approximately 7% are that old, and in fifty years individuals this old are projected to make up anywhere from 13.3 to 18.5 percent of the world's population, depending on assumptions regarding projected fertility and life expectancy. It is worth emphasising, however, that dependency ratios are affected not only by demographics, but also by policy decisions. The proportion of a given population that is eligible for a universal pension can be raised or lowered by decreasing or increasing the age of eligibility.

The good demographic news for pension costs is that there are proportionally fewer aged in low income countries, and this will continue to be the case for at least the next fifty years. From the last column of table 1, it is evident that the revenue required to provide all residents of least developed countries older than age 65 with pensions equal to 30 percent of their per capita GDP amounts to less than one percent of those countries' GDP today, and will increase to only 1.6 to 2.3 percent of GDP in fifty years time.

Table 1. Aged Persons (65+ years) as a Percentage of Total Population. (1950, 2000 and 2050)

Year	Population Growth	World Total	More Developed	Less Developed	Least Developed
1950		5.2	7.9	3.9	3.3
2000		6.9	14.3	5.1	3.1
2050	(high)	13.3	24.2	11.9	5.4
2050	(medium)	15.6	26.8	14.0	6.3
2050	(low)	18.5	29.4	16.8	7.5

Note: More developed regions comprise North America, Japan, Europe and Australia/New Zealand. The rest of the world is defined as less developed, and includes 48 countries defined by the United Nations General Assembly to be least developed.

Source: United Nations (2001).

It is widely feared that ageing of the population will create serious problems, if not crises, for public pension systems. Increased numbers of pensioners require increased rates of taxation to transfer a larger share of GDP to the elderly, and there is concern that this necessarily means that the after-tax income of younger cohorts will fall. Such fears may be groundless, or at the very least, misdirected. It is true that increased taxes will be required to finance public pensions, but taxpayers' standard of living will fall only if pensions are extremely generous (larger than per capita GDP) or if per capita output falls sharply.

This point can easily be demonstrated. Suppose that a country provides a citizen's pension of py to all eligible residents, and recipients of these pensions pay no taxes, nor do they have other income. Assume $p < 1$, i.e. a flat pension smaller than per capita output. Let w denote the average income that remains for the rest of the population after transfers to pensioners. Output (=income) per capita is then a weighted average of these two average incomes, the weights being the share of pensioners (r) and the share of non-pensioners (1-r) in the total population:

$$y = rpy + (1 - r)w \qquad (3)$$

Solving for w, the average income of non-pensioners:

$$w = y(1 - rp) / (1 - r) . \qquad (4)$$

Suppose now that output per capita (y) remains unchanged, as does the size of the citzen's pension (py), but there is an increase in r, the proportion of the population eligible for a pension. What happens to w, the average income of the population that is not eligible to receive a pension? The surprising answer is that w *increases*, so long as the citzen's pension is less than per capita output. This becomes very clear if one examines the derivative of equation (4) with respect to r:

$$w'(r) = y(1-p) / (1-r)^2 . \qquad (5)$$

For all p less than unity (flat pensions smaller than per capita output), this derivative is unambiguously positive, which means that w is an increasing function of r.

Even should a country suffer a fall in per capita output along with an increase in r, it is still possible for w to increase. By how much must y fall to offset the positive effect on w of an increase in r? This is relatively easy to calculate. From equation (4), it is clear that, in the base year, w_0 is equal to $y_0 (1- r_0p) / (1- r_0)$. In the future, following a rise in r, from r_0 to r_1, w becomes $w_1 = y_1 (1- r_1p) / (1- r_1)$. For $w_1 > w_0$, it is necessary that

$$y_1 (1- r_1p) / (1- r_1) > y_0 (1- r_0p) / (1- r_0), \qquad (6)$$

which is equivalent to

$$y_1 / y_0 > [(1- r_0p) / (1- r_0)] / [(1- r_1p) / (1- r_1)] . \qquad (7)$$

So long as this inequality is satisfied, w increases along with r. Since r is always less than unity, and $r_1 > r_0$, for all $p<1$ the right-hand-side (RHS) of inequality (7) is less than unity. In other words, it is possible for w (the average income of non-pensioners) to *increase* following an *increase* in r (the proportion of pensioners in the population) combined with a *decrease* in y (per capita GDP), provided the decrease in y is not 'too' large.

If these results seem counterintuitive, consider the following arithmetic example. Suppose authorities set the pension at a generous 50% of per capita output (p = 0.5), and expect to experience an 'ageing crisis' of mammoth proportions some fifty years in the future. Citizens eligible for a pension are projected to increase from 10% to 30% of the population (r increases from 0.1 to 0.3). Per capita GDP (y) is not expected to change, so the ratio of earmarked pension taxes to GDP is expected to triple as well, from 0.05 to 0.15. Average income of non-pensioners (w) prior to the 'ageing crisis' is [(1-0.05)/(1-0.1)]y, or 105.6 percent of per capita GDP; after the 'crisis' it is expected to be [(1-0.15)/(1-0.3)]y, or 121.4 percent of per capita GDP.

In this example, a three-fold increase in the number of retirees, and a similar increase in transfer payments to retirees, *increases* by 15 percent the after-tax income of those who do not retire. The standard of living of taxpayers does not fall, but actually improves. This follows from the assumption that per capita output remains constant, because "per capita" refers to the entire population, retirees as well as workers and their families. The pension is less than per capita GDP and is the sole income of pensioners, so it is also less than the average income of non-pensioners. When workers retire, on average they receive reduced incomes, leaving more of the unchanged per capita output for those who continue to work. There is no shortage of output, so the ageing 'crisis', if there is one, will manifest itself as a crisis of distribution, not as a crisis of production.

Now, suppose that the GDP projections are deemed optimistic given the expected retirement of so many workers and the increase in tax rates needed to provide them with pensions. What is the maximum that y can fall, combined with the increase in r, before the standard of living of the non-pensioned population is adversely affected? From the RHS of inequality (7), we calculate that y, as a proportion of the original y, can fall to [(1-0.05)/(1-0.1)]/[(1-0.15)/(1-0.3)], or 0.869. So long as per capita output falls less than 13%, the average income of non-pensioners, after tax, will actually rise. The size of the basic pension (py) will nonetheless fall along with per capita output, for p (the pension as a portion of per capita GDP) is constant but not y (per capita GDP).

The crucial variable in these exercises is not 'r' or the dependency ratio—it is per capita output (y). Unless the pension is exceptionally generous, population ageing need not create serious problems so long as output does not fall sharply. It is interesting that, though there are many forecasts of fiscal crises for pay-as-you-go pension systems in ageing populations, forecasts of declining per capita GDP are nowhere to be found. Falling output is certainly necessary if the forecast pension crisis is to be economic (a crisis of production) rather than political (a crisis of distribution).

Suppose per capita output is expected to decline as a result of population ageing. There are essentially two types of policy response to such a problem. One way to offset the effects of a shrinking labour force is to increase the output of each worker. This can be accomplished by encouraging investment in physical capital (more and better equipment and machinery) and investment in human capital (training and education). A second, more direct way to prevent GDP from falling is to keep the number of workers from falling in the first instance. This requires policies to increase the labour supply, such

as promoting immigration, reducing taxes on earned income, providing more and better childcare facilities, improving public transportation systems, and designing pension systems with incentives for pensioners to continue to work in paid employment, possibly on a part time basis.

Analysts often express concern for the 'unfunded pension liabilities' of governments that choose to finance pensions on a pay-as-you-go basis. Is there a case for pre-funding universal pensions so that future taxpayers will not be burdened with the implicit debt of pension promises? Is there a general case for pre-funding *all* promises of future expenditure? If not, what is so special about expenditure on pensions? Public and private enterprises often commit themselves to paying some or all of the health and life insurance premiums of their employees, yet they typically do not set up an insurance fund, but intend to pay these expenses out of future income. This is perfectly acceptable in the case of health and life insurance because, once an employee leaves the payroll, payments cease.

Pension promises to employees are different, for two reasons. First, they represent deferred wages, thus make up part of the costs of the current output of goods and services. Second, payments to retired workers must continue even if the enterprise encounters budgetary difficulties or ceases to exist. Because of the risk of insolvency, governments typically require private enterprises to pre-fund their pension obligations. Governments, and the public enterprises they own, do not go bankrupt, but it is still prudent for them to pre-fund the pensions of all employees, even if the funding consists of i.o.u.'s (government bonds), for these deferred wages should be accounted for as part of the cost of current labour services.

Public pensions are not deferred wages; they are transfers. Since they are not payments for past purchases of goods and services, they do not require pre-funding on this account. Moreover, as Barr (2000, pp. 17-18) reminds us, a country never dies, so "does not have to anticipate a time when production will cease. The fact that countries are immortal is central: from an economic perspective, it makes pre-funding unnecessary." It makes no more sense to be concerned with the unfunded liabilities of public pensions than to be worried about the unfunded liabilities of public education. After all, children everywhere are reaching school age, and governments are committed to providing them with at least a basic education at taxpayer expense, yet no one plays the least attention to this implicit debt.

This said, it is sometimes prudent to pre-fund, not just pensions, but public expenditure in general, in order to smooth the after-tax income of taxpayers over time. (See Barr, 2000.) If taxes are raised today, they can be lowered tomorrow, or at least set at a level lower than they would otherwise be. This is very different from the argument that the implicit debt of public pensions ought to be reduced or eliminated. Fiscal smoothing takes into account *all* taxation and public expenditure, not just taxes earmarked for pensions. If per capita output is expected to increase steadily, pre-funding is probably not a good idea. If taxpayers in the future will enjoy greater and greater wealth, why should they be given the gift of lower taxes at the expense of today's

taxpayers? But, if per capita output is expected to fall (or, if the terms of trade are expected to fall so that the same output purchases less on international markets), then pre-funding may well be appropriate.

When demographic changes result in population ageing, there is also a good case for pre-funding, provided per capita GDP is expected to stagnate or fall. The budget surplus that pre-funding generates can be used to retire the public debt, which will reduce interest payments in the future, leaving more tax revenue to allocate to pensions. Alternatively, the proceeds can be invested in a fund, and its assets drawn on to reduce the need to generate tax revenue in the future. If the assets of the fund are invested entirely in government bonds, as is the case with the Social Security Trust Fund of the United States, this is equivalent to retiring some of the public debt. There is a political economy argument to setting up some sort of a fund, rather than paying off debt, as this helps governments resist the temptation to cut taxes or increase expenditure when they have large budget surpluses. There is also a possibility that budget surpluses might result in increased national saving and investment, which would improve the outlook for per capita GDP in the future.[3]

Basic pensions: real-world examples

There are few examples in the world today of basic pensions that do not subject beneficiaries to an income test, a retirement test, or both. Canada and the Nordic countries of Europe used to have such systems in place, but they now subject basic pensions to means tests, retaining at most a small, symbolic pension that is payable to all elderly irrespective of income or wealth. What these and other high-income countries typically provide is a social safety net for the poor, intended to lift out of poverty those who would not, or could not, save enough to fund their own retirement.

Universal schemes (citizen's pension)

At this moment, seven countries provide, or attempt to provide a meaningful pension to their aged population with no test other than residence and age: New Zealand, Mauritius, Namibia, Botswana, Bolivia, Nepal and Antigua. New Zealand's flat, non-contributory pension dates from 1898, and became universal, without test of income or retirement, in 1938.[4] New Zealand is unusual, in that its government has never mandated an earnings-related pension plan. A proposal to replace New Zealand's universal pension with a mandatory, defined contribution scheme was defeated 12 to 1 in a 1997 referendum that attracted a record 80% of registered voters. (See St. John and Willmore,

[3] The increase in national saving is only a possibility, for the public can offset increased government saving by reducing private saving. Anything can happen in theory, so what really happens must be measured, which turns out to be quite a difficult task. Barr (2000, p. 14) summarizes "a large, complex and controversial literature" the following way: "The magnitude of the impact of funding on growth is controversial. Though there is some empirical evidence that funding contributes to higher savings in the United States, there is no robust evidence of a similar effect elsewhere."

[4] From 1985 to 1998 the universal pension was subject to recovery from pensioners with other income through the device of an income tax surcharge. This affected approximately 16% of all pensioners, with perhaps half of those affected losing the entire pension.

2001.) Mauritius' non-contributory old age pensions commenced in 1950 and became universal in 1958 (Willmore, 2003). Namibia inherited a race-based system of flat pensions, which it transformed into a single, universal pension following independence in 1990. Botswana inaugurated its system of Universal Old Age Pensions in October of 1996. Bolivia also launched a universal pension in 1996. Its Bonosol is funded by proceeds from the sale of five large public enterprises and is paid to all citizens over the age of 65, but is restricted to those born prior to 1975, so unless changed will gradually end beginning in the year 2040 (HelpAge International, 2004, pp. 12-13). Nepal, one of the poorest countries in the world, in 1995/96 introduced an Old Age Allowance Programme that provides a basic pension to all persons over the age of 75 and to "helpless widows" between the ages of 60 and 74 years. In March of 2004 Antigua and Barbuda in the Caribbean became the latest country to provide its citizens with a universal old age pension (HelpAge International, 2004, p. 14).

Table 2 reports basic data for each of the seven universal systems. In each country pensions are paid at a flat rate to all who meet age and residency requirements, regardless of other income they might receive; only in New Zealand is the citizen's pension taxable as income. The pensions reported in table 2 for New Zealand are net of tax, assuming that recipients have no other income; receipt of a citizen's pension can and does push some pensioners from the first (15%) tax bracket to brackets with marginal rates as high as 39%. Old age pensions, at 30 to 40 percent of per capita GDP, are largest in New Zealand, Bolivia and Antigua. Mauritius provides an exceptionally generous pension (66% and 74% of per capita GDP) to all residents over the age of 90 and 100 years. Botswana's universal pension is only 110 Pula a month, equivalent to 9% of per capita GDP, but a means-tested food allowance valued at 90 Pula is available each month for those who are destitute (Fultz and Pieris, 1999, p. 23). Nepal's basic pension, though tiny, amounts to 11 percent of its per capita GDP. Transfer of income to the aged via the universal pension ranges from less than 1% of GDP in Nepal, Botswana and Namibia to more than 1% in Bolivia, 2% in Mauritius and Antigua, and 4% in New Zealand.

The total fiscal cost of a citizen's pension includes costs of administration; these are difficult to measure, since other government agencies typically provide services free of charge to the pensions authorities. Nonetheless, costs of administration are known to be extremely low in New Zealand, and, according to Fultz and Pieris (1999, p. 26) amount to two or three percent of transfers in Mauritius, 15% in Namibia and 4.5% in Botswana. The exceptionally high costs in Namibia appears to result largely from the disperse settlement of its population over a large territory, and the consequent need to transport cash via armoured cars, at high cost, to pensioners who reside far from post offices and banks.

The citizen's pension in New Zealand, Antigua, Bolivia and Mauritius, though clearly not adequate to satisfy all needs in old age, is adequate to insure that few experience poverty or deprivation in old age. The pensions of Namibia and Botswana, according to Fultz and Pieris (1999, pp. 23-24) fall short of meeting the needs of subsistence, especially in urban areas. It is not obvious, however, that Namibia's pension, at 16% of per capita GDP, is inadequate, for Subbarao (1998, p. 11) reports that it is "sufficient for a family of three to stay above the poverty line." In any event, Namibia

might want to consider increasing the age of eligibility from 60 to 65; such a measure would allow government to provide fewer, but more generous, pensions. Bostwana's programme began only in 1996; it is possible that government might eventually increase the generosity of the pension by popular demand, as happened in Mauritius in 1976.

Universal, flat pensions are extremely popular with citizens and residents of New Zealand and Mauritius, the two countries with a long history of universal pensions. In contrast, both Namibia and Botswana report problems with their schemes. One problem, already noted, derives from their disperse population. In Namibia, because of security problems, cash payments are sent at great expense by armoured car to remote pensioners. In Botswana, officials are sometimes required to travel long distances, for up to two days, to deliver monthly payments to as few as one or two persons (Anonymous, 1998). In Botswana, lack of birth records has made it necessary to establish Age Assessment Committees in each district to conduct interviews and collect affidavits from community leaders, peers and relatives of applicants (Fultz and Pieris, 1999, p. 25). This is a source of friction, as it is felt that some have falsified their age while others, who should be eligible, are unable to prove their age (Anonymous, 1998). The same lack of records applies to deaths in both countries. In Botswana the registry is filled with names of aged persons who qualify, but never show up to collect a pension; it is assumed that the majority of these are deceased. Pensioners in both countries are required to complete and return a Life Certificate on a regular basis; this increases costs of administration, and also results in a delay in payments when pensioners forget to sign these certificates (Fultz and Pieris, 1999, p. 26).

In countries with a citizen's pension in place, one would expect the rate of coverage (beneficiaries as a percentage of the covered population) to be 100%, except for measurement errors. From table 2, it is clear that this is not the case for Mauritius, Namibia, Botswana and Nepal, where apparent rates of coverage are 109%, 85%, 167%, and 60%, respectively. Assuming that the underlying demographic statistics are accurate, there are two reasons for coverage rates to diverge from 100%. First, individuals receiving pensions may be younger than the age of eligibility, or they may be deceased. Subbarao (1998, p. 15) reports, for example, that in Namibia "instances of children and grandchildren drawing pensions of parents and grandparents long dead is not infrequent." Such fraud leads to errors of inclusion, and can result in coverage ratios exceeding 100%. Though no information is available for Botswana, the extremely high coverage ratio of 167% recorded in that country is indicative of widespread errors of inclusion. Second, there can be errors of exclusion, such that pensions fail to reach those who are entitled to receive them. This problem is widespread in the Northern provinces of Namibia (Subbarao, 1998, pp. 11-12), and accounts for the fact that apparent coverage is only 85%, despite the supposedly universal nature of that country's basic pension. Little is known about Nepal, but the low coverage rate of 60% is due at least in part to 'self-targeting', since many non-poor Nepalese do not bother to collect the modest citizen's pension (HelpAge International, 2004, p. 40). Errors of inclusion and exclusion offset each other, so a recorded coverage ratio near 100% is no guarantee that a universal system of pensions is, indeed, providing benefits to all eligible residents. In Mauritius, there are no reported problems of non-delivery of pension benefits to those who qualify,

so, unless population estimates are very inaccurate, the 109% coverage ratio implies that approximately 8% of registered pensioners in that country are underage or deceased.

Many of the problems of improper inclusion and exclusion in Namibia and Botswana will no doubt be solved with time. Universal pensions provide an incentive to record births and deaths more carefully, for reliable records are needed to prevent error and to combat fraud. As for difficulties in delivering pensions to remote beneficiaries, improved systems of transportation will eventually help. But, in the meantime, consideration could be given to requiring pensioners to travel to the nearest post office or bank to collect the allowance to which they are entitled. This need not be on a monthly basis, for the funds could accumulate for three or six months. Governments promise other services, such as postal delivery and primary education, to the entire population, but they do not provide these services to each remote farm or village. Instead, citizens who choose to live in isolated areas have to travel to the nearest post office or school to avail themselves of these services. Why should pensions be any different?

It goes without saying that the value of the pension must be sufficient to make it worthwhile for the beneficiary to travel to collect it. Fultz and Pieris (1999, p. 21, footnote 44) report the interesting case of Zimbabwe, which in 1998 offered a disability pension to the blind and disabled that amounted to the equivalent of five US dollars per month. Recipients petitioned the government to decentralise payments, "since the cost of a bus ride from the communal farming area to the district welfare office for a blind person accompanied by a helper was … 80 percent of the payment amount."

Means-tested schemes (social pensions)

Table 2 also reports data for means-tested basic pensions in five countries: South Africa, Australia, Costa Rica, the United States and India.[5] Calculations for some of these entries are based on rather heroic assumptions. The United States does not report pension payments to disabled persons by age group; payments to elderly disabled are estimated on the assumption that the average of pensions received by disabled persons over the age of 65 is equal to the average pension for all the disabled. For South Africa, the total inter-generational transfer through old age pensions is calculated on the assumption that all 1.8 million pensioners receive a full pension of 500 Rand; according to Case and Deaton (1998, p. 1335), this is true for the vast majority of beneficiaries. In the case of India, the size of the total transfer is known, but not the number of beneficiaries; this was estimated as 2.2 million persons by dividing the total transfer by the size of the pension, thus assuming that no one in India receives a partial pension. In both the United States and India, which have a federal structure of government, states often supplement pensions of the central government; such supplements are not considered in the statistics reported in table 2.

South Africa's basic pension, though means-tested, is quite generous, in terms of both its level (one-third of per capita GDP) and the number of beneficiaries (88% of the

[5] Numerous governments provide means-tested pensions to qualified residents, and the generosity and coverage of these schemes vary widely. It would be useful to add more examples to the five in table 2, which are only an illustrative beginning.

covered population). It is not clear why South Africa does not proceed, like Namibia, to a universal pension. According to Case and Deaton (1998), the purpose of the means test is to exclude wealthy members of the white minority. But this could be accomplished, at least in part, by making social pensions taxable as regular income. If further exclusion is desired, the pensions could be 'clawed back' with a surcharge, as was done in New Zealand from 1985 until 1998. The present system is difficult to administer, gives considerable discretion to government bureaucrats, and lends itself to corruption. South Africa's Welfare Ministry, which administers the social pension, has not attempted to quantify the costs of its administration, but Fultz and Pieris (1999, p. 26) comment on some of the administrative costs of corruption:

> "In South Africa, the Welfare Department has undertaken a project called Ghost Buster to detect dead beneficiaries. Here the problem involves not only families which fail to report a beneficiary's death, but also fraud rings within the Welfare Ministry which use deceased beneficiaries' identification details to collect multiple benefits. Project Ghost Buster involved re-registrations of the entire beneficiary caseload in several provinces."

Despite these problems, there can be no doubt that South Africa's social pension is a godsend for many families. The basic pension amounts to a third of per capita GDP but this, given the skewed distribution of income inherited from the previous system of government, represents "about twice the median per capita income of African households" (Case and Deaton, 1998, p. 1330). Researchers report that basic pensions in South Africa are "a significant source of income, with definite redistributive effects; they are a reliable source of income, which leads to household security; they are the basis of credit facilities in local markets, further contributing to food security; they deliver cash into remote areas where no other institutions do; they are gender sensitive towards women; and they reach rural areas as few other services do" (Ardington and Lund, 1994, p. 19, cited in Case and Deaton, 1998, pp. 1331-1332).

Australia, like South Africa, provides its elderly with a generous basic pension, known as the Age Pension, that amounts, for those who pass income and assets tests, to as much as 37% of per capita GDP for a single person, or 56% of per capita GDP for a couple. (These amounts include means-tested rental assistance.) The age of eligibility for women has been set at 60 years, but this began to increase in July of 1999, and will reach 65 years, the same as for men, in July of 2013. The intent of the means test is not to tightly target the poor, but rather to eliminate the wealthiest from benefits of the Age Pension. In recent years, two-thirds of residents of Australia who meet the age requirements for a basic pension have managed to qualify for at least a partial pension, and, most often, a full pension. The Age Pension's coverage increased rapidly in the 1970s, from about 55% to more than 80% of the population of Age Pension age, due to the phased abolition of the means test. Coverage fell in the period from 1980 to 1990, largely because of a reversal of policy: the government reimposed the income test on pensioners aged 70 years and over and reintroduced the assets test for pensioners of all ages. (For details, see Whiteford, 2000, especially pp. 49-54.)

The Government of Costa Rica created in 1974 a tightly (and poorly) targeted social pension for citizens over the age of 65 and set its value initially at approximately US$37 a month. In 1995 the agency charged with administering the programme initiated a major reform to ensure that the pensions went to the poor rather than the non-poor elderly. Nonetheless, in the year 2000 it is estimated that 40% of the pensions were collected by persons classified as "non-poor" while 32% of those elderly living in extreme poverty were forced to make do without a social pension (Durán, 2002, table 16, p. 210). Presumably the targeting before 1995 was worse. In any event the non-contributory pension remains quite modest—equivalent at the beginning of 2000 to US$30 a month, with a supplement for those pensioners with a dependent spouse or children. There has been an attempt in recent years to increase coverage and it did increase from 40 thousand (20% of the elderly population) at the beginning of 2000 to nearly 49 thousand (21% of the elderly) by the end of 2003. Considerable effort has also gone into improved targeting, in part by sending staff to visit homes of potential pensioners, in order to judge from the condition of the house and furnishings whether the person indeed lives in poverty, and in part by targeting the 'oldest old' (those over 70) who are not in receipt of benefits from a contributory pension.[6] The basic pension itself increased over this period, from the local currency equivalent of US$30 to US$33. (See Caja Costarricense de Seguro Social, 2000 and 2003, table N1.) Actual transfers to the elderly via the social pension amounted to 0.09% of GDP in 2000 and 0.11% in 2003. If means tests had been dropped, transfers would have been 0.45% of GDP in 2000 and 0.52% in 2003; government would have saved the expense of investigating the living conditions of the elderly, and those in extreme poverty would automatically have benefited from receipt of a pension.

Basic pensions of the first pillar in the United States, known as Supplemental Security Income (SSI), are typically ignored in descriptions of the US system of public pensions, which focus on the second pillar's contributory pensions, popularly known as "Social Security". SSI pensions are pensions of last resort for the needy. To be eligible for SSI, the value of all the assets (cash, real or personal property) of an individual cannot exceed $2,000, or $3000 in the case of a couple living together. "Countable" income cannot exceed the amount of the maximum pension, as of the year 2000 equal to $512 a month ($769 for a couple). The maximum pension is equivalent to 17% of per capita GDP (13% for a couple), and is reduced dollar-for-dollar by the amount of a person's countable income. All unearned income in excess of $20, such as income from a contributory pension (private or public), is countable income, as is one-half of all earned income after the first $65. In effect, individuals or couples receiving SSI are subject to a 100% marginal rate of tax on unearned income, and a 50% marginal rate of tax on earned income. The average pension received by the more than two million elderly recipients of SSI is thus only $282, much less than the maximum pension of $512, and lower even than one-half of the maximum pension awarded to couples ($385).[7] Pillar 1 is a very

[6] This expansion of benefits to all citizens over the age of 65 who living in poverty is referred to in Costa Rica as 'universalisation' of non-contributory pensions. In an earlier draft of this paper, I interpreted this to mean that the means test would be phased out. I was mistaken. The goal is more effective targeting, not abolition of the means test.

[7] The maximum SSI pension is adjusted annually for price inflation, so in the year 2004 was $564 a month for a single person and $846 for a couple. Some states supplement the federal SSI with their own funds.

small pillar in the United States, and is financed from general taxes amounting to less than 0.1% of GDP.

India, like the United States, offers a limited "social safety net" pension to a small percentage of its elderly population. This basic pension, known as the National Old Age Pension Scheme, began in August 1995 and is intended to aid destitute individuals who are over the age of 65 and have no living relatives who are not also destitute. The pension is tiny, amounting to less than 2 US dollars a month, or 5% of per capita income, so it is insufficient to lift anyone out of poverty. Five percent of India's population is older than 65 years, so universal provision of a pension of this size to everyone who lives to this age would cost only (0.05)(0.05)=0.0025 or one-quarter of one percent of GDP. Universal provision of a pension four times more generous, equivalent to 20% of per capita GDP, would cost only one percent of GDP. Surely it is *possible* to address in this fashion the problem of poverty among the elderly of India. What is lacking is political will. A recent report (India, 2000, p. 13) concludes: "The sheer number of the elderly is too large, and the resources of the State are too small, to make anti-poverty programs the central plank in thinking about the elderly." The same report finds it impossible to expand mandatory, contributory pensions beyond the 11% of the labour force they now reach, and recommends instead an increase in incentives and tax subsidies for voluntary savings of the third pillar.

Conclusion

A citizen's pension holds great promise in ensuring that no worker face poverty in old age. This paper has demonstrated that such a scheme can be affordable. It can also be politically attractive. To illustrate this, let us compare provision of a universal pension with provision of universal schooling. There are good reasons for a universal pension to be more popular than universal schooling, yet few governments are committed to a universal pension, whereas all governments are committed to universal schooling, at least for the primary grades.

For purely selfish reasons, citizens might be expected to be attracted to the idea of universal pensions. They are good value, for they provide peace of mind regarding one's own fate, or the fate of a grandparent, aunt, friend or neighbour, in old age. Provided the pension is not set at too high a level, this peace of mind comes at an affordable price. Universal schooling is also an attractive idea. Yet, public schooling is often judged to be of poor quality, and is frequently rejected by parents who enrol their children in private schools. A pension, on the other hand, is useful to everyone. No matter how much income a retiree might have, additional income is always welcome. Taxpayers often complain that public schooling does not provide good value for money. So long as fraud is avoided and administrative costs are kept down, a citizen's pension can provide excellent value for all taxpayers.

How might the goal of a universal pension be reached? More research is needed on this 'political economy' aspect of pension systems, but I suspect that it is best to

proceed with universality and a modest pension, rather than with a means test and a generous pension. Once universality is achieved, there will undoubtedly be pressure from citizens to increase the size of the pension, and to prevent inflation from eroding its value, by formal or informal indexing of the benefit level. This has been the experience of both New Zealand and Mauritius. Means tests promise fiscal savings, but tightly targeted benefits lack political appeal, so means-tested benefits run the risk of becoming smaller and smaller relative to wages and per capita GDP.

Another reason for avoiding means tests is that they send the wrong signals to workers. They discourage low income workers from saving for their old age and from continuing to work, even on a part-time basis, beyond normal retirement age. If, for some reason, it is important to deny a basic pension to wealthier members of society, it is far better to do this through the tax system, collecting a surtax on a pensioner's income above a given threshold. Or, a portion of the pension can be retrieved from pensioners with other income simply by making the citizen's pension taxable as ordinary income. This is done in New Zealand, with excellent results.

There is virtually complete agreement on the need for society to provide each child with a basic education. This provision is not subject to a means test and, for the most part, is intended to be a 'flat benefit', in that public schooling does not (ought not?) vary according to the wealth or class of the recipient. Perhaps some day there will also be agreement on the need for society to provide, to every person in his or her old age, a citizen's pension that does not vary according to the wealth or work history of the recipient. This will bring peace of mind to everyone, taxpayers as well as pensioners.

Table 2. Non-contributory Old-Age Pension Schemes in Selected Countries, circa 2000.

Country	Population Over Age 65 (% of total)	Covered Population	Beneficiaries (number)	Beneficiaries (% of covered population)	Maximum Net Monthly Pension			Annual Transfer to Aged (% of GDP)
					local currency	US $	% of GDP per capita	
Universal schemes:								
New Zealand	11.7	citizens and permanent residents with 10 years residence, from age 65	453,400	100	NZ$977 (single rate)	$447	42	4.1
					NZ$752 (couple rate)	$344	33	
Mauritius	6.2	citizens with 12 years residence; permanent residents with 15 years residence, from age 60	112,000	109	R/ 1,400 (age 60-89)	$55	17	2.0
					R/ 5,400 (age 90-99)	$212	66	
					R/ 6,000 (from age 100)	$236	74	
Namibia	3.8	citizens and permanent residents, from age 60	82,000	85	N$160	$26	16	0.7
Botswana	2.8	citizens from age 65	71,000	167	110 Pula	$24	9	0.4
Bolivia	4.4	citizens born before 1975, from age 65	366,000*	100*	150 Bolivianos	$21	29	1.3*
Nepal	3.7	citizens from age 75	171,322	60	150 Rupees	$2	11	0.1
Antigua	7.3	citizens from age 60	4,170*	100*	EC$750	$281	30	1.8*

Table 2. (concluded)

Country	Population Over Age 65 (% of total)	Covered Population	Beneficiaries (number)	Beneficiaries (% of covered population)	Maximum Net Monthly Pension			Annual Transfer to Aged (% of GDP)
					local currency	US $	% of GDP per capita	
Means-tested schemes:								
South Africa	3.6	citizens from age 65 for Men and 60 for women	1,800,000	88	500 Rand	$80	32	1.4
Australia	12.3	residents from age 65 for men and 60 for women	1,730,000	66	A$990 (single rate)	$653	37	2.3
					A$754 (couple rate)	$497	28	
Costa Rica	5.1	citizens from age 65	40,106	20	8,500 colones (single rate)	$30	9	0.09
					11,050 colones (3 dependents)	$39	11	
United States	12.3	eligible residents from age 65	2,011,000	6	$512 (single rate)	$512	17	0.07
					$385 (couple rate)	$385	13	
India	5.0	citizens from age 65	2,200,000	4	75 Rupees	$2	5	0.01

Note: Estimates for Bolivia and Antigua, marked with an asterisk (*), assume 100% take-up of pensions by all those eligible.

Source: Author's estimates, based on data from Australian Bureau of Statistics (2001), Brooks (2001), Caja Costarricense de Seguro Social (2000), Fultz and Pieris (1999), India (2000), Mauritius (2001), New Zealand (2000, 2001), and United Nations (2001). Data for Nepal are from Willmore (2003). Pension data for Boliva and Antigua are from HelpAge International (2004). Antigua's scheme commenced in 2004.

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