

**WHAT CAN WE LEARN FROM OTHER COUNTRIES ABOUT THE WHY'S AND  
HOW'S OF INDIVIDUAL ACCOUNTS FOR THE U.S.?**

by

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## **ABSTRACT**

This paper describes the structural reforms to their social security systems that many countries have adopted in recent years. In addition to a publicly managed social safety net, this strategy includes a funded component (retirement savings), with the funds privately managed. The basic rationale is that relying on partial pre-funding enhances system sustainability and has a positive impact on the broader economy by increasing long term national saving and labor market incentives. The paper contrasts how the funded pillar has developed in Latin America (where individual accounts prevail), the OECD countries (where group plans at the company or occupational level are common), and elsewhere.

The relevance of these experiments in other countries for the social security debate in the U.S. is explored. If a portion of the current contribution rate to social security were “carved out” and placed in individual accounts that earn a market return, this would help to keep over-all benefits at their present level without a tax increase. It would increase the sustainability of the system and, under conditions specified in the paper, would also enhance economic growth. Based on empirical evidence from other countries, private competitive management of the funds would yield the highest return and the most productive allocation of capital.

Once a country has made the political decision to move in the direction of pre-funding individual accounts, it faces a number of difficult implementation issues. Chief among these are: how to avoid undue risk and high administrative costs, how to achieve an equitable distribution of costs and benefits, and how to finance the transition. The paper describes the variety of solutions to these problems adopted by the countries that have already undergone structural reforms to their social security systems.

## **WHAT CAN WE LEARN FROM OTHER COUNTRIES ABOUT THE WHY'S AND HOW'S OF INDIVIDUAL ACCOUNTS IN THE U.S.?**

The presidential election of 2000 put social security reform on the political agenda in the U.S. Rather than treating social security as the third rail, to be avoided at all cost, both major candidates took strong and contrasting positions as major parts of their campaigns. It is likely that the debate will accelerate over the coming year, and even possible that significant changes in our current system will be forthcoming. The outcome will have widespread ramifications for the health of the broader economy, as well as the financial stability of the social security system.

The U.S. is not unique in its willingness to pay attention to this issue. Over the past decade, many countries around the world have confronted serious problems with their current systems and have instituted major structural reforms. This article aims to place the U.S. debate in international perspective. It explains the problems with old systems that have led countries to reform, outlines some of the commonalities and differences in reforms around the world, and considers the applicability to the U.S. The most important commonality is the shift toward greater prefunding, in accounts that are privately managed, as an important part of the mandatory social security system. This shift is designed to make the system more sustainable, more equitable, and more favorable toward economic growth—objectives which are widely shared in the U.S.

It may come as a surprise to many to note that, compared with other countries that have not yet reformed, the U.S. social security system is relatively healthy. Yet, it is clearly not sustainable with its current contribution and benefit rates, since cash outflows will exceed inflows in just a few years. How can we cover this gap in a way that:

- is fiscally balanced and contains automatic mechanisms to keep it sustainable in the long run;
- is good for economic growth, thereby increasing the output that will be available both for old and young to consume;
- avoids undue risk—both political and financial market risk;
- is administered in a cost-effective way;
- and distributes its costs and benefits equitably?

This is the question that we should all be asking, and the experience of other countries may help us find an answer.

### **I. Population Aging Around the World and its Relevance for Social Security Reform**

Over the next 30 years, the proportion of the world's population that is over age 60 will nearly double, from 9% to 16%. Population aging is due to a sharp drop in the birth rate, hence relatively fewer young people, together with an increase in life expectancy, particularly at the older end in recent years. In industrialized OECD countries almost 30% of the population will be over age 60 by 2030. (Figure 1). The population of the U.S. is still young compared with most European countries, but the proportion of people over 60 will increase from 17% to 28% in this period.

Cross-sectional analysis shows that public spending on formal pension plans increases exponentially as populations age. In developing countries today, only 2-3% of GDP is spent on old age security, but in many industrialized countries this figure now exceeds 10% and it will grow still higher in the years ahead (Figure 2). Because of its young demography, U.S. expenditures on old age security are now only 6% of GDP but this number will escalate when the baby boomers start to retire; and public spending on pensions and health (primarily Medicare) combined is already almost twice as high (Figure 3). Programs for the old are by far our largest civilian public programs and they are destined to grow further.

With such large sums involved, how this money is generated and spent can affect the entire economy, by influencing the quantity and productivity of labor and capital and therefore the size of the GNP pie. For example, high payroll taxes for old age pensions may discourage employment or work effort among the young, and subsidized early retirement may reduce the supply of experienced labor, which will be especially harmful as populations age—so these policies have a negative impact on economic growth. In contrast, pension plans that accumulate retirement funds in advance can help to increase long term national saving—which many economists feel would be desirable in the U.S. If a fund is accumulated, it is important to invest it in the most productive way—a rationale for private rather than public management of the funds.

Also, with such large sums involved and so many people dependent on old age programs, it is important to structure them so that they remain fiscally sustainable, even as external conditions such as

life expectancy change in unexpected ways. This places a premium on systems that are self-equilibrating, whose parameters adjust automatically, to avoid a difficult political decision process at every turn.

Increasingly aware of these broad effects, countries have been reforming their systems to meet the five criteria listed above—augmenting sustainability, growth and equity, while keeping risk and costs contained. They have done so by a structural reform that adds a funded privately managed component, or pillar, to their pre-existing mandatory social security systems. The establishment of individual accounts with part of the social security tax, which has been proposed in the United States, is a typical form that such a structural reform might take.

Part II of this paper briefly describes the almost universal problems in traditional systems. Part III discusses the rationale for funding, with private management of the funds, and contrasts three ways that private management has been implemented—the Latin American model in which workers decide how their savings will be invested, the OECD model in which employer and/or union representatives control the investment strategy for an entire enterprise or occupation, and the institutional model in which workers choose but their choice is constrained in order to economize on administrative costs. Part IV outlines methods that have been used to contain risk and costs while increasing equity. Part V describes how transition costs have been covered. The Conclusion raises questions about implications for the U.S.

## **II. Funded Individual Accounts as a Response to Problems of PAYG Systems**

New systems are a response to the problems of old systems. Therefore it is important to start by summarizing these problems. Most old age security systems established by governments in the past were financed by payroll taxes on a pay-as-you-go (PAYG) basis—meaning that the contributions made by today's workers are used to pay the pensions of those who have already retired. The pensions were defined benefit (DB), according to a formula based on the worker's earnings and years of service. These systems, including the US social security system, have helped many old people live out their senior years with dignity and security. However, it is now widely recognized that these systems generate many problems. The problems were small when the systems were immature and small, but they can no longer be overlooked as the systems mature and grow. These problems concern sustainability, growth and equity.

### **Sustainability**

Most public attention has focused on the sustainability problems. PAYG systems are very sensitive to demographic change and system maturation. Under a PAYG system,  $C = B/S = B \cdot D$ , where  $C$  is the contribution rate (as a percentage of wages) required to balance the books in a given year,  $B$  = the average benefit (as a percentage of average wage),  $S$  = the support ratio (the number of workers per retiree) and  $D$  = the dependency ratio (the number of retirees per worker). As the PAYG system matures and populations age, which is currently happening almost everywhere, the dependency ratio grows and the revenues are eventually insufficient to pay the promised benefits. Then either  $B$  must go down or  $C$  must go up.

For example, suppose the benefit ratio is initially 40%. When the support ratio is 3.3, the required contribution rate is 12%. This is approximately where we are now in the US. But when the support ratio falls to 2 due to increased longevity and decreased fertility, the contribution rate must rise to 20% or the benefit ratio must fall to 24%, or some combination of the two. That is where we are heading by 2030.

Parametric changes in the system—raising the contribution rate or the retirement age, reducing the pension, modifying the indexation formula—could keep PAYG solvent as demography changes. However, these would be very difficult changes for workers and retirees to swallow and very difficult for politicians to make. And they would have to be made not once, but repeatedly, as changes continue to occur—hardly a self-equilibrating system. For example, every time the trustees of the U.S. social security system have assessed its fiscal soundness, they have found that people are living longer than expected the previous time and therefore some adjustment to the benefit formula or contribution rate is needed to keep the system solvent. Some demographers expect longevity improvement to accelerate, which would also accelerate the required adjustment for social security.

## **Growth**

PAYG systems also have negative effects on economic growth:

- High and rising payroll taxes for pensions (exceeding 25% of wages in many countries) may increase unemployment;
- Early retirement on actuarially unfair terms (often below the age of 60) reduces the supply of experienced labor;
- Private saving may be discouraged by the gift of benefits to the first generation of retirees and the continued provision of public annuities to future generations.

- A large implicit pension debt accumulates, and the need to pay off this debt may crowd out the government's ability to provide other important public goods.

In the U.S. the payroll tax is relatively low, the retirement age is relatively high and early retirement is penalized. But our national savings rate is considered too low by many economists—yet we have not used our old age security program as a way to raise it; quite the contrary. (For examples of the extensive literature on the impact of social security on retirement age and savings, respectively, see Gruber and Wise 1997; Kotlikoff, Gokhale and Sabelhaus 1996; also see summary of this literature in World Bank 1994).

Contributions that workers make to PAYG systems are justified by the promise of pensions when they retire in the future. Unfortunately, no assets back up these promises. Thus, a large unfunded implicit pension debt accumulates—the present value of the benefit promises that have been made to current workers and pensioners. It is an implicit debt because it is not written down or legally binding, but it is a debt in the sense that ethically and politically most of it must be paid. In every industrialized country this implicit pension debt exceeds the explicit debt (bonds), it usually exceeds 100% of GDP and in some cases it exceeds 200% (Figure 4). The U.S. is fortunately at the low end on this score because our benefits are quite modest and our population is still quite young. But as the baby bulge moves through the system, our pension debt will also increase. Most countries would be horrified by an explicit debt that exceeds 100%, but are hardly aware that they are building a much larger implicit debt. Future generations will have to pay off this debt, thereby reducing public and private resources for investment in growth-enhancing human or physical capital.

### **Equity**

Finally, empirical evidence has cast doubt on the equity of many traditional systems. In many countries, rich people gain at the expense of the poor, since rich people live longer, hence collect benefits for more years. Although the U.S. has a relatively progressive benefit formula, this tends to be offset by the greater life expectancy of the rich, a disparity in life span which has been increasing. Under the defined benefit formula in effect in most countries, workers who retire before the age of 60 receive benefits that are subsidized by a tax on the labor of those who work longer. This is a not big problem in the U.S. But the U.S. has other surprising and questionable winners and losers. For example,

non-working spouses of high earning breadwinners are big winners, taking out of the system much more than they ever put in, which means that unmarried heads of households and dual career families are big losers (see Gustman and Steinmeier 2000; Coronado, Fullerton and Glass 2000).

However, the biggest redistribution in PAYG systems of virtually all countries stems from the payment of generous benefits to the first generations of workers who retired under social security. They contributed small amounts for only part of their working lives and received relatively generous benefits for their entire retirement. The money paid to them prevented the build-up of funds in the accounts of younger workers, and left us with a large unfunded debt. While most of us might be glad to pay these redistributions to low earners who suffered through the depression and war, high earners benefited as well—in fact, more. This debt will be paid by future generations, young and middle-aged workers today, including many low earners who will get a low return on their social security contributions. (For a summary of the large literature on intra- and inter-generational redistributions under PAYG in other countries see World Bank 1994. For applicability to the U.S. and distributional effects of proposed reforms see Kotlikoff 2001; Gustman and Steinmeier 2000; Coronado, Fullerton and Glass 1999, 2000; and various papers in Feldstein 2000)

To avoid these dangers in the future, more than 20 countries (from Latin America, Europe and the Asia-Pacific region) have reformed by incorporating pre-funded privately managed retirement accounts into their mandatory social security systems. (Figures 5 and 6). In most of these countries somewhere between 6 and 12% of payroll is contributed to the funded plan. We can learn from the methods they have developed for managing the funds and handling the concomitant issues of risk, costs and equity.

### **III. How Have Countries Reformed? How are the Funds Managed?**

The experience of the last 20 years shows us that structural pension reform is difficult but possible—even in democracies and welfare states. These structural social security reforms have certain commonalities, but also many differences—as a result of different initial conditions and political economies.

The most important commonalities are:

- a partial shift from PAYG to pre-funding, with private management of the funds

- a partial shift from defined benefit plans to defined contribution plans
- separate arrangements or “pillars” for the poverty-prevention part of the old age system (the public pillar) and the retirement savings part (the private pillar)
- government regulation over the private pillar

The term “privatization” of social security has been applied to these reforms, but it would be more accurate to call them “public-private partnerships,” since each sector plays an important role—the public sector regulating and providing a social safety net, the private sector investing the funds.

The reforming countries also exhibit important differences, chief among them being the nature and size of the public pillar, and the question of who chooses the investment managers in the private pillar. This paper focuses on funding and how the funds have been managed.

### **Why Pre-funding?**

Most analysts now agree that some pre-funding is desirable for the sustainability of a pension system and for the broader economy. It is good for the finances of the system because a given contribution rate will support a higher benefit rate under pre-funding than under PAYG. The rate of return in a PAYG system is (approximately) the rate of wage growth + the rate of population growth, both of which raise the payroll tax base that financed benefits. With a stable population and a wage growth rate of, say, 2%, this yields a 2% rate of return to contributions. In contrast, the rate of return in a funded system is the return on investments, which historically has been over 5% in real terms. This means the individual will get a larger pension from his contribution to a funded system. Viewed somewhat differently, if the support ratio is 2 and the target benefit rate is 40% of the average wage, then a 20% contribution rate is required in a pay-as-you-go system but only a 6.5% contribution rate under a funded system, if the funds earn a 5% real return. So the burden on younger workers is smaller and the peak tax rates that would be required under a pay-as-you-go system as the population ages is avoided.

Funding is also good for the broader economy since it can help to build and mobilize long term national saving. Saving, in turn, facilitates capital accumulation. Moreover, empirical analysis suggests that saving that is committed for the long term, as is the case for retirement savings, is especially productive (Musalem and Catalan 1999). It increases the size of the GNP pie that will later be available for people to consume. If savings are sub-optimal to begin with, due to public or private myopia or a

tax wedge between social and private returns, the increase in future consumption is valued more than present consumption foregone by the savings—everyone can then be made better off. Thus, mandatory social security saving can be an important ingredient of a long run strategy for increasing productivity and output, enabling the standard of living to remain high when the ratio of retirees to workers increases. Long term national saving can of course be increased in other ways, such as paying down the national debt, but retirement accounts is one of the most effective ways.

However, pre-funding retirement accounts will increase national saving only if it does not crowd out other private savings or increase public dissaving. Regarding the first point: if workers believe that a pre-funded system is more credible than a PAYG system, they may save less on a voluntary basis for their own old age (or borrow more for current consumption), thereby offsetting some of the increased mandatory saving. In the U.S., since few people save voluntarily, this offset is likely to be small. Regarding the second point: if the build-up of pension reserves relaxes fiscal discipline or if the government finances the transition solely through issuing additional bonds, this will mean that increased public deficits have absorbed the increased personal saving. The choice of debt finance versus other means of financing the transition will be discussed further below.

Generally, retirement accounts are turned into annuities or other forms of gradual withdrawals when the worker leaves the labor market. If he retires early, the annual annuity or withdrawal is relatively small, because it must cover many years. If she continues working longer, the annual benefit will automatically be larger, if it is adjusted on actuarially fair terms. This provides an incentive for continued work, which increases the nation's labor force and productive capacity. The conversion of savings into annuities or other withdrawals on actuarially fair terms, which is characteristic of funded defined contribution plans, is thus good for the economy. It is also good for the sustainability of the social security system, particularly as longevity increases, since it provides an automatic device for encouraging workers to raise their retirement age or reduce their annual benefits, without the need for a series of difficult political decisions.

### **Why private management of the funds?**

While many analysts now agree on the benefits of funding, a big issue in the US concerns how these funds will be managed—by the public versus the private sector. Who should choose the investment

managers and how much should we constrain worker choice? Countries that have adopted structural reforms in recent years have all chosen private control over the funds—believing that this maximizes the likelihood that economic rather than political objectives will determine the investment strategy. This will produce the best allocation of capital and the highest return on savings. In some OECD countries (e.g. Switzerland, Australia, Denmark and the Netherlands), for historical reasons, employer and/or union representatives choose the investment managers for an entire company or occupation. In Latin America and Eastern Europe (e.g. Chile, Argentina, Mexico, Hungary, Poland) workers choose the investment managers for their own individual accounts in the retail market. And more recently an “institutional market” approach has been adopted in countries such as Bolivia and Sweden, that negotiate fees centrally in order to gain for numerous small accounts the low fees that large institutional investors usually capture. In all these cases, the investment managers are chosen by private rather than public sector agents. (For further details on the Latin American and Eastern European reforms, see Cerda and Grandolini 1997, Chlon, Gora and Rutkowski 1999, Palacios and Rocha 1997, Queisser 1998, Schmidt-Hebbel 1998, 1999a, 1999b, Valdes-Prieto 1998, and Acuna and Iglesias 2001. For further details on the OECD reforms see Bateman and Piggott 1998, Hepp 1998, Johnson 1998, Feldstein 1998).

These countries have all been influenced by empirical data that show publicly managed pension reserves around the world earn low returns, far below the bank deposit rate or the growth of per capita income (Figures 7 and 8 from Iglesias and Palacios 2000), and frequently lose their principal as well. This is largely because public managers have been required to invest in low interest government securities, loans to failing state enterprises, or other politically motivated investments that pay low rates of return. Politicians are also subject to pressures to raise benefits if publicly managed funds are available (for example, this happened in the early years of the U.S. social security system). Moreover, the hidden and exclusive access to these funds makes it easier for governments to run larger deficits or to spend more wastefully than they could if they had to rely on a more accountable source of funds—actions that have a negative impact on the economy as well as the finances of the pension system. (Some economists believe this happened in the U.S. in the 1980’s, as the social security trust fund built up and was used to finance the growing public deficit in a non-transparent way).

Competitively managed funded pension plans, in contrast, are more likely to be invested in a

mixture of public and corporate bonds, equities and real estate, thereby earning a higher rate of return (Figure 9 from Iglesias and Palacios 2000). They enjoy the benefits of investment diversification, including international diversification, which enables them to increase their yield and reduce their risk. They build constituencies that help them resist political manipulation. They spur financial market development, by creating a demand for new financial instruments and institutions, especially important in middle-income countries. In Chile, which reformed its system 20 years ago, financial markets became more liquid as the number of traded shares on the stock market and their turnover increased; demand was created for the equities of newly privatized state enterprises; information disclosure and credit-rating institutions developed; the variety of financial instruments including indexed annuities, mortgage and corporate bonds grew; and asset pricing improved. These developments have played a particularly important role in explaining Chile's rapid growth rate during the twenty years that have elapsed since it started its new social security system (Valdes-Prieto 1998; Schmidt-Hebbel 1999a; also see Musalem and Catalan 1999 on OECD countries).

Some critics of private management have argued that the US is different from the African and Latin American countries that misallocated and dissipated their publicly managed pension funds. They argue that we should prefund, and the funds should be invested in securities markets, but the government should manage the funds and choose the investment strategy, in order to benefit from scale economies and financial expertise. We do indeed have better governance procedures and trustee laws that would prevent gross abuses. However, we also have pressure groups, intensive lobbying, and campaign contributions that influence issues over which contributors feel strongly. If funds were publicly managed, we could imagine these pressures being brought to bear on issues such as: Which companies, industries, and indexes should be the focal points for investment? Which products (e.g. tobacco, abortion pills) should be prohibited for investment? Should the funds be used to prop up the stock market when it is falling, or to dampen it when it is escalating rapidly? Should anti-trust actions be started and profit-reducing regulations be imposed on companies in which the public fund has major investments?

Such pressures on fund allocations will not maximize the financial returns to the system or the productivity of capital in the economy. They could also lead to wasteful spending of resources to influence these allocations—a negative sum game. Moreover, public control of social security funds

would concentrate a lot of market power in one large investor and could lead the government to play a large and largely unhealthy role in the governance of corporations in which it has invested. For all these reasons, private decentralized management of the funds seems to be in the best interest of the pension system, the broader economy, and the general polity. In the US context this would imply individual accounts (IA's).

#### **IV. Risk, Costs and Equity**

While pre-funding, with private control over the funds, may be beneficial for the sustainability of the system and for economic growth, this should be done in a way that avoids undue financial and political risk, keeps administrative costs low, and distributes its costs and benefits equitably. This section briefly discusses how other countries have handled these issues.

##### **Risk**

One of the concerns most frequently voiced concerning IA's deals with financial market risk—the possibility that investments will have a poor outcome for some workers. Risk and uncertainty are indeed inevitable in all old age security plans, given the long time horizons that they cover. This risk is handled differently in public defined benefit pay-as-you-go plans versus privately managed funded plans. In a public PAYG system, as conditions change in unexpected ways a collective decision is made about how the system will adapt. For example, suppose the old live longer so the dependency rate rises—who bears the resulting costs for the system? If, on the one hand, retirees are politically strong, they will be able to retain their benefits for many years, while workers pay more. If, on the other hand, workers are politically strong, benefits will be cut in order to keep payroll taxes stable. It is also possible, in the case of major political upheaval (as in the former Soviet Union or the former Yugoslavia or in China) that the rules of the game that workers counted on when young will change altogether. In all these instances, workers and retirees face the risk of changing conditions that will greatly affect their current or future well-being; but the risk is political risk.

In contrast, in a private funded system, workers and retirees face financial market risk—the market may not perform as well as we hope or believe it will. Generally, the investment contract spells out how benefits will be affected, so the locus of risk is better defined than in a public DB scheme. A variety of risk-sharing options are available, ranging from arrangements where the entire loss is borne by the worker investors (e.g. in stock market mutual funds) to arrangements where the entire loss is borne by

a guaranteeing institution (e.g. insurance companies that guarantee a fixed rate annuity) to more complex risk-sharing contracts where workers are afforded some downside protection if they have agreed to forego some of their potential up-side gain (as in variable annuities with floors). Even in cases of bankruptcy, rules of law generally spell out who bears the risk. In general, the more risk that is borne by the worker or retiree investor the greater the expected return—as well as the potential loss.

Thus, whatever the system that is chosen, risk cannot be avoided, but its nature and the rules for sharing it change. What are some reasonable principles that might be considered, for mitigating risk and sharing it efficiently?

As a starting point, given the great uncertainty faced by old age security programs stemming from their long time horizons, the best protection against risk is broad diversification of income sources. This is achieved by a system that has publicly and privately managed components; financing based both on wages and returns to capital, on taxes and own-savings; and investments both in stocks and bonds. In this sense, adding a private invested component to system that is exclusively public PAYG probably reduces risk over-all, by diversifying the sources of total retirement income. If the public source fails due to political risk, the private source may remain, and vice versa. Within the funded pillar, financial risk can be further reduced by regulations that require benchmarking to a broad market index rather than concentrating on a narrow sector; by holding for the long time horizon rather than timing the market; and by investing both in domestic and international markets to minimize country specific risk. Passive funds that are indexed to a broad benchmark would encompass both methods. Historically, holding a stock portfolio for 20 years or more has always resulted in a net gain—a gain that exceeds the return from a pure bond portfolio (Alier and Vittas 2001). Also historically, attempts to avoid market risk through fixed income securities imply a low nominal return and therefore introduce another risk—that pensions will not keep up with inflation. Diversifying across sources of retirement income, types and location of investment instruments, and holding for the long term seem to be the most effective ways to reduce risk in a very uncertain situation.

What have reforming countries actually done? Frequently they restrict the portfolios in which pension funds may invest, to rule out volatile and concentrated portfolios. The Latin American and most continental European countries include explicit portfolio limits, while the Anglo-Saxon countries

typically rely on the more discretionary “prudent man rule.” The latter approach seems to perform better than the former, but may be difficult to implement in countries without well-developed rules of law and prudent man precedents. Many countries require guarantees of absolute or relative rates of return by the pension funds; and/or include a minimum pension guarantee by the government. Switzerland requires a minimum return of 4% nominal over the workers’ tenure with a given employer. This constraint may, however, lead to overly conservative investments, particularly for funds that start out close to the 4% margin. Chile penalizes funds that earn a return that is 50% lower or 2 percentage points lower than the industry average (whichever comes first); the averaging period was initially one year, was increased to 3 years, but further easing is now under consideration (Acuna and Iglesias 2001). This rule has been accused of leading to investment herding among pension funds, as each fund tries to look very much like the others. Rather than having a choice of different points on the risk-return frontier, stemming from differing asset allocations—as would be the case in a well-functioning financial market—workers have the much less meaningful choice among companies that provide the same asset allocation and risk-return mix.

In many countries the government provides a minimum pension guarantee to ensure that, if all else fails, retirees will be kept out of poverty in this way. In Mexico current workers are permitted to return to the old PAYG system upon retirement, if this would have yielded a better pension. One might anticipate that this would lead to a moral hazard problem—workers’ buying overly risky portfolios since they will benefit from the prospect of gains but are protected from downside loss. The Mexican authorities have avoided this moral hazard problem by greatly limiting the funds’ choice of investment strategies: at least 65% of all assets must be invested in government bonds (as of 2000 the funds were still 99% in bonds) and international investments are proscribed. Since workers have no real choice of portfolios, moral hazard is avoided; but the flow of funds through the pension funds to the financial market and the private sector is also avoided. Thus, guarantees reduce risk but they also introduce new costs and potential moral hazard problems that are avoided through direct portfolio restrictions, hence a reduction in choice. Each reforming country has chosen a somewhat different point on this risk-choice-cost frontier.

### **Administrative costs**

The biggest criticism of individual account systems concerns the high administrative cost and fees

that have developed in some countries using the Latin American (retail market, worker choice) model. The advantage of private over public investment is the likelihood that it will produce a better allocation of capital, therefore higher returns for the fund and growth for the economy. However, decentralized systems also may charge high administrative fees, partly due to high marketing costs in competitive industries. In Chile and most other Latin American countries fees are front-loaded, meaning that workers pay a one-time fee on new contributions rather than an annual fee based on assets. Specifically, this one-time fee is about 2 percent of wages, or 15-25 percent of new contributions, in virtually all cases, making the pensions ultimately 15-25% lower than they would have been in the absence of these costs. While expenses related to investments and record-keeping are inevitable in any system of retirement savings, almost half of these total costs are due to marketing expenses that may be avoidable.

These numbers appear very high. To understand their impact on net returns, it is helpful to convert these one-time charges on contributions into their equivalents in terms of annual charges on assets, which is the way most mutual fund charges are assessed in the US. Obviously, for accounts that have small accumulated assets (young workers with few years of contributions), this fee will be high relative to assets. However, for accounts that have built up substantial assets over the years, the fee will be small relative to assets. Simulations show that if the current fee schedule is maintained, the average Chilean worker who contributes for 40 years will pay the equivalent of less than 1 percent of assets per year.

To put these numbers into perspective, these charges are somewhat less than the fees and expenses found in the average U.S. mutual fund in which millions of individuals invest on a voluntary basis, so the perceived benefits far exceed the costs for many people. Moreover, they are not excessive in comparison to less expensive systems that produce much lower gross and net returns (e.g. publicly managed reserves in Singapore and the U.S. social security trust fund). Nevertheless, these costs and fees are a source of concern in mandatory systems where everyone is forced to participate and pay. And they are a particular problem in the early years of a new system, when accounts are small.

Some analysts believe that administrative costs would be lower under a group plan and hence favor choice by the employer or union. Such group plans may be better positioned to benefit from economies of scale, greater financial expertise, and lower marketing costs. (On the existence of scale

economies see James and Palacios 1995, James et al 2000 and 2001, and Mitchell 1996b). This is one rationale given for employer and/or union choice of the investment manager in OECD countries. However, because employers or union representatives make the investment decisions while workers bear the risk in a defined contribution plan, such arrangements can also open the door to financial abuse and principal-agent problems: employers might choose investment managers or strategies that benefit them even if this implies lower returns for their workers.

A third alternative may be desirable, especially in small countries whose markets cannot support many pension companies efficiently due to scale economies, countries with undeveloped financial markets that want to attract investment expertise and minimize start-up costs, and countries with low contribution rates to the second pillar. This alternative draws on the experience of the institutional market, in which large investors (company DB plans, foundations, endowments) face much lower rates. The reformed systems in Bolivia and Sweden represent attempts to use or mimic the institutional market to achieve lower fees in their mandatory systems by aggregating numerous small accounts into large money blocs and negotiating a group rate.

In Bolivia, an international competitive auction process was used to select two pension funds to run its mandatory private pillar; although initially assigned, workers will soon be given the choice between them. This competitive bidding process has resulted in much lower costs relative to assets and affiliates in Bolivia than in other Latin American countries. In Sweden, after studying cost functions in the Swedish financial market, the pension authorities established a maximum fee schedule that asset managers could use, for mandatory retirement accounts. Workers are permitted to choose amongst the large number of mutual funds that entered the market, but the money is moved in large blocs, records are kept centrally, and funds do not even know the names of their affiliates—an attempt to avoid sales commissions. The allowable fees, again, are much lower than those charged in Latin America or Eastern European pension funds, or in the voluntary mutual fund industry in Europe or the U.S. (For more details see James, Ferrier, Smalhout and Vittas 2000; James, Smalhout and Vittas 2001; Sunden 1998; von Gersdorff 1997.). Along similar lines, the voluntary Thrift Saving Plan for U.S. federal employees offers three (soon increasing to five) portfolios, specializing in stocks, bonds, and money market instruments, respectively; uses passive investing; and chooses its asset managers on the basis of a

competitive bidding process—at a total cost of 11 basis points (.11% of assets) per year.

A number of methods have been proposed in the U.S. to keep costs low. These include constricting worker choice and using competitive bidding to govern entry on the basis of fees, consequently reducing resources and incentives for marketing activities, emphasizing passive investing and low turnover. The downside of such processes is that investment options are restricted so some workers will not be able to get the manager and portfolio of their choice, incentives for good performance are limited, and adaptability to unforeseen events is dampened. Once entry is limited it becomes more difficult to insulate the investment process from political manipulation, corruption and collusion. The advantages are that lower costs, allowing a substantial increase in net rates of return and benefit rates, can be achieved, if the process is well-handled. I have calculated that such methods could keep costs as low as \$30-50 per account, less than .2% of assets per year, in the long run. These savings are particularly important during the early years of a new funded pillar, when average account size is small and high administrative costs could consume much of the investment return. (For a discussion of several plans that economize on administrative costs see Shoven 2000).

### **Equity**

A third key issue concerns the distribution of the costs and benefits of a social security system that includes individual accounts. Is this equitable? Of course, different people hold different beliefs about what is equitable. For purposes of this discussion, we focus on redistributions to low earners to keep them out of poverty, and their converse, “perverse” redistributions to high earners.

As already discussed, old PAYG systems are not as progressive as we might like to believe—features such as longer lifetimes and steeper age-earnings profiles often imply that high earners are the chief gainers. Even in the US, which has a supposedly progressive benefit structure, recent empirical studies suggest that lifetime redistributions are not pro-poor (NBER citations). Because many traditional systems are both inefficient and inequitable, an opportunity exists to improve both outcomes. However, it is still an open question whether or not the reforms have succeeded in improving equity. Closer examination suggests that the devil is in the details and some of the results may be surprising.

For example, workers are eligible for Chile’s minimum pension guarantee (about 27 percent of the average wage) after 20 years of contributions, meaning that the government tops up the benefits of

these workers to the guaranteed point if their own accumulation does not suffice. The main beneficiaries here will be low earners who worked only 20 years—disproportionately females, who have limited labor market attachment— while workers who remain in the formal sector for a full career are unlikely to receive this subsidy. This benefit is well targeted toward the poor but may encourage them to withdraw from the formal labor market after the twenty year point has been reached. In contrast, in Argentina a flat benefit of about 28 percent of the average wage is paid to all workers who have at least 30 years of contributions (plus an additional 1 percent for every year above 30 up to 45). This benefit structure encourages and rewards continued formal labor market participation. The main recipients will be workers who spent most of their adult lives in the formal labor sector. In sharp contrast to Chile, women and other low income transient workers are unlikely to qualify. (Argentina is now considering replacing this with a means-tested benefit because of its high fiscal cost). Switzerland's public pillar is earnings-related and hence appears less redistributive than that in Argentina, but the benefit schedule is very compressed and the payroll tax which finances it is levied on all earnings (that is, there is no ceiling on taxable earnings as there is in Argentina), which makes it quite redistributive toward the poor. In fact, low earners get such a high replacement rate from the public pillar that they are not even required to contribute toward the private pillar, thereby increasing their take-home pay as well.

When a country such as the US reforms, we should keep in mind the following principles: Young families with children are the poorest group and they will benefit from keeping payroll taxes low and wages high. A system that increases the rate of return to the fund and the rate of labor productivity in the economy, hence reduces required contributions and raises take-home pay, will help this group. An individual account system tends to be distributionally neutral so any progressivity must come through manipulating the remaining PAYG part. Given recent empirical findings, it may be desirable to increase and better target redistributions—by redefining progressivity within the tax schedule while working and/or within the benefit schedule after retirement. An annuity scheme that allows low earners to be placed into lower risk (lower longevity) categories will benefit them. And in designing the system the welfare of low earners should be carefully modeled, to ensure that they benefit from the reform—at least as much as and possibly more than middle and high earners.

## V. Financing the Transition

If we decide that we can have a better system, the next problem is to figure out how to get there. One important obstacle to overcome is the need to cover transition costs. Unfortunately, this issue is often misunderstood. Indeed, it surfaced during the presidential campaign in the U.S. in a way that probably did not add much to public understanding.

If countries with a PAYG pension system switch to a multi-pillar system that includes a funded component, some of the contribution usually is shifted to the funded pillar. For example, several proposals for the U.S. would shift 2 percentage points out of the total payroll tax into the funded pillar, the individual accounts. This creates a financing gap between the remaining PAYG revenues and the revenues needed to cover the current obligations of the old system. Some other revenue source must be found to cover this short run transition gap, in addition to the long run pre-existing financing gap of the old system.

Countries that finance their funded pillar by adding an extra contribution rather than diverting money that was originally slated for the PAYG arrangement (an add-on rather than a carve-out) do not face this problem. For example, most OECD countries with multi-pillar systems started with modest PAYG pillars and financed their funded pillars by mandating additional contributions, thereby avoiding the transition financing gap. If the U.S. chose a small add-on instead of a carve-out, we too would avoid the transition financing problem. The downside to this strategy is that payroll taxes would go up.

All Latin American and Eastern European countries have used the carve-out approach and therefore have faced the transition cost problem. How did they finance the transition? Which of these methods would be most applicable to the U.S.? Because of the fungibility of money, it is difficult to answer these questions precisely. That is, if government debt and taxes rise, it is difficult to know how much of the increased debt versus taxes were used to finance the pension transition. To do so would require knowing the counterfactual—exactly what would have happened otherwise; and unfortunately we do not know that. Compounding this problem is the fact that, even without a diversion of contributions to the funded pillar, all these systems were or would soon be in financial distress because the present value of their future obligations exceeded the present value of their incoming revenues under the old system. The term “transition costs” properly applies only to the additional gap created by the carve-out.

While we cannot give precise numbers we can describe more generally the strategies that countries have used. Basically, we observe five strategies:

- 1) making the carve-out relatively small and keeping some workers in the old system, so most of the contribution continues flowing into the PAYG pillar;
- 2) downsizing the benefit obligations of the PAYG pillar, particularly for young workers, expecting that this would be compensated by growth of the funded pillar;
- 3) applying other assets, such as a budgetary surplus, to offset the pension debt;
- 4) borrowing temporarily, to spread the burden of transition costs across generations;
- 5) using the general taxing powers of government to repay this loan over time.

Each of these methods and its applicability to the U.S. is discussed below. Each has different effects on income distribution and national saving, which must be evaluated. The important thing to remember is that transition costs arise from the need to meet obligations that already exist and they diminish as these old obligations are paid off. Some of the financing methods involve critical trade-offs between reducing the cash flow deficit in the short run versus keeping the implicit pension debt low in the long run. If the new system enhances economic growth by increasing long term saving, labor supply and productivity, this will generate additional resources that could be used to finance the transition in the long run.

### **Making the carve-out small**

The transition financing gap will be reduced if some part of the new system remains PAYG, so contributions continue flowing into the PAYG pillar. This has been accomplished in several ways:

- 1) *keeping a sizeable public pillar and instituting a smaller private pillar.* My research shows that countries with a large implicit pension, such as Sweden, Hungary, and Uruguay, tended to keep a large public pillar, because they felt that otherwise they could not cover their transition costs. In contrast, countries like Chile, Mexico and Kazakhstan, which started with a relatively small pension debt, resorted to a small public pillar—a minimum pension guarantee, received only by lifetime low earners (James and Brooks 2000). The continued inflow of funds to a large PAYG pillar reduces the transition financing gap in the short run. But if it offers benefits that are

too generous (actuarially unsound), the reform will not be sustainable in the long run. In any event, it will continue to maintain a sizeable implicit debt whose tax burden is very sensitive to demography, and it will not offer the other economic benefits discussed above.

- 2) *excluding some workers*, such as the military, the police or older workers, from the new system (as in Chile), or making the second pillar mandatory only for certain groups, such as high earners (as in Uruguay).
- 3) *Making the switch voluntary for current workers*. Most reforming countries have followed this approach, making the multi-pillar system mandatory for new workers but allowing current workers to stay in the old system if desired. Usually workers over the age of 45 choose to stay in the old system while most younger workers switch. The former group continues contributing to the PAYG pillar, thereby reducing the financing gap, while the latter group partially withdraws with the expectation that the individual accounts will build up by the time they retire. One advantage of a voluntary switch is that it mitigates opposition to reform from groups most anxious to stay in the old system and permits a lower value to be placed on past service credits for those who switch. By choosing the minimum terms that are needed to convince the desired number of workers to switch, a government can substantially downsize its recognized debt and transition costs (as was done in Hungary). Obviously, the higher the expected rate of return on the individual accounts, the lower the compensation needed to induce workers to switch. In effect, the transition can be partially self-financed by building a strong second pillar.

Which of these methods would work in the U.S.? Since the U.S. has a relatively small implicit pension debt and financing gap, we could finance a largely funded privatized system if we chose to do so. That is, we could carve out half or more of the contribution (as in the Scheiber-Weaver proposal or recent proposals by Feldstein and by Kotlikoff) for the new funded pillar. However, many proposals visualize keeping a substantial PAYG pillar, diverting only 2 percentage points, or 20% of the total, to the funded pillar. In following this course we would be maintaining part of the disadvantage of the

PAYG system, but gaining the advantage of keeping the transition financing gap small. (See Gramlich 1996, Feldstein and Samwick 1996 and 2000, Kotlikoff, Smetters and Walliser 1999).

We could reduce this gap still further by making the switch voluntary. However, a voluntary switch would be difficult to implement given the complex benefit formula in the U.S. system. Unless careful measures were taken, high earners might opt out of the PAYG pillar, thereby withdrawing part of their contributions that were used to finance the benefits of low earners. Low earners would be left in the PAYG system, exacerbating its financing problem. The switching terms would have to be carefully devised, and income-specific, to avoid this outcome.

### **Downsizing benefit obligations**

Before or in the course of making the transition, most countries have reformed their old systems by downsizing benefits, raising retirement age and penalties for early retirement, tightening eligibility for disability benefits, and changing the indexation method to price rather than wage indexation, so the outstanding debt becomes smaller. Chile, Argentina, Uruguay, Hungary and Poland followed this strategy, which may be virtually indispensable to a good pension reform—especially in countries that start out with bloated benefits. (Of course, benefit cuts would be necessary in these countries whether or not they undertake structural reform). This cuts the benefits that must be paid for past service under the old system, as well as the new obligations that accrue in the remaining PAYG pillar; hence it cuts the transition cost problem. Some, but not all, of these benefit cuts are typically made up through the growth of the funded pillar. That is, typically in Latin America and Eastern Europe total benefits from the combination of both pillars in the new system are somewhat reduced, but benefits stemming from the PAYG first pillar in the new system are cut still further.

The specter of benefit cuts was one of the sensitive issues that arose during the recent presidential election campaign. In the U.S. our current benefits are not bloated, by world standards. Our average replacement rate is modest—about 40%, in comparison to 60-80% found in other countries before they reformed. Our retirement age is 65, slated to rise to 67, and penalties exist for early retirement at age 62, in contrast to other countries where retirement without such penalties often occurs before age 60. We have always used price indexation and even that method has been adjusted downward in recent years. Given this, it is unlikely that benefit targets from the PAYG and funded parts combined would

be lower, although it is likely that benefits from the PAYG part alone would fall, to match the cut in contributions to that pillar. In fact, if this did not happen the carve-out would not be consistent with system solvency.

Four interrelated principles have been followed by most countries and would likely be followed here:

- pensioners and workers near retirement are protected—it would be politically impractical and morally indefensible to cut their benefits just at the point when they are most dependent on them;
- any cuts in the PAYG part affect new rather than old obligations;
- changes in benefit arrangements are introduced gradually, so workers have ample time to adjust and build up accumulations in the individual accounts;
- and, normal and early retirement ages are gradually increased to keep pace with increased longevity—thereby improving the finances of the pension system as well as the productive capacity of the economy.

### **Using existing assets to pay off the pension debt and cover transition costs**

In some reforming countries, such as Peru and Poland, where public enterprises are being privatized, part of the proceeds have been used to pay off the pension debt—a cancellation of long term assets against long term liabilities. This is not a potential revenue source in the U.S. More relevant for our purposes is the use of treasury surpluses or temporary surpluses in the existing social security system.

While the Latin systems generally did not have a surplus in their old social security systems, the U.S. currently does—the social security trust fund. The trust fund is not large, it will not last long and it consists exclusively of government bonds, hence requires that other buyers be found for them, but it is one of several revenue sources that could be drawn upon to continue paying off old obligations and finance the transition.

The Latin countries (aside from Chile) also did not have surpluses in their general treasuries. Chile, in contrast, is said to have built up a surplus in its public treasury before undertaking its pension reform. The U.S. fortuitously has a budgetary surplus (or at least did before the recent tax cut), that could be used to pay transition costs. If a surplus exists that otherwise would have increased government

spending or decreased taxes, then its use to allow the build-up of retirement accounts enhances national saving and labor productivity.

### **Issuing general treasury debt to cover the remaining cash gap in the short run**

Because of the fungibility of money we do not know to what extent the transition has been financed from benefit cuts plus asset reallocations, but 30-40% might be a good estimate in many cases. The remainder is usually financed by government debt, with the intent to gradually repay this out of taxes and system savings that continue after the old obligations have passed. The relevant proportion for the U.S. could only be determined by crunching the numbers of many alternative financing options.

Government borrowing has increased in the early years of the reform in almost every Latin American and Eastern European country. Indeed, some use of temporary debt finance is almost inevitable so that a heavy double burden is not imposed on the transition generation of workers. Temporary borrowing with gradual repayment allows policymakers to determine how the burden of the debt should be distributed among cohorts. Since young and future workers will benefit most from the reform, by receiving larger pensions or paying lower contributions than they would have otherwise, it is appropriate that they should also pay part of the cost. This is accomplished by borrowing to cover part of the transition cost and repaying later on.

However, if one object of the reform is to increase national saving, then the painful fact is that someone's consumption must be cut, at least temporarily, relative to what it would have been otherwise; and pure debt finance will not accomplish this. Eventually, taxes must be raised or benefits cut enough to pay off the debt. The slower the pay-off the lower the required tax rate per year and the more politically acceptable may be the reforms, but this also delays the timing of increased national saving for productive investment. Indeed, if the transition is largely debt financed and if the debt is not paid off in a timely way, the benefits of "pension reform" are substantially mitigated.

The issue of debt finance of the transition was loudly raised during the presidential campaign. It is crucial to realize that total public debt is not increased by this financing arrangement. The pension debt exists right now, in every PAYG system. Rather, borrowing temporarily as part of a transition to a funded system is simply an exchange of hidden implicit debt for more observable explicit debt. In fact, in the course of the reform the total pension obligation of the government has been reduced in almost

every country. The fact that the remaining debt becomes more explicit increases the likelihood that pressures will be brought to bear to pay it off. Using special issue transition bonds with scheduled retirement dates could enhance such pressures.

Where can the government find buyers for these bonds? In countries that have already reformed, some of the new bonds were sold to the pension funds in the new second pillar; government debt and bank deposits have been the largest initial investments of practically all new pension funds in Latin America and Eastern Europe. Further, these countries all limit international diversification of pension fund investments, which virtually ensures large investments in domestic government bonds. In the U.S., substantial international diversification would be expected, as well as investments in equities and other assets with higher returns than government debt. Nevertheless, finding buyers for the bonds should pose no problem as we switch from an era of government deficits to surpluses, leaving potential buyers bidding for the reduced supply.

### **Using the general taxing power of government**

What kind of tax has been and could be used to pay off the debt? That is a hard question to answer empirically, because in most cases the bonds are simply part of general government finance and we don't know how taxes have been augmented (or government spending cut) to retire them. As a first shot, one might think of using a payroll tax, since that finances the rest of the social security systems in most countries. In Argentina the payroll tax paid to the public pillar was used to finance the transition, initially. (But Argentina has now shifted, in part, to a value added tax). The payroll tax could be continued at its current level even after the obligations of the PAYG part has fallen, due to the reform; the surplus could repay the transition debt. As a variation on this theme, the ceiling on taxable earnings might be raised. This would have beneficial effects on scheme finance if incremental revenues go up more than incremental benefits, as would be the case under the current U.S. formula.

However, a consumption or value-added tax would have several advantages. Having a broader tax base, it would require a lower rate. It would be less distortionary to labor markets, more growth-enhancing and probably more progressive, which many people would interpret as more equitable. But, as a completely new tax, it may also be the most difficult to implement politically. It has been estimated that if half the current PAYG system were converted to a funded DC system, the financing gap would

be paid off by a payroll tax rate of about 1.5% or a consumption tax of 1% for 70 years in the U.S. (Gramlich 1996). A smaller carve-out could be paid off with a smaller tax, in fewer years.

Does the tax that finances the transition “use up” the contribution advantage of the higher-return pre-funded system? This depends on whether the new pension system increases economic growth and decreases distortions that led to non-optimally low savings and early retirement. If it accomplishes this, the growth premium allows the transition costs to be paid off, while still leaving a consumable surplus for workers and retirees, in the long run.

### **Conclusion**

Approximately 20 countries in Latin America, Europe and the Asian-Pacific region have made major structural reforms to their social security systems over the past 20 years and at least another 10 are moving in that direction to make their systems more sustainable, equitable and growth-enhancing. They have tried to achieve these beneficial effects by increased pre-funding, with the investment managers chosen on a competitive basis by workers, unions and/or employers. They have tried to insulate the system from political pressures that might emphasize short run gains over long run stability. The funded private arrangement has been accompanied by a publicly managed social safety net, for risk diversification and mitigation, as well as redistribution. While the new systems in most of these countries are still too new to evaluate, the pension reform in Chile, in existence for 20 years, has been credited with making a major contribution to Chile’s high growth rate.

What does all of this imply for the forthcoming social security debate in the United States? Despite the very real problems in our system, it is healthier than those in many other countries that have not yet reformed their systems. Our benefit rate is modest, our retirement age realistic and rising and actuarial penalties are applied, discouraging early retirement. Yet, we will have to do something to maintain the solvency of the system. Under the current structure, benefits will have to be cut and/or contributions raised. The longer we wait the deeper the cuts and steeper the tax hike will have to be. So we are better off starting now. And since we have to change the system in some way, we should give a lot of thought as to what is the best way. We should choose a fix that lasts, instead of one that will prove insufficient ten years later. And we should be thinking about how the various proposals would affect the aggregate economy. For example, keeping the payroll tax low can help to contain the cost of labor, penalties for

early retirement and rewards for continued employment can increase the supply of older workers, the shift toward individual savings accounts can generate a stock of investable resources and private management of these funds can help to produce a productivity-maximizing allocation.

Most analysts on all sides of the political spectrum now believe that some pre-funding is desirable—to make the financial balance of social security less sensitive to demographic change, to reduce the pension debt we are passing on to our children and grandchildren, and to build up a stock of national saving that is committed for the long term. But once we agree to pre-fund the question immediately arises: who should manage the funds? And here there is greater disagreement. The experience of many countries suggests that it is difficult to insulate publicly managed funds from political manipulation and this manipulation leads to low rates of return for the economy and the pension funds. This is the basic rationale for private competitive management. Despite much controversy about the administrative costs and fees in such a scheme, analyses of retirement savings plans in the U.S. and abroad suggest that it is possible to carefully design the system to keep these low.

As discussed above, the financing for these accounts can come from a carve-out of the existing contribution rate—so long as policy-makers are willing to cut benefits from the PAYG pillar that would remain. Based on the experience of other countries, this cut would be gradual and would not affect current pensioners. The monetary part of the cut would be recouped through the build-up in the personal accounts of contributing workers. The fact that the individual accounts are likely to earn a rate of return that is higher than the return in a PAYG scheme helps to restore these benefits without the increase in contribution rate that would otherwise be necessary.

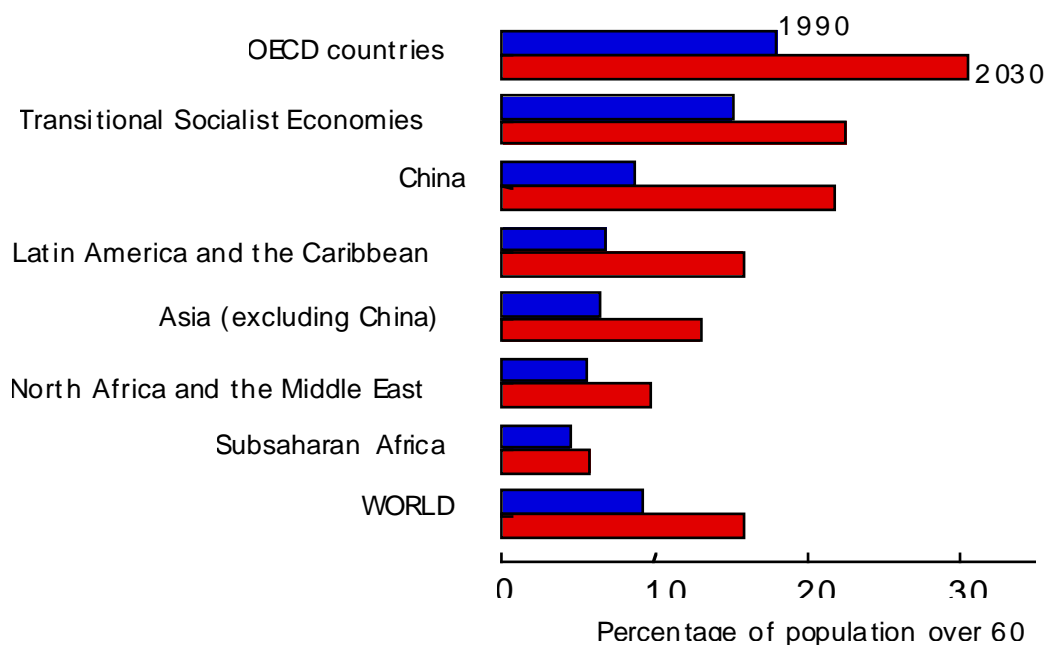
One important potential benefit cut that probably would not be recouped is a further increase in retirement age, which would also benefit the economy by preventing the experienced labor supply from falling as the baby boomers approach retirement. When given the choice between later retirement versus an ever-lower annual benefit as longevity increases, many people would probably choose to work longer. Privately managed accounts that are converted into actuarially fair annuities upon retirement give workers this choice between later retirement and lower benefits. This puts the system on automatic pilot with respect to retirement age as longevity changes, and thereby helps to keep it sustainable. If savings and retirement age were too low under the old system, these changes increase GDP and also

imply the possibility of higher welfare for everyone, both old and young, as output grows.

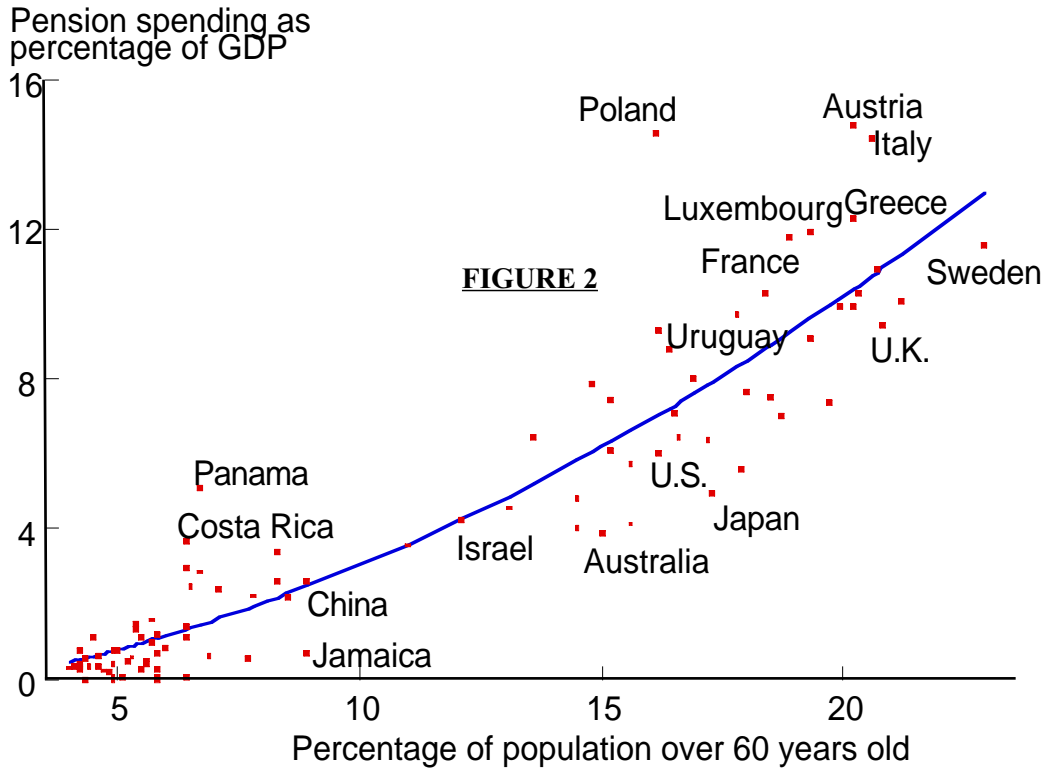
This paper has surveyed some of the key implementation issues, including how to keep risk and costs contained, how to achieve an equitable distribution of costs and benefits, and how to cover the transition costs. These issues are difficult, but they are not insoluble. Other countries have solved them and hopefully we can learn from them and do better. The important point is to do it now, so we are prepared ten years from now when the baby boomers start to retire. Change is often painful. The sooner we start, the more gradual and less painful the inevitable changes can be.

**FIGURE 1**

## Percentage of the Population Over 60 Years Old. by Region, 1990 and 2030



# Relationship Between Percentage of the Population over 60 Years Old and Public Pension Spending



## Public Health and Pension Spending versus Population Aging

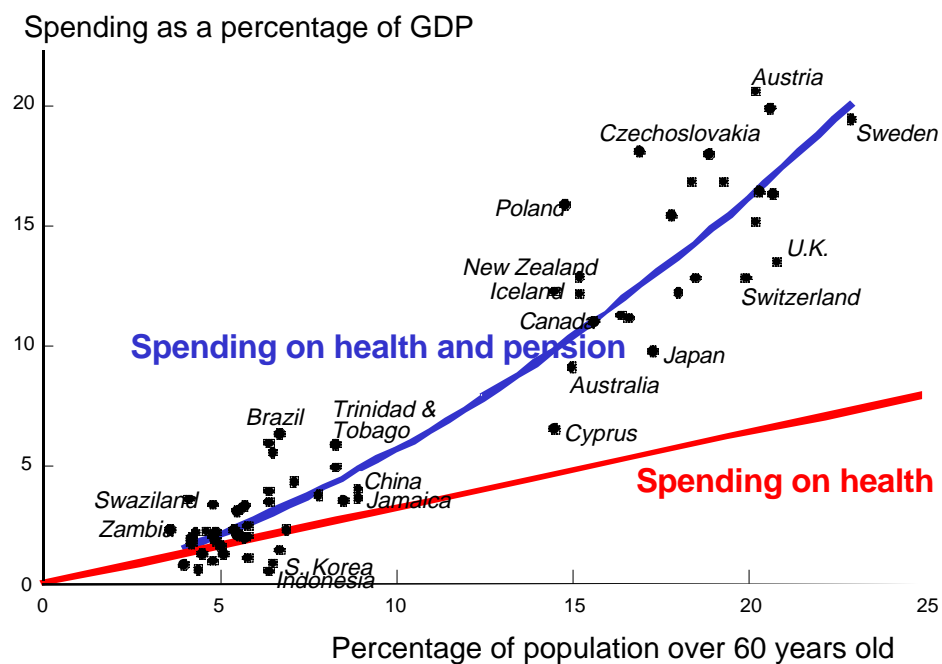
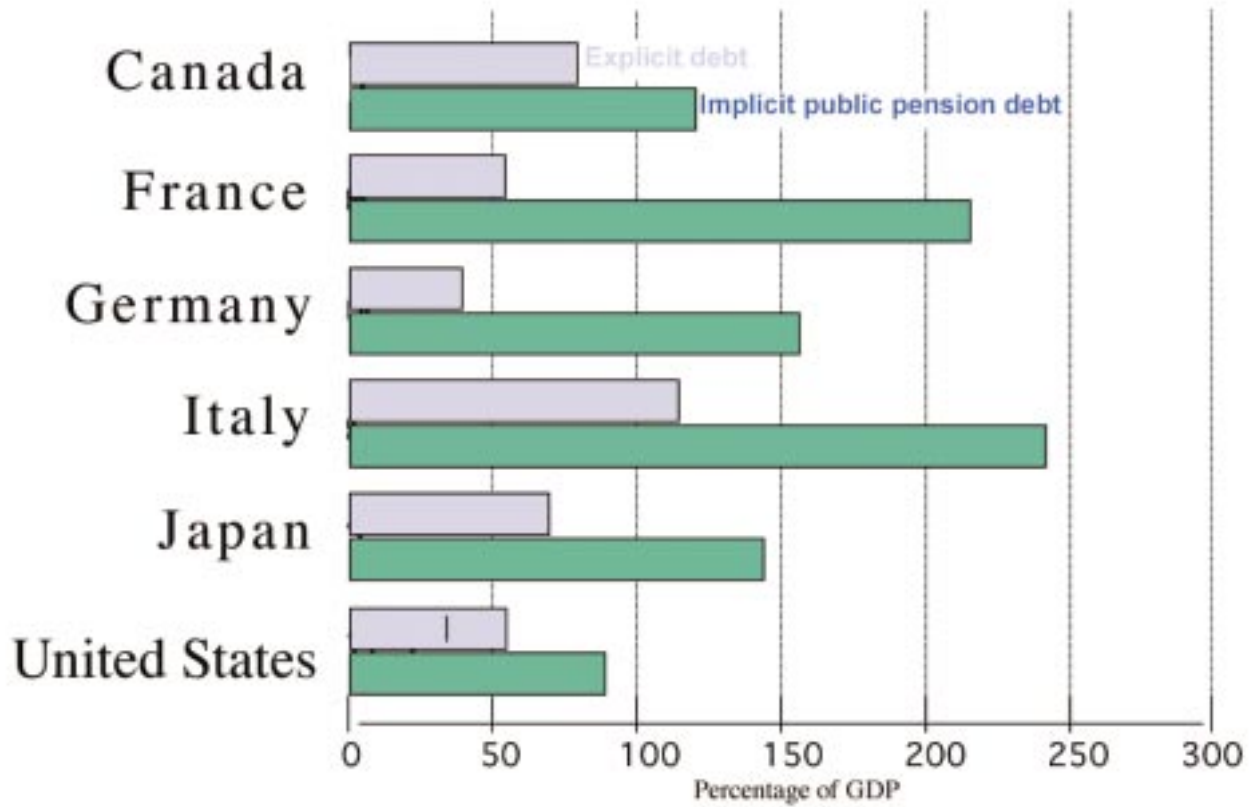
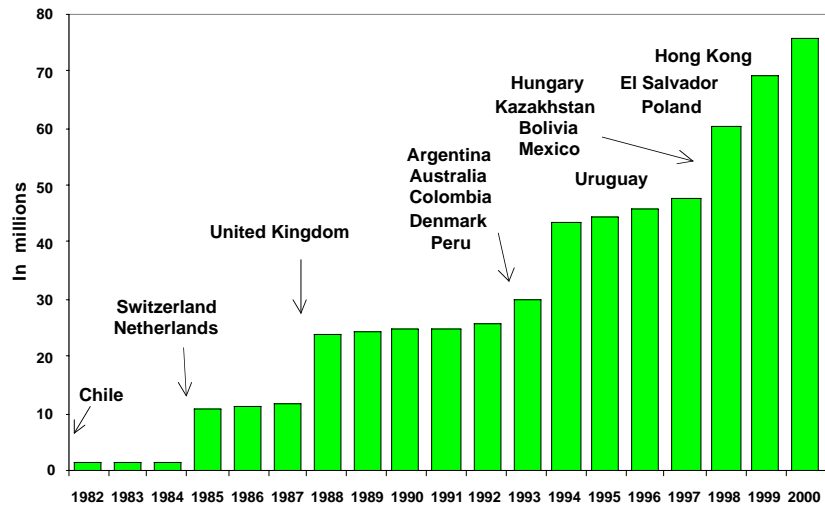
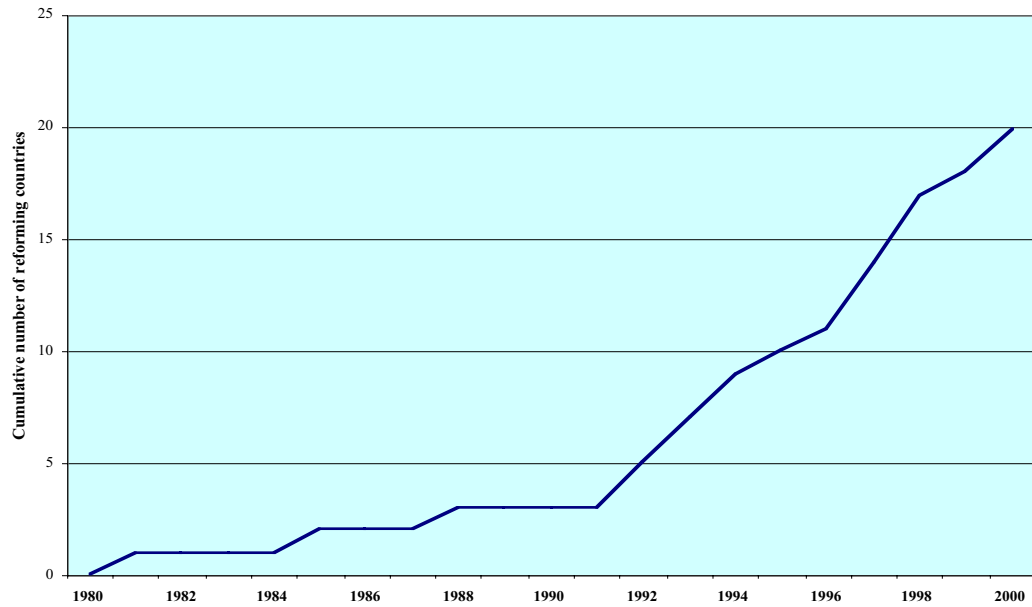


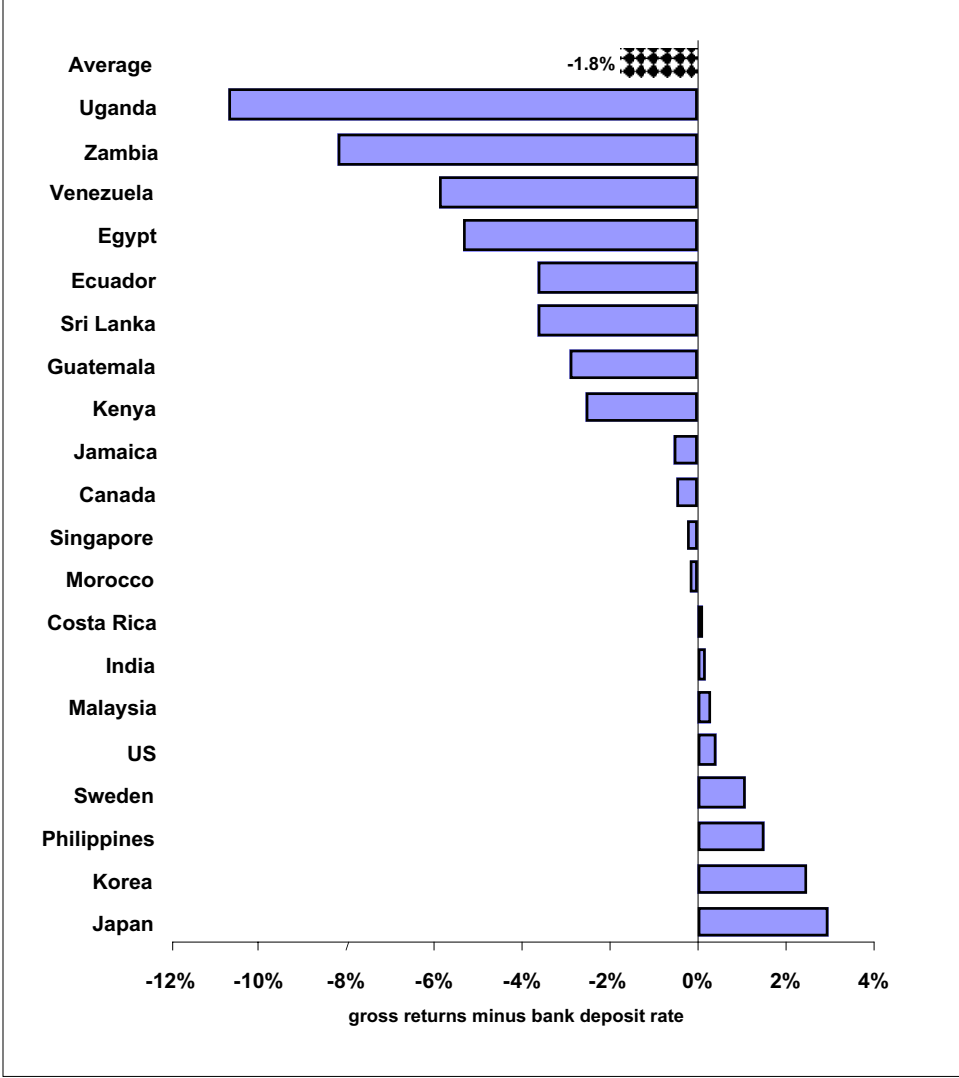
FIGURE 2  
Implicit Public Pension Debt



**FIGURE 4**

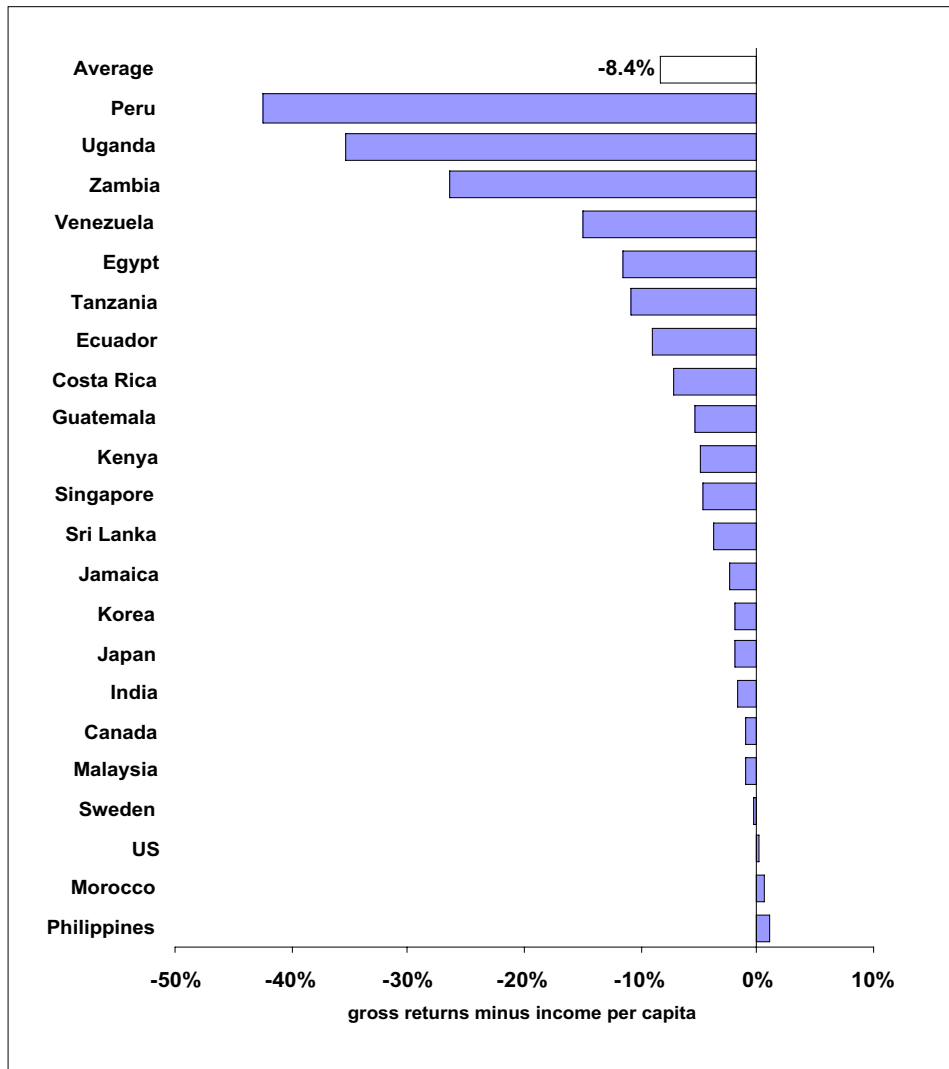
**Diffusion of structural reform around the world, 1980-2000**

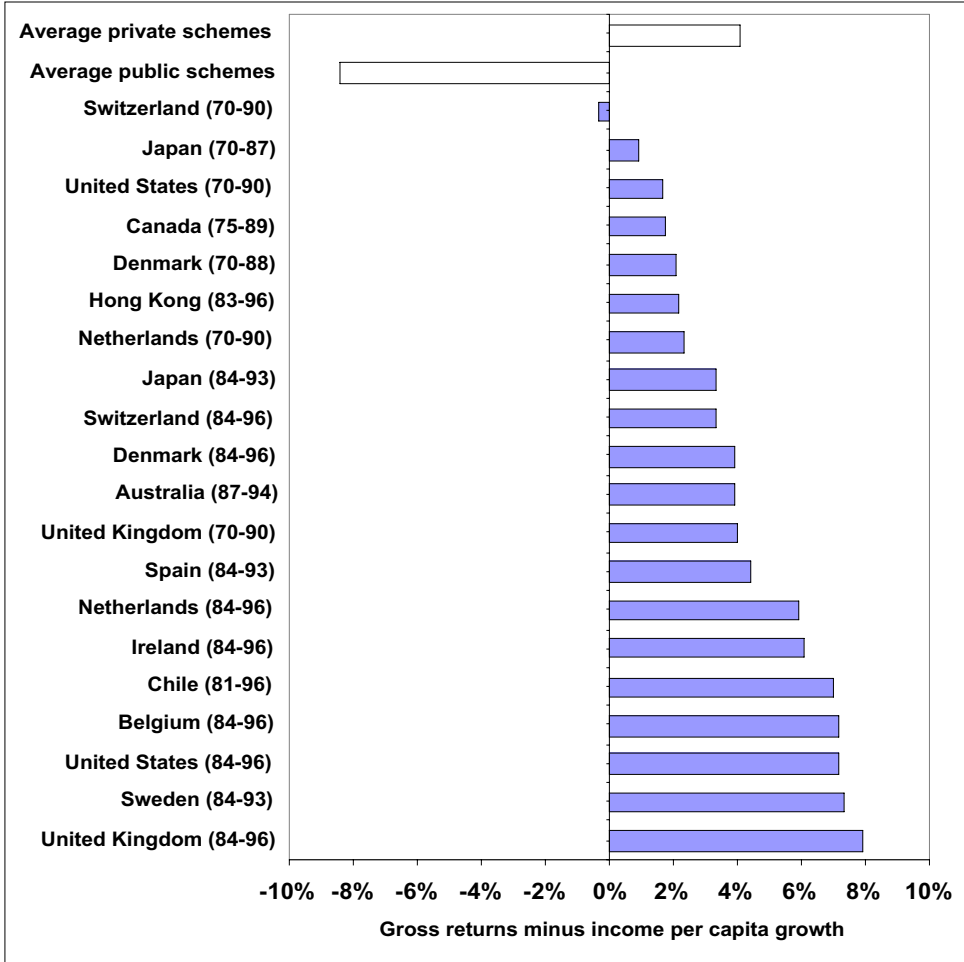




**FIGURE 8**

**RETURNS TO PUBLICLY MANAGED PENSION FUNDS MINUS GROWTH RATE IN PER  
CAPITA INCOME**





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