

Demographic Challenges to State Pension Systems Around the World

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Social Security has been in the news a lot lately. For the first time since 1983, when the Social Security Trust Fund came within months of running out of funds, the nation is engaged in a healthy debate on the nature of the problem the Social Security System faces, and on the choices that are available to address the problem. My purpose today is not to enter into this historic debate over the merits of available choices, but instead to discuss the fundamental source of the problem and the fact that the same issue is alive in most countries around the world.

The fundamental source of the problem, as most are now aware, is changing demographics. In all high-income countries the population is aging as a consequence of a birth rate much lower than in earlier years and a longer life expectancy as a consequence of advances in medicine. The fraction of the population over age 65 is rising, and if that age continues to mark the traditional retirement age the number of dependent retired persons relative to the number of working persons will rise to levels never seen before.

Naturally, there is considerable aversion toward making any substantive changes in Social Security; most persons would like to retire at 65 or earlier. However, changing demographics make it impossible both to maintain that traditional retirement age, with the level of benefits defined in current law, and to maintain the current level of taxation on the working population to support the retirement system. The option of raising taxes on the working population is being actively discussed, but we should be clear about what is

involved. Many of us would find it unthinkable to ask our own children to divert a growing share of their own income to support our retirement; the existence of the Social Security System does not change the fact that children in general, rather than children of individual families, will have to bear a growing burden if retirement benefits are unchanged.

Thus, changing demographics force us to make some choices. We will have to either raise the retirement age for the current level of annual benefits, reduce the level of benefits in current law, raise taxes on working persons, or adopt some combination of the three options. Most participants in the debate agree that the sooner we address the issue the better because we should make changes long enough in advance to give people ample opportunity to adjust to changed expectations.

The United States is not alone in facing a funding problem in its government-run pension system. Almost all economically advanced countries have large, government-run pension programs that replace a high percentage of the lifetime earnings of retired persons. These programs use the tax payments of current workers to fund the pension benefits of retired persons and their dependents. The funding problem all of these systems face has arisen because the number of persons drawing benefits is rising more rapidly than the number of working persons paying taxes to fund those benefits. Demographers project that these trends will continue over the next several decades; thus, without reforms, the funding problems of Social Security and the

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similar programs of other countries will only worsen.

I will begin my talk today by reviewing some of the underlying demographic facts that pose a challenge for government-run pension systems such as the U.S. Social Security system. These data show that some other countries, notably Japan and a few countries in Europe, are experiencing a more rapidly aging population than the United States. Next, I will discuss some of the reforms already undertaken in other countries to confront the funding problems of their government-run pension systems, in the hope that the experiences of other countries might inform the debate in our own country.

Before proceeding, I want to emphasize that the views I express here are mine and do not necessarily reflect official positions of the Federal Reserve System. I thank my colleagues at the Federal Reserve Bank of St. Louis—especially Howard J. Wall and David C. Wheelock, both assistant vice presidents in the research division—for extensive assistance. However, I retain full responsibility for errors.

DEMOGRAPHIC CHALLENGES TO GOVERNMENT PENSION SYSTEMS

Like the government-run pension systems of most countries, Social Security is a “pay-as-you-go” system, meaning that benefits paid to current recipients are financed by taxes levied on today’s workers and their employers. In essence, Social Security is an intergenerational transfer program and not a retirement savings program in the traditional sense.

Some lament the pay-go nature of the Social Security System, and argue that our current problem would never have arisen if the system had been properly funded. Here it is important to distinguish what an individual can do and what a society can do. Let me use food as an example to illustrate an extremely important point. Consider food consumed at some future time, such as 2030. The food consumed in 2030 will be pro-

duced mostly in 2030, with some carried over from 2029. The working population in 2030 must produce the food and services to process and distribute it to the entire population—to both the working and the dependent population of young persons and retired persons. It is impossible to accumulate a food fund now to be used in the future. Accumulation of financial assets does not accumulate food assets. If a retired person sells financial assets to pay for food, someone must purchase those assets. Dependent persons cannot purchase the assets—only working persons can. So, accumulating a retirement fund, whether in the Social Security Trust fund or private retirement accounts, does not solve the problem for society as a whole raised by an aging population.

The Social Security system was established in the mid-1930s as one of several programs introduced to combat the Great Depression. In the 1940s, there were some 40 persons paying into the system for every one person then drawing Social Security benefits. In the 1950s, the ratio was about 16 working persons paying taxes to support every one person receiving benefits. Today, however, there are just over three persons financing the benefits of each recipient, and over the next thirty years the ratio will fall to two persons paying taxes for each benefit recipient. These projections take into account the scheduled increase in the normal retirement age to 67 but not other possible changes in labor force participation that could be induced by changes in work incentives for those over age 67.

What explains the decline in the number of persons currently paying into Social Security relative to those drawing benefits? The answer has two parts. First, over the past century, the United States, like most if not all economically advanced countries, has experienced an increase in average life span. Second, these countries have also experienced a decline in the birth rate, especially since 1960 or so. Consequently, the number of persons who have reached the age at which they are eligible for benefits has been rising faster than the number of persons in the labor force paying taxes. Demographers expect these trends

in life span and birth rate to continue. Thus, without reforms to the system, the number of working people paying Social Security taxes will continue to fall relative to the number of people receiving Social Security benefits. I should also note that labor force participation of males aged 55 to 64 declined substantially from 89.5 percent in 1948 to 68.7 percent in 2004. Early retirement has added to the problem.

The increase in life span reflects the wonders of modern medicine and our rising standard of living. The world's fastest-growing age group is comprised of those persons aged 80 and over. In 2000, 69 million persons, or 1.1 percent of world population, were aged 80 or older. By 2050, the number aged 80 or older is expected to more than quintuple to 377 million and be 4.2 percent of world population. In that year, 21 countries or areas are projected to have at least 10 percent of their population aged 80 or over. Japan is expected to have 15.5 percent of its population over age 80—the highest of any country—and nearly 1 percent of its population aged 100 or more. The United States is projected to have 7.2 percent of its population consist of those 80 and older. In 1940, U.S. life expectancy at age 65 was an additional 13 years; today it is an additional 18 years.

Obviously, it is a great achievement that people are living longer and usually in better health and financial comfort than their parents and grandparents. The downside, however, is that the benefit payments from existing government-run pension systems will in the near future exceed the inflow of tax revenues to finance those payments unless steps are taken to reduce benefits, raise the retirement age, and/or increase taxes on current workers and their employers.

Those persons born in the first years of the post-World War II baby boom are today nearing our traditional retirement age of 65, and as this demographic group passes from their working years into retirement, the funding gap in Social

Security will open wide. Without reforms, the trustees of the Social Security trust fund tell us that Social Security outlays will begin to exceed payroll tax revenues in 2018 and the Social Security trust fund will be exhausted by 2042.¹

It is important to understand just how large has been the magnitude of the decline in the fertility rate, which determines the size of the working age population to support the baby boom generation when it retires. In the 1950s, women in the United States had, on average, 3.5 children in their lifetime. By 2000, the fertility rate had fallen to about 2.1, the minimum necessary for a population to be self-sustaining. The United Nations projects the U.S. fertility rate will continue to fall to about 1.85 by the middle of the century. Most economically developed countries already have fertility rates well below the replacement rate. Some representative examples are the United Kingdom, 1.60, Germany, 1.35, Italy, 1.23 and Japan, 1.32. With such low fertility rates, the populations of these countries are aging rapidly and forcing reforms to public pension systems.

REFORMS AROUND THE WORLD

Now let us consider some steps that other countries have already taken to shore up the financing of their government-run pension systems. The systems of other countries vary greatly in their details, but there is one characteristic that, for our purposes, helps distinguish among systems. That characteristic is the extent to which the contributions a person makes to the system during his or her working years are linked to the benefits that person receives in retirement. In some systems, there is little or no link between a person's contributions and retirement benefits. In others, benefits are closely tied to contributions, often through the use of privately funded retirement accounts. Our Social Security system falls somewhere in the middle. We have a system

¹ *2004 Annual Report of the Social Security and Medicare Boards of Trustees*. The U.S. Social Security program comprises two parts. The Old-Age and Survivors Insurance (OASI) program pays retirement and survivor benefits, and the Disability Insurance (DI) program pays disability benefits. The years in which benefit payments exceed revenues and the Social Security trust fund will be exhausted refer to the combined OASDI programs.

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of notional accounts that relate to some extent a retiree's promised benefits to the amount he or she paid into the system in the form of payroll taxes. Nevertheless, all benefits are financed by taxes imposed on current workers.

France and Germany are among the countries where the relationship between the benefits people receive in retirement and the taxes they pay during their working years is relatively weak. Such countries have typically offered generous benefits to those who take early retirement. Thanks to both a tradition of generous benefits and unfavorable demographics, many of these countries have already begun to experience serious problems in the financing of public pensions. They have tended to undertake reforms that strengthen the link between contributions and benefits, and thus make their systems more like the U.S. system.

At the other extreme are countries that impose a tight relationship between a person's payments into the system and his or her ultimate benefits. Several countries, including Sweden, Italy, the United Kingdom and Chile, have strengthened this link by shifting some of the financing of state pensions onto private sources. In these systems, early retirement places little, if any, burden on the system, and these systems are relatively well poised to handle the problem of an aging population. Still, several of these countries are considering further reforms of their systems.

For convenience, I will place the various reforms that countries have undertaken into four categories: tax increases, benefit reductions, measures to encourage later retirement, and expansions of private funding for government pensions. The first three categories are "parametric reforms." That is, these reforms alter some of the parameters of the existing system, whereas the fourth category includes changes to the structure of the system.

TAX INCREASES

For European countries, further tax increases are, for the most part, a non-starter for addressing

the state-pension problem. To begin with, many European countries already have high taxes—much higher than in the United States. Furthermore, the populations of these countries are aging rapidly, and the scope of the looming public pension funding problem is such that only drastic tax increases could hope to solve the problem. In fact, as a recent OECD report concludes, large tax increases could make matters worse by reducing the incentives for market work and for saving.² High taxes discourage economic activity, and without strong economic growth, countries will have trouble generating enough revenue to fund promised benefits to retirees.

BENEFIT REDUCTIONS

In countries where the challenges presented by demographic trends are more severe, and more immediate, than in the United States, state-pension reform has included benefit cuts.

Several countries have sought to reduce the growth of benefits by modifying how benefits are indexed. Many countries, including the United States, automatically increase public pension benefits annually to reflect increases in the general level of wages. In the United States, the initial benefit is indexed to wages and once benefits are paid they are indexed to the Consumer Price Index. Indexing the initial benefit to wages passes along the benefits of higher productivity and wages to persons at the time of retirement. This system maintains an initial benefit that is roughly constant over time as a percentage of the economy's average wage level.

However, in a country with an aging population and a pay-as-you-go retirement system, wage indexation implies that the average taxpayer is called upon to devote an ever larger share of his or her income to financing the benefit payments of retired persons and their dependents. With rising life expectancy and a lower fertility rate than in earlier years, stabilizing the initial benefit as a fraction of the economy's wage level neces-

² OECD. "Strengthening Growth and Public Finances in an Era of Demographic Change." May 2004.

sarily reduces the after-tax wage for employees, because the tax rate to support the retirement system must rise.

Because consumer prices tend to rise more slowly than wages, several countries, including Italy, Japan, Spain, and France have recently switched from wage indexation to price indexation in an effort to slow the growth of benefit payments while still protecting retirees from inflation. By indexing to prices instead of wages, the initial benefit will keep up with inflation but gradually decline as a percentage of the economy's average wage level. This method of reducing the initial benefit level is under active consideration in the United States as well.

Another of the parametric reforms is to raise the age at which a person is eligible for pension benefits. This reform recognizes increased life expectancy. Finland has already taken the step of indexing its full-pension retirement age to life expectancy. Other countries, including the United States, have made small increases in their normal retirement age, though usually less than the increase in life expectancy. Still others have increased the number of years that a person must work in order to receive full benefits.

Several countries have taken steps to encourage people to remain in the labor force as they get older. Some have done so by strengthening the link between contributions and benefits. Sweden, for example, has introduced "notional accounts," by which participants can see their potential pension benefits rise as they work longer and contribute more to the system. In this sense, Sweden's system has become more like the U.S. Social Security system.

Other countries have taken steps to reduce payments to persons who retire before the normal retirement age. Many countries have traditionally offered generous benefits to people who choose to retire early. Although early retirees typically receive a smaller annual pension than persons who wait until they are older to retire, the differ-

ence in many countries has been insufficient to discourage large numbers of people from retiring early. The United States has long been something of an exception. For a man with average income, our Social Security System is roughly actuarially neutral between ages 62 and 70. That is, the annual benefit rises as retirement is delayed about in accord with the decreased number of years benefits will be received. Beyond age 70, however, the incentive to remain in the U.S. labor force is low, because benefits are not further increased if retirement is further delayed. Of course, a person can work and receive income while also receiving Social Security benefits, but the person's benefits may be taxed at a relatively high marginal rate, depending on income, and the person must also pay Social Security taxes as with any wage earner. For these reasons, the implicit tax of remaining in the labor force past age 70—the foregone after-tax benefits—is relatively high.

Not coincidentally, the United States stands out in terms of the extent to which older workers participate in the labor force. In 2000, 68 percent of American males aged between 55 and 64 were in the labor force. The corresponding numbers for France, Germany, Italy, and the Netherlands were 42 percent, 56 percent, 45 percent and 46 percent, respectively. Britain, Sweden, and Norway are similar to the United States in that over 66 percent of persons aged 55 to 64 are in the labor force.³

Consistent with these figures, a recent OECD study found a close correlation between incentives to retire and retirement behavior—not surprisingly, people do respond to incentives! The implication of this research, according to its authors, is that labor force participation in the 55-64 age group could be increased substantially by reforms that abolished policy-induced incentives to retire early. Indeed, the report goes on to suggest that policymakers should consider skewing incentives against retirement, at least up to some age, in recognition that people who work provide a net positive impact on public budgets.⁴

³ OECD. "Policies for an Ageing Society: Recent Measures and Areas for Further Reform." November 2003.

⁴ This research is summarized in "Strengthening Growth and Public Finances in an Era of Demographic Change." OECD, May 2004.

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By continuing to work past normal retirement age, people support themselves and pay taxes that help to reduce the tax burden that would otherwise fall on others.

Let me now turn to the issue of private financing. As a prelude, allow me to quote from a Presidential address to the U.S. Congress. The address proposes a Social Security system that ultimately is comprised of two components. One component is to consist of “compulsory contributed annuities which in time will establish a self-supporting system for those now young and for future generations.” A self-supporting system is one in which “funds for the payment of...benefits [do] not come from the proceeds of general taxation.” Our current system does not satisfy this principle completely because it cannot be self-supporting for many years. But with adjustments, perhaps it might become so eventually.

The second component called for by the President is to consist of “voluntary contributory annuities by which individual initiative can increase the annual amounts received in old age.” In other words, the system should include voluntary personal accounts to go along with the mandatory notional accounts of the current system.

A particularly astute student of presidential history might recognize that I am quoting from an address of President Franklin Roosevelt, who presented these proposals in an address to Congress on February 17, 1935. President Roosevelt’s notion of personal accounts was not quite the same as those proposed by the current Administration, but a key principle is the same: Alongside notional accounts funded by Social Security taxes on a pay-as-you-go basis, some of the money to pay for a person’s retirement benefits through the Social Security system should come from his or her voluntary purchase of financial assets.

The advantage of moving toward increased use of personal accounts in government pension systems is that it would reduce the taxes imposed on one generation to fund the benefits paid to an older generation. Unlike our present system, a portion of each generation’s retirement would be funded by the earnings of their private accounts.

A move toward personal accounts would strengthen the links between one’s contributions and the benefits he or she receives, and thereby lessen the burden of an aging population on the funding of retirement benefits.

Opponents of the Administration’s proposal for personal accounts have pointed out that those who choose to use personal accounts will face some financial-market risks. Depending on the types of assets that can be held in these accounts, however, these risks need not be particularly high. On the other hand, personal accounts will allow people to insulate themselves from the risks inherent in a system that relies on taxing one generation to fund the benefits of another generation.

It was 70 years ago almost to this day that President Roosevelt proposed personal retirement accounts as a pillar of our Social Security. Only recently, however, have countries begun to make personal retirement accounts a part of their government run pension systems. Britain and Chile have gone the farthest down this road, with reforms dating back to the early 1980s. More recently, Sweden and Italy have made personal accounts a part of their public systems. As a point of reference, if the Bush Administration’s proposals are enacted and optional personal accounts are created, our Social Security system would resemble Sweden’s, except that in Sweden personal accounts are mandatory.

The British pension system has seen ongoing reform that began under the Conservative government of Margaret Thatcher in 1980 and has continued through the Labour government of Tony Blair. As a result, the British pension system is the most reliant on private finance of any high-income country. It is also among the most complicated, so I will try to simplify it as much as I can.

The mandatory first tier of the British system includes a basic pension that is financed on a pay-as-you-go basis from taxes on current workers. The level of benefit from the basic pension is fairly low, however, and benefits are supplemented by various means-tested payments including a Minimum Income Guarantee and housing benefits. The second tier of the British system is manda-

tory for all those in paid employment who earn above a certain level. Within this tier, individuals can choose from among various approved private pension plans, a heavily regulated “basic pension” plan, and a second state pension. The third tier of the British pension system allows people to contribute to private pension plans from their pre-tax income and includes various other tax breaks for payments and capital gains from pension plans. Thus, the third tier of the British system is very similar to the system of tax advantages afforded to those with private pension plans or IRAs in the United States.

The relatively heavy use of private pension plans within the state pension system means that state pension spending in Britain accounted for only 5.5 percent of GDP in 2000. Further, this figure is expected to decline to 5 percent by 2040. In contrast, across a list of European countries, the average expenditure on state pensions was over 10 percent in 2000 and is expected to rise to nearly 14 percent by 2040.⁵ By comparison, in the United States expenditure on Social Security benefits was 4.3 percent of GDP in 2003.

The country that has moved farthest in converting its state pension scheme into a primarily private one is Chile. Like the British system, the Chilean system has three tiers. The primary difference between the two systems is that Chile’s first tier provides a much lower minimum pension, which makes the Chilean system even less reliant on government funding. In fact, the Chilean government’s expenditure on first tier pensions is expected to remain below 0.5 percent of GDP for the foreseeable future.⁶ The conversion into the new system has been very costly, however, because the government decided to continue funding the pension promises made to those who were working before the new system was in

place. Even so, by the late 1990s, total spending on state pensions had fallen to below 4 percent of GDP.⁷

Individuals have enjoyed average annual returns of more than 10 percent per year on their private retirement savings accounts under the Chilean system, thanks to the rapid growth of Chile’s economy during the 1980s and 1990s. The perceived success of the Chilean reforms has led many other countries to undertake similar reforms to their own state pension systems. As of last year, 11 Latin American countries had adopted some version of the Chilean model.⁸

CONCLUSION

The debate over the future of Social Security has just begun. There are no easy solutions to the problem of how to ensure that our public pension system remains sound in the face of inevitable demographic changes. Compared to many countries, however, we in the United States are lucky. We have a strong economy supporting a high standard of living, a high rate of labor force participation, and our Social Security system imposes relatively little distortion on the retirement decisions of persons younger than age 70. Moreover, compared to other developed countries, the changes in the age distribution of our population have been and will continue to be relatively modest.

Still, we must make some changes in our Social Security system to ensure its long-run solvency, and those changes will involve some hard choices. Understanding the nature of the available choices, why choices must be made and lessons from experience abroad should help the nation address these important issues in a sound and long-lasting way.

⁵ Disney, Richard. “Public Pension Reform in Europe: Policies, Prospects and Evaluation.” *World Economy*, 2003, 26, pp. 1425-45.

⁶ Acuña, Rodrigo R. and Iglesias, Augusto P. “Chile’s Pension Reform After 20 Years.” World Bank Social Protection Discussion Paper No. 0129, December 2001.

⁷ Acuña, Rodrigo R. and Iglesias, Augusto P. “Chile’s Pension Reform After 20 Years.” World Bank Social Protection Discussion Paper No. 0129, December 2001.

⁸ Corbo, Vittorio. “Policy Challenges of Population Aging and Pension Systems in Latin America.” Presented at the Federal Reserve Bank of Kansas City Symposium *Global Demographic Change: Economic Impacts and Policy Challenges*, Jackson Hole, Wyoming, August 26-28, 2004.