International Evidence on the Desirability of Individual Retirement Accounts in Public Pension Systems

Testimony for the

Subcommittee on Social Security
Committee on Ways and Means

U.S. House of Representatives

Rayburn House Office Building
10:00 a.m.
July 31, 2001

by

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Summary

Social Security faces a long-term financing problem. The simplest and most logical solution to this problem is to trim promised benefits and increase payroll taxes modestly over the next two decades. These steps are politically unpopular, however, which explains the growing interest in supplementing or replacing traditional Social Security with a new system of worker owned and directed retirement accounts. A number of countries have already moved in this direction. However, the introduction of private accounts, by itself, does not solve the long-term problem facing public pension systems, including the Social Security system.

Some people who favor individual accounts believe we can learn from the experience of countries that have adopted such a system. While this is true, it is more pertinent to ask whether the experience of other countries sheds any light on the wisdom of replacing traditional Social Security, in whole or in part, with a system based on individual retirement accounts. The United States' situation differs significantly from that of other countries which have recently adopted individual account systems.

In comparison with most of the industrialized world, the United States does not face an acute funding crisis in its main public pension program. The Social Security system is better financed than pay-as-you-go systems in most other industrialized countries. The U.S. has a younger population than other developed countries, and the trend toward a grayer population is proceeding more slowly in the United States than it is elsewhere. If current immigration and fertility patterns continue, the fraction of Americans who are past the retirement age will never reach the levels expected in Japan and most of Western Europe.

One reason Social Security's financial position is comparatively healthy is that benefits are relatively low. As a result, the tax needed to pay for promised benefits after the Baby Boom generation retires will be lower than the *current* payroll tax rate needed to pay for benefits in other countries.

The relatively modest level of Social Security benefits causes the United States to be different from other countries in one crucial respect. Our old-age poverty rate is more than three times the poverty rate in other rich nations. Social Security pensions account for an overwhelming fraction of the income received by aged Americans who are at risk of becoming poor. We therefore face a much greater risk than other wealthy countries of pushing large numbers of the aged into poverty if we reduce the guaranteed pensions available to low-wage workers.

The United States also has less need for introducing individual account pensions. A large percentage of the workforce already participates in employer-sponsored plans or in voluntary individual retirement accounts. In comparison with most of the industrialized world, the assets accumulated in these plans represent an unusually large percentage of our national wealth. Though it is desirable to increase the percentage of workers who participate in individual retirement saving plans, it makes no sense to accomplish this worthy goal by weakening the retirement income protection and guaranteed benefits available to workers who have low or intermittent career earnings.

The crisis in public pension systems

The populations of the United States and other industrial countries are certain to grow older over the next five decades. By 2050 the ratio of people past age 64 relative to the number age 20-64 will exceed 45 percent in each of the seven largest industrial countries except the United States. In Germany, the aged dependency ratio will approach 55 percent; in Italy, it may reach 75 percent. Even though the United States will not age as fast, the American dependency rate is expected to be four-fifths higher in 2050 than it is today, rising from 21 percent to 38 percent (see Table 1).

The projected budget cost associated with population aging is so large that most countries will be forced to make painful changes in their public pension programs. Policymakers may be tempted to follow the example of Chile and replace part or all of their national pension systems with private systems organized around individual retirement accounts. Advocates of this kind of reform point to Chile's success in introducing an individual account system to replace its failing pay-as-you-go system, which the government began to phase out in the early 1980s. So far, Chile's individual account pension system has received high marks for sound administration, good returns, and broad political acceptance. The expected surge in public retirement costs in rich industrialized countries has made policymakers in many countries receptive to the idea of including individual investment accounts in their nations' public retirement systems.

A number of countries in Western and Central Europe, in Latin America, and on the Pacific Rim have enacted major reforms in the past decade. A partial list includes Sweden, Germany, and Italy in Western Europe, most of the transition countries in Central Europe, Argentina, Mexico, and Uruguay in Latin America, as well as Australia, Canada, and Japan. Some countries decided to introduce voluntary or compulsory individual retirement accounts as part of their reforms. Others focused on overhauling the pay-as-you-go component of their existing public systems. The United States can learn lessons about reform from the experiences of other countries. The successes and failures of other countries can guide us in the design and administration of an individual retirement account system, if we choose to adopt such a system. But before considering these lessons, it is important to consider whether the decision of other countries to adopt individual account systems is really informative about whether that choice is sensible for the United States.

Differences in the outlook for public pensions. The United States differs in significant ways from countries that have moved toward individual retirement systems. Some differences would make it easier to introduce individual accounts, but many would make it much less advantageous to do so. In comparison with public retirement systems in most other rich countries, the U.S. Social Security system places much smaller burdens on active workers. There are three main reasons for this.

First, a relatively high birth rate and a high rate of immigration mean that the American work force will continue to grow far into the future. This difference with most of the rest of the industrialized world implies that a pay-as-you-go retirement system can provide pensions at a lower contribution rate than will be possible in other rich countries. The working-age population is growing slightly faster than 1 percent a year in the United States. It is already shrinking in Japan, and it will soon begin to decline in many other industrialized countries. The financing problem facing pay-as-you-go pension systems is thus less serious in the United States than it is in other rich countries.

Compared with national pension systems in many other countries, especially developing countries, the U.S. Social Security system is less costly to administer. Collection of payroll contributions is closely integrated with collection of the personal and corporation income tax, making contributions less costly for the government to collect and for employers to pay. There is a high rate of voluntary compliance with Social Security contribution requirements, in contrast with the situation in some other countries where workers and employers frequently evade contribution requirements, increasing the burden on employers and workers who honestly pay the required contribution. Finally, the Social Security Administration is

more efficient than counterpart agencies in many other countries. Only about 1 percent of American workers' contributions are consumed in the administration of Social Security, leaving 99 percent of contributions for benefit payments and investments in pension reserves. Not only is the Social Security Administration efficient in comparison with public pension agencies in most other countries, it is remarkably efficient in comparison with private insurance and pension companies in the United States that perform similar functions.[1]

A third reason the pension financing problem is less severe in the United States is that the basic benefits provided by Social Security are lower in relation to wages than benefits provided by most other national pension systems. Because benefits are lower relative to average wages in the United States, the contribution rate needed to pay for them is also lower. Congress has historically been more cautious in raising average benefits than legislatures in other industrial countries. Faced with the prospect of a long-term funding problem in Social Security, the United States was the first major country to increase its normal pension age. Congress raised the normal retirement age from 65 to 67 under the Social Security Amendments passed in 1983. Around that same year, governments in several West European countries were revising their pension and unemployment insurance programs to make it easier for workers between 55 and 64 years old to collect early pensions. This step was taken to alleviate Europe's worsening unemployment problem, but it added to the long-term financing problem faced by their public pension systems.

Table 1 summarizes the demographic outlook and pension fund challenges facing the seven largest industrial countries. The first three columns show the U.S. Census Bureau's estimates of old-age dependency rates in 2000, 2025, and 2050, respectively. High rates of fertility and immigration give the United States the lowest predicted dependency rate in 2025 and 2050. The comparatively low dependency rate combined with a modest level of pensions also give the United States the lowest level of spending on public pensions, measured as a percentage of GDP (column 4). Although pension spending will increase in the future, it will remain substantially lower than spending in the other G-7 countries, with the notable exception of Great Britain (see column 5). Revisions of the British pension system enacted in the 1980s will cause basic pensions to rise more slowly than average wages, almost guaranteeing that pension outlays will eventually shrink as a share of national income – assuming the current British system survives unchanged until 2050. Along with Britain's public pension system, the American Social Security system has the smallest gross and net liabilities (columns 6 and 7).

<u>Low benefits and high poverty</u>

The modest basic pension guaranteed by the U.S. system gives rise to a problem that is unusual in rich industrialized countries – a high poverty rate among the aged. Chart 1 shows poverty rates among the elderly in sixteen rich countries. The countries provide micro-census information to the Luxembourg Income Study in a way that allows researchers to calculate poverty rates in consistent way. I classify someone as poor if he or she is a member of a household that receives less than 40 percent of his or her country's median household income.[2] (Household income includes cash and near-cash income, such as food stamps, but payments for income and payroll taxes are subtracted. Reported incomes are adjusted to reflect differences in household size.) Under this definition, the old-age poverty rate in the United States is

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[1] Excluding the cost of the disability program, the cost of administering Social Security is about $10 per person per year. This estimate is based on 1997 administrative costs of $2.1 billion and 182.6 million participants – 145 million workers and 37.6 million beneficiaries. Peter Diamond estimates that the administrative cost of the U.S. Social Security system is only one-third to one-twelfth of the equivalent cost of administering private pension plans. (NBER Working Paper No. 4510, National Bureau of Economic Research, Cambridge, MA, 1993)

[2] For purposes of comparison, the official U.S. poverty line for a four-person family was 42 percent of median household income in 1999.

12 percent – more than three times the average rate in the other 15 countries. Only Australia has an old-age poverty rate that is as high.

A principal goal of national pension systems, including ours, is to minimize poverty among the retired elderly. In view of the exceptionally high poverty rate of America's elderly, we should be more cautious than other countries in reforming our system in a way that threatens to reduce the guaranteed pensions available to workers who have low lifetime earnings. About 9 percent of aged Social Security recipients are poor under the official U.S. poverty definition. The Social Security Administration estimates that 48 percent of recipients *would be* poor if they did not receive Social Security benefits. Social Security pensions provide about four-fifths of the money income received by elderly Americans in the bottom 40 percent of the aged income distribution. For many of these aged Americans, the monthly benefits provided by Social Security are simply too low to remove them from the ranks of the poor. Any reform of the U.S. retirement system should be designed to prevent old-age poverty rates from rising even further above the rates in the rest of the industrialized world.

Private pensions

The United States differs from many other rich countries in having a well-developed system of funded private and employer-sponsored pensions. Slightly more than one-half of all active workers in the United States, including a large majority of the best paid employees, are already covered by an employer-sponsored plan.[3] By law, employer-sponsored plans are fully funded. In addition, many workers make voluntary contributions to Keogh plans (for the self-employed), 401(k) or 403(b) plans (for private company and nonprofit institution employees), or Individual Retirement Accounts (primarily for employees not covered by an employer pension plan). Private and employer-sponsored pension plans now provide at least one-sixth of older Americans' nonwage incomes, and this fraction is certain to rise as an increasing share of workers reach retirement after long careers in pension-covered jobs.

Private and employer-sponsored pension plans cover a large percentage of active U.S. workers. As a result, these plans have accumulated more assets than private plans in most other industrial countries (see right-hand column in Table 1). Among the seven largest industrial countries, only the United Kingdom has accumulated such a large stock of savings in private pension plans. In comparison with the situation in most other G-7 countries, the U.S. pension system already relies to an unusual degree on private pensions funded with voluntary contributions from workers and their employers.

Our long experience with funded employer-sponsored and individual pensions provides a healthy environment for extending individual pensions to a bigger share of the work force. The rapid expansion of 401(k) and IRA participation after 1980 shows that many American workers are comfortable with a major role in directing their own retirement saving. Most large employers offer sound retirement saving options to workers, and many have developed excellent education programs to inform their workers of the pros and cons of different investment options.

In addition, the United States is fortunate in having one of the world's best developed and most efficient capital markets. It has well regulated financial securities markets and well established institutions for providing financial services. Banks, insurance companies, and mutual fund companies compete intensively for the opportunity to manage workers' retirement savings. Unlike workers in much of the rest of the world, Americans can choose among dozens of firms willing to manage their retirement savings at reasonable cost.

But while the competitive and regulatory environment for individual pension accounts is healthy, the need for introducing individual retirement accounts as a component of Social Security is not very

[3] Among working American families in which the head of household is less than 65 years old, 57 percent of families have at least one member who participates in an occupational pension plan (EBRI, 2000).

compelling. Compared with the existing Social Security program, a system of individual accounts would increase the administrative cost of providing pensions, increase the exposure of workers to financial market risk, and force many under-prepared workers to make choices about the allocation of their retirement saving, exposing many to the risk of making poor investment choices.

An important risk of an individual account system that is financed with resources diverted from the existing system is that the guaranteed public pension available to low-income workers would be reduced. This risk is much greater if individual retirement accounts are established with funds that have been diverted from the existing system. Most voters recognize that the future payroll taxes available to finance Social Security are not high enough to pay for promised future benefits. To eliminate the difference between future resources and future obligations, we must increase contributions or reduce benefits. If we divert part of the current payroll tax to establish new individual retirement accounts, benefits in the traditional program will have to be cut even further. Unless the new retirement accounts produce outstanding returns for low-wage contributors, many of them will lose more in traditional Social Security pensions than they will gain in benefits from their new accounts.

Investment risk in individual accounts

A common argument in favor of individual accounts is that they would permit workers to earn a much better rate of return than they are likely to achieve on their contributions to traditional Social Security. I have heard it claimed, for example, that workers will earn a negative real return on their contributions to Social Security, while they could earn 8% to 11% on their contributions to an individual retirement account if it is invested in the U.S. stock market.

This comparison is incorrect and seriously misleading. First, the claimed return on Social Security contributions is unrealistically low. Some contributors will earn negative returns on their Social Security contributions, but on average future returns are expected to be between 1% and 2%, even if taxes are increased or benefits are reduced to restore long-term solvency.

Second, workers will not have an opportunity to earn the stock market rate of return on all of their retirement contributions, even if Congress establishes an individual account system in the near future. Workers' overall rate of return on their contributions to the retirement system will be an average of the return obtained on their contributions to individual accounts and the return earned on their contributions to whatever remains of the traditional Social Security system. For an average worker, this overall rate of return will be much closer to the current return on Social Security contributions than it is to 8%.

Advocates of individual retirement accounts often overlook the investment risk inherent in these kinds of accounts. All financial market investments are subject to risk. Their returns, measured in constant, inflation-adjusted dollars, are not guaranteed. Over long periods of time, investments in the U.S. stock market have outperformed all other types of domestic U.S. financial investments, including Treasury bills, long-term Treasury bonds, and highly rated corporate bonds. But stock market returns are highly variable from one year to the next. In fact, they are substantially *more* variable over short periods of time than are the returns on safer assets, like U.S. Treasury bills.

Some people mistakenly believe the annual ups and downs in stock market returns average out over time, assuring even the unluckiest investor of a high return if he or she invests steadily over a 20- or 30-year period. A moment's reflection shows that this cannot be true. From March 2000 to March 2001 the Standard and Poor's composite stock market index fell almost 30% after adjusting for changes in the U.S. price level. The value of stock certificates purchased in March 2000 and earlier lost nearly one-third their value in 12 months. For a worker who planned on retiring in 2001, the drop in stock market prices between 2000 and 2001 would have required a major change in consumption plans if the worker's sole source of retirement income depended on stock market investments.

I have made calculations of the pensions that workers could expect under an individual account plan using information about annual stock market performance, interest rates, and inflation dating back to 1871.[4] I start with the assumption that workers enter the workforce at age 22 and work for 40 years until reaching their 62nd birthdays. I also assume they contribute 2% of their wages each year to their individual retirement accounts. Workers' earnings typically rise throughout their careers until they reach their late 40s or early 50s, when earnings begin to fall. I assume that the age profile of earnings in a given year matches the age profile of earnings for American men in 1995 (as reported by the Census Bureau using tabulations from the March 1996 Current Population Survey). In addition, I assume that average earnings in the economy as a whole grow 2% a year, the approximate rate of the past few years.

The attached chart shows the replacement rate for workers retiring at the beginning of successive years from 1911 through 2001. The hypothetical experiences of 91 workers are displayed in this table. The worker who entered the workforce in 1871 and retired at the beginning of 1911, for example, would have accumulated enough savings in his individual retirement account to buy an annuity that replaced 16% of his peak lifetime earnings (that is, his average annual earnings between ages 54 and 58). The worker who entered the workforce in 1961 and retired at the beginning of 2001 could purchase an annuity that replaced 33% of his peak earnings. The highest replacement rate (39%) was obtained by the worker who entered the workforce in 1960 and retired in January 2000. The lowest (6%) was obtained by the worker who entered work in 1881 and retired in January 1921. Nine-tenths of the replacement rates shown in the chart fall in the range between 9% and 32%. The average replacement rate is 18%.

To see the impact of recent financial market fluctuations on pensions, I calculated pension entitlements for workers who retired in March 2000, when stock market prices reached an all-time peak, and in March 2001, when stock market prices and bond yields had fallen sharply. The worker who retired in March 2000 would have received a pension that replaced 39% of his career high wage; the worker retiring in March 2001 would have received a pension that replaced 25% of his peak career wage. In other words, the pension replacement rate fell more than one-third in just 12 months.

No one denies that a retirement saving account invested in U.S. stocks offers workers the prospect of good returns *on average.* However, a lesson to be drawn from results in Chart 2 is that defined-contribution retirement accounts offer an uncertain basis for planning one's retirement. Workers fortunate enough to retire when financial markets are strong obtain big pensions; workers with the misfortune to retire when markets are weak can be left with little to retire on. Even in the four decades since 1960, the experiences of retiring workers would have differed widely. The biggest pension was 2.7 times the size of the smallest one. Social Security pensions have been far more predictable and have varied within a much narrower range. For that reason, traditional Social Security provides a much more solid basis for retirement planning and a much more reliable foundation for a *publicly mandated* basic pension.

Design lessons from foreign experience

If the nation adopts a system of individual accounts, the experiences of other countries can help us choose a basic design and administrative procedures that minimize program costs, assure broad worker and employer compliance, and offer participating workers the best possible combination of investment choice, financial safety, and income protection. I have distilled some of the lessons from past research in a box at the end of my testimony entitled "Design principles for individual account pensions."

To my knowledge, no other nation has adopted an individual account system that embodies all of these principles. I believe the design choices made by policymakers in Chile, Australia, and the United Kingdom can improved if individual retirement accounts are to play a central role in U.S. Social Security

[4] Stock market data are taken from Robert J. Shiller, *Market Volatility* (Cambridge, MA: MIT Press, 1989), Chapter 26, with the data updated by Shiller and me.

reform. Whether it makes sense to include such accounts in a reform of Social Security depends critically on the level of funding that will remain to pay for the traditional guaranteed pension. It makes no sense to introduce individual retirement investment accounts if the accounts are funded with money that is taken away from guaranteed traditional pensions for low- and moderate-wage workers.

BOX: Design principles for individual account pensions

If the United States adopts a system of funded individual pension accounts, Congress should take steps to reduce the administrative costs of such a system and to increase the protections available to workers and their survivors. These steps are highly desirable in any compulsory system of individual accounts. Even if contributions to the new individual accounts are voluntary, many components of the recommended system will be needed if workers' contributions to the new system are taken out of their contributions to the traditional Social Security program.

- First, contributions should be collected centrally, preferably by the U.S. Treasury in cooperation with the Social Security Administration. This minimizes collection and enforcement costs compared with any system that relies on decentralized collection and record-keeping. The Treasury and Social Security Administration are extremely efficient at tax collection, record keeping, and pension distribution. No private insurance or mutual fund company is even remotely close. What is more important, this contribution collection apparatus is already in place. Little modification is needed for it to collect and keep records on workers' pension contributions. More important still, every employer in the nation who complies with the tax laws has already established the tax collection and earnings record keeping procedures needed to calculate and send contributions to the Treasury and SSA. This is particularly important from the point of view of administrative costs, because most small employers would find it costly to establish new contribution-collection procedures in addition to those they have already developed for income and payroll tax withholding.

- Second, the new pension system should offer contributors a handful of alternative investment options, each designed to be appropriate for retirement saving. For example, each worker could choose among (1) Short-term interest-bearing securities, such as U.S. Treasury bills; (2) Long- and medium-term U.S. Treasury bonds; (3) Mortgage-backed marketable securities; (4) Corporate bonds; (5) An index fund of U.S. corporate stocks; (6) An index fund of European and Asian corporate stocks; and (7) An index fund of stocks in corporations that meet certain social standards (no arms production, no alcohol or tobacco production, no genetically modified food, etc.). The seventh option should be made available in order to minimize political controversy around the first six investment options. The great advantage of offering workers investment choice is that each worker is permitted to select a retirement saving portfolio that corresponds with his or her preferences regarding financial market risk and return. The enormous advantage of offering only a handful of options is that it will be much easier to educate workers about the risk and return characteristics of each option. In fact, when there are few investment options, newspapers and electronic media will perform this educational function at least once a year (and possibly every week).

- The Social Security Administration or other government entity that is responsible for collecting and recording contributions would also be responsible for collecting and maintaining records about workers' investment choices. In order to hold down average administrative costs, workers should be allowed to change their investment allocation only once every year for free. They should be charged the full average cost for the privilege of altering their investment allocation more frequently than once a year. If the government is not informed of the worker's investment choice, the portfolio allocation should reflect an expert's assessment of the optimal allocation given the worker's age (for example, twenty-year-olds might be assigned an allocation of 80 percent U.S. corporate stocks and 20 percent corporate or U.S. Treasury bonds; workers near retirement might be assigned an allocation that contains more short-term securities and mortgage-backed securities and less corporate equities). The administrative cost of managing the

system can be collected from workers as a percent of assets under management or as a percent of workers' annual contributions.

- As soon as pension contributions are collected from employers or self-employed workers, they should be invested according to the allocation instructions of contributing workers. Funds will often come to the government before it has received investment instructions from contributing workers (especially newly hired workers). In a centralized system, this is not an important problem. If there are only seven investment options, funds flowing in from employers can be allocated according to historical proportions observed for typical workers. The investment choices of individual workers have little effect on that percentage allocation. The advantage of this system is that contributions begin to earn appropriate investment returns immediately.

- Fifth, the U.S. Treasury should select private fund managers to handle asset accumulation under each of the investment options. Managing companies should be selected using a competitive process that appropriately weighs the qualifications of the bidding companies as well as the charges that they propose to charge for managing the assets. Private sector companies have become extremely efficient at managing investment funds and deciding how to vote corporate shares in their investment portfolios. It is hard to believe any entity of the U.S. government could perform these functions more effectively and at lower cost (though the U.S. Treasury could efficiently manage short- and long-term government debt portfolios that are restricted to U.S. Treasury securities). In addition to being efficient, the private management of fund accumulation offers an important political advantage. The investments would not be directly under the control of a government entity (although the choice of investment assets is ultimately determined and regulated by Congress).

- Sixth, upon retirement workers should be required to convert a minimum percentage of their pension accumulation into a monthly annuity payment. This minimum should be determined by (1) the amount of traditional Social Security benefits available to the worker and his or her spouse; and (1) the amount of monthly income needed to make the worker ineligible for means-tested Supplemental Security Income benefits. Workers should be required to buy a large enough annuity so that the combination of annuity and traditional Social Security pension makes them ineligible for a means-tested benefit. The goal of this policy is to prevent workers from using up their pension savings quickly and thereby becoming eligible for means-tested benefits. If a worker has accumulated too little savings in her retirement account to purchase an annuity that renders her ineligible for SSI, the entire balance of the account should be converted to an annuity upon retirement. If the worker's traditional Social Security pension, by itself, is high enough to render the worker ineligible for SSI, then workers should not be forced to convert any part of their individual account savings into an annuity.

- Seventh, the Social Security Administration should handle the distribution of required annuity payments from the new individual-account system. Compared with private companies, it enjoys huge economies and vast experience in performing this function. Equally important, because a single government entity would be charged with converting pension accumulations into annuities, it could offer actuarially fair annuities to all older Americans, something that private insurance companies cannot do because of the problem of adverse selection and the requirement that the insurance company earn a market rate of return on its operations. One important advantage of using the Social Security Administration to convert pension savings into annuities is that it is in a much better position than a private firm to determine the minimum mandatory annuity conversion that a worker is obliged to accept. As noted above, workers should convert at least enough of their pension saving into an annuity to prevent them from becoming eligible for means-tested old-age benefits. The Social Security Administration is in the best position to determine how much annuity conversion is needed, because it has direct access to information about the worker's traditional Social Security pension. Another advantage of using a government entity for annuity conversion is that it will be easier to require that retired workers purchase annuities indexed to changes in consumer prices. Private firms that offer such annuities might go bankrupt or alternatively charge such high prices for

indexed annuities that retired workers are left with very meager pensions.

- Finally, after pension savings have been converted to annuities by the Social Security Administration, the funds collected from workers should be turned over to private fund managers. These fund managers should be selected in the same way as managers of the pension accumulation funds. However, in this case the basic portfolio allocation should be selected by an independent publicly appointed managing trustee. The selection and tenure of the trustee should be designed to provide insulation from political pressure and a reasonable degree of independence. The United States has been quite successful in protecting the political independence and integrity of the Federal Reserve Board and its Chairman. Similar procedures could be used to select and protect trustees of the annuity reserve fund. The purpose of the fund is to finance a stream of (indexed) annuity payments to an identifiable group of workers. The portfolio should not be selected by the individual workers, because they do not bear the investment risk. Instead, the portfolio should be chosen by the government, which ultimately bears the risk of poor investment performance. Obviously, the portfolio should be designed to offer good investment returns while minimizing the risk there will be insufficient funds to pay promised annuities. The actual funds can be managed by private investment fund managers, but the ultimate choice of appropriate investment strategy should be that of an independent expert trustee or board of trustees.

Table 1: Dependency Rates and the Outlook for Pensions in G-7 Countries

Percent

	Aged dependency ratio [1]			Public pension expenditures / GDP [2]		Gross pension liabilities / GDP in 1994 [3]	Net pension liabilities / GDP in 1994 [4]	Private pension fund assets / GDP 1994 [5]
Country	**2000**	**2025**	**2050**	**1995**	**2050**			
Canada	21	36	46	5.2	8.7	204	101	34
France	27	40	51	10.6	14.4	318	102	4
Germany	26	40	54	11.1	17.5	348	62	6
Italy	29	43	75	13.3	20.3	401	60	2
Japan	27	50	69	6.6	16.5	299	70	6
U.K.	27	37	50	4.5	4.1	142	24	68
U.S.A.	21	34	38	4.1	7.0	163	23	67

[1] The aged dependency ratio is the ratio of persons aged 65 and over to those who are 20-64. *Source:* U.S. Census Bureau.

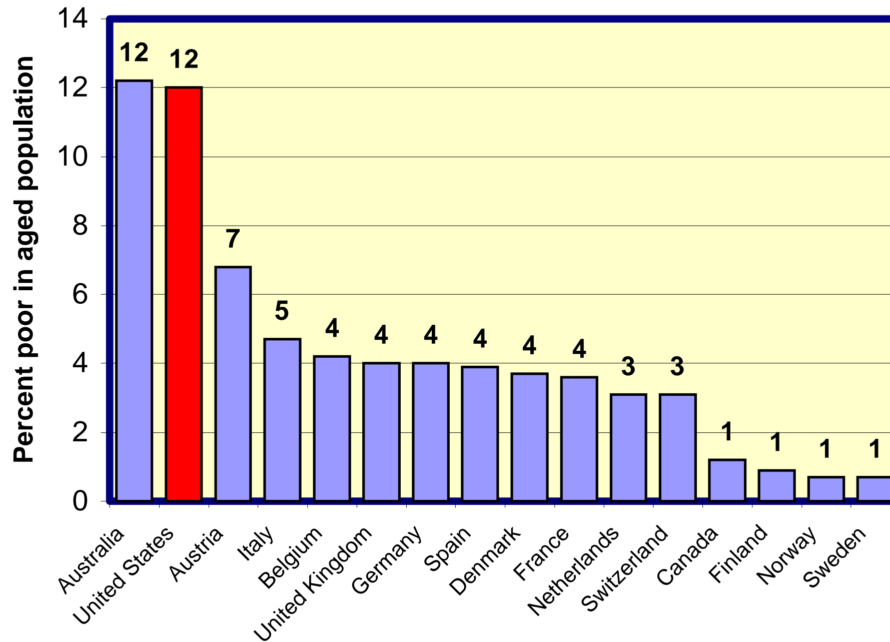
[2] *Source:* Roseveare et al. (1996). "Ageing Populations, Pension Systems and Government Budgets: Simulations for 20 OECD Countries." Economics Department Working Paper No. 168 (Paris: OECD).

[3] Gross pension liabilities are the discounted present value of future public pension payments. *Source:* Roseveare et al. (1996).

[4] Net pension liabilities are calculated by subtracting the present value of future contributions from discounted gross liabilities. *Source:* Roseveare et al. (1996).

[5] *Source:* E. Philip Davis (1997). "Can Pension Systems Cope? Population Ageing and Retirement Income Provision in the European Union." Special paper (London: Royal Institute of International Affairs).

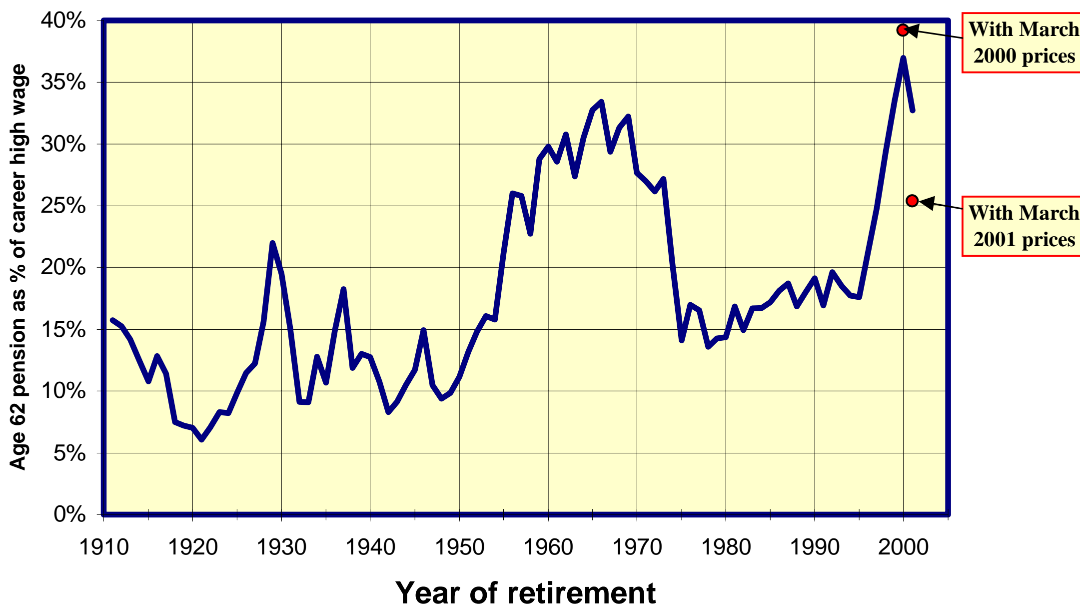
Chart 1. Old-Age Poverty Rates in Major Industrial Countries (Middle 1990s)



Note: A person is classified as poor if he or she is a member of a household receiving less than 40 percent of median national income. Household income includes cash and near-cash income from all sources and excludes payments for income and payroll taxes. It is adjusted to reflect differences in household size.

Source: Smeeding, Rainwater, and Burtless. (2000). "United States Poverty in a Cross-National Context," LIS Working Paper No. 244, Luxembourg Income Study, Center for Policy Research, The Maxwell School. (Syracuse, NY: Syracuse University).

Chart 2. Replacement rate under individual account pension when retirement savings are invested in S&P composite stock, 1911-2001



Note: The worker is assumed to invest 2% of his annual earnings in the composite stock represented in the Standard & Poor's index. Dividends are reinvested in stocks. Each worker's career lasts for 40 years, and ends in January of the indicated year.

Source: July 2001 tabulations of author.